



# Modicon Switch

Connecting Ethernet Devices

# Quick access to product information

## Get technical information about your product

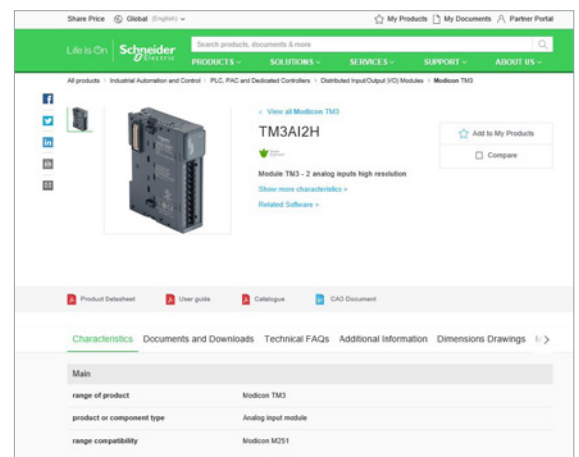
References

**Modicon TM3**  
I/O expansion modules for Modicon controllers  
Analog I/O modules

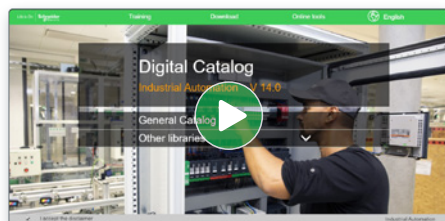
| Module and type of channel          | Input range                          | Output range | Resolution       | Input terminal block (V) | Reference | Weight (g) |
|-------------------------------------|--------------------------------------|--------------|------------------|--------------------------|-----------|------------|
| 2 refrigerant inputs                | -10...+10 VDC<br>0...20 mA/4...20 mA | 10 bits/12   | 0.001% (10 bits) | Terminal 2               | TM3AI2H   | 0.110      |
| 4 refrigerant inputs                | -10...+10 VDC<br>0...20 mA/4...20 mA | 10 bits/12   | 0.001% (10 bits) | Terminal 2               | TM3AI4H   | 0.110      |
| 4 refrigerant or temperature inputs | -10...+10 VDC<br>0...20 mA/4...20 mA | 10 bits/12   | 0.001% (10 bits) | Terminal 2               | TM3AI4H   | 0.110      |
| 4 differential temperature inputs   | -10...+10 VDC<br>0...20 mA/4...20 mA | 10 bits/12   | 0.001% (10 bits) | Terminal 2               | TM3AI4H   | 0.110      |
| 2 differential temperature inputs   | -10...+10 VDC<br>0...20 mA/4...20 mA | 10 bits/12   | 0.001% (10 bits) | Terminal 2               | TM3AI2H   | 0.110      |

Each commercial reference presented in a catalog contains a hyperlink. Click on it to obtain the technical information of the product:

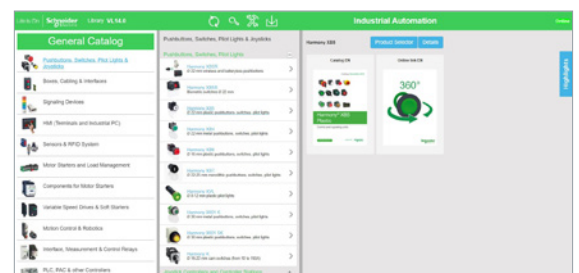
- Characteristics, Dimensions and drawings, Mounting and clearance, Connections and schemas, Performance curves
- Product image, Instruction sheet, User guide, Product certifications, End of life manual



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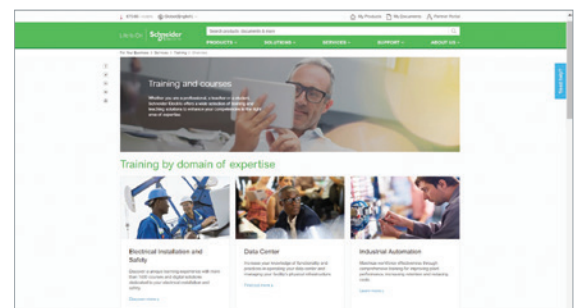


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# Modicon

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Ethernet network  
Modicon unmanaged switches

| Device type             |                          |                      | Unmanaged switches, 3, 5 ports, copper twisted pair                               |                                                                                    |
|-------------------------|--------------------------|----------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                         |                          |                      |  |  |
| Interfaces              | Copper cable ports       | Number and type      | 3 x 10/100BASE-TX ports                                                           | 5 x 10/100BASE-TX ports                                                            |
|                         |                          | Shielded connectors  | RJ45                                                                              |                                                                                    |
|                         |                          | Medium               | Shielded twisted pair, category CAT 5E                                            |                                                                                    |
|                         |                          | Total length of pair | 100 m/328 ft                                                                      |                                                                                    |
|                         | Fiber optic ports        | Number and type      | –                                                                                 |                                                                                    |
|                         |                          | Connectors           | –                                                                                 |                                                                                    |
|                         |                          | Medium               | –                                                                                 |                                                                                    |
|                         | Length of fiber          | 50/125 µm            | –                                                                                 |                                                                                    |
|                         |                          | 62.2/125 µm          | –                                                                                 |                                                                                    |
|                         |                          | 9/125 µm             | –                                                                                 |                                                                                    |
|                         | Attenuation analysis     | 50/125 µm fiber      | –                                                                                 |                                                                                    |
|                         |                          | 62.2/125 µm fiber    | –                                                                                 |                                                                                    |
|                         |                          | 9/125 µm fiber       | –                                                                                 |                                                                                    |
|                         | Ethernet services        |                      | –                                                                                 |                                                                                    |
| Configuration           |                          | –                    |                                                                                   |                                                                                    |
| Topology                | Number of switches       | Cascaded             | Unlimited                                                                         |                                                                                    |
|                         |                          | Redundant in a ring  | –                                                                                 |                                                                                    |
| Redundancy              |                          |                      | –                                                                                 |                                                                                    |
| Power supply            | Voltage                  |                      | 12...24 V $\overline{\text{---}}$ (9.6...32 V) SELV                               |                                                                                    |
|                         | Consumption              |                      | 2.2 W                                                                             |                                                                                    |
|                         | Removable terminal block |                      | 3 - pin                                                                           |                                                                                    |
| Operating temperature   |                          |                      | 0...+ 60°C/+ 32...+ 140°F                                                         |                                                                                    |
| Relative humidity       |                          |                      | 0...95% non-condensing                                                            |                                                                                    |
| Degree of protection    |                          |                      | IP 30                                                                             |                                                                                    |
| Dimensions              |                          | W x H x D            | 25 x 114 x 79 mm/<br>0.98 x 4.49 x 3.11 in.                                       |                                                                                    |
| Mounting                |                          |                      | On symmetrical DIN rail, 35 mm/1.38 in. wide                                      |                                                                                    |
| Weight                  |                          |                      | 0.113 kg/0.249 lb                                                                 |                                                                                    |
| Conforming to standards |                          |                      | UL 508 and CSA 22.2 No.142<br>IEC/EN 61131-2, IEC 60825-1 class 1                 |                                                                                    |
| LED indicators          |                          |                      | Power supply, copper port activity, 10 or 100 Mbps data rate                      |                                                                                    |
| Alarm relay             |                          |                      | –                                                                                 |                                                                                    |
| Reference               |                          |                      | TCSESU033FN0                                                                      | TCSESU053FN0                                                                       |
| Pages                   |                          |                      | 32                                                                                |                                                                                    |

(1) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 2,000 m/6,561 ft).

| Unmanaged switches, 4, 5 and 8 ports, copper twisted pair and fiber optic                                                      |                                                                                     |                                                                                     |                                                                                     |                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|                                             |  |  |  |            |
| 4 x 10/100BASE-TX ports                                                                                                        | 5 x 10/100BASE-TX ports                                                             | 8 x 10/100BASE-TX ports                                                             |                                                                                     |                                                                                               |
| RJ45                                                                                                                           | M12 (type D, female)                                                                | RJ45                                                                                |                                                                                     |                                                                                               |
| Shielded twisted pair, category CAT 5E                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                               |
| 100 m/328 ft                                                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                               |
| 1 x 100BASE-FX port                                                                                                            | –                                                                                   | –                                                                                   | –                                                                                   | –                                                                                             |
| Duplex SC                                                                                                                      | –                                                                                   | –                                                                                   | –                                                                                   | –                                                                                             |
| Multimode fiber                                                                                                                | –                                                                                   | –                                                                                   | –                                                                                   | –                                                                                             |
| 5,000 m/16,404 ft (1)                                                                                                          | –                                                                                   | –                                                                                   | –                                                                                   | –                                                                                             |
| 4,000 m/13,123 ft (1)                                                                                                          | –                                                                                   | –                                                                                   | –                                                                                   | –                                                                                             |
| –                                                                                                                              | –                                                                                   | –                                                                                   | –                                                                                   | –                                                                                             |
| 8 dB                                                                                                                           | –                                                                                   | –                                                                                   | –                                                                                   | –                                                                                             |
| 11 dB                                                                                                                          | –                                                                                   | –                                                                                   | –                                                                                   | –                                                                                             |
| –                                                                                                                              | –                                                                                   | –                                                                                   | –                                                                                   | –                                                                                             |
| –                                                                                                                              | –                                                                                   | –                                                                                   | –                                                                                   | –                                                                                             |
|                                                                                                                                |                                                                                     |                                                                                     |                                                                                     | USB Master mode, USB 2.0 Type A                                                               |
| Unlimited                                                                                                                      |                                                                                     |                                                                                     |                                                                                     |                                                                                               |
| –                                                                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                               |
| –                                                                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                               |
| 12...24 V $\overline{\text{---}}$ (9.6...32 V) SELV                                                                            | 24 V $\overline{\text{---}}$ (18...32 V) SELV                                       | 12...24 V $\overline{\text{---}}$ (9.6...32 V) SELV                                 |                                                                                     |                                                                                               |
| 3.9 W                                                                                                                          | 3.2 W                                                                               | 4.1 W                                                                               | 1.5 W                                                                               | 2.6 W                                                                                         |
| 3 - pin                                                                                                                        | 5 - pin, with M12 (type A, male)                                                    | 3 - pin                                                                             |                                                                                     | 6 - pin (redundant power supplies)                                                            |
| 0...+ 60°C/+ 32...+ 140°F                                                                                                      |                                                                                     |                                                                                     |                                                                                     | –40 °C...+70 °C/–40 °F...+158 °F                                                              |
| 0...95% non-condensing                                                                                                         |                                                                                     |                                                                                     | 10...95% non-condensing                                                             |                                                                                               |
| IP 30                                                                                                                          | IP 67                                                                               | IP 30                                                                               |                                                                                     | IP 40                                                                                         |
| 25 x 114 x 79 mm/<br>0.98 x 4.49 x 3.11 in.                                                                                    | 60 x 126 x 31 mm/<br>2.36 x 4.96 x 1.22 in.                                         | 35 x 138 x 121 mm/<br>1.37 x 5.43x 4.76 in.                                         | 38 x 102 x 79 mm/<br>1.50 x 4.02 x 3.11 in.                                         | 50 x 135 x 117 mm/<br>1.97 x 5.31 x 4.50 in.                                                  |
| On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                   | On a flat surfacein. wide                                                           | On symmetrical DIN rail, 35 mm/1.38 in. wide                                        |                                                                                     |                                                                                               |
| 0.120 kg/0.265 lb                                                                                                              | 0.210 kg/0.463 lb                                                                   | 0.246 kg/0.542 lb                                                                   | 0.150 kg/0.331 lb                                                                   | 0.440 kg/0.970 lb                                                                             |
| UL 508 and CSA 22.2 No.142<br>IEC/EN 61131-2, IEC 60825-1 class 1                                                              | cUL 508 and<br>CSA 22.2 No. 142, Cc                                                 | UL 508 and CSA 22.2 No.142<br>IEC/EN 61131-2, IEC 60825-1 class 1                   | RCM, UL/IEC 61010-1,<br>UL/IEC 61010-2-201                                          | ISA-12.12.01, DNVGL-<br>CG-0339, UL/IEC 61010-1,<br>UL/IEC 61010-2-201, RCM                   |
| Power supply, copper port activity, 10 or 100 Mbps data rate                                                                   | Power supply, link status                                                           | Power supply, copper port activity, 10 or 100 Mbps data rate                        | Power supply, link status, data status                                              | Power supply, supply voltage 1/2 status, link status, data rate, configuration update via USB |
| Fiber optic port activity and status                                                                                           | –                                                                                   |                                                                                     |                                                                                     |                                                                                               |
| –                                                                                                                              |                                                                                     |                                                                                     |                                                                                     | Yes                                                                                           |
| TCSESU043F1N0                                                                                                                  | TCSESU051F0                                                                         | TCSESU083FN0                                                                        | TCSESSU083FN0                                                                       | TCSESPU083FN0                                                                                 |
| For more information, please refer to our website <a href="http://www.schneider-electric.com">www.schneider-electric.com</a> . | 31                                                                                  | 32                                                                                  |                                                                                     |                                                                                               |



Ethernet network  
Modicon unmanaged switches

| Device type             |                          |                                                                                                                                                | Unmanaged switches, 5 and 9 ports, copper twisted pair and fiber optic            |                        |                                                                                    |                        |
|-------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------|------------------------------------------------------------------------------------|------------------------|
|                         |                          |                                                                                                                                                |  |                        |  |                        |
| Interfaces              | Copper cable ports       | Number and type                                                                                                                                | 4 x 10/100BAST-TX ports                                                           |                        | 7 x 10/100BAST-TX ports                                                            |                        |
|                         |                          | Shielded connectors                                                                                                                            | RJ45                                                                              |                        |                                                                                    |                        |
|                         |                          | Medium                                                                                                                                         | Shielded twisted pair, category CAT 5E                                            |                        |                                                                                    |                        |
|                         |                          | Total length of pair                                                                                                                           | 100 m/328 ft                                                                      |                        |                                                                                    |                        |
|                         | Fiber optic ports        | Number and type                                                                                                                                | 1 x 100BASE-FX port                                                               |                        | 2 x 100BASE-FX port                                                                |                        |
|                         |                          | Connectors                                                                                                                                     | Duplex SC                                                                         |                        |                                                                                    |                        |
|                         | Length of fiber          | Medium                                                                                                                                         | Multimode fiber                                                                   | Single-mode fiber      | Multimode fiber                                                                    | Single-mode fiber      |
|                         |                          | 50/125 µm                                                                                                                                      | 5,000 m/16,404 ft (1)                                                             | –                      | 5,000 m/16,404 ft (1)                                                              | –                      |
|                         |                          | 62.2/125 µm                                                                                                                                    | 4,000 m/13,123 ft (1)                                                             | –                      | 4,000 m/13,123 ft (1)                                                              | –                      |
|                         |                          | 9/125 µm                                                                                                                                       | –                                                                                 | 30,000 m/98,425 ft (1) | –                                                                                  | 30,000 m/98,425 ft (1) |
| Attenuation analysis    | 50/125 µm fiber          | 8 dB                                                                                                                                           | –                                                                                 | 8 dB                   | –                                                                                  |                        |
|                         | 62.2/125 µm fiber        | 11 dB                                                                                                                                          | –                                                                                 | 11 dB                  | –                                                                                  |                        |
|                         | 9/125 µm fiber           | –                                                                                                                                              | 16 dB                                                                             | –                      | 16 dB                                                                              |                        |
| Ethernet services       |                          | –                                                                                                                                              |                                                                                   |                        |                                                                                    |                        |
| Configuration           |                          | USB Master mode, USB 2.0 type A                                                                                                                |                                                                                   |                        |                                                                                    |                        |
| Topology                | Number of switches       | Cascaded                                                                                                                                       | Unlimited                                                                         |                        |                                                                                    |                        |
|                         |                          | Redundant in a ring                                                                                                                            | –                                                                                 |                        |                                                                                    |                        |
| Redundancy              |                          | –                                                                                                                                              |                                                                                   |                        |                                                                                    |                        |
| Power supply            | Voltage                  |                                                                                                                                                | 12 ... 24 V $\overline{\text{---}}$ (9.6...32 V) SELV                             |                        |                                                                                    |                        |
|                         | Consumption              |                                                                                                                                                | 4.3 W                                                                             |                        | 6.9 W                                                                              |                        |
|                         | Removable terminal block |                                                                                                                                                | 6 - pin (redundant power supplies)                                                |                        |                                                                                    |                        |
| Operating temperature   |                          | - 40...+ 70°C/- 40...+ 158°F                                                                                                                   |                                                                                   |                        |                                                                                    |                        |
| Relative humidity       |                          | 10...95% non-condensing                                                                                                                        |                                                                                   |                        |                                                                                    |                        |
| Degree of protection    |                          | IP 40                                                                                                                                          |                                                                                   |                        |                                                                                    |                        |
| Dimensions              | W x H x D                |                                                                                                                                                | 39 x 135 x 117 mm/1.53 x 5.31 x 4.61 in.                                          |                        | 56 x 135 x 117 mm/2.20 x 5.31 x 4.61 in.                                           |                        |
| Mounting                |                          | On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                                   |                                                                                   |                        |                                                                                    |                        |
| Weight                  |                          | 0.430 kg/0.948 lb                                                                                                                              |                                                                                   | 0.510 kg/1.124 lb      |                                                                                    |                        |
| Conforming to standards |                          | ISA-12.12.01, DNVGL-CG-0339, UL/IEC 61010-1, UL/IEC 61010-2-201, RCM                                                                           |                                                                                   |                        |                                                                                    |                        |
| LED indicators          |                          | P1 and P2 power supplies, link status, data status                                                                                             |                                                                                   |                        |                                                                                    |                        |
| Alarm relay             |                          | Activity, detected fault (power supply, Ethernet network, or communication port) (volt-free contact 1 A max. at 24 V $\overline{\text{---}}$ ) |                                                                                   |                        |                                                                                    |                        |
| Reference               |                          | TCSESPU053F1CU0 TCSESPU053F1CS0 TCSESPU093F2CU0 TCSESPU093F2CS0                                                                                |                                                                                   |                        |                                                                                    |                        |
| Pages                   |                          | 32                                                                                                                                             |                                                                                   |                        |                                                                                    |                        |

(1) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 2,000 m/6,561 ft).  
(2) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 15,000 m/49,212 ft).

| Device type |  |  | Unmanaged switches, 10 ports, copper twisted pair and fiber optic                                                                    |                                                                                     |
|-------------|--|--|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|             |  |  |                                                   |  |
|             |  |  | 8 x 10/100BAST-TX ports                                                                                                              |                                                                                     |
|             |  |  | RJ45                                                                                                                                 |                                                                                     |
|             |  |  | Shielded twisted pair, category CAT 5E                                                                                               |                                                                                     |
|             |  |  | 100 m/328 ft                                                                                                                         |                                                                                     |
|             |  |  | 2 x 100BASE-FX port                                                                                                                  |                                                                                     |
|             |  |  | Duplex SC                                                                                                                            |                                                                                     |
|             |  |  | Multimode fiber                                                                                                                      | Singlemode fiber                                                                    |
|             |  |  | 5,000 m/16,404 ft (1)                                                                                                                | —                                                                                   |
|             |  |  | 4,000 m/13,123 ft (1)                                                                                                                | —                                                                                   |
|             |  |  | —                                                                                                                                    | 30,000 m/98,425 ft (2)                                                              |
|             |  |  | 8 dB                                                                                                                                 | —                                                                                   |
|             |  |  | 11 dB                                                                                                                                | —                                                                                   |
|             |  |  | —                                                                                                                                    | 16 dB                                                                               |
|             |  |  | —                                                                                                                                    |                                                                                     |
|             |  |  | Unlimited                                                                                                                            |                                                                                     |
|             |  |  | —                                                                                                                                    |                                                                                     |
|             |  |  | —                                                                                                                                    |                                                                                     |
|             |  |  | 12 ... 24 V $\overline{\text{---}}$ (9.6...32 V) SELV                                                                                |                                                                                     |
|             |  |  | 8.4 W                                                                                                                                |                                                                                     |
|             |  |  | 3 - pin                                                                                                                              |                                                                                     |
|             |  |  | -40...+ 70°C/- 40...+ 158°F                                                                                                          |                                                                                     |
|             |  |  | 0...95% non-condensing                                                                                                               |                                                                                     |
|             |  |  | IP 30                                                                                                                                |                                                                                     |
|             |  |  | 35 x 138 x 121 mm/1.37 x 5.43 x 4.76 in.                                                                                             |                                                                                     |
|             |  |  | On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                         |                                                                                     |
|             |  |  | 0.260 kg/0.573 lb                                                                                                                    |                                                                                     |
|             |  |  | IEC 61131-2, UL 508, UL 1604 class 1 division 2, CSA 22.2 No. 142 (cUL), CSA 22.2 No. 213 class 1 division 2 (cUL), Cc, GL           |                                                                                     |
|             |  |  | Power supply, data rate, link status fiber port state                                                                                |                                                                                     |
|             |  |  | Detected fault (power supply, Ethernet network, or communication port) (volt-free contact 1 A max. at 24 V $\overline{\text{---}}$ ) |                                                                                     |
|             |  |  | TCSESU103F2CU0                                                                                                                       | TCSESU103F2CS0                                                                      |
|             |  |  | For more information, please refer to our website <a href="http://www.schneider-electric.com">www.schneider-electric.com</a> .       |                                                                                     |

Ethernet network  
Modicon lite and basic managed switches

| Device type             |                          |                      | Lite managed switch, 4 ports, copper twisted pair                                                                                                                                  |  | Basic managed switch, 8 ports, copper twisted pair                                                                                                                                      |  |
|-------------------------|--------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                         |                          |                      |                                                                                                   |  |                                                                                                       |  |
| Interfaces              | Copper cable ports       | Number and type      | 8 x 10/100BASE-TX ports                                                                                                                                                            |  |                                                                                                                                                                                         |  |
|                         |                          | Shielded connectors  | RJ45                                                                                                                                                                               |  |                                                                                                                                                                                         |  |
|                         |                          | Medium               | Shielded twisted pair, category CAT 5E                                                                                                                                             |  |                                                                                                                                                                                         |  |
|                         |                          | Total length of pair | 100 m/328 ft                                                                                                                                                                       |  |                                                                                                                                                                                         |  |
|                         | Fiber optic ports        | Number and type      | –                                                                                                                                                                                  |  |                                                                                                                                                                                         |  |
|                         |                          | Connectors           | –                                                                                                                                                                                  |  |                                                                                                                                                                                         |  |
|                         |                          | Medium               | –                                                                                                                                                                                  |  |                                                                                                                                                                                         |  |
|                         | Length of fiber          | 50/125 µm            | –                                                                                                                                                                                  |  |                                                                                                                                                                                         |  |
|                         |                          | 62.2/125 µm          | –                                                                                                                                                                                  |  |                                                                                                                                                                                         |  |
|                         |                          | 9/125 µm             | –                                                                                                                                                                                  |  |                                                                                                                                                                                         |  |
|                         | Attenuation analysis     | 50/125 µm fiber      | –                                                                                                                                                                                  |  |                                                                                                                                                                                         |  |
|                         |                          | 62.2/125 µm fiber    | –                                                                                                                                                                                  |  |                                                                                                                                                                                         |  |
|                         |                          | 9/125 µm fiber       | –                                                                                                                                                                                  |  |                                                                                                                                                                                         |  |
|                         | Ethernet services        |                      | Web Management, HTTPS, SNMP V1/V2/V3, BOOTP server, DHCP server, Ethernet Switch Configurator, Log files, remote monitoring (RMON), Topology Discovery                             |  | SNTP client, multicast filtering for optimization of the Global Data protocol, configuration via Web access, IGMP Snooping, RSTP ( <i>Rapid Scanning Tree Protocol</i> ), priority port |  |
|                         | USB                      |                      | –                                                                                                                                                                                  |  |                                                                                                                                                                                         |  |
| Topology                | Number of switches       | Cascaded             | Unlimited                                                                                                                                                                          |  |                                                                                                                                                                                         |  |
|                         |                          | Redundant in a ring  | 50 max.                                                                                                                                                                            |  |                                                                                                                                                                                         |  |
| Redundancy              |                          |                      | Industry standard redundancy protocol (RSTP) enabling deployment of ring and mesh network architectures                                                                            |  | P1 and P2 redundant power supplies, redundant single ring, ring coupling                                                                                                                |  |
| Power supply            | Voltage                  |                      | 12...24 V $\overline{\text{---}}$ (9.6...32 V) SELV                                                                                                                                |  |                                                                                                                                                                                         |  |
|                         | Consumption              |                      | 2.35 W                                                                                                                                                                             |  | 6 W                                                                                                                                                                                     |  |
|                         | Removable terminal block |                      | 3 - pin                                                                                                                                                                            |  | 6 - pin (redundant power supplies)                                                                                                                                                      |  |
| Operating temperature   |                          |                      | 0...+ 50 °C/+ 32...122 °F                                                                                                                                                          |  | 0...+ 60 °C/+ 32...+ 140 °F                                                                                                                                                             |  |
| Relative humidity       |                          |                      | 5...95% non-condensing                                                                                                                                                             |  | 10...95% non-condensing                                                                                                                                                                 |  |
| Degree of protection    |                          |                      | IP 30                                                                                                                                                                              |  | IP 20                                                                                                                                                                                   |  |
| Dimensions              |                          | W x H x D            | 25 x 114 x 79 mm/0.98 x 4.49 x 3.11 in.                                                                                                                                            |  | 47 x 131 x 111 mm/1.85 x 5.15 x 4.37 in.                                                                                                                                                |  |
| Mounting                |                          |                      | On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                                                                       |  |                                                                                                                                                                                         |  |
| Weight                  |                          |                      | 0.103 kg/0.227 lb                                                                                                                                                                  |  | 0.400 kg/0.882 lb                                                                                                                                                                       |  |
| Conforming to standards |                          |                      | IEEE 802.1d-2004), UL 61010-1/-2-201, FCC 47CFR Part 15, Class A, EN55022 Class A, EN 61000-4-2, -3,-4,-5,-6, IEC 60068-2-6, IEC 60068-2-27, IEC/EN60060-2-30Db, LLDP IEEE 802.1ab |  | IEC/EN 61131-2, UL 508, UL 1604 class 1 division 2, CSA 22.2 No. 214 (cUL), CSA 22.2 No. 213 class 1 division 2 (cUL), CÉ                                                               |  |
| LED indicators          |                          |                      | Power supply status, link status, data rate                                                                                                                                        |  | Power supply status, alarm relay status, active redundancy, redundancy management, copper port status, and copper port activity                                                         |  |
| Alarm relay             |                          |                      | Immediately reports unusual events by sending them to a management station via SNMP                                                                                                |  | Detected fault (power supply, Ethernet network, or communication port) (volt-free contact 1 A max. at 24 V $\overline{\text{---}}$ )                                                    |  |
| Reference               |                          |                      | TCSESL043F23F0                                                                                                                                                                     |  | TCSESB083F23F0                                                                                                                                                                          |  |
| Pages                   |                          |                      | 33                                                                                                                                                                                 |  |                                                                                                                                                                                         |  |

(1) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 2,000 m/6,561 ft).

| Basic managed switches, 8 and 9 ports, copper twisted pair and fiber optic                                                                                                     |  |                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------|
|                                                                                             |  |                      |
|                                                                                             |  |                      |
| 6 x 10/100BASE-TX ports                                                                                                                                                        |  |                      |
| RJ45                                                                                                                                                                           |  |                      |
| Shielded twisted pair, category CAT 5E                                                                                                                                         |  |                      |
| 100 m/328 ft                                                                                                                                                                   |  |                      |
| 2 x 100BASE-FX ports                                                                                                                                                           |  | 3 x 100BASE-FX ports |
| Duplex SC                                                                                                                                                                      |  |                      |
| Multimode fiber                                                                                                                                                                |  |                      |
| 5,000 m/16,404 ft (1)                                                                                                                                                          |  |                      |
| 4,000 m/13,123 ft (1)                                                                                                                                                          |  |                      |
| –                                                                                                                                                                              |  |                      |
| 8 dB                                                                                                                                                                           |  |                      |
| 11 dB                                                                                                                                                                          |  |                      |
| –                                                                                                                                                                              |  |                      |
| SNTP client, multicast filtering for optimization of the Global Data protocol, configuration via Web access, IGMP Snooping, RSTP (Rapid Scanning Tree Protocol), priority port |  |                      |
| –                                                                                                                                                                              |  |                      |
| Unlimited                                                                                                                                                                      |  |                      |
| 50 max.                                                                                                                                                                        |  |                      |
| P1 and P2 redundant power supplies, redundant single ring, ring coupling                                                                                                       |  |                      |
| 12...24 V $\overline{\text{---}}$ (9.6...32 V) SELV                                                                                                                            |  |                      |
| 8 W                                                                                                                                                                            |  | 9 W                  |
| 6 - pin (redundant power supplies)                                                                                                                                             |  |                      |
| 0...+ 60 °C/+ 32...+ 140 °F                                                                                                                                                    |  |                      |
| 10...95% non-condensing                                                                                                                                                        |  |                      |
| IP 20                                                                                                                                                                          |  |                      |
| 74 x 131 x 111 mm/2.91 x 5.15 x 4.37 in.                                                                                                                                       |  |                      |
| On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                                                                   |  |                      |
| 0.410 kg/0.904 lb                                                                                                                                                              |  |                      |
| IEC/EN 61131-2, UL 508, UL 1604 class 1 division 2, CSA 22.2 No. 214 (cUL), CSA 22.2 No. 213 class 1 division 2 (cUL), CÉ                                                      |  |                      |
| Power supply status, alarm relay status, active redundancy, redundancy management, fiber optic port status, and fiber optic port activity                                      |  |                      |
| Detected fault (power supply, Ethernet network, or communication port) (volt-free contact 1 A max. at 24 V $\overline{\text{---}}$ )                                           |  |                      |
| TCSESB083F2CU0                                                                                                                                                                 |  | TCSESB093F2CU0       |
| 33                                                                                                                                                                             |  |                      |

Ethernet network  
Modicon managed switches

| Device type             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | Managed switches, 4 and 5 ports, copper twisted pair and fiber optic                                                                             |  |  |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                |  |  |
| Interfaces              | Copper cable ports                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Number and type      | 4 x 10/100BASE-TX ports                                                                                                                          |  |  |
|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Shielded connectors  | RJ45                                                                                                                                             |  |  |
|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Medium               | Shielded twisted pair, category CAT 5E                                                                                                           |  |  |
|                         | Fiber optic ports                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Total length of pair | 100 m/328 ft                                                                                                                                     |  |  |
|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Number and type      | – 1 x 100BASE-FX port                                                                                                                            |  |  |
|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Connectors           | – Duplex SC                                                                                                                                      |  |  |
|                         | Length of fiber                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Medium               | – Multimode fiber Single-mode fiber                                                                                                              |  |  |
|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 50/125 µm            | – 5,000 m/16,404 ft (1) –                                                                                                                        |  |  |
|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 62.2/125 µm          | – 4,000 m/13,123 ft (1) –                                                                                                                        |  |  |
|                         | Attenuation analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 9/125 µm             | – 30,000 m/98,425 ft (2) –                                                                                                                       |  |  |
| 50/125 µm fiber         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | – 8 dB –             |                                                                                                                                                  |  |  |
| 62.2/125 µm fiber       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | – 11 dB –            |                                                                                                                                                  |  |  |
| Ethernet services       | 9/125 µm fiber                                                                                                                                                                                                                                                                                                                                                                                                                                                           | – 16 dB –            |                                                                                                                                                  |  |  |
|                         | Ethernet TCP/IP,SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP, SFTP, CP, LLDP, SNMP-Traps and SYSLOG, IGMP Snooping, VLAN, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, bandwidth management, MAC notification, TCP dump, link flap detection, RMON (remote network monitoring), self test, signal contact, port hardening, password protection, RADIUS assignment, DoS prevention, role-based access control, audit trail |                      |                                                                                                                                                  |  |  |
|                         | –                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                                                                                                                                                  |  |  |
| Topology                | Number of switches                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Cascaded             | Unlimited                                                                                                                                        |  |  |
|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Redundant in a ring  | 50 max.                                                                                                                                          |  |  |
| Redundancy              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | Redundant power supplies, redundant single ring, ring coupling, HiPER ring, RSTP, link aggregation, link backup, redundant network coupling, MRP |  |  |
| Power supply            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | 12...24 V $\overline{\text{---}}$ (9.6...32 V) SELV                                                                                              |  |  |
|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | 5 W 6 W                                                                                                                                          |  |  |
|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | 6-pin (redundant power supplies)                                                                                                                 |  |  |
| Operating temperature   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | 0...+ 60°C/+ 32...+ 140°F                                                                                                                        |  |  |
| Relative humidity       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | 1...95% non-condensing                                                                                                                           |  |  |
| Degree of protection    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | IP 30                                                                                                                                            |  |  |
| Dimensions              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | W x H x D            | 57 x 138 x 111 mm/2.24 x 5.43 x 4.37 in.                                                                                                         |  |  |
| Mounting                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                                     |  |  |
| Weight                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | 0.380 kg/0.837 lb 0.420 kg/0.925 lb                                                                                                              |  |  |
| Conforming to standards |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | EN/IEC 61000-6-2, EN/IEC 61000-6-4, EN/IEC 61010-2-201, CE, cULus, RCM, Merchant Navy                                                            |  |  |
| LED indicators          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | P1 and P2 power supplies status, device status, memory backup medium status, channel diagnostic                                                  |  |  |
| Alarm relay             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | Detected fault (power supply, Ethernet network, communication port, or redundancy) (volt-free contact 1 A max. at 24 V $\overline{\text{---}}$ ) |  |  |
| Reference               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | MCSESM043F23F0 MCSESM053F1CU0 MCSESM053F1CS0                                                                                                     |  |  |
| Pages                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | 34                                                                                                                                               |  |  |

(1) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 2,000 m/6,561 ft).  
(2) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 15,000 m/49,212 ft).

| Managed switches, 6 and 8 ports, copper twisted pair and fiber optic                                                                                                                                                                                                                                                                                                                                                                                                     |                        |                                          |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------------------------|--|
|                                                                                                                                                                                                                                                                                                                                                                                       |                        |                                          |  |
| 4 x 10/100BASE-TX ports                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        | 8 x 10/100BASE-TX ports                  |  |
| RJ45                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |                                          |  |
| Shielded twisted pair, category CAT 5E                                                                                                                                                                                                                                                                                                                                                                                                                                   |                        |                                          |  |
| 100 m/328 ft                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                        |                                          |  |
| 2 x 100BASE-FX ports                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        | —                                        |  |
| Duplex SC                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        | —                                        |  |
| Multimode fiber                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Single-mode fiber      |                                          |  |
| 5,000 m/16,404 ft (1)                                                                                                                                                                                                                                                                                                                                                                                                                                                    | —                      |                                          |  |
| 4,000 m/13,123 ft (1)                                                                                                                                                                                                                                                                                                                                                                                                                                                    | —                      |                                          |  |
| —                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 30,000 m/98,425 ft (2) |                                          |  |
| 8 dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | —                      |                                          |  |
| 11 dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | —                      |                                          |  |
| —                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 16 dB                  |                                          |  |
| Ethernet TCP/IP,SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP, SFTP, CP, LLDP, SNMP-Traps and SYSLOG, IGMP Snooping, VLAN, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, bandwidth management, MAC notification, TCP dump, link flap detection, RMON (remote network monitoring), self test, signal contact, port hardening, password protection, RADIUS assignment, DoS prevention, role-based access control, audit trail |                        |                                          |  |
| —                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        |                                          |  |
| Unlimited                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |                                          |  |
| 50 max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |                                          |  |
| Redundant power supplies, redundant single ring, ring coupling, HiPER ring, RSTP, link aggregation, link backup, redundant network coupling, MRP                                                                                                                                                                                                                                                                                                                         |                        |                                          |  |
| 12...24 V $\overline{\text{---}}$ (9.6...32 V) SELV                                                                                                                                                                                                                                                                                                                                                                                                                      |                        |                                          |  |
| 7 W                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                        | 6 W                                      |  |
| 6-pin (redundant power supplies)                                                                                                                                                                                                                                                                                                                                                                                                                                         |                        |                                          |  |
| 0...+ 60°C/+ 32...+ 140°F                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        | -40...+ 70°C/ -40...+ 158°F              |  |
| 1...95% non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                        |                                          |  |
| IP 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                        |                                          |  |
| 57 x 138 x 111 mm/2.24 x 5.43 x 4.37 in.                                                                                                                                                                                                                                                                                                                                                                                                                                 |                        | 73 x 138 x 111 mm/2.87 x 5.43 x 4.37 in. |  |
| On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                                                                                                                                                                                                                                                                                                                                                             |                        |                                          |  |
| 0.420 kg/0.925 lb                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        | 0.500 kg/1.102 lb                        |  |
| EN/IEC 61000-6-2, EN/IEC 61000-6-4, EN/IEC 61010-2-201, CE, cULus, RCM, Merchant Navy                                                                                                                                                                                                                                                                                                                                                                                    |                        |                                          |  |
| Power supply status, alarm relay status, active redundancy, redundancy management, copper port status, and copper port activity, redundancy ring fault, power supply fault, switch fault, data link status                                                                                                                                                                                                                                                               |                        |                                          |  |
| P1 and P2 power supplies status, device status, memory backup medium status, channel diagnostic                                                                                                                                                                                                                                                                                                                                                                          |                        |                                          |  |
| MCSESM063F2CU0                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | MCSESM063F2CS0                           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        | MCSESM083F23F0                           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        | MCSESM083F23F0H                          |  |

34



Ethernet network  
Modicon managed switches

| Device type             |                          |                      | Managed switches, 9 ports, copper twisted pair and fiber optic                                                                                                                                                                                                                                                                                                                                                                                                             |                        |
|-------------------------|--------------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
|                         |                          |                      |                                                                                                                                                                                                                                                                                                                                                                                          |                        |
| Interfaces              | Copper cable ports       | Number and type      | 8 x 10/100BASE-TX ports                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                        |
|                         |                          | Shielded connectors  | RJ45                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                        |
|                         |                          | Medium               | Shielded twisted pair, category CAT 5E                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |
|                         |                          | Total length of pair | 100 m/328 ft                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |
|                         | Fiber optic ports        | Number and type      | 1 x 100BASE-FX port                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        |
|                         |                          | Connectors           | Duplex SC                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |
|                         |                          | Medium               | Multimode fiber                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Single-mode fiber      |
|                         | Length of fiber          | 50/125 µm            | 5,000 m/16,404 ft (1)                                                                                                                                                                                                                                                                                                                                                                                                                                                      | –                      |
|                         |                          | 62.2/125 µm          | 4,000 m/13,123 ft (1)                                                                                                                                                                                                                                                                                                                                                                                                                                                      | –                      |
|                         |                          | 9/125 µm             | –                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 30,000 m/98,425 ft (2) |
|                         | Attenuation analysis     | 50/125 µm fiber      | 8 dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | –                      |
|                         |                          | 62.2/125 µm fiber    | 11 dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | –                      |
|                         |                          | 9/125 µm fiber       | –                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 16 dB                  |
|                         | Ethernet services        |                      | Ethernet TCP/IP, SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP, SFTP, SCP, LLDP, SNMP-Traps and SYSLOG, IGMP Snooping, VLAN, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, bandwidth management, MAC notification, TCP dump, link flap detection, RMON (remote network monitoring), self test, signal contact, port hardening, password protection, RADIUS assignment, DoS prevention, role-based access control, audit trail |                        |
| USB                     |                          | –                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                        |
| Topology                | Number of switches       | Cascaded             | Unlimited                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |
|                         |                          | Redundant in a ring  | 50 max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                        |
| Redundancy              |                          |                      | Redundant power supplies, ring coupling, redundant single ring, HiPER ring, link aggregation link backup, redundant network coupling, MRP                                                                                                                                                                                                                                                                                                                                  |                        |
| Power supply            | Voltage                  |                      | 12...24 V ~ (9.6...32 V) SELV                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |
|                         | Consumption              |                      | 7 W                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        |
|                         | Removable terminal block |                      | 6-pin (redundant power supplies)                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        |
| Operating temperature   |                          |                      | 0...+ 60°C/+ 32...+ 140°F                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |
| Relative humidity       |                          |                      | 1...95% non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |
| Degree of protection    |                          |                      | IP 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                        |
| Dimensions              |                          | W x H x D            | 73 x 138 x 111 mm/2.87 x 5.43 x 4.37 in.                                                                                                                                                                                                                                                                                                                                                                                                                                   |                        |
| Mounting                |                          |                      | On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |
| Weight                  |                          |                      | 0.500 kg/1.102 lb                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |
| Conforming to standards |                          |                      | EN/IEC 61000-6-2, EN/IEC 61000-6-4, EN/IEC 61010-2-201, CE, cULus, RCM, Merchant Navy                                                                                                                                                                                                                                                                                                                                                                                      |                        |
| LED indicators          |                          |                      | P1 and P2 power supplies status, device status, memory backup medium status, channel diagnostic                                                                                                                                                                                                                                                                                                                                                                            |                        |
| Alarm relay             |                          |                      | Detected fault (power supply, Ethernet network, communication port, or redundancy) (volt-free contact 1 A max. at 24 V ~)                                                                                                                                                                                                                                                                                                                                                  |                        |
| Reference               |                          |                      | MCSESM093F1CU0MCSESM093F1CS0                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |
| Pages                   |                          |                      | 34                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                        |

(1) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 2,000 m/6,561 ft).  
(2) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 15,000 m/49,212 ft).

| Managed switches, 10 ports, copper twisted pair and fiber optic                                                                                                                                                                                                                                                                                                                                                                                                            |  |                             |                        |                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------|------------------------|---------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                         |  |                             |                        |                           |
| 8 x 10/100BASE-TX ports                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                             |                        |                           |
| RJ45                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                             |                        |                           |
| Shielded twisted pair, category CAT 5E                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                             |                        |                           |
| 100 m/328 ft                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                             |                        |                           |
| 2 x 100BASE-FX ports                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                             |                        |                           |
| Duplex SC                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                             |                        |                           |
| Multimode fiber                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                             | Single-mode fiber      |                           |
| 5,000 m/16,404 ft (1)                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                             | —                      |                           |
| 4,000 m/13,123 ft (1)                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                             | —                      |                           |
| —                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                             | 30,000 m/98,425 ft (2) |                           |
| 8 dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                             | —                      |                           |
| 11 dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                             | —                      |                           |
| —                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                             | 16 dB                  |                           |
| Ethernet TCP/IP, SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP, SFTP, SCP, LLDP, SNMP-Traps and SYSLOG, IGMP Snooping, VLAN, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, bandwidth management, MAC notification, TCP dump, link flap detection, RMON (remote network monitoring), self test, signal contact, port hardening, password protection, RADIUS assignment, DoS prevention, role-based access control, audit trail |  |                             |                        |                           |
| —                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                             |                        |                           |
| Unlimited                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                             |                        |                           |
| 50 max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                             |                        |                           |
| Redundant power supplies, ring coupling, redundant single ring, HiPER ring, link aggregation link backup, redundant network coupling, MRP                                                                                                                                                                                                                                                                                                                                  |  |                             |                        |                           |
| 12...24 V ~ (9.6...32 V) SELV                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                             |                        |                           |
| 8 W                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                             |                        |                           |
| 6-pin (redundant power supplies)                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                             |                        |                           |
| 0...+ 60°C/+ 32...+ 140°F                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | -40...+ 70°C/ -40...+ 158°F |                        | 0...+ 60°C/+ 32...+ 140°F |
| -40...+ 70°C/ -40...+ 158°F                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                             |                        |                           |
| 1...95% non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                             |                        |                           |
| IP 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                             |                        |                           |
| 73 x 138 x 111 mm/2.87 x 5.43 x 4.37 in.                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                             |                        |                           |
| On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                             |                        |                           |
| 0.500 kg/1.102 lb                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | 0.570 kg/1.256 lb           |                        | 0.500 kg/1.102 lb         |
| 0.570 kg/1.256 lb                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                             |                        |                           |
| EN/IEC 61000-6-2, EN/IEC 61000-6-4, EN/IEC 61010-2-201, CE, cULus, RCM, Merchant Navy                                                                                                                                                                                                                                                                                                                                                                                      |  |                             |                        |                           |
| P1 and P2 power supplies status, device status, memory backup medium status, channel diagnostic                                                                                                                                                                                                                                                                                                                                                                            |  |                             |                        |                           |
| Detected fault (power supply, Ethernet network, communication port, or redundancy)<br>(volt-free contact 1 A max. at 24 V ~)                                                                                                                                                                                                                                                                                                                                               |  |                             |                        |                           |
| MCSESM103F2CU0                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | MCSESM103F2CU0H             |                        | MCSESM103F2CS0            |
| MCSESM103F2CS0H                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                             |                        |                           |

34



Ethernet network  
Modicon managed switches

| Device type             |                          |                                                                                                                                                                                                                                                                                                                                                                                                      | Managed switches, 8 gigabit ports, copper twisted pair with PoE                                                                           |                             |
|-------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
|                         |                          |                                                                                                                                                                                                                                                                                                                                                                                                      |                                                         |                             |
| Interfaces              | Copper cable ports       | Number and type                                                                                                                                                                                                                                                                                                                                                                                      | 8 x 10/100BASE-TX ports with PoE                                                                                                          |                             |
|                         |                          | Shielded connectors                                                                                                                                                                                                                                                                                                                                                                                  | RJ45                                                                                                                                      |                             |
|                         |                          | Medium                                                                                                                                                                                                                                                                                                                                                                                               | Shielded twisted pair, category CAT 5E                                                                                                    |                             |
|                         |                          | Total length of pair                                                                                                                                                                                                                                                                                                                                                                                 | 100 m/328 ft                                                                                                                              |                             |
|                         | Fiber optic ports        | Number and type                                                                                                                                                                                                                                                                                                                                                                                      | –                                                                                                                                         |                             |
|                         |                          | Connectors                                                                                                                                                                                                                                                                                                                                                                                           | –                                                                                                                                         |                             |
|                         | Length of fiber          | Medium                                                                                                                                                                                                                                                                                                                                                                                               | –                                                                                                                                         |                             |
|                         |                          | 50/125 µm                                                                                                                                                                                                                                                                                                                                                                                            | –                                                                                                                                         |                             |
|                         |                          | 62.2/125 µm                                                                                                                                                                                                                                                                                                                                                                                          | –                                                                                                                                         |                             |
|                         |                          | 9/125 µm                                                                                                                                                                                                                                                                                                                                                                                             | –                                                                                                                                         |                             |
| Attenuation analysis    | 50/125 µm fiber          | –                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                           |                             |
|                         | 62.2/125 µm fiber        | –                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                           |                             |
|                         | 9/125 µm fiber           | –                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                           |                             |
| Ethernet services       |                          | SMTP V3, SMTP client, multicast filtering for optimization of the Global Data protocol, configuration via Web access, VLAN, IGMP Snooping, RSTP ( <i>Rapid Scanning Tree Protocol</i> ), priority port, data stream control, secure port, SNMP- Traps and SYSLOG, port hardening password protection, RADIUS assignment, DoS prevention, role-based access control, audit trail, Power over Ethernet |                                                                                                                                           |                             |
| USB                     |                          | –                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                           |                             |
| Topology                | Number of switches       | Cascaded                                                                                                                                                                                                                                                                                                                                                                                             | Unlimited                                                                                                                                 |                             |
|                         |                          | Redundant in a ring                                                                                                                                                                                                                                                                                                                                                                                  | 50 max.                                                                                                                                   |                             |
| Redundancy              |                          |                                                                                                                                                                                                                                                                                                                                                                                                      | redundant power supplies, ring coupling, redundant single ring, HiPER ring, link aggregation link backup, redundant network coupling, MRP |                             |
| Power supply            | Voltage                  |                                                                                                                                                                                                                                                                                                                                                                                                      | 24 V ~ (18...30 V) SELV                                                                                                                   |                             |
|                         | Consumption              |                                                                                                                                                                                                                                                                                                                                                                                                      | 106 W                                                                                                                                     |                             |
|                         | Removable terminal block |                                                                                                                                                                                                                                                                                                                                                                                                      | 6-pin (redundant power supplies)                                                                                                          |                             |
| Operating temperature   |                          |                                                                                                                                                                                                                                                                                                                                                                                                      | 0...+ 60°C/+ 32...+ 140°F                                                                                                                 | –40...+ 70°C/ –40...+ 158°F |
| Relative humidity       |                          |                                                                                                                                                                                                                                                                                                                                                                                                      | 1...95% non-condensing                                                                                                                    |                             |
| Degree of protection    |                          |                                                                                                                                                                                                                                                                                                                                                                                                      | IP 30                                                                                                                                     |                             |
| Dimensions              |                          | W x H x D                                                                                                                                                                                                                                                                                                                                                                                            | 125 x 138 x 111 mm/4.92 x 5.43 x 4.37 in.                                                                                                 |                             |
| Mounting                |                          |                                                                                                                                                                                                                                                                                                                                                                                                      | On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                              |                             |
| Weight                  |                          |                                                                                                                                                                                                                                                                                                                                                                                                      | 1.4 kg/3.086 lb                                                                                                                           |                             |
| Conforming to standards |                          |                                                                                                                                                                                                                                                                                                                                                                                                      | EN/IEC 61000-6-2, EN/IEC 61000-6-4, EN/IEC 61010-2-201, CE, cULus, RCM, Merchant Navy                                                     |                             |
| LED indicators          |                          |                                                                                                                                                                                                                                                                                                                                                                                                      | P1 and P2 power supplies status, device status, memory backup medium status, channel diagnostic                                           |                             |
| Alarm relay             |                          |                                                                                                                                                                                                                                                                                                                                                                                                      | Detected fault (power supply, Ethernet network, communication port, or redundancy) (volt-free contact 1 A max. at 24 V ~)                 |                             |
| Reference               |                          |                                                                                                                                                                                                                                                                                                                                                                                                      | MCSESP083F23G0                                                                                                                            | MCSESP083F23G0T             |
| Pages                   |                          |                                                                                                                                                                                                                                                                                                                                                                                                      | 34                                                                                                                                        |                             |

(1) These optional references of SFP transceivers are available in Separate parts for accessories for managed switches in page 30.

| Managed switch, 8 ports and 4 gigabit ports, copper twisted pair and SFP                                                                                                                                                                                                                                                                                  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                                                                                                                                                                                                                                                                        |  |
| 8 x 10/100BASE-TX ports                                                                                                                                                                                                                                                                                                                                   |  |
| RJ45                                                                                                                                                                                                                                                                                                                                                      |  |
| Shielded twisted pair, category CAT 5E                                                                                                                                                                                                                                                                                                                    |  |
| 100 m/328 ft                                                                                                                                                                                                                                                                                                                                              |  |
| 100/1000BASE SFP                                                                                                                                                                                                                                                                                                                                          |  |
| –                                                                                                                                                                                                                                                                                                                                                         |  |
| SFP (1)                                                                                                                                                                                                                                                                                                                                                   |  |
| –                                                                                                                                                                                                                                                                                                                                                         |  |
| –                                                                                                                                                                                                                                                                                                                                                         |  |
| –                                                                                                                                                                                                                                                                                                                                                         |  |
| –                                                                                                                                                                                                                                                                                                                                                         |  |
| –                                                                                                                                                                                                                                                                                                                                                         |  |
| –                                                                                                                                                                                                                                                                                                                                                         |  |
| Ethernet TCP/IP, SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP, SFTP, SCP, LLDP, SNMP-Traps and SYSLOG, IGMP Snooping, VLAN, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, bandwidth management, MAC notification TCP dump, link flap detection, RMON (remote network monitoring), self test, signal contact |  |
| –                                                                                                                                                                                                                                                                                                                                                         |  |
| Unlimited                                                                                                                                                                                                                                                                                                                                                 |  |
| 50 max.                                                                                                                                                                                                                                                                                                                                                   |  |
| Redundant power supplies, ring coupling, redundant single ring, HiPER ring, link aggregation link backup, redundant network coupling, MRP                                                                                                                                                                                                                 |  |
| 12...24 V ~ (9.6...32 V) SELV                                                                                                                                                                                                                                                                                                                             |  |
| 9 W + 1 W per SFP fiber optic module                                                                                                                                                                                                                                                                                                                      |  |
| 6-pin (redundant power supplies)                                                                                                                                                                                                                                                                                                                          |  |
| 0...+ 60°C/+ 32...+ 140°F                                                                                                                                                                                                                                                                                                                                 |  |
| 1...95% non-condensing                                                                                                                                                                                                                                                                                                                                    |  |
| IP 30                                                                                                                                                                                                                                                                                                                                                     |  |
| 73 x 138 x 111 mm/2.87 x 5.43 x 4.37 in.                                                                                                                                                                                                                                                                                                                  |  |
| On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                                                                                                                                                                                                                                              |  |
| 0.570 kg/1.256 lb                                                                                                                                                                                                                                                                                                                                         |  |
| EN/IEC 61000-6-2, EN/IEC 61000-6-4, EN/IEC 61010-2-201, CE, cULus, RCM, Merchant Navy                                                                                                                                                                                                                                                                     |  |
| P1 and P2 power supplies status, device status, memory backup medium status, channel diagnostic                                                                                                                                                                                                                                                           |  |
| Detected fault (power supply, Ethernet network, communication port, or redundancy)<br>(volt-free contact 1 A max. at 24 V ~)                                                                                                                                                                                                                              |  |
| MCSesm123F2LG0                                                                                                                                                                                                                                                                                                                                            |  |
| 34                                                                                                                                                                                                                                                                                                                                                        |  |

Ethernet network  
Modicon managed switches

| Device type             |                          |                                                                                                                                | Managed switches, 16 ports, copper twisted pair and fiber optic                                                                                                                                                                                                                                                                                     |                          |
|-------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
|                         |                          |                                                                                                                                |                                                                                                                                                                                                                                                                   |                          |
| Interfaces              | Copper cable ports       | Number and type                                                                                                                | 16 x 10/100BASE-TX ports                                                                                                                                                                                                                                                                                                                            | 14 x 10/100BASE-TX ports |
|                         |                          | Shielded connectors                                                                                                            | RJ45                                                                                                                                                                                                                                                                                                                                                |                          |
|                         |                          | Medium                                                                                                                         | Shielded twisted pair, category CAT 5E                                                                                                                                                                                                                                                                                                              |                          |
|                         |                          | Total length of pair                                                                                                           | 100 m/328 ft                                                                                                                                                                                                                                                                                                                                        |                          |
|                         | Fiber optic ports        | Number and type                                                                                                                | –                                                                                                                                                                                                                                                                                                                                                   | 2 x 100BASE-FX ports     |
|                         |                          | Connectors                                                                                                                     | –                                                                                                                                                                                                                                                                                                                                                   | Duplex SC                |
|                         |                          | Medium                                                                                                                         | –                                                                                                                                                                                                                                                                                                                                                   | Multimode fiber          |
|                         | Length of fiber          | 50/125 µm                                                                                                                      | –                                                                                                                                                                                                                                                                                                                                                   | 5,000 m/16,404 ft (1)    |
|                         |                          | 62.2/125 µm                                                                                                                    | –                                                                                                                                                                                                                                                                                                                                                   | 4,000 m/13,123 ft (1)    |
|                         |                          | 9/125 µm                                                                                                                       | –                                                                                                                                                                                                                                                                                                                                                   | –                        |
|                         | Attenuation analysis     | 50/125 µm fiber                                                                                                                | –                                                                                                                                                                                                                                                                                                                                                   | 8 dB                     |
|                         |                          | 62.2/125 µm fiber                                                                                                              | –                                                                                                                                                                                                                                                                                                                                                   | 11 dB                    |
|                         |                          | 9/125 µm fiber                                                                                                                 | –                                                                                                                                                                                                                                                                                                                                                   | –                        |
|                         | Ethernet services        |                                                                                                                                | Ethernet TCP/IP, SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP, SFTP, SCP, LLDP, configuration via web server, VLAN, multicast filtering, data stream control, secure port, IGMP Snooping, SMTP V3, SNMP-Traps and SYSLOG, priority port, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, port hardening |                          |
| Topology                | Number of switches       | Cascaded                                                                                                                       | Unlimited                                                                                                                                                                                                                                                                                                                                           |                          |
|                         |                          | Redundant in a ring                                                                                                            | 50 max.                                                                                                                                                                                                                                                                                                                                             |                          |
| Redundancy              |                          | Redundant power supplies, redundant single ring, ring coupling                                                                 |                                                                                                                                                                                                                                                                                                                                                     |                          |
| Power supply            | Voltage                  |                                                                                                                                | 24 V ~ (9.6...60 V ~ /18...30 V ~) SELV                                                                                                                                                                                                                                                                                                             |                          |
|                         | Consumption              |                                                                                                                                | 9.4 W                                                                                                                                                                                                                                                                                                                                               | 11.8 W                   |
|                         | Removable terminal block |                                                                                                                                | 6 - pin (redundant power supplies)                                                                                                                                                                                                                                                                                                                  |                          |
| Operating temperature   |                          | 0...+ 60°C/+ 32...+ 140°F                                                                                                      |                                                                                                                                                                                                                                                                                                                                                     |                          |
| Relative humidity       |                          | 10...95% non-condensing                                                                                                        |                                                                                                                                                                                                                                                                                                                                                     |                          |
| Degree of protection    |                          | IP 20                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                     |                          |
| Dimensions              |                          | W x H x D                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                     |                          |
|                         |                          | 111 x 131 x 111 mm/4.37 x 5.16 x 4.37 in.                                                                                      |                                                                                                                                                                                                                                                                                                                                                     |                          |
| Mounting                |                          | On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                   |                                                                                                                                                                                                                                                                                                                                                     |                          |
| Weight                  |                          | 0.600 kg/1.323 lb                                                                                                              |                                                                                                                                                                                                                                                                                                                                                     |                          |
| Conforming to standards |                          | IEC/EN 61131-2, UL 508 and CSA 22.2 No. 142, UL 1604 and CSA 22.2 No. 213 class 1 division 2, CE, GL                           |                                                                                                                                                                                                                                                                                                                                                     |                          |
| LED indicators          |                          | Power supply status, alarm relay status, active redundancy, redundancy management, copper port status and copper port activity |                                                                                                                                                                                                                                                                                                                                                     |                          |
| Alarm relay             |                          | Detected fault (power supply, Ethernet network, communication port, or redundancy) (volt-free contact 1 A max. at 24 V ~)      |                                                                                                                                                                                                                                                                                                                                                     |                          |
| Reference               |                          | TCSESM163F23F0TCSESM163F2CU0                                                                                                   |                                                                                                                                                                                                                                                                                                                                                     |                          |
| Pages                   |                          | 33                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                     |                          |

(1) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 2,000 m/6,561 ft).  
(2) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 15,000 m/49,212 ft).

| Managed switches, 16 and 24 ports, copper twisted pair and fiber optic                                                                                                                                                                                                                                                                              |  |                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------|
|                                                                                                                                                                                                                                                                  |  |                          |
| 14 x 10/100BASE-TX ports                                                                                                                                                                                                                                                                                                                            |  | 22 x 10/100BASE-TX ports |
| RJ45                                                                                                                                                                                                                                                                                                                                                |  |                          |
| Shielded twisted pair, category CAT 5E                                                                                                                                                                                                                                                                                                              |  |                          |
| 100 m/328 ft                                                                                                                                                                                                                                                                                                                                        |  |                          |
| 2 x 100BASE-FX ports                                                                                                                                                                                                                                                                                                                                |  |                          |
| Duplex SC                                                                                                                                                                                                                                                                                                                                           |  |                          |
| Single-mode fiber                                                                                                                                                                                                                                                                                                                                   |  | Multimode fiber          |
| –                                                                                                                                                                                                                                                                                                                                                   |  | 5,000 m/16,404 ft (1)    |
| –                                                                                                                                                                                                                                                                                                                                                   |  | 4,000 m/13,123 ft (1)    |
| 30,000 m/98,425 ft (2)                                                                                                                                                                                                                                                                                                                              |  | –                        |
| –                                                                                                                                                                                                                                                                                                                                                   |  | 8 dB                     |
| –                                                                                                                                                                                                                                                                                                                                                   |  | 11 dB                    |
| 16 dB                                                                                                                                                                                                                                                                                                                                               |  | –                        |
| Ethernet TCP/IP, SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP, SFTP, SCP, LLDP, configuration via web server, VLAN, multicast filtering, data stream control, secure port, IGMP Snooping, SMTP V3, SNMP-Traps and SYSLOG, priority port, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, port hardening |  |                          |
| Unlimited                                                                                                                                                                                                                                                                                                                                           |  |                          |
| 50 max.                                                                                                                                                                                                                                                                                                                                             |  |                          |
| Redundant power supplies, redundant single ring, ring coupling                                                                                                                                                                                                                                                                                      |  |                          |
| 24 V ~ (9.6...60 V ~ /18...30 V ~) SELV                                                                                                                                                                                                                                                                                                             |  |                          |
| 11.8 W                                                                                                                                                                                                                                                                                                                                              |  | 14.5 W                   |
| 6 - pin (redundant power supplies)                                                                                                                                                                                                                                                                                                                  |  |                          |
| 0...+ 60°C/+ 32...+ 140°F                                                                                                                                                                                                                                                                                                                           |  |                          |
| 10...95% non-condensing                                                                                                                                                                                                                                                                                                                             |  |                          |
| IP 20                                                                                                                                                                                                                                                                                                                                               |  |                          |
| 111 x 131 x 111 mm/4.37 x 5.16 x 4.37 in.                                                                                                                                                                                                                                                                                                           |  |                          |
| On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                                                                                                                                                                                                                                        |  |                          |
| 0.600 kg/1.323 lb                                                                                                                                                                                                                                                                                                                                   |  | 0.610 kg/1.345 lb        |
| IEC/EN 61131-2, UL 508, UL 1604 class 1 division 2, CSA 22.2 No. 142 (cUL), CSA 22.2 No. 213 class 1 division 2 (cUL), CE, GL                                                                                                                                                                                                                       |  |                          |
| Power supply status, alarm relay status, active redundancy, redundancy management, fiber optic port status and fiber optic port activity                                                                                                                                                                                                            |  |                          |
| Detected fault (power supply, Ethernet network, communication port, or redundancy) (volt-free contact 1 A max. at 24 V ~)                                                                                                                                                                                                                           |  |                          |
| TCSESM163F2CS0                                                                                                                                                                                                                                                                                                                                      |  | TCSESM243F2CU0           |
| 33                                                                                                                                                                                                                                                                                                                                                  |  |                          |



Ethernet network  
Modicon extended managed switches

| Device type             |                          |                                                                                                                                                                                                                                                                                                                                                  | Extended Managed switches, 8 ports, copper twisted pair                                                                                                                                                                                           |  |
|-------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                         |                          |                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                 |  |
| Interfaces              | Copper cable ports       | Number and type                                                                                                                                                                                                                                                                                                                                  | 8 x 10/100BASE-TX ports                                                                                                                                                                                                                           |  |
|                         |                          | Shielded connectors                                                                                                                                                                                                                                                                                                                              | RJ45                                                                                                                                                                                                                                              |  |
|                         |                          | Medium                                                                                                                                                                                                                                                                                                                                           | Shielded twisted pair, category CAT 5E                                                                                                                                                                                                            |  |
|                         |                          | Total length of pair                                                                                                                                                                                                                                                                                                                             | 100 m/328 ft                                                                                                                                                                                                                                      |  |
|                         | Fiber optic ports        | Number and type                                                                                                                                                                                                                                                                                                                                  | –                                                                                                                                                                                                                                                 |  |
|                         |                          | Connectors                                                                                                                                                                                                                                                                                                                                       | –                                                                                                                                                                                                                                                 |  |
|                         |                          | Medium                                                                                                                                                                                                                                                                                                                                           | –                                                                                                                                                                                                                                                 |  |
|                         | Length of fiber          | 50/125 µm                                                                                                                                                                                                                                                                                                                                        | –                                                                                                                                                                                                                                                 |  |
|                         |                          | 62.2/125 µm                                                                                                                                                                                                                                                                                                                                      | –                                                                                                                                                                                                                                                 |  |
|                         |                          | 9/125 µm                                                                                                                                                                                                                                                                                                                                         | –                                                                                                                                                                                                                                                 |  |
|                         | Attenuation analysis     | 50/125 µm fiber                                                                                                                                                                                                                                                                                                                                  | –                                                                                                                                                                                                                                                 |  |
|                         |                          | 62.2/125 µm fiber                                                                                                                                                                                                                                                                                                                                | –                                                                                                                                                                                                                                                 |  |
|                         |                          | 9/125 µm fiber                                                                                                                                                                                                                                                                                                                                   | –                                                                                                                                                                                                                                                 |  |
| Ethernet services       |                          | Ethernet TCP/IP, SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP SFTP, SCP, LLDP, configuration via web server, VLAN, multicast filtering, data stream control secure port, IGMP Snooping, SMTP V3, SNMP-Traps and SYSLOG, priority port, Telnet TFTP, address conflict detection, port monitoring, port mirroring, port hardening | configuration via web server, VLAN, multicast filtering, data stream control, secure port IGMP Snooping, SMTP V3, SNMP-Traps and SYSLOG, priority port, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, port hardening |  |
| Topology                | Number of switches       | Cascaded                                                                                                                                                                                                                                                                                                                                         | Unlimited                                                                                                                                                                                                                                         |  |
|                         |                          | Redundant in a ring                                                                                                                                                                                                                                                                                                                              | 50 max.                                                                                                                                                                                                                                           |  |
| Redundancy              |                          | Redundant power supplies, redundant single ring, ring coupling, rings supporting MRP, Fast HIPER Ring and RSTP                                                                                                                                                                                                                                   | ring coupling, redundant power supplies, redundant single ring, HiPER ring, dual RSTP                                                                                                                                                             |  |
| Power supply            | Voltage                  |                                                                                                                                                                                                                                                                                                                                                  | 24...48 V $\overline{\text{---}}$ (10...60 V $\overline{\text{---}}$ ) SELV                                                                                                                                                                       |  |
|                         | Consumption              |                                                                                                                                                                                                                                                                                                                                                  | 10 W                                                                                                                                                                                                                                              |  |
|                         | Removable terminal block |                                                                                                                                                                                                                                                                                                                                                  | 2 x 2 - pin                                                                                                                                                                                                                                       |  |
| Operating temperature   |                          | 0...+ 60°C/+ 32...+ 140°F                                                                                                                                                                                                                                                                                                                        | -40...+ 85°C/-40...+ 185°F                                                                                                                                                                                                                        |  |
| Relative humidity       |                          | 10...95% non-condensing                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                   |  |
| Degree of protection    |                          | IP 30                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                   |  |
| Dimensions              |                          | W x H x D<br>120 x 137 x 115 mm/4.72 x 5.39 x 4.53 in.                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                   |  |
| Mounting                |                          | On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                   |  |
| Weight                  |                          | 1.000 kg/2.204 lb                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                   |  |
| Conforming to standards |                          | IEC/EN 61131-2, IEC 61850-3, UL 508, UL 1604 class 1 division 2, CSA 22.2 No. 214 (cUL), CSA 22.2 No. 213 class 1 division 2 (cUL), Cc, GL, C-Tick, LR, BV, ATEX Zone 2                                                                                                                                                                          | IEC/EN 61131-2, UL 508, UL 1604 class 1 division 2, CSA 22.2 No. 214 (cUL), CSA 22.2 No. 213 class 1 division 2 (cUL), Cc LR, GL, BV, C-Tick                                                                                                      |  |
| LED indicators          |                          | Power supply status, alarm relay status, active redundancy, redundancy management, copper port status, and copper port activity                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                   |  |
| Alarm relay             |                          | Detected fault (power supply, Ethernet network, or communication port) (volt-free contact 1 A max. at 24 V $\overline{\text{---}}$ , 2-way)                                                                                                                                                                                                      |                                                                                                                                                                                                                                                   |  |
| Reference               |                          | TCSESM083F23F1TCSESM083F23F1C                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                   |  |
| Pages                   |                          | 33                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                   |  |

(1) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 2,000 m/6,561 ft).  
(2) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 15,000 m/49,212 ft).

| Extended Managed switches, 8 ports, copper twisted pair and fiber optic                                                                                                                                                                                                                                                                           |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| 6 x 10/100BASE-TX ports                                                                                                                                                                                                                                                                                                                           |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| RJ45                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| Shielded twisted pair, category CAT 5E                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| 100 m/328 ft                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| 2 x 100BASE-FX ports                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| Duplex SC                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| Multimode fiber                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                   | Single-mode fiber                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                   |
| 5,000 m/16,404 ft (1)                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                                   | –                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                   |
| 4,000 m/13,123 ft (1)                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                                   | –                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                   |
| –                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                                                                   | 30,000 m/98,425 ft (2)                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                   |
| 8 dB                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                                   | –                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                   |
| 11 dB                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                                   | –                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                   |
| –                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                                                                   | 16 dB                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                   |
| Ethernet TCP/IP, SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP SFTP, SCP, LLDP, configuration via web server, VLAN, multicast filtering, data stream control secure port, IGMP Snooping, SMTP V3, SNMP-Traps and SYSLOG, priority port, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, port hardening |  | configuration via web server, VLAN, multicast filtering, data stream control, secure port IGMP Snooping, SMTP V3, SNMP-Traps and SYSLOG, priority port, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, port hardening | Ethernet TCP/IP, SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP SFTP, SCP, LLDP, configuration via web server, VLAN, multicast filtering, data stream control secure port, IGMP Snooping, SMTP V3, SNMP-Traps and SYSLOG, priority port, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, port hardening | configuration via web server, VLAN, multicast filtering, data stream control, secure port IGMP Snooping, SMTP V3, SNMP-Traps and SYSLOG, priority port, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, port hardening |
| Unlimited                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| 50 max.                                                                                                                                                                                                                                                                                                                                           |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| Redundant power supplies, redundant single ring, ring coupling, rings supporting MRP, Fast HiPER Ring and RSTP                                                                                                                                                                                                                                    |  | ring coupling, redundant power supplies, redundant single ring, HiPER ring, dual RSTP                                                                                                                                                             | Redundant power supplies, redundant single ring, ring coupling, rings supporting MRP, Fast HiPER Ring and RSTP                                                                                                                                                                                                                                    | ring coupling, redundant power supplies, redundant single ring, HiPER ring, dual RSTP                                                                                                                                                             |
| 24...48 V $\overline{\text{---}}$ (10...60 V $\overline{\text{---}}$ ) SELV                                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| 12 W max.                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| 2 x 2 - pin                                                                                                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| 0...+ 60°C/+ 32...+ 140°F                                                                                                                                                                                                                                                                                                                         |  | -40...+ 85°C/-40...+ 185°F                                                                                                                                                                                                                        | 0...+ 60°C/+ 32...+ 140°F                                                                                                                                                                                                                                                                                                                         | -40...+ 85°C/-40...+ 185°F                                                                                                                                                                                                                        |
| 10...95% non-condensing                                                                                                                                                                                                                                                                                                                           |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| IP 30                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| 120 x 137 x 115 mm/4.72 x 5.39 x 4.53 in.                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| 1.000 kg/2.204 lb                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| IEC/EN 61131-2, IEC 61850-3, UL 508, UL 1604 class 1 division 2, CSA 22.2 No. 214 (cUL), CSA 22.2 No. 213 class 1 division 2 (cUL), Cc, GL, C-Tick, LR, BV, ATEX Zone 2                                                                                                                                                                           |  | IEC/EN 61131-2, UL 508, UL 1604 class 1 division 2, CSA 22.2 No. 214 (cUL), CSA 22.2 No. 213 class 1 division 2 (cUL), Cc                                                                                                                         | IEC/EN 61131-2, IEC 61850-3, UL 508, UL 1604 class 1 division 2, CSA 22.2 No. 214 (cUL), CSA 22.2 No. 213 class 1 division 2 (cUL), Cc, GL, C-Tick, LR, BV, ATEX Zone 2                                                                                                                                                                           | UL 1604 Class 1 Division 2, EN/IEC 61131-2 CSA C22.2 No 213 Class I Division 2 CSA C22.2 No 214, UL 508                                                                                                                                           |
| Power supply status, alarm relay status, active redundancy, redundancy management, fiber optic port status and fiber optic port activity                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| Detected fault (power supply, Ethernet network, or communication port) (volt-free contact 1 A max. at 24 V $\overline{\text{---}}$ , 2-way)                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |
| TCSESM063F2CU1                                                                                                                                                                                                                                                                                                                                    |  | TCSESM063F2CU1C                                                                                                                                                                                                                                   | TCSESM063F2CS1                                                                                                                                                                                                                                                                                                                                    | TCSESM063F2CS1C                                                                                                                                                                                                                                   |
| 33                                                                                                                                                                                                                                                                                                                                                |  |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |

| Device type             |                          |                      | Tofino Industrial Firewall TX/TX                                                                                                                                                                                                                                                                                                                    |
|-------------------------|--------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         |                          |                      |                                                                                                                                                                                                                                                                    |
| Interfaces              | Copper cable ports       | Number and type      | 2 x 10/100 BASE-TX ports for internal and external networks                                                                                                                                                                                                                                                                                         |
|                         |                          | Shielded connectors  | RJ45 type                                                                                                                                                                                                                                                                                                                                           |
|                         |                          | Medium               | Shielded twisted pair, category CAT 5E                                                                                                                                                                                                                                                                                                              |
|                         |                          | Total length of pair | 100 m/328 ft                                                                                                                                                                                                                                                                                                                                        |
|                         | Fiber optic ports        | Number and type      | –                                                                                                                                                                                                                                                                                                                                                   |
|                         |                          | Connectors           | –                                                                                                                                                                                                                                                                                                                                                   |
|                         |                          | Medium               | –                                                                                                                                                                                                                                                                                                                                                   |
|                         | Length of fiber          | 50/125 µm            | –                                                                                                                                                                                                                                                                                                                                                   |
|                         |                          | 62.2/125 µm          | –                                                                                                                                                                                                                                                                                                                                                   |
|                         | Attenuation analysis     | 50/125 µm fiber      | –                                                                                                                                                                                                                                                                                                                                                   |
|                         |                          | 62.2/125 µm fiber    | –                                                                                                                                                                                                                                                                                                                                                   |
|                         | Configuration tools      |                      | PC-based software tool (Tofino Configurator) that is used to create configuration files for Tofino Firewall                                                                                                                                                                                                                                         |
| Security capabilities   |                          |                      | Built-in security modules (Firewall, Event Logger, Modbus TCP Enforcer, NetConnect), optional field upgradeable modules for adding the new LSM modules for other protocols ( DNP3, IEC104 and GOOSE), Tofino Configurator for creating secure zones, DoS prevention and MAC address filtering for encryption protocol.                              |
| Power supply            | Voltage                  |                      | 12...24 V $\overline{\text{---}}$ (9.6...32 V) SELV                                                                                                                                                                                                                                                                                                 |
|                         | Consumption              |                      | 6.9 W                                                                                                                                                                                                                                                                                                                                               |
|                         | Removable terminal block |                      | 6-pin (Redundant power supplies)                                                                                                                                                                                                                                                                                                                    |
| Operating temperature   |                          |                      | 0° to 60° C/ 32° to 140° F                                                                                                                                                                                                                                                                                                                          |
| Relative humidity       |                          |                      | 10 to 95% non-condensing                                                                                                                                                                                                                                                                                                                            |
| Degree of protection    |                          |                      | IP 20                                                                                                                                                                                                                                                                                                                                               |
| Dimensions              |                          | W x H x D            | 60 x 145 x 125 mm /2.36 x 5.71 x 4.92 in.                                                                                                                                                                                                                                                                                                           |
| Mounting                |                          |                      | On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                                                                                                                                                                                                                                        |
| Weight                  |                          |                      | 0.660 kg/1.455 lb                                                                                                                                                                                                                                                                                                                                   |
| Conforming to standards |                          |                      | IEC 60068-2-6, IEC 60068-2-27, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-9, EN 55022 class A/FCC 47 CFR Part 15 class A cUL 508:1988, CЄ (1), German Lloyd VI-7-3 Part 1 Ed. 2003, RoHS Directive, CSA C22.2 No 213 Class I Division 2, UL 1604 Class 1 Division 2, CSA C22.2 No 214, UL 508, EN/IEC 61131-2 |
| LED indicators          |                          |                      | Power supply, link activity, detected fault, mode, save/load, reset                                                                                                                                                                                                                                                                                 |
| References              |                          |                      | TCSEFEA23F3F22                                                                                                                                                                                                                                                                                                                                      |
| Pages                   |                          |                      | 35                                                                                                                                                                                                                                                                                                                                                  |

(1) The Tofino Industrial Ethernet Firewalls TCSEFEA23F3F20 and TCSEFEA23F3F21 are also compliant with Germanischer Lloyd VI-7-3 Part 1 Ed. 2003 certification.

(2) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 2,000 m/6,561 ft).

(3) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 15,000 m/49,212 ft).

| Industrial Firewall/Router TX/TX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | Industrial Firewall/Router TX/MM                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |  |
| 2 x 10/100 BASE-TX ports for internal and external networks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 1 x 10/100BASE-TX port for internal network                                         |
| RJ45 type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                     |
| Shielded twisted pair, category CAT 5E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                     |
| 100 m/328 ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                                                     |
| –                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | 1 x 100BASE-FX port for external network                                            |
| –                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | Duplex SC                                                                           |
| –                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | Multimode fiber                                                                     |
| –                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | 5,000 m/16,404 ft (2)                                                               |
| –                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | 4,000 m/13,123 ft (3)                                                               |
| –                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | 8 dB                                                                                |
| –                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | 11 dB                                                                               |
| V.24 connection; Ethernet Switch Configurator protocol via the application Ethernet Switch Configurator; Memory Backup Adapter; Graphical User Interface                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                     |
| Built-in security modules (Firewall, Event Logger, Modbus TCP Enforcer, NetConnect), role-based access control, syslog protocol support, IPSec optional field upgradeable modules for adding the new LSM modules for other protocols ( DNP3, IEC104 and GOOSE), Tofino Configurator for creating secure zones, and MAC address filtering for encryption protocol.                                                                                                                                                                                                           |  |                                                                                     |
| 24 V $\overline{\text{---}}$ (9.6...32 V) SELV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                     |
| 6.9 W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | 8.3 W                                                                               |
| 6-pin (Redundant power supplies)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                     |
| 0° to 60° C/ 32° to 140° F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                     |
| 10 to 95% non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                     |
| IP 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                                     |
| 60 x 145 x 125 mm /2.36 x 5.71 x 4.92 in.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                     |
| On symmetrical DIN rail, 35 mm/1.38 in. wide                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                                                     |
| 0.610 kg/1.345 lb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                                     |
| EN 50121-4, EN 55022 (Class A), EN 60079-15, EN 60950-1, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-9, EN 61000-4-12, EN 61000-6-2, EN 61000-6-4, GL Guidelines VI-7-3 Part 1 Ed.2003 (EMC 1), FCC 47 CFR Part 15 (Class A), IEC 60068-2-6, IEC 60068-2-27, IEC 60825-1, IEC 61131-2, IEC/EN 61850-3, IEEE 802.1AB, IEEE 802.3-2002, IEEE 802.3ac, IEEE 1613, IEEE C37.90.1, IEEE C37.90.3, UL 508, 2011/65/EU (RoHS), 2004/108/EC (EMC), UL 508, CSA C22.2 No 213 Class I Division 2, CSA C22.2 No 214, UL 1604 Class 1 Division 2, EN/IEC 61131-2 |  |                                                                                     |
| Device state: Power Supply 1, Power Supply 2, Detected Fault, Device Status, Router redundancy mode, EAM storage medium status; VPN status; Port state: Link status, Data status, External Port Status, Internal Port Status, Serial Port Status                                                                                                                                                                                                                                                                                                                            |  |                                                                                     |
| TCSEFEC23F3F21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | TCSEFEC23FCF21                                                                      |
| 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                                                                                     |





ConneXium Network Manager (CNM)  
Software  
ConneXium Network Manager (CNM), initial version

| Software                   |                   | ConneXium Network Manager (CNM), Sales and support                                                                                                                                       |  |
|----------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                            |                   |                                                                                                         |  |
| Number of nodes            |                   | 100                                                                                                                                                                                      |  |
| Version upgrade            |                   | –                                                                                                                                                                                        |  |
| Client/Server architecture |                   | Multiple server deployments, licensing based on the number of managed devices                                                                                                            |  |
| System requirements        | Operating system  | Microsoft Windows 7, 32 or 64-bit                                                                                                                                                        |  |
|                            | Server type       | Microsoft Windows Server 2008R2                                                                                                                                                          |  |
|                            | Available storage | Min. 2 GB                                                                                                                                                                                |  |
|                            | RAM               | Min. 2 GB (300 MB free RAM, 500 KB RAM required for each detected agent)                                                                                                                 |  |
|                            | Screen resolution | Min. 1024 x 768                                                                                                                                                                          |  |
| Supported languages        |                   | English, German, Spanish, French, Italian, Chinese                                                                                                                                       |  |
| Displaying                 | General functions | Network hierarchy including Modbus Devices identification, global and individual device status                                                                                           |  |
|                            | Protocols         | ICMP, SNMP, Modbus, EIP                                                                                                                                                                  |  |
|                            | Topology          | SNMP, LLDP                                                                                                                                                                               |  |
| Monotoring                 | Modes             | Polling, Trap                                                                                                                                                                            |  |
|                            | Status            | Port, RSTP, power supply, relay, others                                                                                                                                                  |  |
| Export                     | Formats           | pdf, jpeg, html, CSV                                                                                                                                                                     |  |
|                            | Functions         | Topology maps, table exports, event list                                                                                                                                                 |  |
| Asset management           |                   | Per-device reports                                                                                                                                                                       |  |
| Support                    |                   | Web client, ConneXium switches, ConneXium firewalls, Schneider Electric M580 Programmable Automation offer                                                                               |  |
| Other functions            |                   | Flexible user-defined statuses, color coding and event handling, customizable data acquisition, long-term trending, firewall friendliness, requiring a minimal set of ports to be opened |  |
| Reference                  |                   | TCSEAZ03S010FM2                                                                                                                                                                          |  |
| Page                       |                   | 38                                                                                                                                                                                       |  |

| ConneXium Network Manager (CNM)                                                                                                                                                          |     |     |       |       |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-------|-------|--|
|                                                                                                       |     |     |       |       |  |
| 25                                                                                                                                                                                       | 100 | 500 | 1,000 | 4,000 |  |
| –                                                                                                                                                                                        |     |     |       |       |  |
| Multiple server deployments, licensing based on the number of managed devices                                                                                                            |     |     |       |       |  |
| Microsoft Windows 7, 32 or 64-bit                                                                                                                                                        |     |     |       |       |  |
| Microsoft Windows Server 2008R2                                                                                                                                                          |     |     |       |       |  |
| Min. 2 GB                                                                                                                                                                                |     |     |       |       |  |
| Min. 2 GB (300 MB free RAM, 500 KB RAM required for each detected agent)                                                                                                                 |     |     |       |       |  |
| Min. 1024 x 768                                                                                                                                                                          |     |     |       |       |  |
| English, German, Spanish, French, Italian, Chinese                                                                                                                                       |     |     |       |       |  |
| Network hierarchy including Modbus Devices identification, global and individual device status                                                                                           |     |     |       |       |  |
| ICMP, SNMP, Modbus, EIP                                                                                                                                                                  |     |     |       |       |  |
| SNMP, LLDP                                                                                                                                                                               |     |     |       |       |  |
| Polling, Trap                                                                                                                                                                            |     |     |       |       |  |
| Port, RSTP, power supply, relay, others                                                                                                                                                  |     |     |       |       |  |
| pdf, jpeg, html, CSV                                                                                                                                                                     |     |     |       |       |  |
| Topology maps, table exports, event list                                                                                                                                                 |     |     |       |       |  |
| Per-device reports                                                                                                                                                                       |     |     |       |       |  |
| Web client, ConneXium switches, ConneXium firewalls, Schneider Electric M580 Programmable Automation offer                                                                               |     |     |       |       |  |
| Flexible user-defined statuses, color coding and event handling, customizable data acquisition, long-term trending, firewall friendliness, requiring a minimal set of ports to be opened |     |     |       |       |  |
| TCSEAZ03P002FM2   TCSEAZ03P010FM2   TCSEAZ03P050FM2   TCSEAZ03P100FM2   TCSEAZ03P400FM2                                                                                                  |     |     |       |       |  |
| 38                                                                                                                                                                                       |     |     |       |       |  |



ConneXium Network Manager (CNM)

Software  
ConneXium Network Manager (CNM), upgraded version  
with fixed number of nodes

|                            |                   |                                                                                                                                                                                          |                 |
|----------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Software                   |                   | ConneXium Network Manager (CNM): 25 and 100 nodes                                                                                                                                        |                 |
|                            |                   |                                                                                                         |                 |
| Number of nodes            |                   | 25                                                                                                                                                                                       | 100             |
| Version upgrade            |                   | Yes                                                                                                                                                                                      |                 |
| Client/Server architecture |                   | Multiple server deployments, licensing based on the number of managed devices                                                                                                            |                 |
| System requirements        | Operating system  | Microsoft Windows 7, 32 or 64-bit                                                                                                                                                        |                 |
|                            | Server type       | Microsoft Windows Server 2008R2                                                                                                                                                          |                 |
|                            | Available storage | Min. 2 GB                                                                                                                                                                                |                 |
|                            | RAM               | Min. 2 GB (300 MB free RAM, 500 KB RAM required for each detected agent)                                                                                                                 |                 |
|                            | Screen resolution | Min. 1024 x 768                                                                                                                                                                          |                 |
| Supported languages        |                   | English, German, Spanish, French, Italian, Chinese                                                                                                                                       |                 |
| Displaying                 | General functions | Network hierarchy including Modbus Devices identification, global and individual device status                                                                                           |                 |
|                            | Protocols         | ICMP, SNMP, Modbus, EIP                                                                                                                                                                  |                 |
|                            | Topology          | SNMP, LLDP                                                                                                                                                                               |                 |
| Monotoring                 | Modes             | Polling, Trap                                                                                                                                                                            |                 |
|                            | Status            | Port, RSTP, power supply, relay, others                                                                                                                                                  |                 |
| Export                     | Formats           | pdf, jpeg, html, CSV                                                                                                                                                                     |                 |
|                            | Functions         | Topology maps, table exports, event list                                                                                                                                                 |                 |
| Asset management           |                   | Per-device reports                                                                                                                                                                       |                 |
| Support                    |                   | Web client, ConneXium switches, ConneXium firewalls, Schneider Electric M580 Programmable Automation offer                                                                               |                 |
| Other functions            |                   | Flexible user-defined statuses, color coding and event handling, customizable data acquisition, long-term trending, firewall friendliness, requiring a minimal set of ports to be opened |                 |
| Reference                  |                   | TCSEAZ03P002UV2                                                                                                                                                                          | TCSEAZ03P010UV2 |
| Pages                      |                   | 38                                                                                                                                                                                       |                 |

| ConneXium Network Manager (CNM): 500, 1,000 and 4,000 nodes                                                                                                                              |                 |                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
|                                                                                                       |                 |                 |
| 500                                                                                                                                                                                      | 1,000           | 4,000           |
| Yes                                                                                                                                                                                      |                 |                 |
| Multiple server deployments, licensing based on the number of managed devices                                                                                                            |                 |                 |
| Microsoft Windows 7, 32 or 64-bit                                                                                                                                                        |                 |                 |
| Microsoft Windows Server 2008R2                                                                                                                                                          |                 |                 |
| Min. 2 GB                                                                                                                                                                                |                 |                 |
| Min. 2 GB (300 MB free RAM, 500 KB RAM required for each detected agent)                                                                                                                 |                 |                 |
| Min. 1024 x 768                                                                                                                                                                          |                 |                 |
| English, German, Spanish, French, Italian, Chinese                                                                                                                                       |                 |                 |
| Network hierarchy including Modbus Devices identification, global and individual device status                                                                                           |                 |                 |
| ICMP, SNMP, Modbus, EIP                                                                                                                                                                  |                 |                 |
| SNMP, LLDP                                                                                                                                                                               |                 |                 |
| Polling, Trap                                                                                                                                                                            |                 |                 |
| Port, RSTP, power supply, relay, others                                                                                                                                                  |                 |                 |
| pdf, jpeg, html, CSV                                                                                                                                                                     |                 |                 |
| Topology maps, table exports, event list                                                                                                                                                 |                 |                 |
| Per-device reports                                                                                                                                                                       |                 |                 |
| Web client, ConneXium switches, ConneXium firewalls, Schneider Electric M580 Programmable Automation offer                                                                               |                 |                 |
| Flexible user-defined statuses, color coding and event handling, customizable data acquisition, long-term trending, firewall friendliness, requiring a minimal set of ports to be opened |                 |                 |
| TCSEAZ03P050UV2                                                                                                                                                                          | TCSEAZ03P100UV2 | TCSEAZ03P400UV2 |

38



ConneXium Network Manager (CNM)

Software  
ConneXium Network Manager (CNM), upgraded version  
with a range of nodes

|                            |                   |                                                                                                                                                                                          |                 |                 |                 |
|----------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|
| Software                   |                   | ConneXium Network Manager (CNM): 25 and 4,000 nodes                                                                                                                                      |                 |                 |                 |
|                            |                   |                                                                                                         |                 |                 |                 |
| Number of nodes            |                   | 25 to 100                                                                                                                                                                                | 25 to 500       | 25 to 1,000     | 25 to 4,000     |
| Version upgrade            |                   | Yes                                                                                                                                                                                      |                 |                 |                 |
| Client/Server architecture |                   | Multiple server deployments, licensing based on the number of managed devices                                                                                                            |                 |                 |                 |
| System requirements        | Operating system  | Microsoft Windows 7, 32 or 64-bit                                                                                                                                                        |                 |                 |                 |
|                            | Server type       | Microsoft Windows Server 2008R2                                                                                                                                                          |                 |                 |                 |
|                            | Available storage | Min. 2 GB                                                                                                                                                                                |                 |                 |                 |
|                            | RAM               | Min. 2 GB (300 MB free RAM, 500 KB RAM required for each detected agent)                                                                                                                 |                 |                 |                 |
|                            | Screen resolution | Min. 1024 x 768                                                                                                                                                                          |                 |                 |                 |
| Supported languages        |                   | English, German, Spanish, French, Italian, Chinese                                                                                                                                       |                 |                 |                 |
| Displaying                 | General functions | Network hierarchy including Modbus Devices identification, global and individual device status                                                                                           |                 |                 |                 |
|                            | Protocols         | ICMP, SNMP, Modbus, EIP                                                                                                                                                                  |                 |                 |                 |
|                            | Topology          | SNMP, LLDP                                                                                                                                                                               |                 |                 |                 |
| Monotoring                 | Modes             | Polling, Trap                                                                                                                                                                            |                 |                 |                 |
|                            | Status            | Port, RSTP, power supply, relay, others                                                                                                                                                  |                 |                 |                 |
| Export                     | Formats           | pdf, jpeg, html, CSV                                                                                                                                                                     |                 |                 |                 |
|                            | Functions         | Topology maps, table exports, event list                                                                                                                                                 |                 |                 |                 |
| Asset management           |                   | Per-device reports                                                                                                                                                                       |                 |                 |                 |
| Support                    |                   | Web client, ConneXium switches, ConneXium firewalls, Schneider Electric M580 Programmable Automation offer                                                                               |                 |                 |                 |
| Other functions            |                   | Flexible user-defined statuses, color coding and event handling, customizable data acquisition, long-term trending, firewall friendliness, requiring a minimal set of ports to be opened |                 |                 |                 |
| Reference                  |                   | TCSEAZ03P012UM2                                                                                                                                                                          | TCSEAZ03P052UM2 | TCSEAZ03P102UM2 | TCSEAZ03P402UM2 |
| Pages                      |                   | 39                                                                                                                                                                                       |                 |                 |                 |

|                                                                                                                                                                                          |                 |                 |                 |                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|
| ConneXium Network Manager (CNM): 100 to 4,000 nodes, 500 to 4,000 nodes, 1,000 to 4,000 nodes                                                                                            |                 |                 |                 |                 |
|                                                                                                       |                 |                 |                 |                 |
| 100 to 1,000                                                                                                                                                                             | 100 to 4,000    | 500 to 1,000    | 500 to 4,000    | 1,000 to 4,000  |
| Yes                                                                                                                                                                                      |                 |                 |                 |                 |
| Multiple server deployments, licensing based on the number of managed devices                                                                                                            |                 |                 |                 |                 |
| Microsoft Windows 7, 32 or 64-bit                                                                                                                                                        |                 |                 |                 |                 |
| Microsoft Windows Server 2008R2                                                                                                                                                          |                 |                 |                 |                 |
| Min. 2 GB                                                                                                                                                                                |                 |                 |                 |                 |
| Min. 2 GB (300 MB free RAM, 500 KB RAM required for each detected agent)                                                                                                                 |                 |                 |                 |                 |
| Min. 1024 x 768                                                                                                                                                                          |                 |                 |                 |                 |
| English, German, Spanish, French, Italian, Chinese                                                                                                                                       |                 |                 |                 |                 |
| Network hierarchy including Modbus Devices identification, global and individual device status                                                                                           |                 |                 |                 |                 |
| ICMP, SNMP, Modbus, EIP                                                                                                                                                                  |                 |                 |                 |                 |
| SNMP, LLDP                                                                                                                                                                               |                 |                 |                 |                 |
| Polling, Trap                                                                                                                                                                            |                 |                 |                 |                 |
| Port, RSTP, power supply, relay, others                                                                                                                                                  |                 |                 |                 |                 |
| pdf, jpeg, html, CSV                                                                                                                                                                     |                 |                 |                 |                 |
| Topology maps, table exports, event list                                                                                                                                                 |                 |                 |                 |                 |
| Per-device reports                                                                                                                                                                       |                 |                 |                 |                 |
| Web client, ConneXium switches, ConneXium firewalls, Schneider Electric M580 Programmable Automation offer                                                                               |                 |                 |                 |                 |
| Flexible user-defined statuses, color coding and event handling, customizable data acquisition, long-term trending, firewall friendliness, requiring a minimal set of ports to be opened |                 |                 |                 |                 |
| TCSEAZ03P101UM2                                                                                                                                                                          | TCSEAZ03P401UM2 | TCSEAZ03P105UM2 | TCSEAZ03P405UM2 | TCSEAZ03P410UM2 |
| 39                                                                                                                                                                                       |                 |                 |                 |                 |



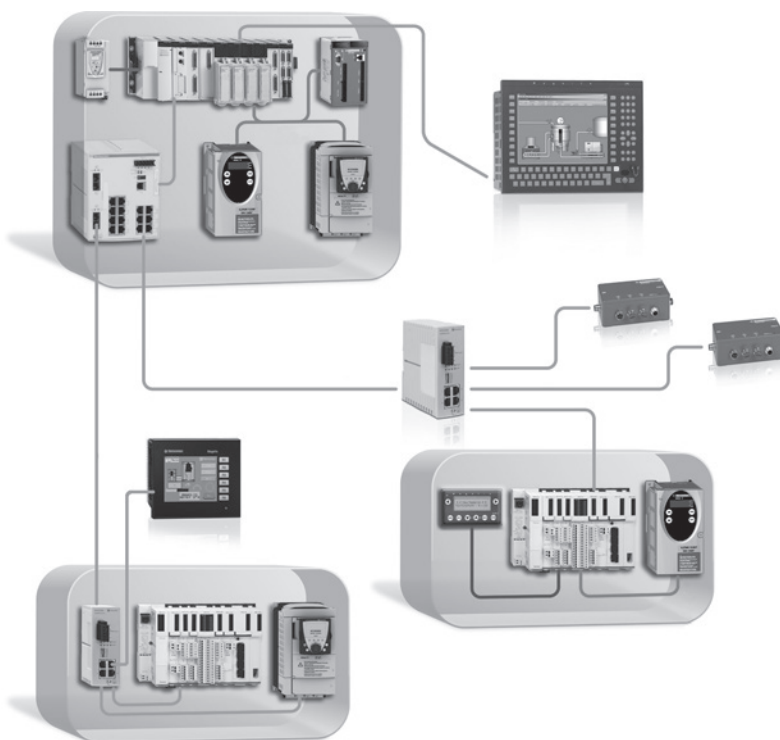
| Managed Ethernet Switches |                          |              |               |         |          |
|---------------------------|--------------------------|--------------|---------------|---------|----------|
| Features                  |                          | Lite Managed | Basic Managed | Managed | Extended |
| Web Interface             | HTTP                     | –            | ✓             | ✓       | ✓        |
|                           | HTTPS                    | ✓            | –             | –       | –        |
| Diagonostics              | SNMP                     | ✓            | ✓             | ✓       | ✓        |
|                           | Alarms                   | ✓            | ✓             | ✓       | ✓        |
|                           | LLDP                     | ✓            | ✓             | ✓       | ✓        |
|                           | Port Mirroring           | –            | ✓             | ✓       | ✓        |
| Switch Security           | Password                 | ✓            | ✓             | ✓       | ✓        |
|                           | Port Access Control      | –            | –             | ✓       | ✓        |
| Redundancy                | Single Ring              | ✓            | ✓             | ✓       | ✓        |
|                           | Dual Ring                | –            | –             | ✓       | ✓        |
|                           | RSTP Protocol            | ✓            | ✓             | ✓       | ✓        |
|                           | MRP Protocol             | –            | ✓             | ✓       | ✓        |
| Switching/Performance     | QOS (Quality of Service) | ✓            | ✓             | ✓       | ✓        |
|                           | Multicast IGMP/GMRP      | –            | ✓             | ✓       | ✓        |
|                           | Rate Limiting            | –            | –             | ✓       | ✓        |
| Filtering                 | VLAN                     | –            | –             | ✓       | ✓        |
|                           | Broadcast Limiting       | –            | –             | ✓       | ✓        |
| Time                      | SNTP/PTP                 | –            | ✓             | ✓       | ✓        |

### Presentation

Schneider Electric offers copper and fiber optic cables for connecting IP 20 and IP 67 Ethernet devices.

### Examples

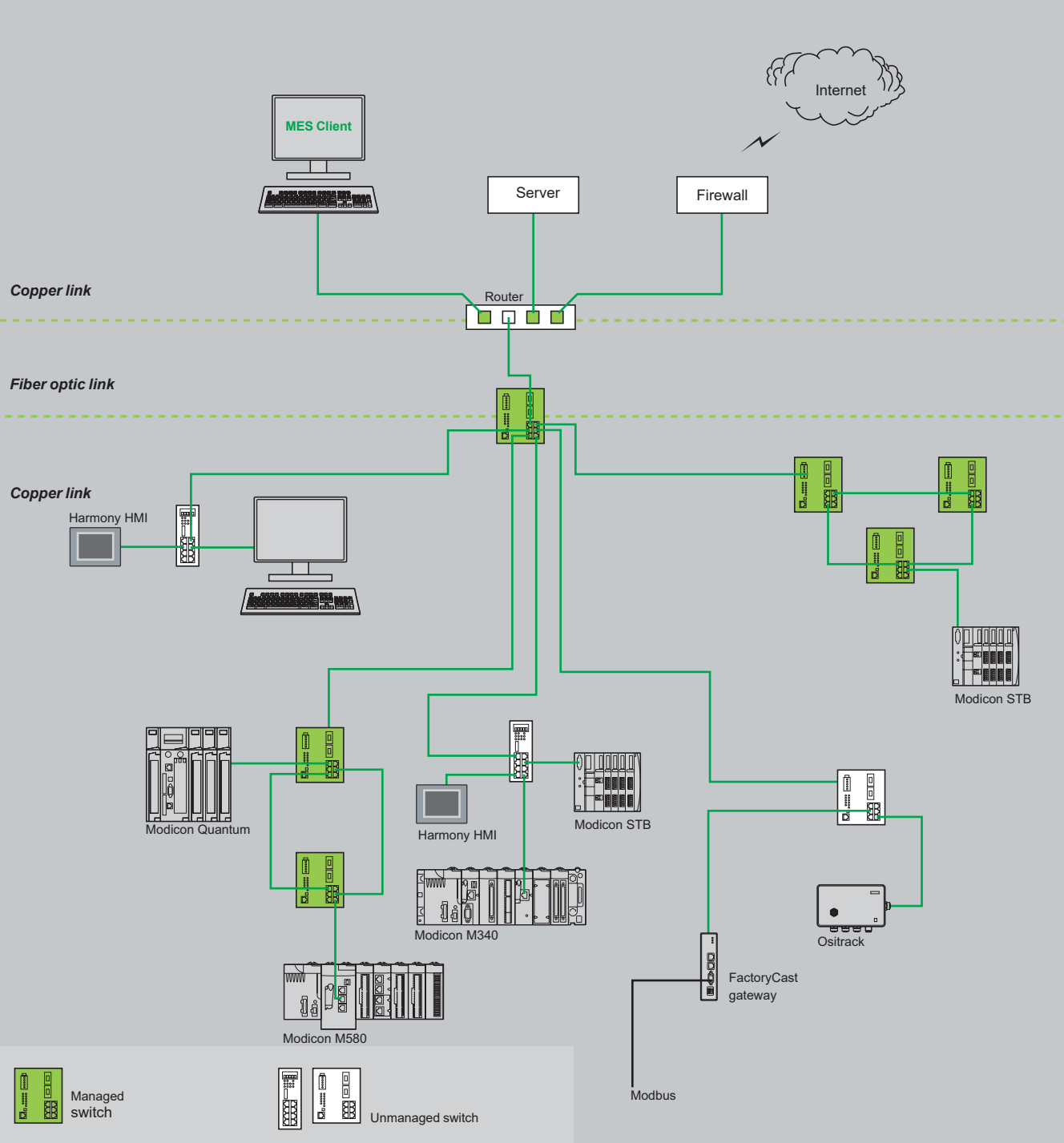
Mixed IP 20 and IP 67 wiring (copper)





Examples (continued)

Mixed copper and fiber optic wiring



### Shielded copper connection cables

ConneXium shielded connection cables are available in two versions to meet the various current standards and approvals:

#### ■ EIA/TIA 568 shielded twisted pair cables for C€ market

These cables conform to:

- EIA/TIA-568 standard, category CAT 5E
- IEC 11801/EN 50173-1 standard, class D

Their fire resistance conforms to:

- NF C32-070 standard, class C2
- IEC 322/1 standards
- Low Smoke Zero Halogen (LSZH)

#### ■ EIA/TIA 568 shielded twisted pair cables for UL market

These cables are:

- CEC type FT-1
- NEC type CM

A new range of ConneXium fully shielded preassembled cables has been specially designed for use in harsh industrial environments. These cables combine a category 5E shielded cable and RJ45 connectors reinforced with a metal profile.

#### EIA/TIA 568 shielded twisted pair cables for C€ market

| Description                                            | With connectors at both ends                                                   | No. | Type     | Length m/ft | Reference                      | Weight kg/lb |
|--------------------------------------------------------|--------------------------------------------------------------------------------|-----|----------|-------------|--------------------------------|--------------|
| <b>Straight-through copper cables</b><br>C€ compatible | 2 x RJ45 connectors<br>For connection to terminal equipment (DTE)              | 1   | Standard | 2/6.56      | <a href="#">490NTW00002</a>    | —            |
|                                                        |                                                                                |     |          | 5/16.40     | <a href="#">490NTW00005</a>    | —            |
|                                                        |                                                                                |     |          | 12/39.37    | <a href="#">490NTW00012</a>    | —            |
|                                                        |                                                                                |     |          | 40/131      | <a href="#">490NTW00040</a>    | —            |
|                                                        |                                                                                |     |          | 80/262      | <a href="#">490NTW00080</a>    | —            |
|                                                        | Rugged                                                                         |     |          | 1/3.28      | <a href="#">TCSECE3M3M1S4</a>  | —            |
|                                                        |                                                                                |     |          | 2/6.56      | <a href="#">TCSECE3M3M2S4</a>  | —            |
|                                                        |                                                                                |     |          | 3/9.84      | <a href="#">TCSECE3M3M3S4</a>  | —            |
|                                                        |                                                                                |     |          | 5/16.40     | <a href="#">TCSECE3M3M5S4</a>  | —            |
|                                                        |                                                                                |     |          | 10/32.81    | <a href="#">TCSECE3M3M10S4</a> | —            |
| <b>Crossover copper cables</b><br>C€ compatible        | 2 x RJ45 connectors<br>For connection between hubs, switches, and transceivers | 2   | Standard | 5/16.40     | <a href="#">490NTC00005</a>    | —            |
|                                                        |                                                                                |     |          | 15/49.21    | <a href="#">490NTC00015</a>    | —            |
|                                                        |                                                                                |     |          | 40/131      | <a href="#">490NTC00040</a>    | —            |



TCSEC3M3M1S4

#### Shielded twisted pair cables for UL market

| Description                                            | With connectors at both ends                                      | No. | Type     | Length m/ft | Reference                     | Weight kg/lb |
|--------------------------------------------------------|-------------------------------------------------------------------|-----|----------|-------------|-------------------------------|--------------|
| <b>Straight-through copper cables</b><br>UL compatible | 2 x RJ45 connectors<br>For connection to terminal equipment (DTE) | 3   | Standard | 2/6.56      | <a href="#">490NTW00002U</a>  | —            |
|                                                        |                                                                   |     |          | 5/16.40     | <a href="#">490NTW00005U</a>  | —            |
|                                                        |                                                                   |     |          | 12/39.37    | <a href="#">490NTW00012U</a>  | —            |
|                                                        | Rugged                                                            |     |          | 1/3.28      | <a href="#">TCSECU3M3M1S4</a> | —            |
|                                                        |                                                                   |     |          | 2/6.56      | <a href="#">TCSECU3M3M2S4</a> | —            |
|                                                        |                                                                   |     |          | 3/9.84      | <a href="#">TCSECU3M3M3S4</a> | —            |
|                                                        |                                                                   |     |          | 5/16.40     | <a href="#">TCSECU3M3M5S4</a> | —            |

#### Do it Yourself copper cable and connectors

The Do it Yourself offer consists of 4 references for connectors (M12 and RJ45) and 3 cable references (300 m/984 ft coil), enabling Ethernet 10/100 Mbps networks to be cabled in the field.

The maximum length of cables created in this way is 80 m/262 ft.

They are quick to assemble using a knife and simple wire cutters (no special tools are required).

| Description                                                        | Characteristics                                      | Length m/ft | Reference                   | Weight kg/lb |
|--------------------------------------------------------------------|------------------------------------------------------|-------------|-----------------------------|--------------|
| <b>Ethernet copper cable</b><br>2 shielded twisted pairs<br>AWG 24 | Conforms to the standards and approvals listed above | 300/984     | <a href="#">TCSECN300R2</a> | —            |
| <b>Ethernet copper cable</b><br>4 shielded twisted pairs<br>AWG 24 | Conforms to the CE standards                         | 300/984     | <a href="#">TCSECE300R2</a> | —            |
|                                                                    | Conforms to the UL standards                         | 300/984     | <a href="#">TCSECU300R2</a> | —            |
| <b>M12 connector</b>                                               | Conforms to IEC 60176-2-101                          | —           | <a href="#">TCSEK1MDRS</a>  | —            |
| <b>RJ45 connector</b>                                              | Conforms to EIA/TIA-568-D                            | —           | <a href="#">TCSEK3MDS</a>   | —            |
| <b>RJ45 rugged connectors</b>                                      | Set of 2 connectors                                  | —           | <a href="#">TCSEK3MR2</a>   | —            |
|                                                                    | Set of 10 connectors                                 | —           | <a href="#">TCSEK3MR10</a>  | —            |



MCSEAAF1LFT00

### Separate parts for accessories for managed switches

| Description                     | Fiber/TX                                                      | Type           | Reference                     | Weight<br>kg/<br>lb |
|---------------------------------|---------------------------------------------------------------|----------------|-------------------------------|---------------------|
| Fiber optic and copper adaptors | Multimode 50/125 µm or 62.5/125 µm                            | 1000BASE-SX    | <a href="#">TCSEAAF1LFU00</a> | 0.040/<br>0.088     |
|                                 | Single-mode 9/125 µm                                          | 1000BASE-LH    | <a href="#">TCSEAAF1LFH00</a> | 0.040/<br>0.088     |
|                                 | Multimode 50/125 µm or 62.5/125 µm<br>Single-mode 62.5/125 µm | 1000BASE-LX    | <a href="#">TCSEAAF1LFS00</a> | 0.040/<br>0.088     |
|                                 | TX/RJ45                                                       | 10/100BASE -TX | <a href="#">MCSEAAF1LFT00</a> | 0.040/<br>0.088     |
|                                 | TX/RJ45                                                       | 1000BASE -TX   | <a href="#">MCSEAAF1LFG00</a> | 0.040/<br>0.088     |
|                                 | Multimode 50/125 µm or 62.5/125 µm                            | 10/100BASE-SX  | <a href="#">MCSEAAF1LFU00</a> | 0.040/<br>0.088     |
|                                 | Single mode 62.5/125 µm                                       | 10/100BASE-LX  | <a href="#">MCSEAAF1LFS00</a> | 0.040/<br>0.088     |

| Description                                        | Use                                                                                                                              | Port       | Reference                  | Weight<br>kg/<br>lb |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|---------------------|
| Configuration backup key for MCS ESM switches      | Connected on the front of the switch; used to:<br>- Save and retrieve the switch configuration<br>- Update the internal software | USB        | <a href="#">TCSEAM0100</a> | 0.050/<br>0.110     |
| Configuration backup key for TCS ESB switches      |                                                                                                                                  | RJ45 (V24) | <a href="#">TCSEAM0200</a> | 0.050/<br>0.110     |
| Modicon Memory Back Up Adapter for MCSESM switches |                                                                                                                                  | USB        | <a href="#">MCSEAM0100</a> | 0.050/<br>0.110     |

### Connection components for IP 67 switch

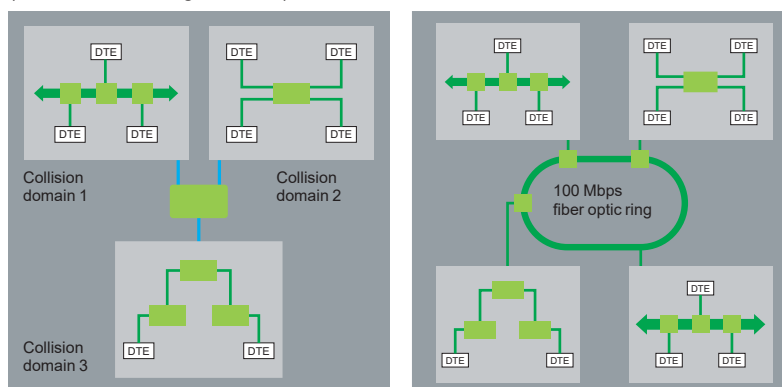
| Description                      | With connectors at both ends                               | No.                              | Length m/ft | Reference                       | Weight kg/lb               |   |
|----------------------------------|------------------------------------------------------------|----------------------------------|-------------|---------------------------------|----------------------------|---|
| Straight-through copper cables   | 1 x IP 67 4-way M12 connector and 1 x RJ45 connector       | 8                                | 1/3.28      | <a href="#">TCSECL1M3M1S2</a>   | —                          |   |
|                                  |                                                            |                                  | 3/9.84      | <a href="#">TCSECL1M3M3S2</a>   | —                          |   |
|                                  |                                                            |                                  | 10/32.81    | <a href="#">TCSECL1M3M10S2</a>  | —                          |   |
|                                  |                                                            |                                  | 25/82.02    | <a href="#">TCSECL1M3M25S2</a>  | —                          |   |
|                                  |                                                            |                                  | 40/131      | <a href="#">TCSECL1M3M40S2</a>  | —                          |   |
|                                  | 2 x IP 67 4-way M12 connectors                             | —                                | 1/3.28      | <a href="#">TCSECL1M1M1S2</a>   | —                          |   |
|                                  |                                                            |                                  | 3/9.84      | <a href="#">TCSECL1M1M3S2</a>   | —                          |   |
|                                  |                                                            |                                  | 10/32.81    | <a href="#">TCSECL1M1M10S2</a>  | —                          |   |
|                                  | Power supply cables                                        | 2 female M12 straight connectors | —           | 2/6.56                          | <a href="#">XZCP1164L2</a> | — |
|                                  |                                                            |                                  |             | 5/16.40                         | <a href="#">XZCP1164L5</a> | — |
| 2 female M12 elbowed connectors  |                                                            | —                                | 2.5/8.20    | <a href="#">XZCP1264L2</a>      | —                          |   |
|                                  |                                                            |                                  | 5/16.40     | <a href="#">XZCP1264L5</a>      | —                          |   |
| 2 female M12 straight connectors |                                                            | —                                | —           | <a href="#">XZCC12FDM50B</a>    | —                          |   |
| 2 female M12 elbowed connectors  |                                                            | —                                | —           | <a href="#">XZCC12FCM50B</a>    | —                          |   |
| M12/RJ45 adapter                 | IP 67 4-way female M12 connector and female RJ45 connector | —                                | —           | <a href="#">TCSEAAF11F13F00</a> | —                          |   |

### Unmanaged switches, twisted pair

#### Presentation

Switches are used to increase the limits of architectures based on hubs or transceivers, by separating collision domains. Higher layer communication is provided between the ports, and collisions at link layer are not propagated (filtering). They therefore improve performance by better allocation of the bandwidth due to the reduction of collisions and network load. Certain Modicon switch models also enable redundant architectures to be created on a twisted pair copper ring or fiber optic ring.

Unmanaged switches are plug and play devices that do not need to be configured by the user. Certain models can also be managed remotely via SNMP or HTTP protocols for monitoring and diagnostic purposes or configured using USB cable (Premium unmanaged switch)



TCSESU051F0

#### References

| Description             | Interfaces                                                                         | Reference                   | Weight<br>kg/<br>lb |
|-------------------------|------------------------------------------------------------------------------------|-----------------------------|---------------------|
| IP67 Unmanaged switches | 5 x 10BASE-T/100BASE-TX ports (copper cable), shielded M12 type D connectors, IP67 | <a href="#">TCSESU051F0</a> | 0.210/<br>0.463     |

| Description                                                           | With connectors<br>at both ends  | Length<br>m/ft | Reference                    | Weight<br>kg/<br>lb |
|-----------------------------------------------------------------------|----------------------------------|----------------|------------------------------|---------------------|
| IP67 power supply cables<br>(for <a href="#">TCSESU051F0</a> )        | Female M12 straight<br>connector | 2/6.56         | <a href="#">XZCP1164L2</a>   | —                   |
|                                                                       |                                  | 5/16.40        | <a href="#">XZCP1164L5</a>   | —                   |
|                                                                       | Female M12 elbowed<br>connector  | 2/6.56         | <a href="#">XZCP1264L2</a>   | —                   |
|                                                                       |                                  | 5/16.40        | <a href="#">XZCP1264L5</a>   | —                   |
| IP67 power supply<br>connectors<br>(for <a href="#">TCSESU051F0</a> ) | Female M12 straight<br>connector | —              | <a href="#">XZCC12FDM50B</a> | —                   |
|                                                                       | Female M12 elbowed<br>connector  | —              | <a href="#">XZCC12FCM50B</a> | —                   |



TCSESU053FN0



TCSESSU083FN0

TCSESPU053F1CU0  
TCSESPU053F1CS0TCSESPU093F2CU0  
TCSESPU093F2CS0

TCSESPU083FN0

### Unmanaged switches, 3, 5, 8 and 10 ports, twisted pair and fiber optic

#### References

| Description        | Interfaces                                                                                                                                                                                    | Reference                      | Weight<br>kg/<br>lb |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------|
| Unmanaged switches | 3 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors                                                                                                                              | <a href="#">TCSESU033FN0</a>   | 0.113/<br>0.249     |
|                    | 5 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors                                                                                                                              | <a href="#">TCSESU053FN0</a>   | 0.113/<br>0.249     |
|                    | <ul style="list-style-type: none"> <li>■ 4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>■ 1 x 100BASE-FX port (multimode fiber), duplex SC connector</li> </ul>    | <a href="#">TCSESU043F1N0</a>  | 0.120/<br>0.264     |
|                    | 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors                                                                                                                              | <a href="#">TCSESU083FN0</a>   | 0.246/<br>0.542     |
|                    | 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors                                                                                                                              | <a href="#">TCSESSU083FN0</a>  | 0.150/<br>0.331     |
|                    | <ul style="list-style-type: none"> <li>■ 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>■ 2 x 100BASE-FX port (multimode fiber), duplex SC connector</li> </ul>    | <a href="#">TCSESU103F2CU0</a> | 0.260/<br>0.573     |
|                    | <ul style="list-style-type: none"> <li>■ 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>■ 2 x 100BASE-FX port (single mode fiber), duplex SC connectors</li> </ul> | <a href="#">TCSESU103F2CS0</a> | 0.260/<br>0.573     |
|                    |                                                                                                                                                                                               |                                |                     |

### Premium unmanaged switches, 5, 8 and 9 ports, twisted pair and fiber optic

#### References

| Description                | Interfaces                                                                                                                                                                                   | Reference                       | Weight<br>kg/<br>lb |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------------|
| Premium unmanaged switches | <ul style="list-style-type: none"> <li>■ 4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>■ 1 x 100BASE-FX port (multimode fiber), duplex SC connector</li> </ul>   | <a href="#">TCSESPU053F1CU0</a> | 0.430/<br>0.948     |
|                            | <ul style="list-style-type: none"> <li>■ 4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>■ 1 x 100BASE-FX port (singlemode fiber), duplex SC connector</li> </ul>  | <a href="#">TCSESPU053F1CS0</a> | 0.430/<br>0.948     |
|                            | <ul style="list-style-type: none"> <li>■ 7 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>■ 2 x 100BASE-FX ports (multimode fiber), duplex SC connector</li> </ul>  | <a href="#">TCSESPU093F2CU0</a> | 0.510/<br>1.124     |
|                            | <ul style="list-style-type: none"> <li>■ 7 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>■ 2 x 100BASE-FX ports (singlemode fiber), duplex SC connector</li> </ul> | <a href="#">TCSESPU093F2CS0</a> | 0.510/<br>1.124     |
|                            | 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors                                                                                                                             | <a href="#">TCSESPU083FN0</a>   | 0.440/<br>0.970     |
|                            |                                                                                                                                                                                              |                                 |                     |



TCSESL043F23F0



TCSESB083F23F0



MCSESM043F23F0


 MCSESM063F2CU0  
 MCSESM063F2CS0

### Lite managed switches, 4 ports, twisted pair

#### References

| Description           | Interfaces                                                       | Reference                      | Weight<br>kg/<br>lb |
|-----------------------|------------------------------------------------------------------|--------------------------------|---------------------|
| Lite managed switches | 4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors | <a href="#">TCSESL043F23F0</a> | 0.103/<br>0.227     |

### Basic managed switches, 8 and 9 ports, twisted pair and fiber optic

#### References

| Description            | Interfaces                                                                                                                          | Reference                      | Weight<br>kg/<br>lb |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------|
| Basic managed switches | 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors                                                                    | <a href="#">TCSESB083F23F0</a> | 0.400/<br>0.882     |
|                        | ■ 6 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors<br>■ 2 x 100BASE-FX ports (multimode fiber), duplex SC connector | <a href="#">TCSESB083F2CU0</a> | 0.410/<br>0.904     |
|                        | ■ 6 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors<br>■ 3 x 100BASE-FX ports (multimode fiber), duplex SC connector | <a href="#">TCSESB093F2CU0</a> | 0.410/<br>0.904     |

### Managed switches, 4, 5 and 6 ports, twisted pair and fiber optic

#### References

| Description      | Interfaces                                                                                                                            | Reference                      | Weight<br>kg/<br>lb |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------|
| Managed switches | 4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors                                                                      | <a href="#">MCSESM043F23F0</a> | 0.380/<br>0.837     |
|                  | ■ 4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors<br>■ 1 x 100BASE-FX ports (multimode fiber), duplex SC connector   | <a href="#">MCSESM053F1CU0</a> | 0.420/<br>0.925     |
|                  | ■ 4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors<br>■ 1 x 100BASE-FX ports (single mode), duplex SC connector       | <a href="#">MCSESM053F1CS0</a> | 0.420/<br>0.925     |
|                  | ■ 4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors<br>■ 2 x 100BASE-FX ports (multimode fiber), duplex SC connector   | <a href="#">MCSESM063F2CU0</a> | 0.420/<br>0.925     |
|                  | ■ 4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors<br>■ 2 x 100BASE-FX ports (single mode fiber), duplex SC connector | <a href="#">MCSESM063F2CS0</a> | 0.420/<br>0.925     |





MCSESM083F23F0  
MCSESM083F23F0H

### Managed switches, 8, 9 and 10 ports, twisted pair and fiber optic

#### References

| Description      | Interfaces                                                                                                                                | Reference       | Weight<br>kg/<br>lb |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------|
| Managed switches | 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors                                                                          | MCSESM083F23F0  | 0.420/<br>0.925     |
|                  | 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors                                                                          | MCSESM083F23F0H | 0.500/<br>1.102     |
|                  | ■ 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors<br>■ 1 x 100BASE-FX ports (multimode fiber), duplex SC connector       | MCSESM093F1CU0  | 0.500/<br>1.102     |
|                  | ■ 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors<br>■ 1 x 100BASE-FX ports (single mode fiber), duplex SC connector     | MCSESM093F1CS0  | 0.500/<br>1.102     |
|                  | ■ 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors, 1 Gb<br>■ 2 x 100BASE-FX ports (multimode fiber), duplex SC connector | MCSESM103F2CU0  | 0.500/<br>1.102     |
|                  | ■ 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors<br>■ 2 x 100BASE-FX ports (single-mode fiber), duplex SC connector     | MCSESM103F2CU0H | 0.570/<br>1.256     |
|                  | ■ 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors<br>■ 2 x 100BASE-FX ports (single mode fiber), duplex SC connectors    | MCSESM103F2CS0  | 0.500/<br>1.102     |
|                  | ■ 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors<br>■ 2 x 100BASE-FX ports (multimode fiber), duplex SC connector       | MCSESM103F2CS0H | 0.570/<br>1.256     |



MCSESP083F23G0  
MCSESP083F23G0T

### Managed switches, 8 gigabit ports, copper twisted pair with PoE

#### References

| Description      | Interfaces                                                            | Reference       | Weight<br>kg/<br>lb |
|------------------|-----------------------------------------------------------------------|-----------------|---------------------|
| Managed switches | 8 x 10/100/1000BASE-TX ports (copper cable), RJ45 shielded connectors | MCSESP083F23G0  | 1.400/<br>3.086     |
|                  | 8 x 10/100/1000BASE-TX ports (copper cable), RJ45 shielded connectors | MCSESP083F23G0T | 1.400/<br>3.086     |



MCSESM123F2LG0

### Managed switch, 8 ports and 4 gigabit ports, copper twisted pair and SFP

#### References

| Description      | Interfaces                                                                                                    | Reference      | Weight<br>kg/<br>lb |
|------------------|---------------------------------------------------------------------------------------------------------------|----------------|---------------------|
| Managed switches | ■ 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors<br>■ 4 x 1000BASE-SFP (fiber optic - Gbit) | MCSESM123F2LG0 | 0.570/<br>1.256     |

# Ethernet network

## Modicon managed switches

## Industrial Ethernet firewalls



TCSESM163F23F0



TCSESM243F2CU0



TCSESM063F2CS1



TCSEFEA23F3F22  
TCSEFEC23F3F21  
TCSEFEC23FCF21

### Managed switches, 16 and 24 ports, twisted pair and fiber optic

#### References

| Description      | Interfaces                                                          | Reference             | Weight<br>kg/<br>lb |
|------------------|---------------------------------------------------------------------|-----------------------|---------------------|
| Managed switches | 16 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors   | <b>TCSESM163F23F0</b> | 0.600/<br>1.323     |
|                  | ■ 14 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors | <b>TCSESM163F2CU0</b> | 0.600/<br>1.323     |
|                  | ■ 2 x 100BASE-FX ports (multimode fiber), duplex SC connector       |                       |                     |
|                  | ■ 14 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors | <b>TCSESM163F2CS0</b> | 0.600/<br>1.323     |
|                  | ■ 2 x 100BASE-FX ports (single-mode fiber), duplex SC connector     |                       |                     |
|                  | ■ 22 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors | <b>TCSESM243F2CU0</b> | 0.610/<br>1.345     |
|                  | ■ 2 x 100BASE-FX ports (multimode fiber), duplex SC connector       |                       |                     |

### Extended managed switches, 8 ports, twisted pair and fiber optic

#### References

| Description               | Interfaces                                                         | Reference                 | Weight<br>kg/<br>lb |
|---------------------------|--------------------------------------------------------------------|---------------------------|---------------------|
| Extended managed switches | 8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors   | <b>TCSESM083F23F1 (1)</b> | 1.000/<br>2.204     |
|                           | ■ 6 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors | <b>TCSESM063F2CU1 (1)</b> | 1.000/<br>2.204     |
|                           | ■ 2 x 100BASE-FX ports (multimode fiber), duplex SC connector      |                           |                     |
|                           | ■ 6 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors | <b>TCSESM063F2CS1 (1)</b> | 1.000/<br>2.204     |
|                           | ■ 2 x 100BASE-FX ports (single-mode fiber), duplex SC connector    |                           |                     |

### Industrial Ethernet firewalls

#### References

| Description                                                                                      | Interfaces                                                                                     | Reference             | Weight<br>kg/<br>lb |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------------------|---------------------|
| Tofino industrial Ethernet firewall TX/TX with multiple LSM available for deep Packet inspection | 2 x 10/100BASE-TX ports (copper cable) for internal and external network connections           | <b>TCSEFEA23F3F22</b> | 0.660/<br>1.455     |
| Industrial Firewall/Router TX/TX                                                                 | 2 x 10/100BASE-TX ports (copper cable) for internal and external network connections           | <b>TCSEFEC23F3F21</b> | 0.610/<br>1.345     |
| Industrial Firewall/Router TX/MM                                                                 | ■ 1 x 10/100BASE-TX port for internal network<br>■ 1 x 10/100BASE-TX port for external network | <b>TCSEFEC23FCF21</b> | 0.610/<br>1.345     |

(1) Available in Conformal Coating version. For this version, add the letter **C** at the end of the reference. For example, the **TCSESM083F23F1** switch becomes in the Conformal Coating version. For further information on treatments for harsh environments, please consult our website [www.schneider-electric.com](http://www.schneider-electric.com).



### Definition

The ConneXium™ Network Manager (CNM) is Schneider Electric's industrial network management system providing a common interface to discover, identify, map, monitor, and configure an array of Schneider Electric's industrial Ethernet connected devices.

### General description

#### Why use ConneXium Network Manager (CNM)?

CNM becomes an invaluable tool for industrial control personnel, responsible for network health and maintenance, network commissioning, or device discovery procedures.

By deploying managed industrial network devices such as the Schneider Electric M580 Programmable Automation Controller series and the ConneXium line of Ethernet infrastructure, the foundation for future industrial data analytics and management becomes a reality.

### CNM infrastructure data management

CNM builds on that foundation of consolidated infrastructure data management. Based on proven client/server architecture, CNM provides a single application for management of Industrial Ethernet devices.

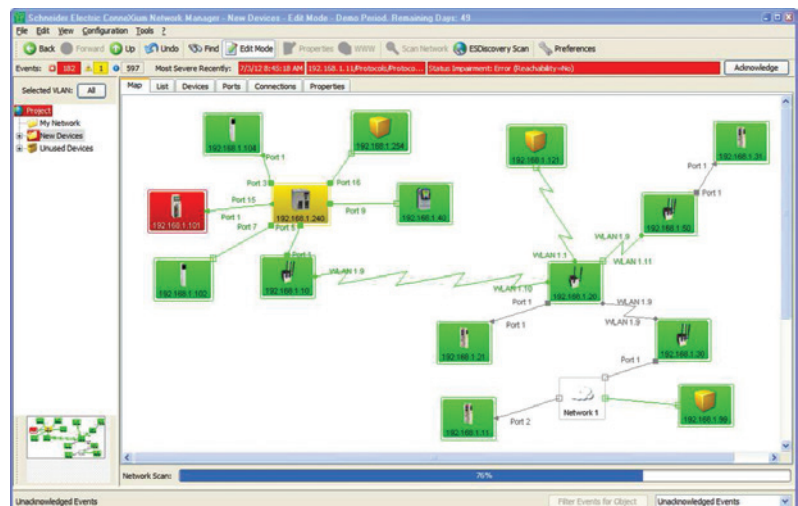
### Device identification and network topology maps

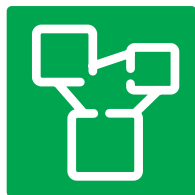
CNM provides the ability to probe networks for device identification and network topology maps. Discovery is achieved via ICMP, SNMP, Modbus, and EIP Protocols, while topology is mapped via SNMP and LLDP.

By gathering such information automatically and removing the human element, key business initiatives tied to asset management or vulnerability assessments become easier and more consistent to implement.

### Examples

#### Device identification and network topology maps





## Configuration

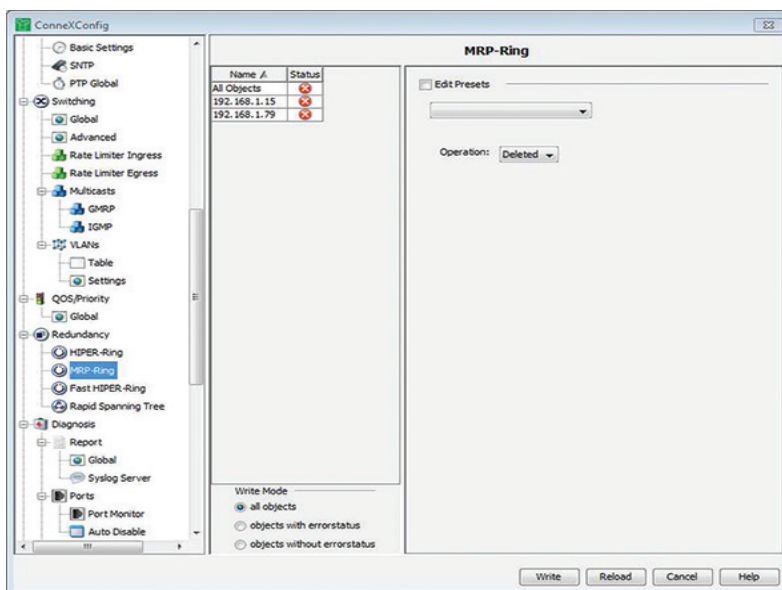
### Presentation

Via CNM, a user can configure one or more Ethernet devices with a few button clicks, obviating the need to log into each device independently.

This feature alone provides a major enhancement in change control and systematic commissioning of industrial Ethernet devices.

## Examples

### ConneXium Network Manager (CNM)



## Monitoring and reporting

### Presentation

As a running operational tool, CNM provides industrial network operators with a view into the real-time status, performance, and health of their industrial Ethernet control networks.

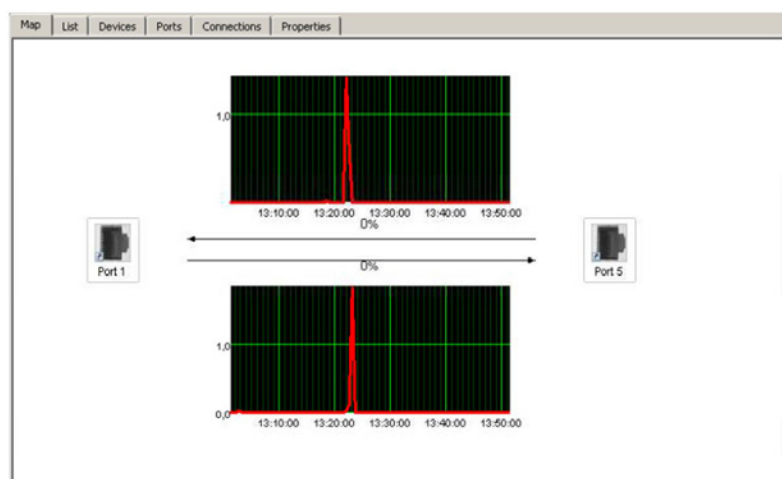
With the click of a button, selected Ethernet links can report congestion, bit rates, or packets per second.

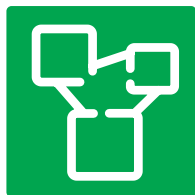
Real-time event logging with OPC and syslog interfaces facilitates time-coordinated holistic integrations with existing SCADA and IT SIEM devices.

CNM provides several reports both in pdf and CVS formats. These reports include asset documentation, device status IP/MAC addressing, event, port and VLAN information, performance monitoring, new device lists, and connection information including path MTBF/MTTR.

## Examples

### ConneXium Network Manager (CNM)





## ConneXium Network Manager (CNM), Sales and support

### References

| Description                                                      | Version | Reference                       | Weight<br>kg/<br>lb |
|------------------------------------------------------------------|---------|---------------------------------|---------------------|
| ConneXium Network Manager (CNM),<br>Sales and support, 100 nodes | Initial | <a href="#">TCSEAZ03S010FM2</a> | –                   |

## ConneXium Network Manager (CNM), with fixed number of nodes

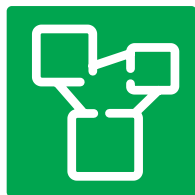
### References

| Description                                     | Version | Reference                       | Weight<br>kg/<br>lb |
|-------------------------------------------------|---------|---------------------------------|---------------------|
| ConneXium Network Manager (CNM),<br>25 nodes    | Initial | <a href="#">TCSEAZ03P002FM2</a> | –                   |
| ConneXium Network Manager (CNM),<br>100 nodes   | Initial | <a href="#">TCSEAZ03P010FM2</a> | –                   |
| ConneXium Network Manager (CNM),<br>500 nodes   | Initial | <a href="#">TCSEAZ03P050FM2</a> | –                   |
| ConneXium Network Manager (CNM),<br>1,000 nodes | Initial | <a href="#">TCSEAZ03P100FM2</a> | –                   |
| ConneXium Network Manager (CNM),<br>4,000 nodes | Initial | <a href="#">TCSEAZ03P400FM2</a> | –                   |

## ConneXium Network Manager (CNM), with fixed number of nodes

### References

| Description                                     | Version  | Reference                       | Weight<br>kg/<br>lb |
|-------------------------------------------------|----------|---------------------------------|---------------------|
| ConneXium Network Manager (CNM),<br>25 nodes    | Upgraded | <a href="#">TCSEAZ03P002UV2</a> | –                   |
| ConneXium Network Manager (CNM),<br>100 nodes   | Upgraded | <a href="#">TCSEAZ03P010UV2</a> | –                   |
| ConneXium Network Manager (CNM),<br>500 nodes   | Upgraded | <a href="#">TCSEAZ03P050UV2</a> | –                   |
| ConneXium Network Manager (CNM),<br>1,000 nodes | Upgraded | <a href="#">TCSEAZ03P100UV2</a> | –                   |
| ConneXium Network Manager (CNM),<br>4,000 nodes | Upgraded | <a href="#">TCSEAZ03P400UV2</a> | –                   |



## ConneXium Network Manager (CNM), with a range of nodes: 25 to 4,000

### References

| Description                                           | Version  | Reference                       | Weight<br>kg/<br>lb |
|-------------------------------------------------------|----------|---------------------------------|---------------------|
| ConneXium Network Manager (CNM),<br>25 to 100 nodes   | Upgraded | <a href="#">TCSEAZ03P002UV2</a> | –                   |
| ConneXium Network Manager (CNM),<br>25 to 500 nodes   | Upgraded | <a href="#">TCSEAZ03P010UV2</a> | –                   |
| ConneXium Network Manager (CNM),<br>25 to 1,000 nodes | Upgraded | <a href="#">TCSEAZ03P050UV2</a> | –                   |
| ConneXium Network Manager (CNM),<br>25 to 4,000 nodes | Upgraded | <a href="#">TCSEAZ03P100UV2</a> | –                   |

## ConneXium Network Manager (CNM), with a range of nodes: 100 to 4,000

### References

| Description                                            | Version  | Reference                       | Weight<br>kg/<br>lb |
|--------------------------------------------------------|----------|---------------------------------|---------------------|
| ConneXium Network Manager (CNM),<br>100 to 500 nodes   | Upgraded | <a href="#">TCSEAZ03P051UM2</a> | –                   |
| ConneXium Network Manager (CNM),<br>100 to 1,000 nodes | Upgraded | <a href="#">TCSEAZ03P101UM2</a> | –                   |
| ConneXium Network Manager (CNM),<br>100 to 4,000 nodes | Upgraded | <a href="#">TCSEAZ03P410UM2</a> | –                   |

## ConneXium Network Manager (CNM), with ranges of nodes: 500 to 4,000, 1,000 to 4,000

### References

| Description                                              | Version  | Reference                       | Weight<br>kg/<br>lb |
|----------------------------------------------------------|----------|---------------------------------|---------------------|
| ConneXium Network Manager (CNM),<br>500 to 4,000 nodes   | Upgraded | <a href="#">TCSEAZ03P405UM2</a> | –                   |
| ConneXium Network Manager (CNM),<br>1,000 to 4,000 nodes | Upgraded | <a href="#">TCSEAZ03P410UM2</a> | –                   |



|                 |    |                 |    |
|-----------------|----|-----------------|----|
| #               |    | TCSECE3M3M5S4   | 29 |
| 490NTC00005     | 29 | TCSECE3M3M10S4  | 29 |
| 490NTC00015     | 29 | TCSECE300R2     | 29 |
| 490NTC00040     | 29 | TCSECL1M1M1S2   | 30 |
| 490NTW00002     | 29 | TCSECL1M1M3S2   | 30 |
| 490NTW00002U    | 29 | TCSECL1M1M10S2  | 30 |
| 490NTW00005     | 29 | TCSECL1M3M1S2   | 30 |
| 490NTW00005U    | 29 | TCSECL1M3M3S2   | 30 |
| 490NTW00012     | 29 | TCSECL1M3M10S2  | 30 |
| 490NTW00012U    | 29 | TCSECL1M3M25S2  | 30 |
| 490NTW00040     | 29 | TCSECL1M3M40S2  | 30 |
| 490NTW00080     | 29 | TCSECN300R2     | 29 |
|                 |    | TCSECU3M3M1S4   | 29 |
| M               |    | TCSECU3M3M2S4   | 29 |
| MCSEAAF1LFG00   | 30 | TCSECU3M3M3S4   | 29 |
| MCSEAAF1LFS00   | 30 | TCSECU3M3M5S4   | 29 |
| MCSEAAF1LFT00   | 30 | TCSECU300R2     | 29 |
| MCSEAAF1LFU00   | 30 | TCSEFEA23F3F22  | 35 |
| MCSEAM0100      | 30 | TCSEFEC23F3F21  | 35 |
| MCSESM043F23F0  | 33 | TCSEFEC23FCF21  | 35 |
| MCSESM053F1CS0  | 33 | TCSEK1MDRS      | 29 |
| MCSESM053F1CU0  | 33 | TCSEK3MDS       | 29 |
| MCSESM063F2CS0  | 33 | TCSEK3MR2       | 29 |
| MCSESM063F2CU0  | 33 | TCSEK3MR10      | 29 |
| MCSESM083F23F0  | 34 | TCSESB083F2CU0  | 33 |
| MCSESM083F23F0H | 34 | TCSESB083F23F0  | 33 |
| MCSESM093F1CS0  | 34 | TCSESB093F2CU0  | 33 |
| MCSESM093F1CU0  | 34 | TCSESL043F23F0  | 33 |
| MCSESM103F2CS0  | 34 | TCSESM063F2CS1  | 35 |
| MCSESM103F2CS0H | 34 | TCSESM063F2CU1  | 35 |
| MCSESM103F2CU0  | 34 | TCSESM083F23F1  | 35 |
| MCSESM103F2CU0H | 34 | TCSESM163F2CS0  | 35 |
| MCSESM123F2LG0  | 34 | TCSESM163F2CU0  | 35 |
| MCSESP083F23G0  | 34 | TCSESM163F23F0  | 35 |
| MCSESP083F23G0T | 34 | TCSESM243F2CU0  | 35 |
|                 |    | TCSESPU053F1CS0 | 32 |
| T               |    | TCSESPU053F1CU0 | 32 |
| TCSEAAF1LFH00   | 30 | TCSESPU083FN0   | 32 |
| TCSEAAF1LFS00   | 30 | TCSESPU093F2CS0 | 32 |
| TCSEAAF1LFU00   | 30 | TCSESPU093F2CU0 | 32 |
| TCSEAAF11F13F00 | 30 | TCSESSU083FN0   | 32 |
| TCSEAM0100      | 30 | TCSESU003FN0    | 32 |
| TCSEAM0200      | 30 | TCSESU043F1N0   | 32 |
| TCSEAZ03P002FM2 | 38 | TCSESU051F0     | 31 |
| TCSEAZ03P002UV2 | 38 | TCSESU053FN0    | 32 |
|                 | 39 | TCSESU083FN0    | 32 |
| TCSEAZ03P010FM2 | 38 | TCSESU103F2CS0  | 32 |
| TCSEAZ03P010UV2 | 38 | TCSESU103F2CU0  | 32 |
|                 | 39 |                 |    |
| TCSEAZ03P050FM2 | 38 | X               |    |
| TCSEAZ03P050UV2 | 38 | XZCC12FCM50B    | 30 |
|                 | 39 |                 | 31 |
| TCSEAZ03P051UM2 | 39 | XZCC12FDM50B    | 30 |
| TCSEAZ03P100FM2 | 38 |                 | 31 |
| TCSEAZ03P100UV2 | 38 | XZCP1164L2      | 30 |
|                 | 39 |                 | 31 |
| TCSEAZ03P101UM2 | 39 | XZCP1164L5      | 30 |
| TCSEAZ03P400FM2 | 38 |                 | 31 |
| TCSEAZ03P400UV2 | 38 | XZCP1264L2      | 30 |
| TCSEAZ03P405UM2 | 39 |                 | 31 |
| TCSEAZ03P410UM2 | 39 | XZCP1264L5      | 30 |
| TCSEAZ03S010FM2 | 38 |                 | 31 |
| TCSECE3M3M1S4   | 29 |                 |    |
| TCSECE3M3M2S4   | 29 |                 |    |
| TCSECE3M3M3S4   | 29 |                 |    |

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