**Technical Data**

Original Instructions

# Stratix Ethernet Device Specifications

Stratix® 2000 Switches (1783-US), Stratix 2500 Switches (1783-LMS), Stratix 6000 Switches (1783-EMS)

Stratix 5400 Switches (1783-HMS), Stratix 5410 Switches (1783-IMS), Stratix 5700 Switches (1783-BMS)

ArmorStratix™ 5700 Switches (1783-ZMS), Stratix 8000 and 8300 Switches (1783-MS, 1783-RMS, 1783-MX)

Stratix 5800 Switches (1783-MMS, 1783-MMX)

Stratix 5100 Wireless Access Point/Workgroup Bridge (1783-WAP), Stratix 5900 Services Router (1783-SR)

Stratix 5950 Security Appliance (1783-SAD), Embedded Switch Technology (1783-ETAP), Configurable NAT Router (1783-NATR), CIP Security Proxy (1783-CSP)


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# Summary of Changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

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|---|---|
| Added information that describes that preinstalled fiber SFP modules use the LC connector type | 3 |
| Added EEE 1613 and IEC 61850-3 certifications for Stratix 5410 and 5800 switches | 23, 44 |
| Added dimension and specification information about the CIP Security Proxy | 69 |

# Stratix 2000 Ethernet Unmanaged Switches—Series B

| Cat. No. | Total Ports | RJ45 Ports[1] | SFP Ports[1] |
|---|---|---|---|
| 1783-US5T/B | 5 | 5 FE | — |
| 1783-US5TG/B | 5 | 5 GE | — |
| 1783-US4T1F/B | 5 | 4 FE | 1 FE multimode preinstalled fiber SFP module |
| 1783-US4T1H/B | 5 | 4 FE | 1 FE singlemode preinstalled fiber SFP module |
| 1783-US8T/B | 8 | 8 FE | — |
| 1783-US6T2F/B | 8 | 6 FE | 2 FE multimode preinstalled fiber SFP modules |
| 1783-US6T2H/B | 8 | 6 FE | 2 FE singlemode preinstalled fiber SFP modules |
| 1783-US7T1F/B | 8 | 7 FE | 1 FE multimode preinstalled fiber SFP module |
| 1783-US7T1H/B | 8 | 7 FE | 1 FE singlemode preinstalled fiber SFP module |
| 1783-US6T2TG2F/B | 10 | 6 FE + 2 GE | 2 FE multimode preinstalled fiber SFP modules |
| 1783-US6T2TG2H/B | 10 | 6 FE + 2 GE | 2 FE singlemode preinstalled fiber SFP modules |
| 1783-US8TG2GX/B | 10 | 8 GE | 2 GE slots[2] |
| 1783-US16T/B | 16 | 16 FE | — |
| 1783-US16T2S/B | 18 | 16 FE | 2 FE slots[2] |

(1) FE = Fast Ethernet; GE = Gigabit Ethernet.
(2) SFP modules must be ordered separately.

The preinstalled fiber SFP modules that are listed in the SFP Ports column use the LC connector type.

### Table 1 - Technical Specifications - Stratix 2000 Switches, Series B

| Attribute | 1783-US5T/B | 1783-US5TG/B | 1783-US4T1F/B, 1783-US4T1H/B | 1783-US8T/B | 1783-US6T2F/B, 1783-US6T2H/B, 1783-US7T1F/B, 1783-US7T1H/B | 1783-US6T2TG2F/B, 1783-US6T2TG2H/B | 1783-US8TG2GX/B | 1783-US16T/B | 1783-US16T2S/B |
|---|---|---|---|---|---|---|---|---|---|
| Inrush current, max | 1.85 A | 0.33 A | 1.69 A | 1.31 A | 0.41 A | 1.83 A | 0.55 A | 0.47 A | 1.63 A |
| Power input | 24V (12...48V DC, 18...30V AC, 50/60 Hz), SELV | | | | | | | | |
| Power consumption, max | 3.4 W | 4.5 W | 3.4 W | 4.6 W | 4.6 W | 7.5 W | 10 W | 8.0 W | 8.0 W |
| Current, nom | DC 180 mA<br>AC 360 mA | DC 250 mA<br>AC 500 mA | DC 180 mA<br>AC 360 mA | DC 250 mA<br>AC 500 mA | DC 250 mA<br>AC 500 mA | DC 450 mA<br>AC 900 mA | DC 550 mA<br>AC 1100 mA | DC 430 mA<br>AC 860 mA | DC 430 mA<br>AC 860 mA |
| Current, max | DC 380 mA<br>AC 750 mA | DC 510 mA<br>AC 1020 mA | DC 380 mA<br>AC 750 mA | DC 510 mA<br>AC 1100 mA | DC 510 mA<br>AC 1100 mA | DC 850 mA<br>AC 1700 mA | DC 1100 mA<br>AC 2200 mA | DC 900 mA<br>~AC 1800 mA | DC 900 mA<br>AC 1800 mA |
| Wire size, ground connection | 2.5 $mm^2$ (14 AWG) copper wire suitable for 86 °C (187 °F) above surrounding ambient temperature outside the enclosure, with a suitable ring terminal | | | | | | | | |
| Wire size, DC power connection | 4...0.25 $mm^2$ (12...24 AWG) twisted-pair copper wire suitable for 86 °C (187 °F) above surrounding ambient temperature outside the enclosure | | | | | | | | |
| Screw torque, ground terminal, max | 0.91 N•m (8.05 in•lb) | | | | | | | | |
| Screw torque, power terminals | 0.50...0.56 N•m (4.5...5.0 in•lb) | | | | | | | | |
| Enclosure type rating | None (open-style) | | | | | | | | |
| North American temp code | T4 | T4A | T5 | T4 | T4 | T4 | T4 | T5 | |
| ATEX temp code | T4 | T4 | T4 | T4 | T4 | T4 | T4 | T4 | |
| IECEx temp code | T4 | T4 | T4 | T4 | T4 | T4 | T4 | T4 | |
| MAC addresses, max supported | 2 K | 8 K | 2 K | 2 k | 2 K | 8 K | 8 K | 8 K | |
| SFP modules[1] | No SFP slots | No SFP slots | Preinstalled | No SFP slots | Preinstalled | Preinstalled | Ordered separately:<br>1783-SFP1GSX<br>1783-SFP1GLX<br>1783-SFP1GEXE<br>1783-SFP1GZX | No SFP slots | Ordered separately:<br>1783-SFP100FX<br>1783-SFP100LX<br>1783-SFP100EXC<br>1783-SFP100ZXC |

(1) For specifications of preinstalled SFP modules, see Table 2. For specifications of SFP modules ordered separately, see Table 62.

## Table 2 - Preinstalled SFP Module Specifications - Stratix 2000 Switches

| Attribute | Multimode (100Base-FX) | Singlemode (100Base-LX) |
|---|---|---|
| Central wavelength (nm) | 1310 | 1310 |
| Transmission distance (km) | 2 | 20 |
| Applicable distance (km) | 0...2 | 0...20 |
| Luminous power, min (db) | -19 | -10 |
| Luminous power, max (db) | -10 | -5 |
| Receiving sensitivity (dBm) | -31 | -34 |
| Overload luminous power | -3 | -3 |

## Table 3 - Environmental Specifications - Stratix 2000 Switches, Series B

| Attribute | 1783-US5T/B, 1783-US8T/B | 1783-US5TG/B, 1783-US4T1F/B, 1783-US4T1H/B, 1783-US6T2F/B, 1783-US6T2H/B, 1783-US7T1F/B, 1783-US7T1H/B, 1783-US6T2TG2F/B, 1783-US6T2TG2H/B, 1783-US8TG2GX/B, 1783-US16T/B, 1783-US16T2S/B |
|---|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock) | -10 °C < Ta < +60 °C<br>(14 °F < Ta < +140 °F) | -40 °C < Ta < +75 °C (-40 °F < Ta < +167 °F) |
| Temperature, ambient, max | 60 °C (140 °F) | 75 °C (167 °F) |
| Temperature, surrounding air, max | 60 °C (140 °F) | 75 °C (167 °F) |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold)<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat)<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F) | |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5...95% noncondensing | |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 2 g @ 10...500 Hz | |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 15 g | |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g | |
| Emissions<br>CISPR11 (IEC 61000-6-4) | IEC 61000-6-4 | |
| ESD immunity<br>IEC 61000-4-2 | 6 kV contact discharges<br>8 kV air discharges | |
| Radiated RF immunity<br>IEC 61000-4-3 | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>20V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz | |
| EFT/B immunity<br>IEC 61000-4-4 | ±4 kV at 5 kHz on power ports<br>±2 kV at 5 kHz on communication ports | |
| Surge transient immunity<br>IEC 61000-4-5 | ±2 kV line-line (DM) and ±4 kV line-earth (CM) on power ports<br>±2 kV line-earth (CM) on communication ports | |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz | |
| Environmental rating | IP30 | |

## Table 4 - Certifications - Stratix 2000 Switches, Series B

| Certifications (when product is marked)[1] | 1783-US5T/B, 1783-US8T/B, 1783-US6T2TG2F/B, 1783-US16T/B | 1783-US5TG/B, 1783-US4T1F/B, 1783-US4T1H/B, 1783-US6T2F/B, 1783-US6T2H/B, 1783-US7T1F/B, 1783-US7T1H/B, 1783-US6T2TG2H/B, 1783-US8TG2GX/B, 1783-US16T2S/B |
|---|---|---|
| c-UL-us | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810. | |
| CE | European Union 2014/30/EU EMC Directive, compliant with:<br>EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>EN 61000-6-2; Industrial Immunity<br>EN 61000-6-4; Industrial Emissions<br>EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>European Union 2011/65/EU RoHS, compliant with:<br>EN 50581; Technical documentation | |
| RCM | Australian Radiocommunications Act, compliant with:<br>AS/NZS CISPR 11; Industrial Emissions | |

### Table 4 - Certifications - Stratix 2000 Switches, Series B

| Certifications (when product is marked)[1] | 1783-US5T/B, 1783-US8T/B, 1783-US6T2TG2F/B, 1783-US16T/B | 1783-US5TG/B, 1783-US4T1F/B, 1783-US4T1H/B, 1783-US6T2F/B, 1783-US6T2H/B, 1783-US7T1F/B, 1783-US7T1H/B, 1783-US6T2TG2H/B, 1783-US8TG2GX/B, 1783-US16T2S/B |
|---|---|---|
| Ex | European Union 2014/34/EU ATEX Directive, compliant with:<br>• EN 60079-0; General Requirements<br>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>• II 3 G Ex nA IIC T4 Gc<br>• DEMKO 16 ATEX 1816X | |
| IECEx | IECEx System, compliant with:<br>• IEC 60079-0; General Requirements<br>• IEC 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>• II 3 G Ex nA IIC T4 Gc<br>• IECEx UL 16.0169X | |
| KC | Korean Certification of Broadcasting and Communications Equipment, compliant with:<br>• Framework Act on Telecommunications and Radio Waves Act | |
| EAC | Russian Customs Union TR CU 020/2011 EMC Technical Regulation | |
| EtherNet/IP™ | ODVA conformance tested to EtherNet/IP specifications | |
| BSMI | CNS 13438 (95); CNS14336-1 (99) Taiwan | – |

(1) See the Product Certification link at http://www.ab.com for Declarations of Conformity, Certificates, and other certification details.

## Dimensions—Stratix 2000 Switches, Series B

### Figure 1 - 1783-US5T/B, 1783-US5TG/B, 1783-US4T1F/B, 1783-US4T1H/B

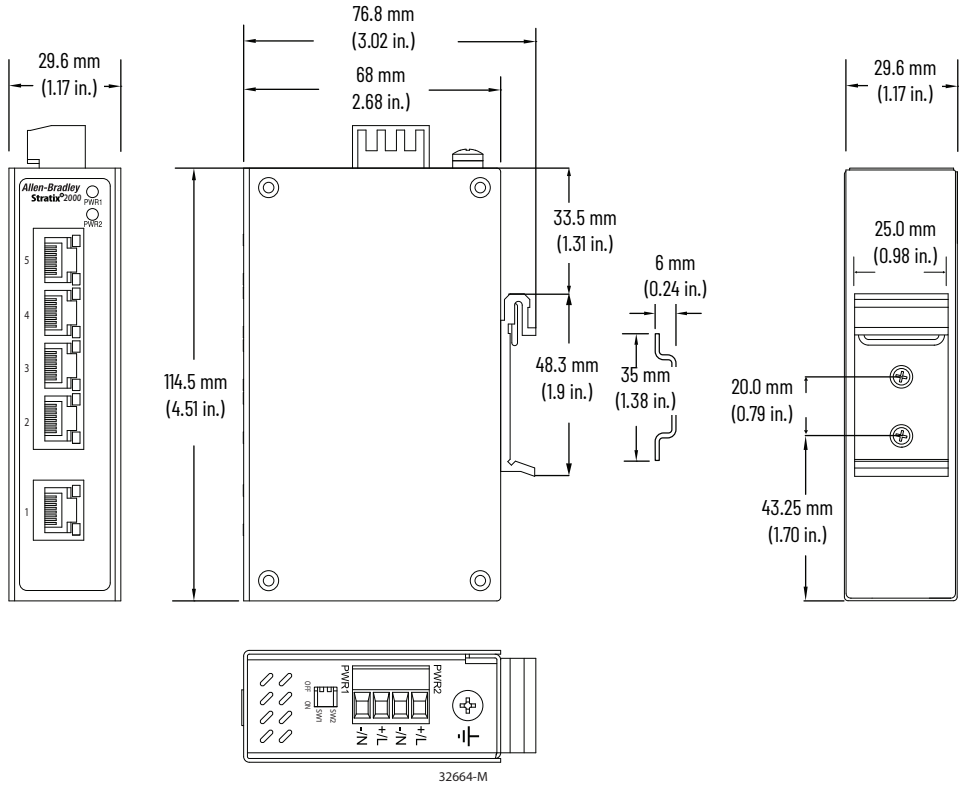


**Figure 2 - 1783-US8T/B, 1783-US6T2F/B, 1783-US6T2H/B, 1783-US7T1F/B, 1783-US7T1H/B**

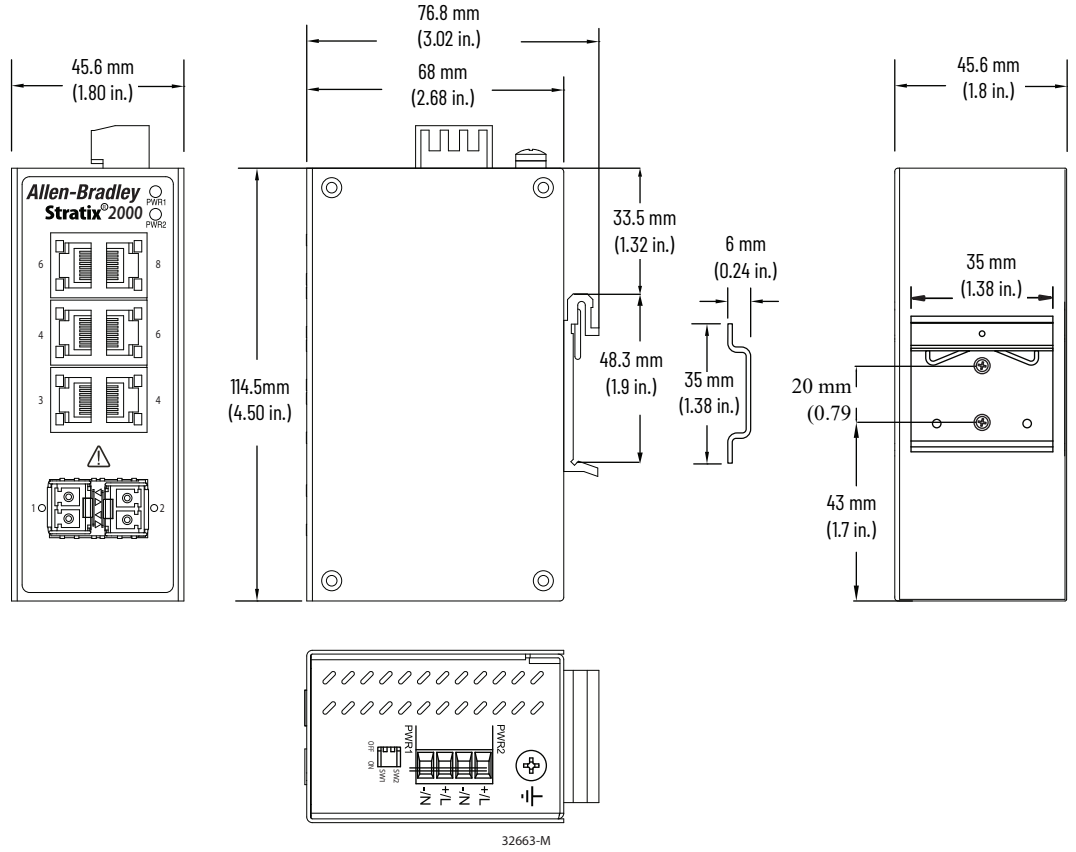



**Figure 3 - 1783-US6T2TG2F/B, 1783-US6T2TG2H/B, 1783-US8TG2GX/B**

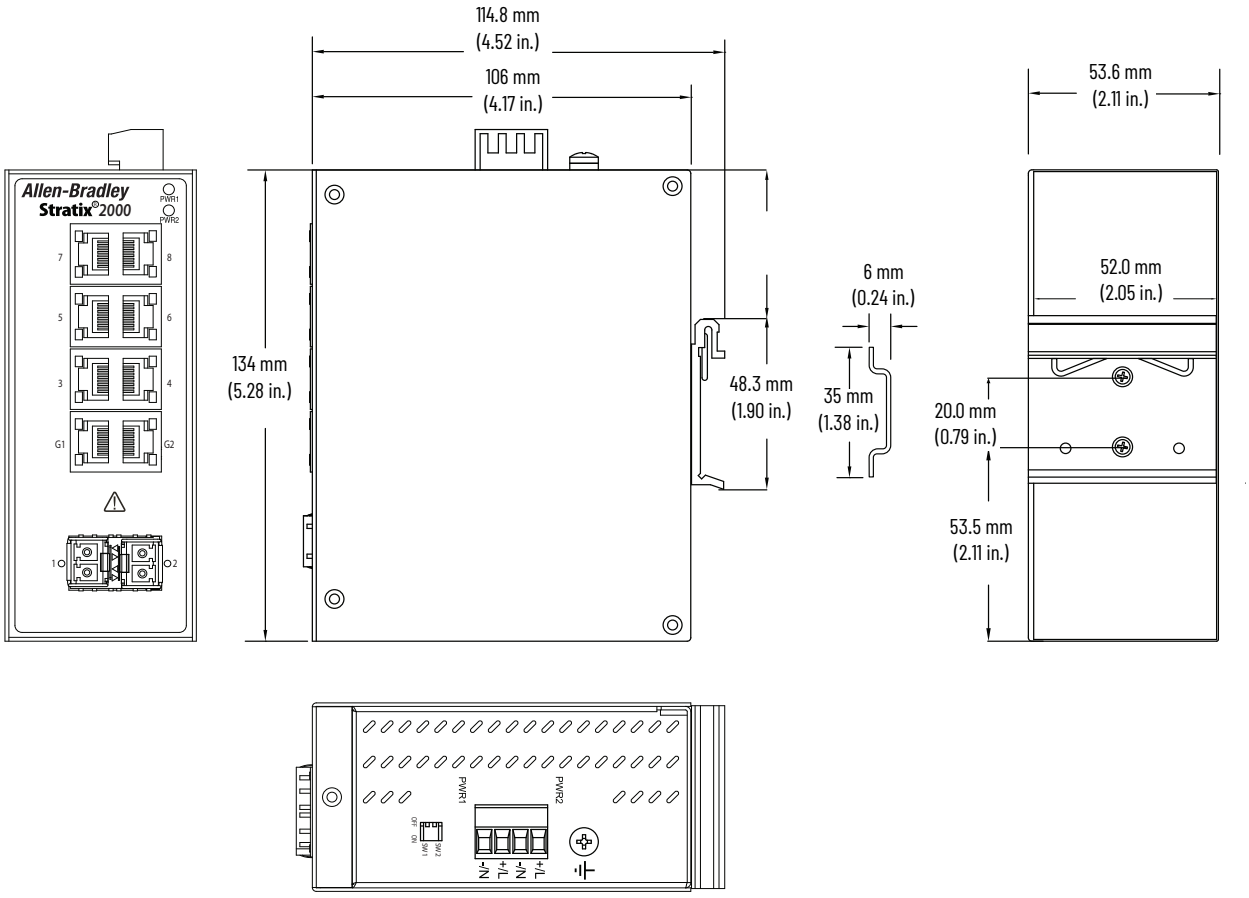
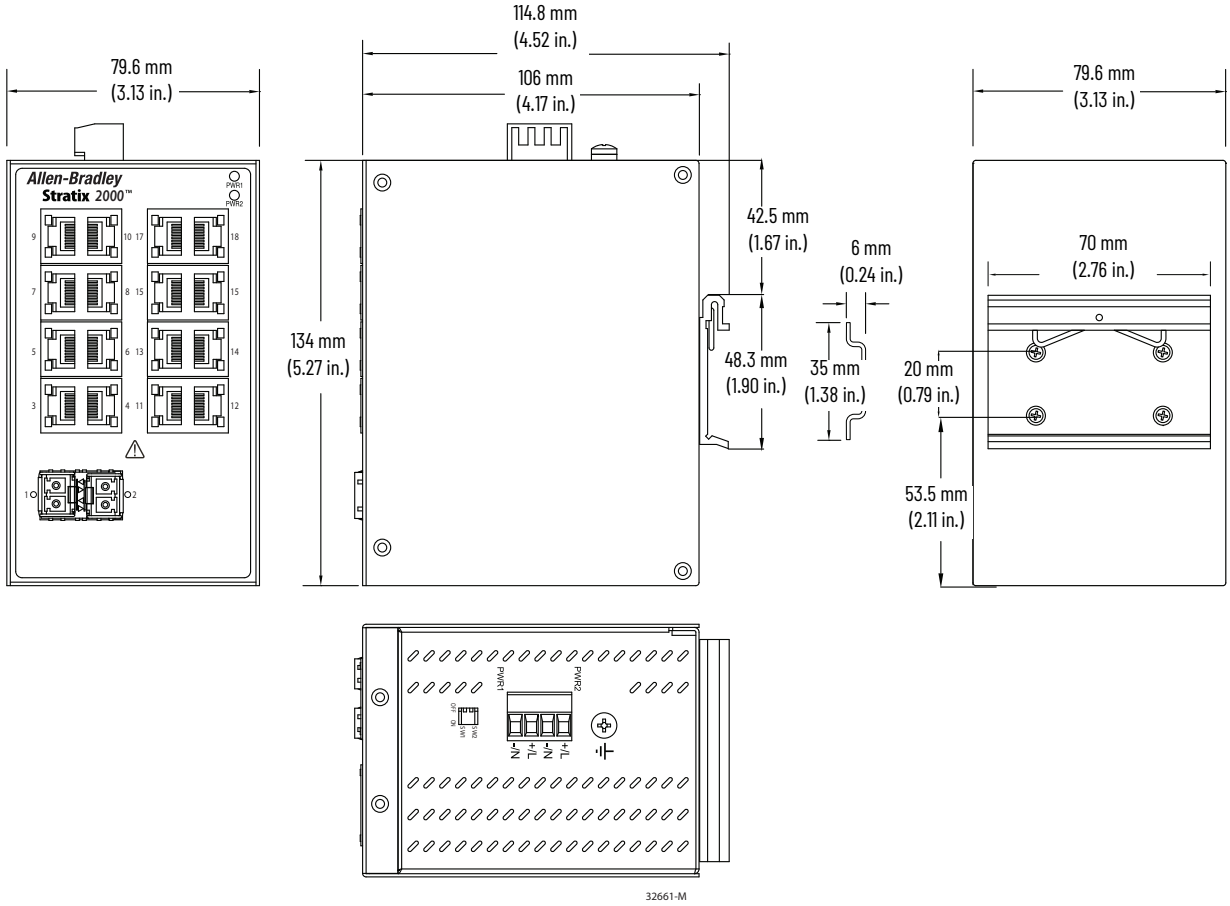


**Figure 4 - 1783-US16T/B, 1783-US16T2S/B**



# Stratix 2000 Ethernet Unmanaged Switches—Series A

| Cat. No. | Total Ports | RJ45 Ports[1] | Combo Ports[1] | SFP Ports[1] |
|---|---|---|---|---|
| 1783-US4T1F/A | 5 | 4 FE | – | 1 FE multimode preinstalled fiber SFP module |
| 1783-US4T1H/A | 5 | 4 FE | – | 1 FE singlemode preinstalled fiber SFP module |
| 1783-US5T/A | 5 | 5 FE | – | – |
| 1783-US5TG/A | 5 | 5 GE | – | – |
| 1783-US6T2F/A | 8 | 6 FE | – | 2 FE multimode preinstalled fiber SFP modules |
| 1783-US6T2H/A | 8 | 6 FE | – | 2 FE singlemode preinstalled fiber SFP modules |
| 1783-US6TG2CG/A | 8 | 6 GE | 2 GE[2] | – |
| 1783-US7T1F/A | 8 | 7 FE | – | 1 FE multimode preinstalled fiber SFP module |
| 1783-US7T1H/A | 8 | 7 FE | – | 1 FE singlemode preinstalled fiber SFP module |
| 1783-US8T/A | 8 | 8 FE | – | – |
| 1783-US14T2S/A | 16 | 14 FE | – | 2 FE[2] |
| 1783-US16T/A | 16 | 16 FE | – | – |

(1) FE = Fast Ethernet; GE = Gigabit Ethernet.
(2) SFP modules must be ordered separately.

The following table lists Stratix 2000 series A switches and their series B replacements. For specifications of series B switches, see page 3.

**Table 5 - Stratix 2000 Series Change**

| Series A Cat. No. | Series B Replacement Cat. No. | Change[1] |
|---|---|---|
| 1783-US4T1F/A | 1783-US4T1F/B | Same catalog number and configuration |
| 1783-US4T1H/A | 1783-US4T1H/B | Same catalog number and configuration |
| 1783-US5T/A | 1783-US5T/B | Same catalog number and configuration |
| 1783-US5TG/A | 1783-US5TG/B | Same catalog number and configuration |
| 1783-US6T2F/A | 1783-US6T2F/B | Same catalog number and configuration |
| 1783-US6T2H/A | 1783-US6T2H/B | Same catalog number and configuration |
| 1783-US7T1F/A | 1783-US7T1F/B | Same catalog number and configuration |
| 1783-US7T1H/A | 1783-US7T1H/B | Same catalog number and configuration |
| 1783-US8T/A | 1783-US8T/B | Same catalog number and configuration |
| 1783-US16T/A | 1783-US16T/B | Same catalog number and configuration |
| 1783-US14T2S/A | 1783-US16T2S/B | New catalog number<br>Replaced 2 GE combo ports with 2 GE copper ports on series B replacement<br>Added 2 GE SFP slots to series B replacement |
| 1783-US6TG2CG/A | 1783-US8TG2GX/B | New catalog number<br>Added 2 FE copper ports to series B replacement |

(1) FE = Fast Ethernet; GE = Gigabit Ethernet.

**Table 6 - Technical Specifications - Stratix 2000 Switches, Series A**

| Attribute | 1783-US4T1F/A<br>1783-US4T1H/A | 1783-US5TG/A | 1783-US6T2F/A<br>1783-US6T2H/A | 1783-US7T1F/A<br>1783-US7T1H/A | 1783-US6TG2CG/A | 1783-US14T2S/A | 1783-US16T/A | 1783-US5T/A | 1783-US8T/A |
|---|---|---|---|---|---|---|---|---|---|
| Inrush current, max | 0.11 A | 0.25 A | 0.86 A | 1.06 A | 0.66 A | 4.34 A | 4.72 A | 0.11 A | 1.47 A |
| Power input | 24V (18…60V DC, 18…30V AC 50/60 Hz), Class 2/SELV | | | | | | | | |
| Current rating | 230.5 mA | 432.1 mA | 442.3 mA | | 1242.7 mA | 663.2 mA | 555.5 mA | 250 mA | 361 mA |
| Power dissipation, max | 2.841 W | 5.491 W | 5.927 W | | 13.643 W | 7.991 W | 6.72 W | 2 W @ 24V AC/DC | 4.04 W @ 24V AC/DC |
| Isolation voltage | 30V (continuous), basic insulation type, power to network channels<br>No isolation between individual network channels<br>Type tested at 500V AC for 60 s | | | | | | | | |
| Wire size, Ethernet connection[1] | RJ45 connector according to IEC 60603-7, 2-pair or 4-pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702 rated 82 °C (180 °F) min | | | | | | | RJ45 connector according to IEC 60603-7, 2-pair or 4-pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702 | |

**Table 6 - (continued)Technical Specifications - Stratix 2000 Switches, Series A (continued)**

| Attribute | 1783-US4T1F/A<br>1783-US4T1H/A | 1783-US5TG/A | 1783-US6T2F/A<br>1783-US6T2H/A | 1783-US7T1F/A<br>1783-US7T1H/A | 1783-US6TG2CG/A | 1783-US14T2S/A | 1783-US16T/A | 1783-US5T/A | 1783-US8T/A |
|---|---|---|---|---|---|---|---|---|---|
| Wire size, DC power connection | 0.82...2.5 $mm^2$ (18...14 AWG) twisted-pair copper wire suitable for 82 °C (180 °F) above surrounding ambient temperature outside the enclosure | | | | | | | 0.75...2.5 $mm^2$ (18...14 AWG) twisted-pair copper wire suitable for 30 °C (86 °F) above surrounding ambient temperature outside the enclosure | |
| Wire size, ground connection | 2.5 $mm^2$ (14 AWG) copper wire suitable for 82 °C (180 °F) above surrounding ambient temperature outside the enclosure, with a suitable ring terminal | | | | | | | 2.5 $mm^2$ (14 AWG) copper wire suitable for 30 °C (86 °F) above surrounding ambient temperature outside the enclosure, with a suitable ring terminal | |
| Screw torque, ground terminal, max | 1.82 N•m (16 in•lb) | | | | | | | | |
| Screw torque, power terminals | 0.4...0.5 N•m (3.5...4.4 in•lb) | | | | | | | | |
| Wiring category[2] | 1 - on power ports<br>2 - on communication ports | | | | | | | | |
| Enclosure type rating | None (open-style) | | | | | | | | |
| North American temp code | T4 | | | | | | | T5 | |
| IEC temp code | T4 | | | | | | | T5 | |
| MAC addresses, max supported | 1 K | 1K | 8 K | | 8 K | 8 K | 8 K | 1K | 8 K |
| SFP modules[3] | Preinstalled | No SFP slots | Preinstalled | Preinstalled | Ordered separately:<br>1783-SFP1GSX<br>1783-SFP1GLX<br>1783-SFP1GEXE<br>1783-SFP1GZX | Ordered separately:<br>1783-SFP100FX<br>1783-SFP100LX<br>1783-SFP100EXC<br>1783-SFP100ZXC | No SFP slots | No SFP slots | No SFP slots |

(1) See page 74 for recommended products.
(2) Use this conductor category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
(3) For specifications of preinstalled SFP modules, see Table 7. For specifications of SFP modules ordered separately, see Table 62.

## Table 7 - Preinstalled SFP Module Specifications - Stratix 2000 Switches

| Attribute | Multimode (100Base-FX) | Singlemode (100Base-LX) |
|---|---|---|
| Central wavelength (nm) | 1310 | 1310 |
| Transmission distance (km) | 2 | 20 |
| Applicable distance (km) | 0…2 | 0…20 |
| Luminous power, min (db) | -19 | -10 |
| Luminous power, max (db) | -10 | -5 |
| Receiving sensitivity (dBm) | -31 | -34 |
| Overload luminous power | -3 | -3 |

## Table 8 - Environmental Specifications - Stratix 2000 Switches, Series A

| Attribute | 1783-US4T1F/A, 1783-US4T1H/A, 1784-US5TG/A, 1783-US6T2F/A, 1783-US6T2H/A, 1783-US6TG2CG/A, 1783-US7T1F/A, 1783-US7T1H/A, 1783-US14T2S/A, 1783-US16T/A | 1783-US5T/A | 1783-US8T/A |
|---|---|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock) | -40…+70 °C (-40…+158 °F) | 0…+60 °C (32…+140 °F) | |
| Temperature, surrounding air, max | 70 °C (158 °F) | 60 °C (140 °F) | |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold)<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat)<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40…+85 °C (-40…+185 °F) | | |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5…95% noncondensing | | |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 2 g @ 10…150 Hz | | 2 g @ 10…500 Hz |
| Operating shock<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 15 g | | |
| Nonoperating shock<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g | | |
| Emissions<br>CISPR11 (IEC 61000-6-4) | Class A | | |
| ESD immunity<br>IEC 61000-4-2 | 8 kV contact discharges<br>15 kV air discharges | | 6 kV contact discharges<br>8 kV air discharges |
| Radiated RF immunity<br>IEC 61000-4-3 | 10V/m with 1 kHz sine-wave 80% AM from 80…2000 MHz<br>3V/m with 1 kHz sine-wave 80% AM from 2000…2700 MHz | | |
| EFT/B immunity<br>IEC 61000-4-4 | ±4 kV at 5 kHz on power ports<br>±3 kV at 5 kHz on communication ports | | |
| Surge transient immunity<br>IEC 61000-4-5 | ±2 kV line-line (DM) and ±4 kV line-earth (CM) on DC power ports<br>±2 kV line-earth (CM) on communication port | | |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz…80 MHz | | |
| Magnetic field immunity<br>IEC 61000-4-8 | 30 A/m long duration and 300 A/m short duration at 50 Hz | | |
| Magnetic pulse immunity<br>IEC 61000-4-9 | — | | 30 A/m pulse |
| Environmental rating | IP20 | | |

## Table 9 - Certifications- Stratix 2000 Switches, Series A

| Certifications (when product is marked)[1] | 1783-US4T1F/A, 1783-US4T1H/A, 1784-US5TG/A, 1783-US6T2F/A, 1783-US6T2H/A, 1783-US6TG2CG/A, 1783-US7T1F/A, 1783-US7T1H/A, 1783-US14T2S/A, 1783-US16T/A | 1783-US5T/A, 1783-US8T/A |
|---|---|---|
| c-UL-us | UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810. | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810. |
| CE | European Union 2004/108/EC EMC Directive, compliant with:<br>EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>EN 61000-6-2; Industrial Immunity<br>EN 61000-6-4; Industrial Emissions<br>EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>European Union 2011/65/EU RoHS, compliant with:<br>EN 50581; Technical Documentation | |
| RCM | Australian Radiocommunications Act, compliant with:<br>EN 61000-6.4; Industrial Emissions | |
| Ex | European Union 94/9/EC ATEX Directive, compliant with:<br>EN 60079-15; Potentially Explosive Atmospheres, Protection “n”<br>EN 60079-0; General Requirements II 3 G Ex nA IIC T4 Gc X | European Union 94/9/EC ATEX Directive, compliant with:<br>EN 60079-15; Potentially Explosive Atmospheres, Protection “n”<br>EN 60079-0; General Requirements II 3 G Ex nA IIC T5 Gc |
| KC | Korean Registration of Broadcasting and Communications Equipment, compliant with:<br>Article 58-2 of Radio Waves Act, Clause 3 | |

(1) See the Product Certification link at http://www.ab.com for Declarations of Conformity, Certificates, and other certification details.

# Dimensions—Stratix 2000 Switches, Series A

**Figure 5 - 1783-US4T1F/A, 1783-US4T1H/A,1783-US5TG/A Switch Dimensions**

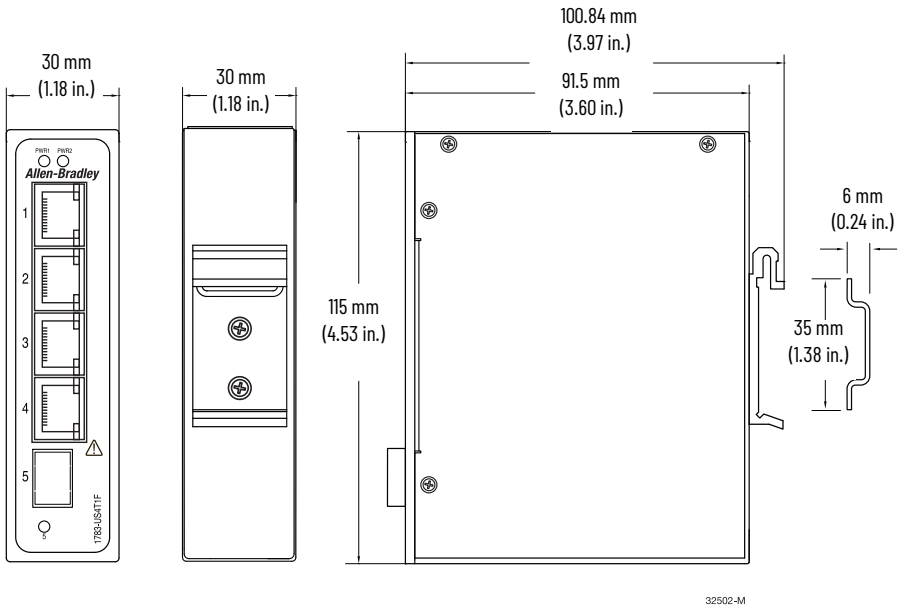



**Figure 6 - 1783-US5T/A Switch Dimensions**

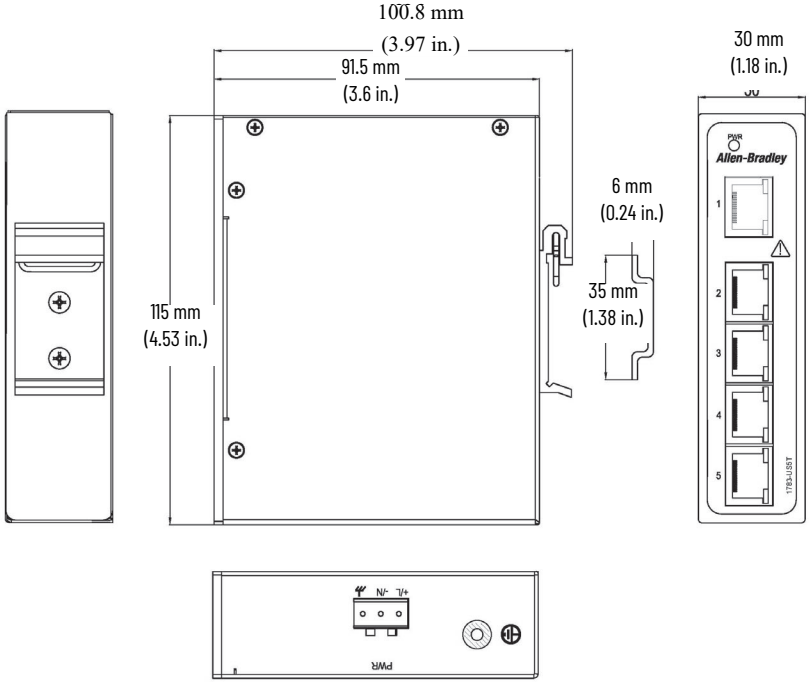


**Figure 7 - 1783-US6T2F/A, 1783-US6T2H/A, 1783-US7T1F/A, 1783-US7T1H/A Switch Dimensions**

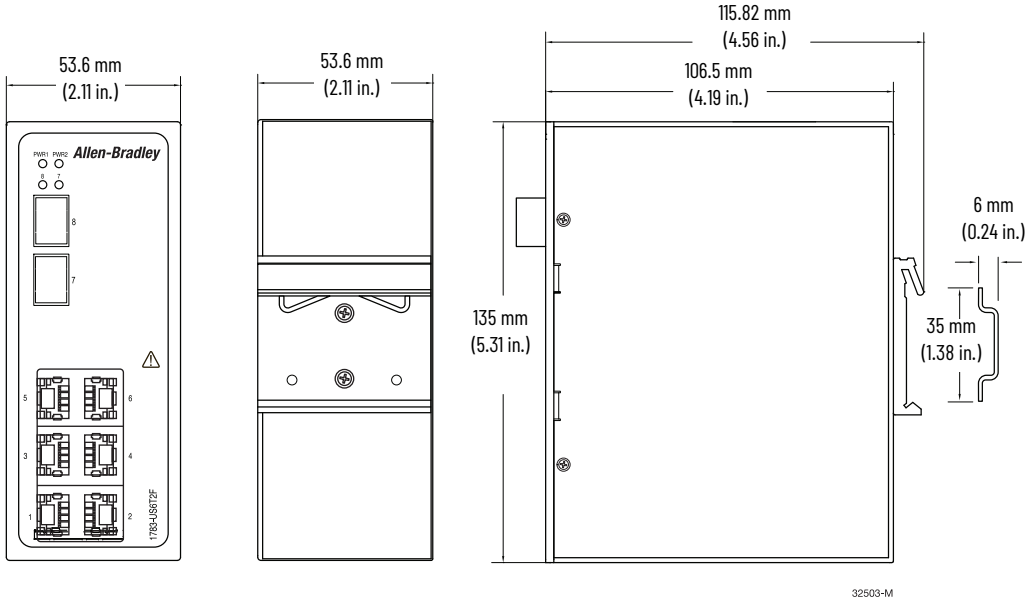
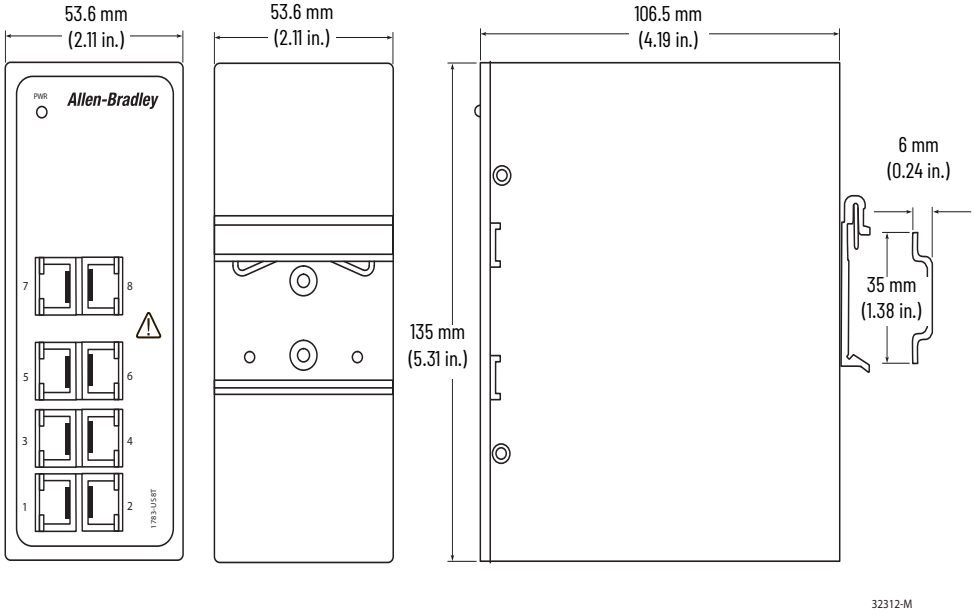
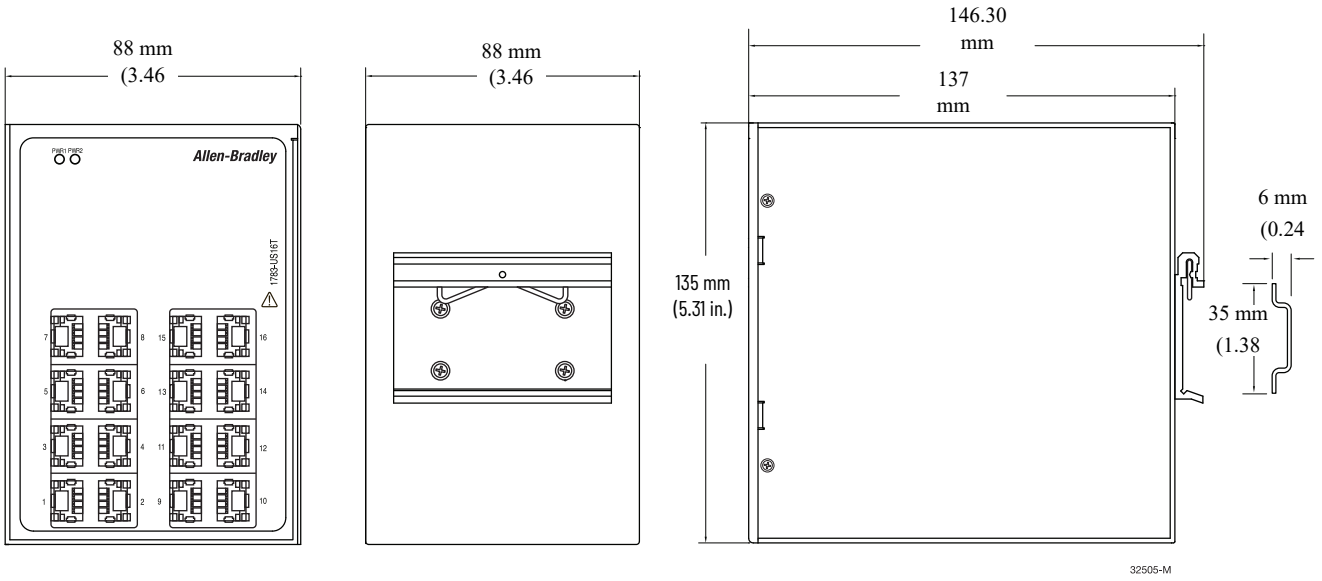



**Figure 8 - 1783-US8T/A Switch Dimensions**



### Figure 9 - 1783-US16T/A, 1783-US14T2S/A, 1783-US6TG2CG/A Switch Dimensions




# Stratix 2500 Ethernet Lightly Managed Switches

| Cat. No. | Description | Total Ports |
|---|---|---|
| 1783-LMS5 | 5 ports copper 10/100 | 5 |
| 1783-LMS8 | 8 ports copper 10/100 | 8 |

### Table 10 - Technical Specifications - Stratix 2500 Switches

| Attribute | 1783-LMS5 | 1783-LMS8 |
|---|---|---|
| Power input | 12...24V DC, 0.3...0.2 A(SELV) | 12...24V DC, 0.4...0.2 A (SELV) |
| Power consumption | 4.2 W | 5.3 W |
| Power dissipation | 4.2 W | 5.3 W |
| Wire size, Ethernet connection(1) | RJ45 connector according to IEC 60603-7, 2 or 4 pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702 | |
| Wire size, DC power connection | 1.3...0.82 $mm^2$ (16...18 AWG) solid or stranded copper wire rated at 30 °C (86 °F), or greater, above the surrounding air temperature | |
| Wire size, ground connection | 5.2...3.3 $mm^2$ (10...12 AWG) solid or stranded copper wire | |
| Torque, power terminal screw | 0.19 N•m (1.7 in•lb) | |
| Torque, functional ground lug screw | 0.51 N•m (4.5 in•lb) | |
| Wiring category(2)(3) | 2 - on power ports<br>2 - on communication ports | |
| Enclosure type rating | None (open-style) | |
| North American temp code | T4 | |
| ATEX temp code | T4 | |

(1) See page 74 for recommended products.
(2) Use this conductor category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1..
(3) Use this Conductor Category information for planning conductor routing as described in the Stratux 2500 Managed Switches Installation Instructions, publication 1783-IN011.

## Table 11 - Environmental Specifications - Stratix 2500 Switches

| Attribute | 1783-LMS5, 1783-LMS8 |
|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock) | -20 °C < Ta < +60 °C (-4 °F < Ta < +140 °F) |
| Temperature, ambient, max | 60 °C (140 °F) |
| Temperature, surrounding air, max | 60 °C (140 °F) |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F) |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5...95% noncondensing |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g |
| Emissions<br>CISPR11 (IEC 61000-6-4) | IEC 61000-6-4 |
| ESD immunity<br>IEC 61000-4-2 | 6 kV contact discharges<br>8 kV air discharges |
| Radiated RF immunity<br>IEC 61000-4-3 | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz |
| EFT/B immunity<br>IEC 61000-4-4 | ±3 kV at 5 @ 100 kHz on DC power ports<br>±3 kV at 5 @ 100 kHz on Ethernet ports |
| Surge transient immunity<br>IEC 61000-4-5 | ±1 kV line-line(DM) and ±2 kV line-earth(CM) on DC power ports<br>±2 kV line-earth(CM) on communication ports |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz |
| Environmental rating | IP30 |

## Table 12 - Certifications - Stratix 2500 Switches

| Certifications (when product is marked)(1) | 1783-LMS5, 1783-LMS8 |
|---|---|
| c-UL-us | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.<br>UL Listed for Class I, Zone 2 Hazardous Locations, certified for U.S. and Canada. See UL File E194810.<br>• Ex nA IIC T4 Gc X<br>• AEx nA IIC T4 Gc |
| CE | European Union 2014/30/EU EMC Directive, compliant with:<br>• EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>• EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>European Union 2011/65/EU RoHS, compliant with:<br>• EN 50581; Technical documentation |
| RCM | Australian Radiocommunications Act, compliant with:<br>• AS/NZS CISPR 11; Industrial Emissions |
| Ex | European Union 2014/34/EU ATEX Directive, compliant with:<br>• EN 60079-0; General Requirements<br>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>• II 3 G Ex nA IIC T4 Gc<br>• DEMKO 16 ATEX 1731 |
| EAC | Russian Customs Union TR CU 020/2011 EMC Technical Regulation |
| EtherNet/IP | ODVA conformance tested to EtherNet/IP specifications |
| KCC | KNN; KN11 (Group 1, Class A), IEC61000-6-2 |
| BSMI | CNS 13438 (95); CNS14336-1 (99) Taiwan |

(1) See the Product Certification link at http://www.ab.com for Declarations of Conformity, Certificates, and other certification details.

# Dimensions—Stratix 2500 Switches

### Figure 10 - 1783-LMS5 Switch Dimensions

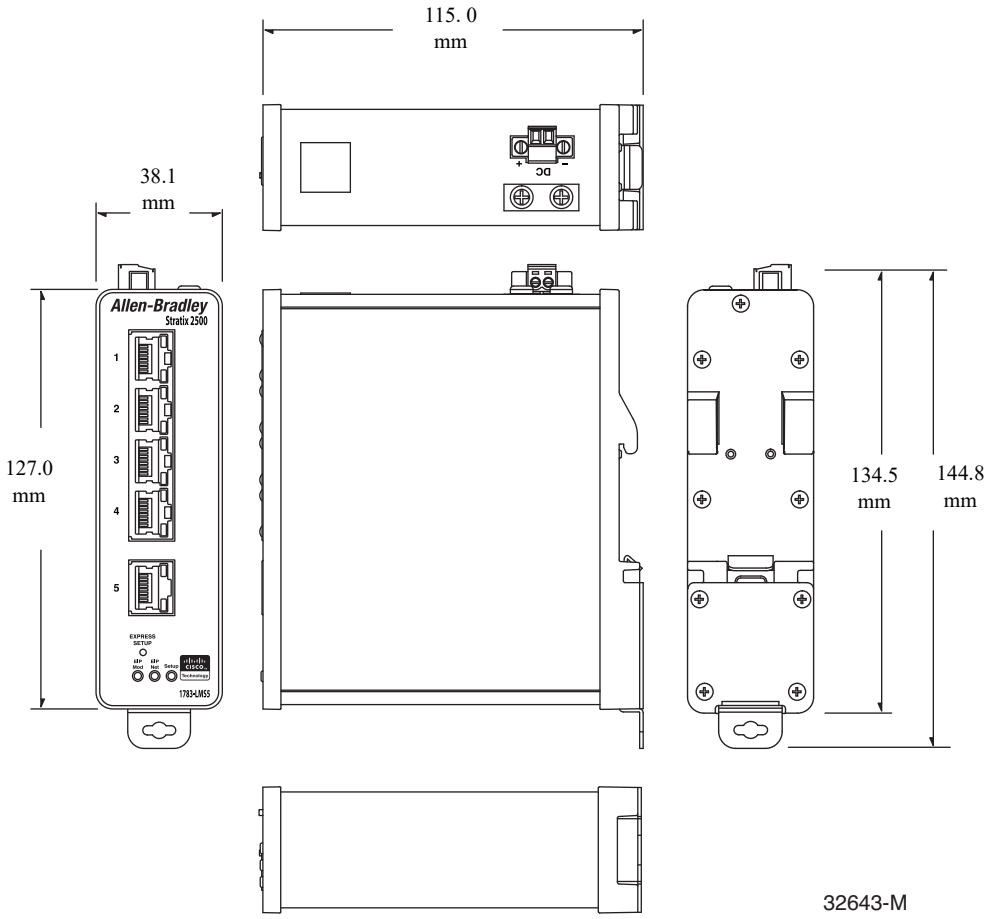
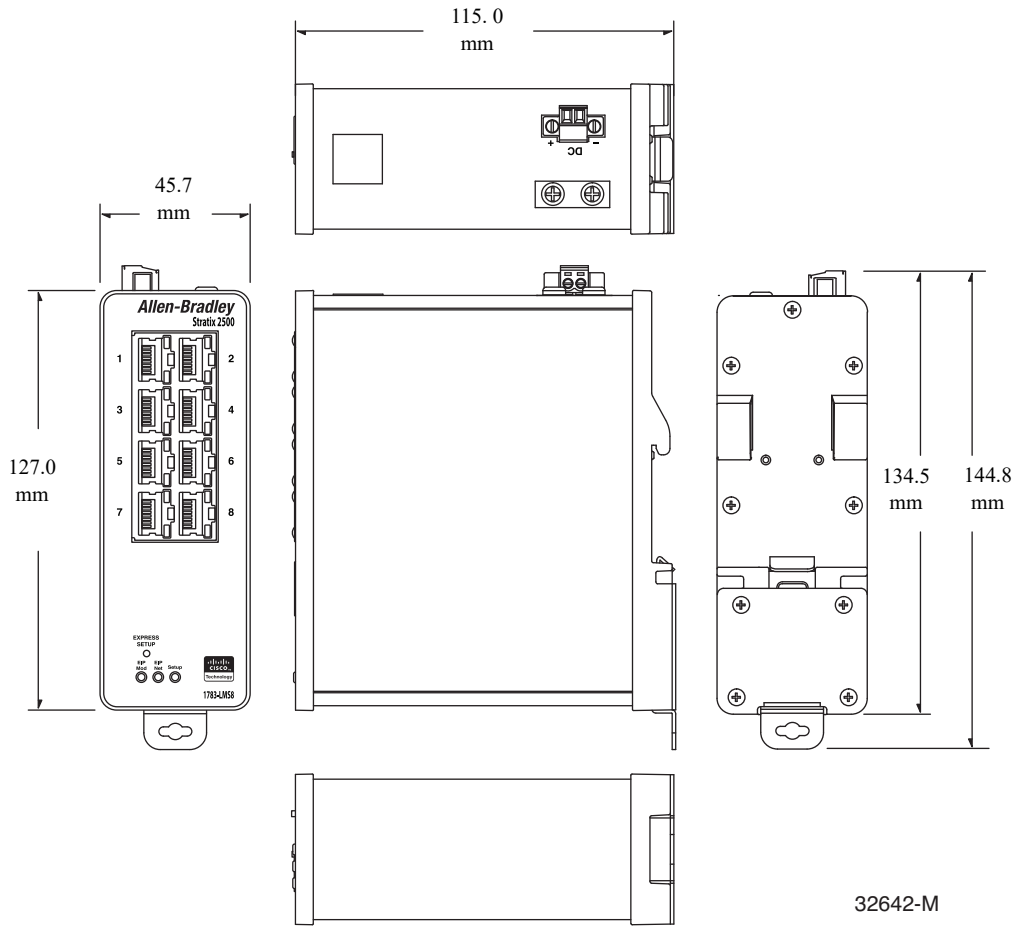


**Figure 11 - 1783-LMS8 Switch Dimensions**




# Stratix 5400 Ethernet Managed Switches

| Cat. No. | Total Ports | RJ45 Ports[1] | Combo Ports | PoE/PoE+ Ports | SFP Slots | Firmware Type | CIP Sync (IEEE 1588) | NAT | DLR |
|---|---|---|---|---|---|---|---|---|---|
| 1783-HMS4C4CGN | 8 | – | 4 FE + 4 GE | – | – | Layer 2 | Yes | Yes | Yes |
| 1783-HMS8T4CGN | 12 | 8 FE | 4 GE | – | – | Layer 2 | Yes | Yes | Yes |
| 1783-HMS8S4CGN | 12 | – | 4 GE | – | 8 FE | Layer 2 | Yes | Yes | Yes |
| 1783-HMS4T4E4CGN | 12 | 4 FE | 4 GE | 4 FE | – | Layer 2 | Yes | Yes | Yes |
| 1783-HMS4S8E4CGN | 16 | – | 4 GE | 8 FE | 4 FE | Layer 2 | Yes | Yes | Yes |
| 1783-HMS16T4CGN | 20 | 16 FE | 4 GE | – | – | Layer 2 | Yes | Yes | Yes |
| 1783-HMS8TG4CGN | 12 | 8 GE | 4 GE | – | – | Layer 2 | Yes | Yes | Yes |
| 1783-HMS8SG4CGN | 12 | – | 4 GE | – | 8 GE | Layer 2 | Yes | Yes | Yes |
| 1783-HMS4EG8CGN | 12 | – | 8 GE | 4 GE | – | Layer 2 | Yes | Yes | Yes |
| 1783-HMS4SG8EG4CGN | 16 | – | 4 GE | 8 GE | 4 GE | Layer 2 | Yes | Yes | Yes |
| 1783-HMS16TG4CGN | 20 | 16 GE | 4 GE | – | – | Layer 2 | Yes | Yes | Yes |
| 1783-HMS8TG8EG4CGN | 20 | 8 GE | 4 GE | 8 GE | – | Layer 2 | Yes | Yes | Yes |
| 1783-HMS8TG4CGR | 12 | 8 GE | 4 GE | – | – | Layer 3 | Yes | Yes | Yes |
| 1783-HMS8SG4CGR | 12 | – | 4 GE | – | 8 GE | Layer 3 | Yes | Yes | Yes |
| 1783-HMS4EG8CGR | 12 | – | 8 GE | 4 GE | – | Layer 3 | Yes | Yes | Yes |
| 1783-HMS4SG8EG4CGR | 16 | – | 4 GE | 8 GE | 4 GE | Layer 3 | Yes | Yes | Yes |
| 1783-HMS16TG4CGR | 20 | 16 GE | 4 GE | – | – | Layer 3 | Yes | Yes | Yes |
| 1783-HMS8TG8EG4CGR | 20 | 8 GE | 4 GE | 8 GE | – | Layer 3 | Yes | Yes | Yes |

(1) FE = Fast Ethernet; GE = Gigabit Ethernet

## Table 13 - Technical Specifications - Stratix 5400 Switches

| Attribute | 1783-HMS8T4CGN, 1783-HMS16T4CGN, 1783-HMS8TG4CGN, 1783-HMS8TG4CGR | 1783-HMS4C4CGN, 1783-HMS16TG4CGN, 1783-HMS16TG4CGR | 1783-HMS8S4CGN, 1783-HMS8SG4CGN, 1783-HMS8SG4CGR | 1783-HMS4T4E4CGN | 1783-HMS4S8E4CGN, 1783-HMS8TG8EG4CGN, 1783-HMS4SG8EG4CGN, 1783-HMS4EG8CGN, 1783-HMS4SG8EG4CGR, 1783-HMS8TG8EG4CGR, 1783-HMS4EG8CGR |
|---|---|---|---|---|---|
| Alarm relay | 1 A @ 30V DC or 0.5 A @ 48V DC | | | | |
| Power input | 3.7 A max @ 12...54V DC | 4.3 A max @ 12...54V DC | 5.0 A max @ 12...54V DC | 3.7 A max @ 12...54V DC | 4.3 A max @ 12...54V DC |
| PoE power input(1) | – | | | 44...54V DC for PoE<br>50...54V DC for PoE+ or a combination of PoE and PoE+ | |
| Power consumption(2) | 35 W @ 24V DC @ 40 °C (104 °F) | 40 W @ 24V DC @ 40 °C (104 °F) | 42 W @ 24V DC @ 40 °C (104 °F) | 35 W @ 24V DC @ 40 °C (104 °F)<br>PoE power at 50V: 120 W | 40 W @ 24V DC @ 40 °C (104 °F)<br>PoE power at 50V: 124 W |
| Power dissipation | 35 W | 40 W | 42 W | 35 W | 42 W |
| Isolation voltage | 60V (continuous), basic insulation type, all ports to ground<br>No isolation between individual ports<br>Type tested at 500V AC for 60 s | | | | |
| Wire size, ground connection | 4 $mm^2$ (10 AWG) solid or stranded copper wire | | | | |
| Wire size, DC power connection | 0.82...0.52 $mm^2$ (18...20 AWG) solid or stranded copper wire rated at 30 °C (86 °F), or greater, above the surrounding air temperature<br>6.3 mm (0.25 in.) ± 0.5 mm (0.02 in.) strip length | | | | |
| Wire size, alarm connection | 0.5...0.8 $mm^2$ (20...18 AWG) solid or stranded, UL/CSA-rated style 1007 or 1569 twisted-pair copper appliance wiring material (AWM) wire,<br>6.3 mm(0.25 in.) ± 0.5 mm (0.02 in.) strip length | | | | |
| Screw torque,ground terminal | 0.51 N•m (4.5 in•lb) | | | | |
| Screw torque, power terminal | 0.56 N•m (5.0 in•lb) | | | | |
| Screw torque, alarm terminal | 0.23 N•m (2.0 in•lb) | | | | |
| Weight, approx | 2.88 kg (6.35 lb) | | | | |
| Wiring category(3) | 3 - on console ports<br>2 - on DC power and alarm ports<br>2 - on Ethernet ports | | | | |
| Enclosure type rating | None (open-style) | | | | |
| Pilot duty rating | Alarm not rated | | | | |
| North American temp code | T3 | | | | |
| ATEX temp code | T3 | | | | |
| SFP modules(4) | 1783-SFP100FX<br>1783-SFP100LX<br>1783-SFP100EXC<br>1783-SFP100ZXC<br>1783-SFP100T(5)<br>1783-SFP1GSX(6)<br>1783-SFP1GLX(6)<br>1783-SFP1GEXE(6)<br>1783-SFP1GZX(6)<br>1783-SFP1GTE(6) | | | | |
| Memory card replacement | 1784-SD1 | | | | |

(1) The initial power allocation and the maximum power allocation on a PoE port are configurable in Device Manager or the Logix Designer application. For details about PoE power budgets, see the Stratix Managed Switches User Manual, publication 1783-UM007.

(2) For PoE configurations, the power consumption values listed represent the highest values that can be configured using all ports. A general guideline is 0.5 W per 30 W PoE+ port used.
(3) Use this conductor category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
(4) For SFP specifications, see page 72.
(5) The 1783-SFP100T module requires Stratix 5400 firmware revision 3.001or later.
(6) Gigabit Ethernet (GE) SFP modules work only in GE SFP slots. For a list of Stratix 5400 catalog numbers with GE SFP slots, see page 17.

## Table 14 - Environmental Specifications - Stratix 5400 Switches

| Attribute | Stratix 5400 Switches |
|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock) | -40...+70 °C (-40...+158 °F) |
| Temperature, surrounding air, max | 70 °C (158 °F) |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F) |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat): | 5...90% noncondensing |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 1 g @ 5...150 Hz |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 15 g |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g |
| Emissions<br>IEC 61000-6-4 | IEC 61000-6-4 |
| ESD immunity<br>IEC 61000-4-2 | 6 kV contact discharges<br>8 kV air discharges |
| Radiated RF immunity<br>IEC 61000-4-3 | 20V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>20V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz |
| EFT/B immunity<br>IEC 61000-4-4 | ±3 kV at 5 @ 100 kHz on DC power ports<br>±3 kV at 5 @ 100 kHz on alarm ports<br>±3 kV at 5 @ 100 kHz on Ethernet ports |
| Surge transient immunity<br>IEC 61000-4-5 | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on DC power ports<br>±1 kV line-line (DM) and ±2 kV line-earth (CM) on alarm ports<br>±2 kV line-earth(CM) on Ethernet ports |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz |
| Magnetic field immunity<br>IEC 61000-4-8 | 300 A/m long duration and 1000 A/m short duration at 50 @ 60 Hz |
| Magnetic pulse immunity<br>IEC 61000-4-9 | 300 A/m pulse |
| Voltage variation<br>IEC 61000-4-29 | 10 ms interruption on DC power ports |
| Damped oscillatory wave immunity<br>IEC 61000-4-18 | ±1 kV line-line (DM) and ±2.5 kV line-earth (CM) on power and alarm ports<br>±2.5 kV line-earth (CM) on Ethernet ports |
| Electric Power Stations Communications Networking<br>EEE 1613 | EEE 1613 |
| Electric Substations Communications Networking<br>IEC 61850-3 | IEC 61850-3(1) |

(1) The switch only meets the requirements of IEC 61850-3 when powered by a redundant power supply configuration.

**Table 15 - Certifications - Stratix 5400 Switches**

| Certifications (when product is marked)[1] | Stratix 5400 Switches |
|---|---|
| c-UL-us | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.<br>UL Listed for Class I, Zone 2 Hazardous Locations, certified for U.S. and Canada. See UL File E194810.<br>Ex nA nC IIC T3 Gc X<br>AEx nA nC IIC T3 Gc |
| CE | European Union 2004/108/EC EMC Directive, compliant with:<br>• EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>• EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>European Union 2011/65/EU RoHS, compliant with:<br>• EN 50581; Technical Documentation |
| RCM | Australian Radiocommunications Act, compliant with:<br>ACMA EMC Std 08 |
| Ex | European Union 94/9/EC ATEX Directive, compliant with:<br>• EN 60079-0; General Requirements<br>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>• II 3 G Ex nA nC IIC T3 Gc<br>• DEMKO14ATEX1423X |
| KC | Korean Registration of Broadcasting and Communications Equipment, compliant with:<br>• Article 58-2 of Radio Waves Act, Clause 3 |
| EtherNet/IP | ODVA conformance tested to EtherNet/IP specifications |
| Anatel | Brazilian regulations (Federal Law 9472/97) |
| EAC | Russian Customs Union TR CU 020 EMC Technical Regulation |
| BSMI | CNS 13438 (95); CNS14336-1 (99) Taiwan |

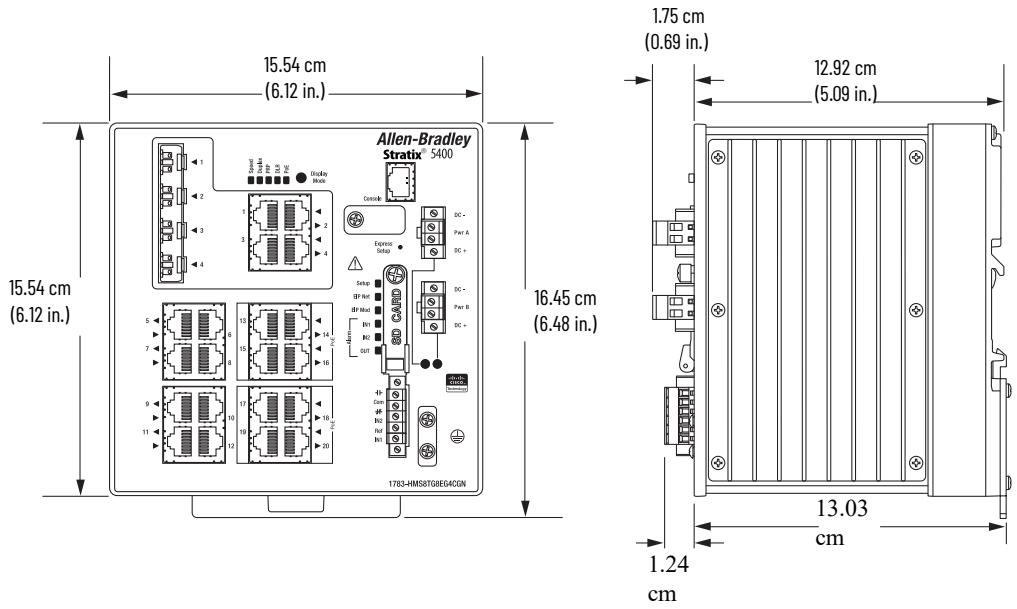
(1) See the Product Certification link at http://www.ab.com for declarations of conformity, certificates, and other certification details.

## Dimensions—Stratix 5400 Switches

To prevent the switch from overheating, observe the following minimum clearances:

- Top and bottom: 50.8 mm (2.0 in.)
- Sides: 50.8 mm (2.0 in.)
- Front: 50.8 mm (2.0 in.)

These diagrams are representative of the Stratix 5400 switches. Actual faceplates vary depending on the catalog number.



# Stratix 5410 Ethernet Managed Switches

| Cat. No. | Total Ports | PoE/PoE+ Ports | SFP Slots[2] | Firmware Type | CIP Sync (IEEE 1588) | NAT | Power Supply[3] | Conformal Coating |
|---|---|---|---|---|---|---|---|---|
| 1783-IMS28GNDC | 28 | 12 GE | 12 GE + 4 GE only | Layer 2 | Yes | Yes | Low DC | – |
| 1783-IMS28GNAC | 28 | 12 GE | 12 GE + 4 GE only | Layer 2 | Yes | Yes | AC/High DC | – |
| 1783-IMS28NDC | 28 | 12 GE | 12 GE + 4 TEN | Layer 2 | Yes | Yes | Low DC | Yes |
| 1783-IMS28NAC | 28 | 12 GE | 12 GE + 4 TEN | Layer 2 | Yes | Yes | AC/High DC | Yes |
| 1783-IMS28GRDC | 28 | 12 GE | 12 GE + 4 GE only | Layer 3 | Yes | Yes | Low DC | – |
| 1783-IMS28GRAC | 28 | 12 GE | 12 GE + 4 GE only | Layer 3 | Yes | Yes | AC/High DC | – |
| 1783-IMS28RDC | 28 | 12 GE | 12 GE + 4 TEN | Layer 3 | Yes | Yes (Layer 2) | Low DC | Yes |
| 1783-IMS28RAC | 28 | 12 GE | 12 GE + 4 TEN | Layer 3 | Yes | Yes (Layer 2) | AC/High DC | Yes |

| Optional Power Supplies[1] | |
|---|---|
| 1783-IMXDC | Low DC |
| 1783-IMXAC | AC/High DC |

(1) The switch supports an optional second power supply of any voltage type to provide redundancy and additional power for PoE devices. One power supply provides 60 W for PoE/PoE+. Two power supplies provide 185 W for PoE/PoE+.
(2) GE = 100 Megabit/1 Gigabit Ethernet; GE only = 1 Gigabit Ethernet; TEN = 1/10 Gigabit Ethernet
(3) One power supply ships pre-installed in each Stratix 5410 switch.

### Table 16 - Technical Specifications - Stratix 5410 Switches

| Attribute | 1783-IMS28NDC, 1783-IMS28RDC, 1783-IMS28GNDC, 1783-IMS28GRDC | 1783-IMS28NAC, 1783-IMS28RAC, 1783-IMS28GNAC, 1783-IMS28GRAC |
|---|---|---|
| Alarm relay | 30V DC, 1 A or 48V DC, 0.5 A | |
| Power input | 24…60V DC, 10 A | 100…240V AC, 2 A, 50…60 Hz (per slot)<br>or<br>100…250V DC, 2 A (per slot) |
| PoE output | 54V DC, 15.4 W max | |
| PoE+ output[1] | 54V DC, 30 W max | |
| Power consumption[2] | One power supply installed:<br>No PoE ports on: 74 W @ 24V DC @ 40°C (104°F), 76 W max<br>4 PoE ports on, 148 W max: 145 W @ 24V DC @ 40°C (104°F)<br><br>Two power supplies installed:<br>PoE power consumption alone (12 ports PoE):<br>210 W@ 24V DC @ 40°C (104°F); 215 W max<br><br>Complete system power, including 12 ports PoE: 291 W max | One power supply installed:<br>No PoE ports on: 74 W @ 120V,60Hz / 230V, 50Hz AC @ 40°C (104°F), 76W max<br>4 PoE ports on, 148 W max:<br>145W @ 120V,60Hz / 230V, 50Hz AC @ 40°C (104°F)<br><br>Two power supplies installed:<br>PoE power consumption alone (12 ports PoE): 210 W@120V, 60Hz/230V, 50 Hz AC @ 40°C (104°F); 215 W max<br><br>Complete system power, including 12 ports PoE: 291 W max |
| Power dissipation | 100 W | 100 W |
| Isolation voltage | 60V (continuous), basic insulation type<br>Type tested at 3000 V DC for 60 s<br>AC input power to alarm output<br>AC input power to Ethernet ports<br>AC input power to console port<br>AC input power to ground | |
| Wire size, Ethernet connection | RJ45 connector according to IEC 60603-7, 2<br>or<br>4 pair Category 5e minimum cable according to TIA 568-B.1<br>or<br>Category 5 cable according to ISO/IEC 24702 | |
| Wire size, ground connection | 13.3 $mm^2$ (6 AWG) solid or stranded copper wire | |
| Wire size, alarm connection | Category 5e minimum cable according to TIA 568-B.1<br>or<br>Category 5 cable according to ISO/IEC 24702 | |
| Wire size, power supply | 3.3$mm^2$ (12 AWG) twisted-pair copper wire | 1.3$mm^2$ (16 AWG) twisted-pair copper wire |

## Table 16 - Technical Specifications - Stratix 5410 Switches (continued)

| Attribute | 1783-IMS28NDC, 1783-IMS28RDC, 1783-IMS28GNDC, 1783-IMS28GRDC | 1783-IMS28NAC, 1783-IMS28RAC, 1783-IMS28GNAC, 1783-IMS28GRAC |
|---|---|---|
| Wiring category[3] | 3 - on console ports<br>2 - on power and alarm ports<br>2 - on Ethernet ports | |
| Wire type | Copper | |
| Pilot duty rating | Alarm not rated | |
| North American temp code | T4 | |
| ATEX temp code | T4 | |
| Screw torque, power supply mount | 0.904…1.13 N•m (8…10 in•lb) | |
| Screw torque, power terminal | 0.96 N•m (± 0.06 N•m) or 8.5 in•lb (± 0.5 in•lb) | |
| Screw torque, ground terminal | 3.39 N•m (± 0.23 N•m) or 30 in•lb (± 2 in•lb) | |
| Weight, approx, switch with power supply, power supply blank, and SD card | 7.30 kg (16.1 lb) | |
| Weight, approx, power supply only | 1.179 kg (2.6 lb) | |
| Weight, approx, accessory kit | 0.18 kg (0.4 lb) | |
| Enclosure type rating | None (open-style) | |
| SFP modules[4] | 1783-SFP100FX<br>1783-SFP100LX<br>1783-SFP100EXC<br>1783-SFP100ZXC<br>1783-SFP100T[5]<br>1783-SFP1GSX<br>1783-SFP1GLX<br>1783-SFP1GEXE<br>1783-SFP1GZX<br>1783-SFP10GSRE<br>1783-SFP10GLRE<br>1783-SFP1GTE | |
| Memory card replacement | 1784-SD1 | |

(1) A second power supply is required to support PoE+.
(2) For PoE configurations, the power consumption values listed represent the highest values that can be configured using all ports. A general guideline is 0.5 W per 30 W PoE+ port used.
(3) Use this conductor category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
(4) SFP modules are supported only on switches with combo ports or SFP slots. For SFP specifications, see page 72.
(5) The 1783-SFP100T module requires Stratix 5410 firmware revision 3.001or later.

## Table 17 - Environmental Specifications - Stratix 5410 Switches

| Attribute | Stratix 5410 Switches |
|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock) | -40...+60 °C (-40...+140 °F) |
| Temperature, ambient, max | 60 °C (140 °F) |
| Temperature, surrounding air, max | 60 °C (140 °F) |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F) |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat): | 5...95% noncondensing |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 1 g @ 5...150 Hz |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 15 g |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g |
| Emissions<br>IEC 61000-6-4 | IEC 61000-6-4 |
| ESD immunity<br>IEC 61000-4-2 | 6 kV contact discharges<br>8 kV air discharges |
| Magnetic field immunity<br>IEC 61000-4-8 | 30 A/m long duration and 300 A/m short duration at 50 Hz and 60 Hz |
| Radiated RF immunity<br>IEC 61000-4-3 | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>1V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz |
| EFT/B immunity<br>IEC 61000-4-4 | ±2 kV at 5 kHz on power ports<br>±2 kV at 5 kHz on signal ports<br>±2 kV at 5 kHz on communication ports |
| Surge transient immunity<br>IEC 61000-4-5 | ±1 kV line-line(DM) and ±2 kV line-earth(CM) on power ports<br>±500V line-line(DM) and ±1 kV line-earth(CM) on signal ports<br>±2 kV line-earth(CM) on communication ports |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz |
| Voltage variation<br>IEC 61000-4-11 | 30% dips for 10 ms and 500 ms on AC supply ports<br>60% dips for 100 ms, 200 ms, and 1 s on AC supply ports<br>100% dips for 10 ms and 5 s on AC supply ports |
| Damped oscillatory wave immunity<br>IEC 61000-4-18 | ±500V line-line(DM) and ±1 kV line-earth (CM) on signal ports<br>±1 kV line-line(DM) and ±2.5 kV line-earth (CM) on power ports<br>±500V line-earth(CM) on communication ports |
| Environmental rating | IP30 |
| Electric Power Stations Communications Networking<br>EEE 1613 | EEE 1613 |
| Electric Substations Communications Networking<br>IEC 61850-3 | IEC 61850-3(1) |

(1) The switch only meets the requirements of IEC 61850-3 when powered by a redundant power supply configuration.

## Table 18 - Certifications - Stratix 5410 Switches

| Certifications (when product is marked)[1] | Stratix 5410 Switches |
|---|---|
| c-UL-us | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.<br>UL Listed for Class I, Zone 2 Hazardous Locations, certified for U.S. and Canada. See UL File E194810.<br>• Class 1, Zone 2, Ex nA nC IIC T4 Gc X<br>• Class 1, Zone 2, AEx nA nC IIC T4 Gc |
| CE | European Union 1999/5/EC R&TTE Directive, compliant with:<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>• EN 300 440-2 V1.4.1; ERM, SRD<br>• EN 301 489-1 V1.9.2; ERM, EMC<br>• EN 301 489-3 V1.6.1; ERM, EMC, SRD<br>• EN 60950-1; Information Technology Equipment<br>European Union 2011/65/EU RoHS, compliant with:<br>• EN 50581; Technical Documentation |
| RCM | Australian Radiocommunications Act, compliant with:<br>• EN 61000-6-4; Industrial Emissions |
| Ex | European Union 94/9/EC ATEX Directive, compliant with:<br>• EN 60079-0; General Requirements<br>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>• Ex nA nC IIC T4 Gc<br>• DEMKO15ATEX1492X |
| KC | Korean Registration of Broadcasting and Communications Equipment, compliant with:<br>• Article 58-2 of Radio Waves Act, Clause 3 |
| EtherNet/IP | ODVA conformance tested to EtherNet/IP specifications |
| RED | Hereby, Rockwell Automation declares that the radio equipment type Stratix 5410 is in compliance with Directive 2014/53/EU. The full text of the EU Declaration of Conformity is available at the following internet address: www.rockwellautomation.com |
| BSMI | CNS 13438 (95); CNS14336-1 (99) Taiwan |

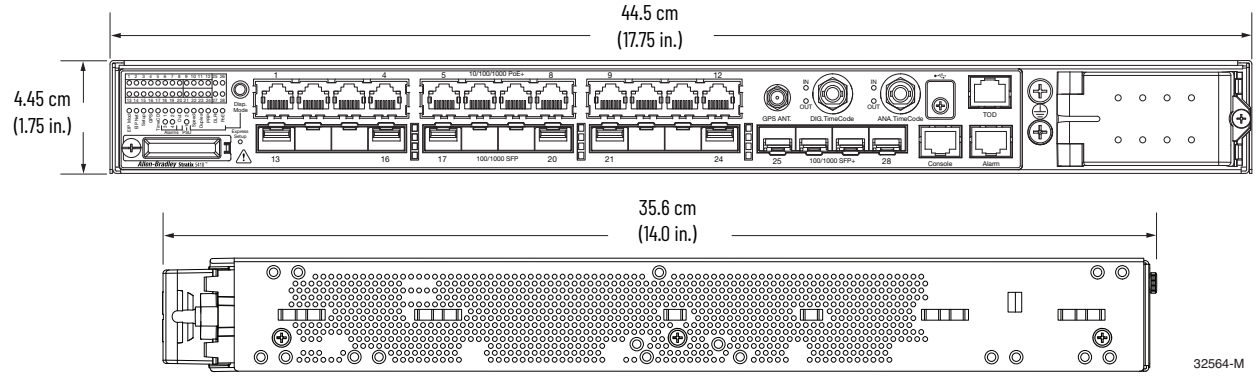
(1) See the Product Certification link at http://www.ab.com for declarations of conformity, certificates, and other certification details.

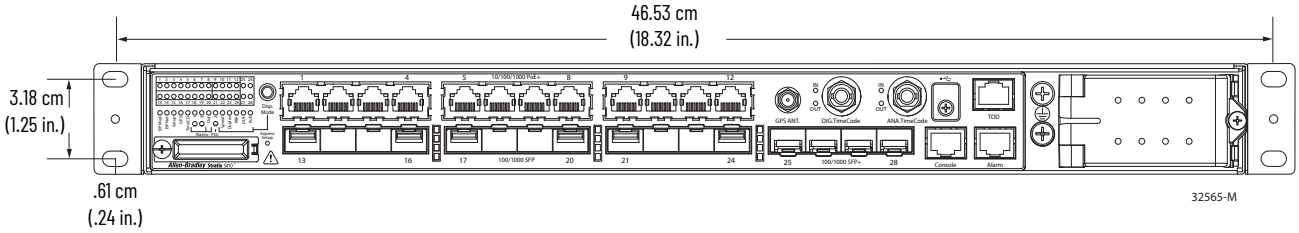
# Dimensions—Stratix 5410 Switches

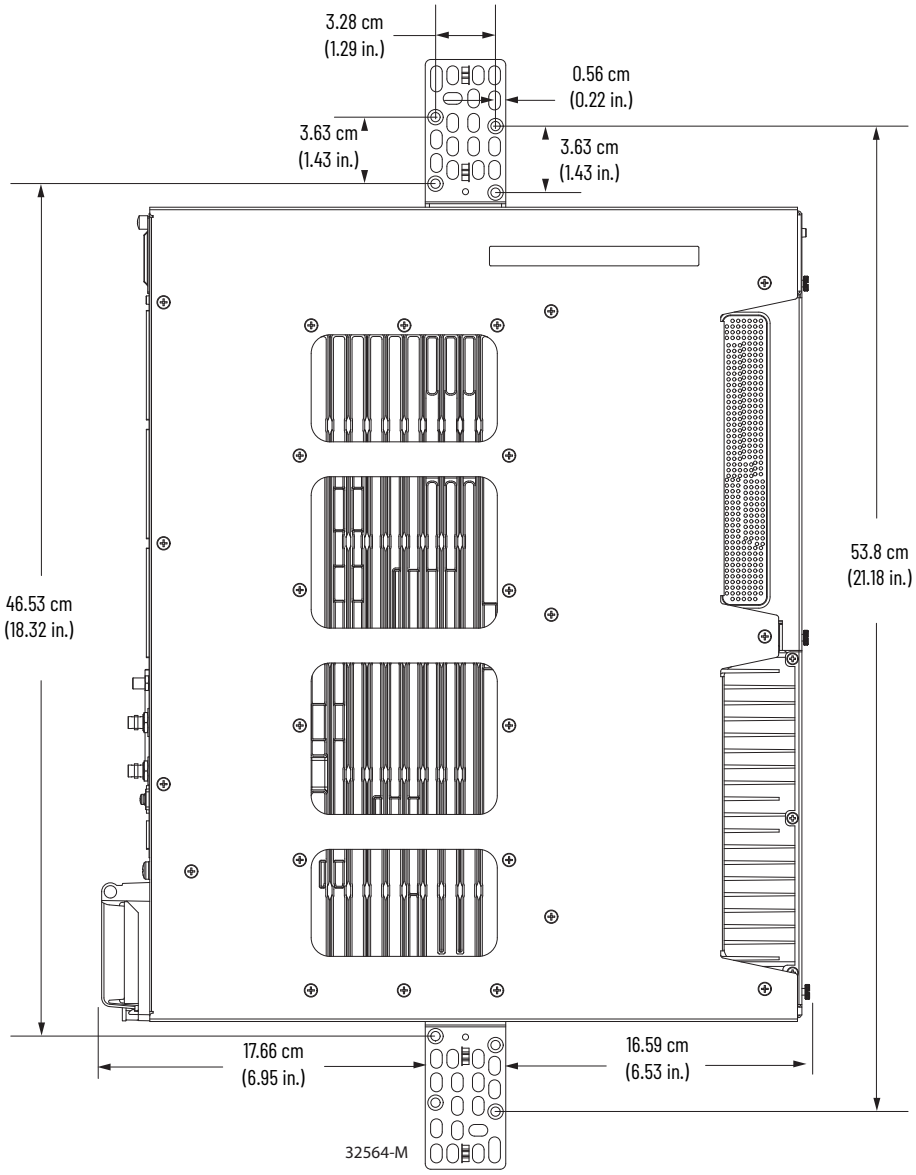
To prevent the switch from overheating, observe the following minimum clearances:

- Top and bottom: 44.45 mm (1.75 in.)
- Sides: 50.8 mm (2.0 in.)
- Front: 50.8 mm (2.0 in.)

These diagrams are representative of the Stratix 5410 switches. Actual faceplates vary depending on the catalog number.




3.28 cm
(1.29 in.)
0.56 cm
(0.22 in.)
3.63 cm
(1.43 in.)
3.63 cm
(1.43 in.)
46.53 cm
(18.32 in.)
53.8 cm
(21.18 in.)
17.66 cm
(6.95 in.)
16.59 cm
(6.53 in.)
32564-M

# Stratix 5700 Ethernet Managed Switches

| Cat. No. | Total Ports | RJ45 Ports[1] | Combo Ports | PoE/PoE+ Ports | SFP Slots | Firmware Type | CIP Sync (IEEE 1588) | NAT | DLR | Conformal Coating |
|---|---|---|---|---|---|---|---|---|---|---|
| 1783-BMS4S2SGL | 6 | – | – | – | 4 FE + 2 GE | Lite | – | – | – | – |
| 1783-BMS4S2SGA | 6 | – | – | – | 4 FE + 2 GE | Full | – | – | – | – |
| 1783-BMS06SL | 6 | 4 FE | – | – | 2 FE | Lite | – | – | – | – |
| 1783-BMS06SA | 6 | 4 FE | – | – | 2 FE | Full | – | – | – | – |
| 1783-BMS06TL | 6 | 6 FE | – | – | – | Lite | – | – | – | – |
| 1783-BMS06TA | 6 | 6 FE | – | – | – | Full | – | – | – | – |
| 1783-BMS06SGL | 6 | 4 FE | – | – | 2 GE | Lite | – | – | – | – |
| 1783-BMS06SGA | 6 | 4 FE | – | – | 2 GE | Full | – | – | – | – |
| 1783-BMS06TGL | 6 | 4 FE + 2 GE | – | – | – | Lite | – | – | – | – |
| 1783-BMS06TGA | 6 | 4 FE + 2 GE | – | – | – | Full | – | – | – | – |
| 1783-BMS10CL | 10 | 8 FE | 2 FE | – | – | Lite | – | – | – | – |
| 1783-BMS10CA | 10 | 8 FE | 2 FE | – | – | Full | – | – | – | – |
| 1783-BMS10CGL | 10 | 8 FE | 2 GE | – | – | Lite | – | – | – | – |
| 1783-BMS10CGA | 10 | 8 FE | 2 GE | – | – | Full | – | – | – | – |
| 1783-BMS10CGP | 10 | 8 FE | 2 GE | – | – | Full | Yes | – | Yes | – |
| 1783-BMS10CGN | 10 | 8 FE | 2 GE | – | – | Full | Yes | Yes | Yes | – |
| 1783-BMS12T4E2CGL | 18 | 12 FE | 2 GE | 4 FE | – | Lite | – | – | Yes | – |
| 1783-BMS12T4E2CGP | 18 | 12 FE | 2 GE | 4 FE | – | Full | Yes | – | Yes | – |
| 1783-BMS12T4E2CGNK | 18 | 12 FE | 2 GE | 4 FE | – | Full | Yes | Yes | Yes | Yes |
| 1783-BMS20CL | 20 | 16 FE | 2 FE | – | 2 FE | Lite | – | – | Yes | – |
| 1783-BMS20CA | 20 | 16 FE | 2 FE | – | 2 FE | Full | – | – | Yes | – |
| 1783-BMS20CGL | 20 | 16 FE | 2 GE | – | 2 FE | Lite | – | – | Yes | – |
| 1783-BMS20CGP | 20 | 16 FE | 2 GE | – | 2 FE | Full | Yes | – | Yes | – |
| 1783-BMS20CGN | 20 | 16 FE | 2 GE | – | 2 FE | Full | Yes | Yes | Yes | – |
| 1783-BMS20CGPK | 20 | 16 FE | 2 GE | – | 2 FE | Full | Yes | – | Yes | Yes |

(1) FE = Fast Ethernet; GE = Gigabit Ethernet.

## Table 19 - Technical Specifications - Stratix 5700 Switches

| Attribute | 1783-BMS06SL, 1783-BMS06SA, 1783-BMS06TL, 1783-BMS06TA, 1783-BMS06SGL, 1783-BMS06SGA, 1783-BMS06TGL, 1783-BMS06TGA | 1783-BMS10CL, 1783-BMS10CA, 1783-BMS10CGL, 1783-BMS10CGA | 1783-BMS10CGN, 1783-BMS10CGP | 1783-BMS20CL, 1783-BMS20CA, 1783-BMS20CGL, 1783-BMS20CGP, 1783-BMS20CGN, 1783-BMS20CGPK | 1783-BMS4S2SGL, 1783-BMS4S2SGA |
|---|---|---|---|---|---|
| Alarm relay | 1 A @ 30V DC or 0.5 A @ 48V DC | | | | |
| Power input | 0.5…2.0 A max @ 12…48V DC<br>Class 2/SELV | | | 0.5…3.0 A max @ 12…48V DC<br>Class 2/SELV | 0.5…2.0 A max @ 12…48V DC<br>Class 2/SELV |
| Power consumption | 9.5 W @ 24V DC @ 40 °C (104 °F)<br>15 W max | 12.5 W @ 24V DC/40 °C (104 °F)<br>17 W max | 15 W @ 24V DC/ 40 °C (104 °F)<br>20 W max | 21 W @ 24V DC/40 °C (104 °F)<br>30 W max | 12.5 W @ 24V DC/40 °C (104 °F)<br>14 W max |
| Power dissipation | 15 W | 17 W | 20 W | 30 W | 14 W |
| Isolation voltage | 50V (continuous), basic insulation type, DC power ports to ground, DC power ports to Ethernet ports, and DC power ports to alarm ports<br>No isolation between individual Ethernet ports<br>No isolation between console port and system<br>Type tested at 850V DC for 60 s | | | | 60V (continuous), basic insulation type, DC power ports to ground, alarm ports to ground, and DC power ports to alarm ports<br>No isolation between console port and system<br>Type tested at 707V DC for 60 s |

## Table 19 - Technical Specifications - Stratix 5700 Switches (continued)

| Attribute | 1783-BMS06SL, 1783-BMS06SA, 1783-BMS06TL, 1783-BMS06TA, 1783-BMS06SGL, 1783-BMS06SGA, 1783-BMS06TGL, 1783-BMS06TGA | 1783-BMS10CL, 1783-BMS10CA, 1783-BMS10CGL, 1783-BMS10CGA | 1783-BMS10CGN, 1783-BMS10CGP | 1783-BMS20CL, 1783-BMS20CA, 1783-BMS20CGL, 1783-BMS20CGP, 1783-BMS20CGN, 1783-BMS20CGPK | 1783-BMS4S2SGL, 1783-BMS4S2SGA |
|---|---|---|---|---|---|
| Wire size, Ethernet connection[1] | RJ45 connector according to IEC 60603-7, 2- or 4-pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702 | | | | – |
| Wire size, DC power connection | 0.5…0.8 $mm^2$ (20…18 AWG) solid or stranded copper wire rated at 75 °C (167 °F) or greater, 1.2 mm (3/64 in.) insulation max, 6.3 mm (0.25 in.) ±0.5 mm (0.02 in.) strip length | | | | |
| Wire size, alarm connection | 0.5…0.8 $mm^2$ (20…18 AWG) solid or stranded, UL/CSA-rated style 1007 or 1569 twisted-pair copper appliance wiring material (AWM) wire, 6.3 mm (0.25 in.) ±0.5 mm (0.02 in.) strip length | | | | |
| Wire size, ground connection | 4.0 $mm^2$ (12 AWG) min, stranded copper wire | | | | |
| Screw torque, power and alarm terminals | 0.23 N•m (2.0 in•lb) | | | | 0.23 N•m (2.0 in•lb) |
| Screw torque, ground terminal, max | 0.96 N•m (8.5 in•lb) | | | | 0.4 N•m (3.5 in•lb) |
| Weight, approx | 1.11 kg (2.45 lb) | 1.25 kg (2.75 lb) | 1.38 kg (3.05 lb) | 2.04 kg (4.50 lb) | 1.22 kg (2.69 lb) |
| Wiring category[2] | 3 - on console and alarm ports<br>2 - on DC power ports<br>2 - on Ethernet ports | | | | 3 - on console ports<br>2 - on DC power and alarm ports |
| Enclosure type rating | None (open-style) | | | | |
| Pilot duty rating | Alarm not rated | | | | |
| North American temp code | T4 | | | | |
| IEC temp code | T4 | | | | |
| SFP modules[3] | 1783-SFP100FX<br>1783-SFP100LX<br>1783-SFP100EXC<br>1783-SFP100ZXC<br>1783-SFP100T[4]<br>1783-SFP1GSX[5]<br>1783-SFP1GLX[5]<br>1783-SFP1GEXE[5]<br>1783-SFP1GZX[5]<br>1783-SFP1GTE[5] | | | | |
| Memory card | 1784-SD1 | | | | |
| Industry standards | Substation KEMA (IEEE 1613, IEC 61850 - 3)<br>IEEE 1613 Electric Power Stations Communications Networking<br>IEC 61850-3 Electric Substations Communications Networking | | | | |

(1) See page 74 for recommended products.
(2) Use this conductor category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
(3) SFP modules are supported only on switches with combo ports or SFP slots. For SFP specifications, see page 72.
(4) The 1783-SFP100T module requires Stratix 5700 firmware revision 8.001or later.
(5) Gigabit Ethernet (GE) SFP modules work only in GE SFP slots. For a list of Stratix 5700 catalog numbers with GE SFP slots, see page 27.

## Table 20 - Environmental Specifications - Stratix 5700 Switches

| Attribute | 1783-BMS06SL, 1783-BMS06SA, 1783-BMS06TL, 1783-BMS06TA, 1783-BMS06SGL, 1783-BMS06SGA, 1783-BMS06TGL, 1783-BMS06TGA, 1783-BMS10CL, 1783-BMS10CA, 1783-BMS10CGL, 1783-BMS10CGA, 1783-BMS10CGN, 1783-BMS10CGP, 1783-BMS20CL, 1783-BMS20CA, 1783-BMS20CGL, 1783-BMS20CGP, 1783-BMS20CGN, 1783-BMS20CGPK | 1783-BMS4S2SGL, 1783-BMS4S2SGA |
|---|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock) | -40...+60 °C (-40...+140 °F) | |
| Temperature, surrounding air, max | 60 °C (140 °F) | |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...85 °C (-40...185 °F) | |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5...95% noncondensing | |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 2 g @ 10...500 Hz | |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g | |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 55 g | 50 g |
| Emissions<br>CISPR11 (IEC 61000-6-4) | Class A | |
| ESD immunity<br>IEC 61000-4-2 | 8 kV contact discharges<br>15 kV air discharges | 6 kV contact discharges<br>8 kV air discharges |
| Radiated RF immunity<br>IEC 61000-4-3 | 20V/m with 1 kHz sine-wave 80% AM from 80...1000 MHz<br>20V/m with 200 Hz 50% pulse 100% AM at 900 MHz<br>10V/m with 1 kHz sine-wave 80% AM from 1000...2700 MHz | 20V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz<br>20V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz |
| EFT/B immunity<br>IEC 61000-4-4 | ±4 kV at 5 kHz and ±2 kV at 100 kHz on DC power ports<br>±4 kV at 2.5 kHz, ±2 kV at 5 kHz, and ±1 kV at 100 kHz on alarm ports<br>±4 kV at 2.5 kHz, ±2 kV at 5 kHz, and ±1 kV at 100 kHz on Ethernet ports | ±4 kV at 2.5, 5, and 100 kHz on DC power ports<br>±4 kV at 2.5, 5, and 100 kHz on alarm ports |
| Surge transient immunity<br>IEC 61000-4-5 | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on DC power ports<br>±2 kV line-earth (CM) on Ethernet ports | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on DC power ports<br>±1 kV line-line (DM) and ±2 kV line-earth (CM) on alarm ports |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz | |
| Magnetic field immunity<br>IEC 61000-4-8 | — | 300A/m long duration at 50 and 60 Hz<br>1000A/m short duration at 50 and 60 Hz |
| Magnetic pulse immunity<br>IEC 61000-4-9 | — | 300A/m pulse |
| Voltage variation<br>IEC 61000-4-29 | 10 ms interruption on DC power ports | |
| Damped oscillatory wave immunity<br>IEC 61000-4-18 | ±1 kV line-line (DM) and ±2.5 kV line-earth (CM) on power ports | ±1 kV line-line (DM) and ±2.5 kV line-earth (CM) on DC power ports at 1 MHz and 100 kHz<br>±1 kV line-line (DM) and ±2.5 kV line-earth (CM) on alarm ports at 1 MHz and 100 kHz |
| Environmental rating | IP30 | |

# Stratix 5700 PoE Switches

## Table 21 - Technical Specifications - Stratix 5700 PoE Switches

| Attribute | 1783-BMS12T4E2CGL, 1783-BMS12T4E2CGP, 1783-BMS12T4E2CGNK | |
|---|---|---|
| Ethernet data rate | 10/100 Mbps | |
| Alarm relay | 30V DC, 1 A or 48V DC, 0.5 A | |
| Switch power input, max | 12...48V DC, 0.5...3.0 A, Class 2/SELV | |
| PoE power input(1) | 44...57V DC, 2.5 A max | |
| PoE+ power input(1) | 50...57V DC, 2.5 A max | |
| Power consumption(2) | 15 W @ 24V DC 40 °C (104 °F), 30 W max | |
| Power dissipation | 30 W | |
| Isolation voltage | 60V (continuous), basic insulation type, DC power ports to ground, and PoE power ports to ground<br>No isolation between individual Ethernet ports<br>No isolation between PoE power and Ethernet ports<br>No isolation between console port and system<br>Type tested at 1585V DC for 60 s | |
| Wire size, Ethernet connection(3) | RJ45 connector according to IEC 60603-7, 2- or 4-pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702 | |
| Wire size, DC power connection | 0.5...0.8 $mm^2$ (20...18 AWG) solid or stranded copper wire rated at 75 °C (167 °F) or greater, 1.2 mm (3/64 in.) insulation max, 6.3 mm (0.25 in.) ±0.5 mm (0.02 in.) strip length | |
| Wire size, alarm connection | 0.5...0.8 $mm^2$ (20...18 AWG) solid or stranded, UL/CSA-rated style 1007 or 1569 twisted-pair copper appliance wiring material (AWM) wire, 6.3 mm (0.25 in.) ±0.5 mm (0.02 in.) strip length | |
| Wire size, ground connection | 4.0 $mm^2$ (12 AWG) min, stranded copper wire | |
| Screw torque, power and alarm terminals | 0.23 N•m (2.0 in•lb) | |
| Screw torque, ground terminals, max | 0.96 N•m (8.5 in•lb) | |
| Weight, approx | 1.11 kg (2.45 lb) | |
| Wiring category(4) | 3 - on console and alarm ports<br>2 - on DC power ports<br>2 - on Ethernet ports | |
| Pilot duty rating | Alarm not rated | |
| Enclosure type rating | None (open-style) | |
| North American temp code | T4 | |
| IEC temp code | T4 | |
| SFP modules(5) | 1783-SFP100FX<br>1783-SFP100LX<br>1783-SFP100EXC<br>1783-SFP100ZXC<br>1783-SFP100T(6) | 1783-SFP1GSX(7)<br>1783-SFP1GLX(7)<br>1783-SFP1GEXE(7)<br>1783-SFP1GZX(7)<br>1783-SFP1GTE(7) |
| Memory card | 1784-SD1 | |
| Industry standards | Substation KEMA (IEEE 1613, IEC 61850 - 3)<br>IEEE 1613 Electric Power Stations Communications Networking<br>IEC 61850-3 Electric Substations Communications Networking | |

(1) The initial power allocation and the maximum power allocation on a PoE port are configurable in Device Manager or the Logix Designer application. For details about PoE power budgets, see the Stratix Managed Switches User Manual, publication 1783-UM007.

(2) For PoE configurations, the power consumption values listed represent the highest values that can be configured using all ports. A general guideline is 0.5 W per 30 W PoE+ port used.
(3) See page 74 for recommended products.
(4) Use this conductor category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
(5) SFP modules are supported only on switches with combo ports or SFP slots. For SFP specifications, see page 72.
(6) The 1783-SFP100T module requires Stratix 5700 firmware revision 8.001or later.
(7) Gigabit Ethernet (GE) SFP modules work only in GE SFP slots. For a list of Stratix 5700 catalog numbers with GE SFP slots, see page 27.

## Table 22 - Environmental Specifications - Stratix 5700 PoE Switches

| Attribute | 1783-BMS12T4E2CGL, 1783-BMS12T4E2CGP, 1783-BMS12T4E2CGNK |
|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock) | -40...+60 °C (-40...+140 °F) |
| Temperature, surrounding air, max | 60 °C (140 °F) |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F) |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5...95% noncondensing |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 2 g @ 10...500 Hz |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 50 g |
| Emissions<br>CISPR11 (IEC 61000-6-4) | Class A |
| ESD immunity<br>IEC 61000-4-2 | 6 kV contact discharges<br>8 kV air discharges |
| Radiated RF immunity<br>IEC 61000-4-3 | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz<br>1V/m with 1 kHz sine-wave 80% AM from 1000...2700 MHz |
| EFT/B immunity<br>IEC 61000-4-4 | ±4 kV at 5 kHz on DC power ports<br>±4 kV at 5 kHz on alarm ports<br>±4 kV at 5 kHz on Ethernet ports |
| Surge transient immunity<br>IEC 61000-4-5 | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on DC power ports<br>±2 kV line-earth (CM) on Ethernet ports |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz |
| Damped oscillatory wave immunity<br>IEC 61000-4-18 | ±1 kV line-line (DM) and ±2.5 kV line-earth (CM) on power ports |

## Table 23 - Certifications - Stratix 5700 Switches

| Certifications (when product is marked)[1] | Stratix 5700 Switches |
|---|---|
| c-UL-us | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.<br>UL Listed for Class I, Zone 2 Hazardous Locations, certified for U.S. and Canada. See UL File E194810.<br>AEx/Ex nA nC IIC T4 Gc X |
| CE | European Union 2004/108/EC EMC Directive, compliant with:<br>• EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>• EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>European Union 2011/65/EU RoHS, compliant with:<br>• EN 50581; Technical Documentation |
| RCM | Australian Radiocommunications Act, compliant with:<br>• AS/NZS CISPR 11; Industrial Emissions |
| Ex | European Union 94/9/EC ATEX Directive, compliant with:<br>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>• EN 60079-0; General Requirements<br>• II 3 G Ex nA nC IIC T4 Gc X |
| KC | Korean Registration of Broadcasting and Communications Equipment, compliant with:<br>• Article 58-2 of Radio Waves Act, Clause 3 |
| EtherNet/IP | ODVA conformance tested to EtherNet/IP specifications |
| Anatel | Brazilian regulations (Federal Law 9472/97) |
| EAC | Russian Customs Union TR CU 020 EMC Technical Regulation |
| BSMI | CNS 13438 (95); CNS14336-1 (99) Taiwan |

(1) See the Product Certification link at http://www.ab.com for declarations of conformity, certificates, and other certification details.

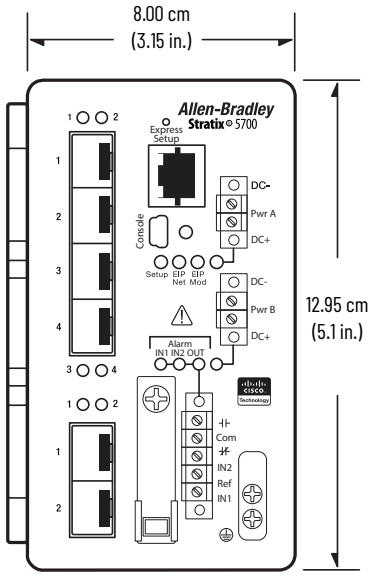
# Dimensions—Stratix 5700 Switches

To prevent the switch from overheating, observe the following minimum clearances:

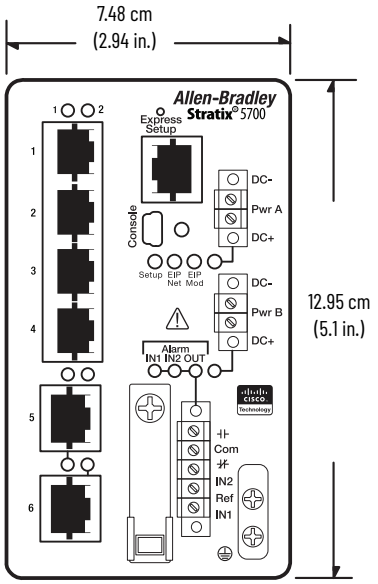
- Top and bottom: 50.8 mm (2.0 in.)
- Sides: 50.8 mm (2.0 in.)
- Front: 50.8 mm (2.0 in.)

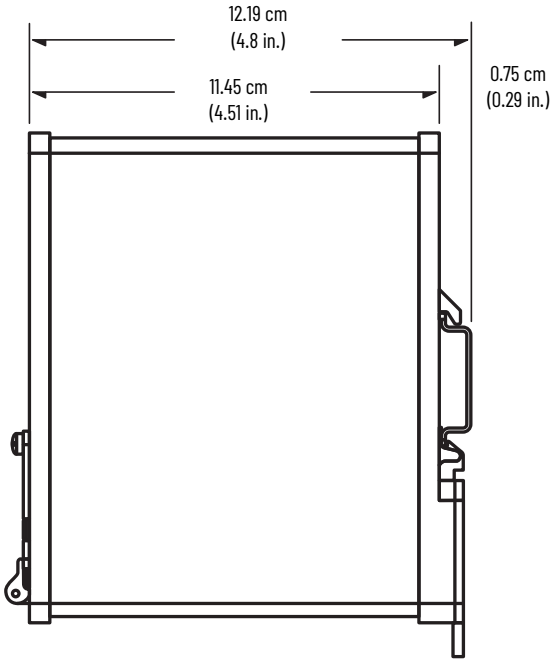
These diagrams are representative of the Stratix 5700 switches. Actual faceplates vary depending on the catalog number.

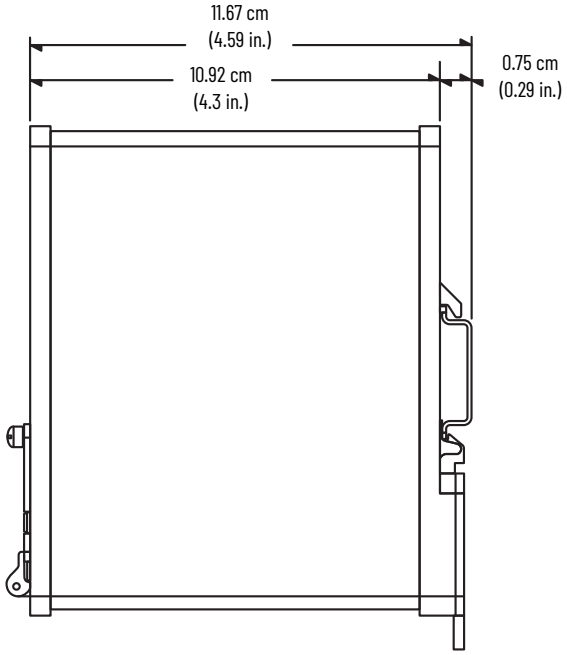
6 SFP-port Switches
1783-BMS4S2SGL, 1783-BMS4S2SGA



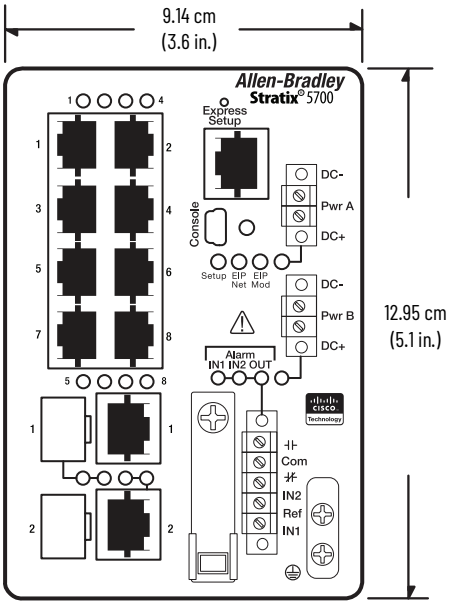

6-port Switches
1783-BMS06SL, 1783-BMS06SA, 1783-BMS06TL, 1783-BMS06TA,
1783-BMS06SGL, 1783-BMS06SGA, 1783-BMS06TGL, 1783-BMS06TGA

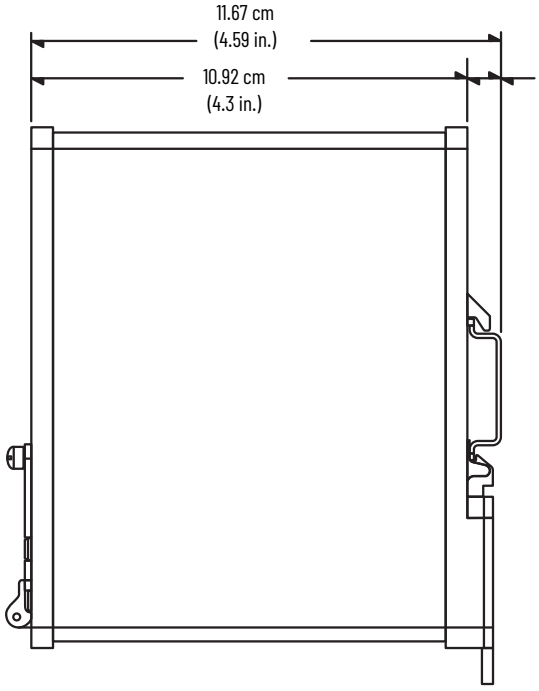


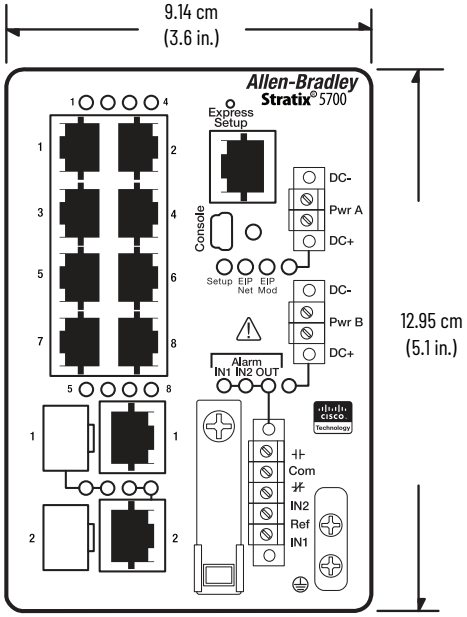



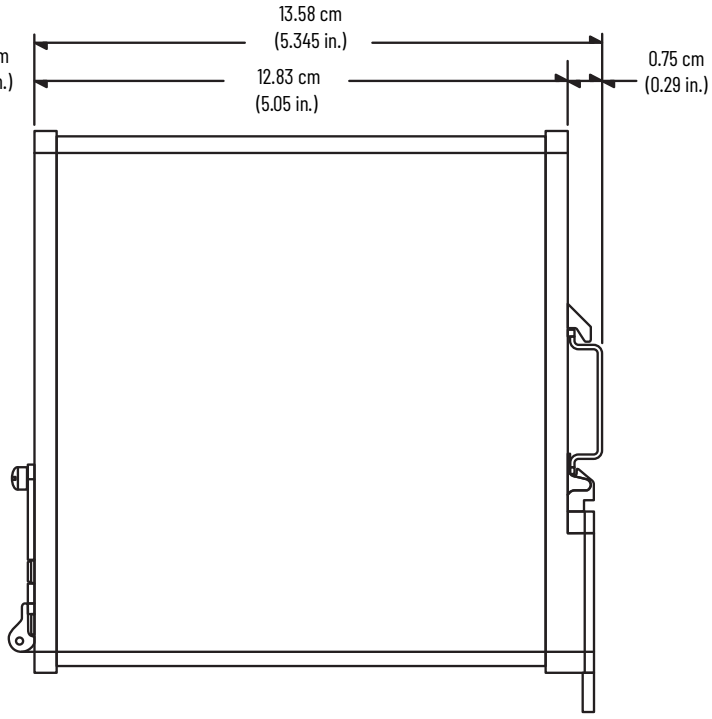
10-port Switches
1783-BMS10CL, 1783-BMS10CA,
1783-BMS10CGL, 1783-BMS10CGA



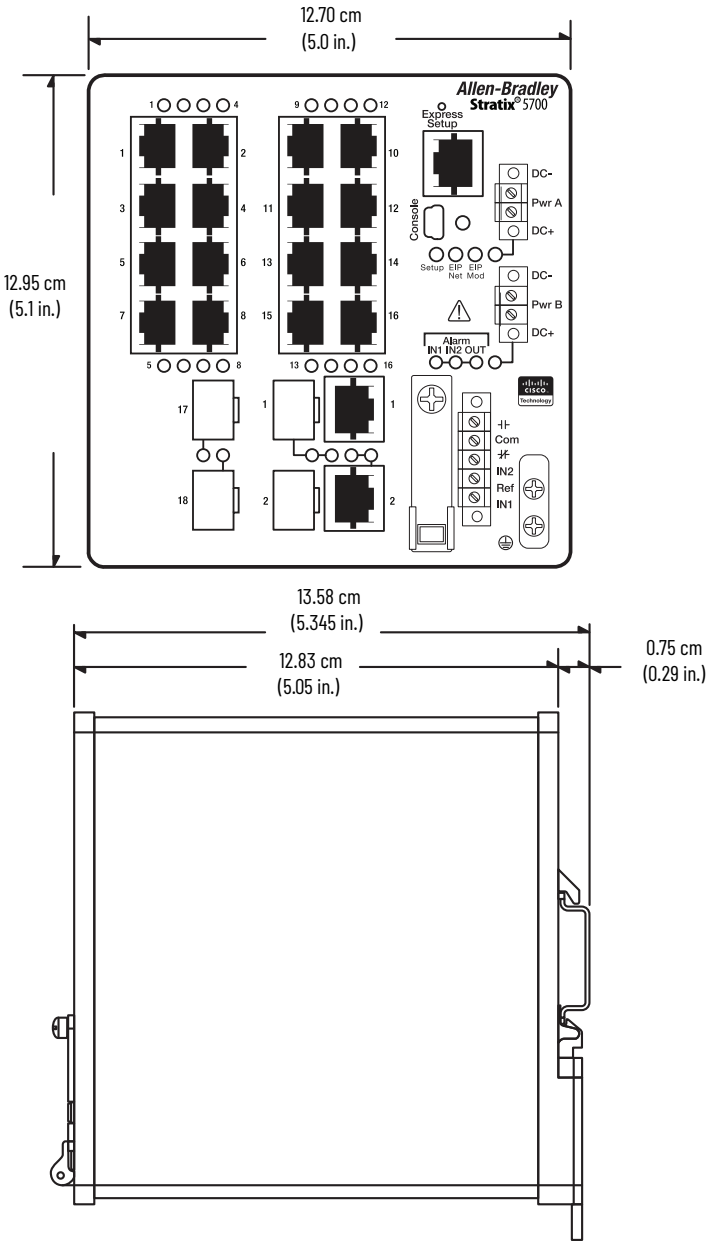




10-port Switch
1783-BMS10CGP, 1783-BMS10CGN



18-port and 20-port Switches
1783-BMS12T4E2CGNK, 1783-BMS12T4E2CGP, 1783-BMS12T4E2CGL, 1783-BMS20CL, 1783-BMS20CA, 1783-BMS20CGL, 1783-BMS20CGP, 1783-BMS20CGN, 1783-BMS20CGPK



# ArmorStratix 5700 Ethernet Managed Switches

| Cat. No. | Total Ports | M12 D-code Ports | M12 X-code Ports | PoE/PoE+ Ports | Firmware Type | CIP Sync (IEEE 1588) | NAT | DLR |
|---|---|---|---|---|---|---|---|---|
| 1783-ZMS8TA | 8 | 8 FE | – | – | Full | – | – | – |
| 1783-ZMS4T4E2TGP | 10 | 4 FE | 2 GE | 4 FE | Full | Yes | – | Yes |
| 1783-ZMS4T4E2TGN | 10 | 4 FE | 2 GE | 4 FE | Full | Yes | Yes | Yes |
| 1783-ZMS16TA | 16 | 16 FE | – | – | Full | – | – | – |
| 1783-ZMS8T8E2TGP | 18 | 8 FE | 2 GE | 8 FE | Full | Yes | – | Yes |
| 1783-ZMS8T8E2TGN | 18 | 8 FE | 2 GE | 8 FE | Full | Yes | Yes | Yes |
| 1783-ZMS24TA | 24 | 24 FE | – | – | Full | – | – | – |

## Table 24 - Technical Specifications - ArmorStratix 5700 Switches

| Attribute | 1783-ZMS8TA | 1783-ZMS16TA | 1783-ZMS24TA | 1783-ZMS4T4E2TGP, 1783-ZMS4T4E2TGN | 1783-ZMS8T8E2TGP, 1783-ZMS8T8E2TGN |
|---|---|---|---|---|---|
| Power input | 1.5 A max @ 12...48V DC | 1.8 A max @ 12...48V DC | 2.0 A max @ 12...48V DC | User supply (non PoE):<br>9.6...60V DC, 2.9 A max<br>Alarm:<br>30V DC, 1 A or 48V DC, 0.5 A | User supply (non PoE): 9.6...60V DC, 3.3 A max<br>Alarm:<br>30V DC, 1 A or 48V DC, 0.5 A |
| PoE power input[1] | – | | | 44...57V DC (48V DC nom) for PoE<br>50...57V DC (54V DC nom) for PoE+ or a combination of PoE/PoE+ | |
| Power consumption, max[2] | 7 W @ 24V DC @ 40°C (104°F) 17 W | 10 W @ 24V DC @ 40°C (104°F) 20 W | 12 W @ 24V DC @ 40°C (104°F) 22 W | 11.5 W @ 24V DC @ 40°C (104°F)<br>22 W max<br>Max PoE power @ 50V: 62 W | 17 W @ 24V DC @ 40°C (104°F) 30 W<br>Max PoE power @ 50V: 120 W |
| Power dissipation | 17 W | 20 W | 22 W | 21 W | 24 W |
| Isolation voltage | 60V (continuous), basic insulation type, DC power ports to ground, and PoE power ports to ground<br>No isolation between individual Ethernet ports<br>No isolation between PoE power and Ethernet ports<br>No isolation between console port and system<br>Type tested at 1570V DC for 60 s | | | | |
| Wire size, ground connection | 4.0 $mm^2$ (12 AWG) min, stranded copper wire | | | | |
| Wire size, Ethernet connection[3] | IP67-rated M12 D-code or X-code connectors according to ODVA EtherNet/IP specifications and ISO/IEC 24702/61918 | | | | |
| Screw torque, ground terminal, max | 1.13 N•m (10.0 in•lb) | | | | |
| Weight, approx | 3 kg (7.19 lb) | 3 kg (7.28 lb) | 4 kg (8.86 lb) | 3 kg (7.19 lb) | 3 kg (7.28 lb) |
| Wiring category[4] | 3 - on console<br>2 - on DC power ports<br>2 - on Ethernet ports | | | 3 - on console<br>2 - on DC power and alarm ports<br>2 -on Ethernet ports | |
| Pilot duty rating | – | – | – | Alarm not rated | |
| Enclosure type rating | Meets IP66, IP67, and Type 4 | | | | |
| Industry standards | Substation KEMA (IEEE 1613, IEC 61850 - 3)<br>IEEE 1613 Electric Power Stations Communications Networking<br>IEC 61850-3 Electric Substations Communications Networking | | | | |

(1) The initial power allocation and the maximum power allocation on a PoE port are configurable in Device Manager or the Logix Designer application. For details about PoE power budgets, see the Stratix Managed Switches User Manual, publication 1783-UM007.

(2) For PoE configurations, the power consumption values listed represent the highest values that can be configured using all ports. A general guideline is 0.5 W per 30 W PoE+ port used.
(3) See page 74 for recommended products.
(4) Use this conductor category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

## Table 25 - Environmental Specifications - ArmorStratix 5700 Switches

| Attribute | 1783-ZMS8TA, 1783-ZMS16TA, 1783-ZMS24TA | 1783-ZMS4T4E2TGP, 1783-ZMS8T8E2TGP, 1783-ZMS4T4E2TGN, 1783-ZMS8T8E2TGN |
|---|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock) | -40...+60 °C (-40...+140 °F) | |
| Temperature, ambient, max | 60 °C (140 °F) | |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F) | |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5...95% noncondensing | |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 2 g @ 10...500 Hz | |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 15 g | |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g | |
| Emissions<br>CISPR11 (IEC 61000-6-4) | Class A | |
| ESD immunity<br>IEC 61000-4-2 | 8 kV contact discharges<br>15 kV air discharges | |
| Radiated RF immunity<br>IEC 61000-4-3 | 20V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>20V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz | |
| EFT/B immunity<br>IEC 61000-4-4 | ±4 kV at 5 kHz on DC power ports<br>±4 kV at 5 kHz on Ethernet ports | ±4 kV at 5 kHz on DC power ports<br>±4 kV at 5 kHz on Ethernet ports<br>±4 kV at 5 kHz on alarm ports |
| Surge transient immunity<br>IEC 61000-4-5 | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on DC power ports<br>±4 kV line-earth (CM) on Ethernet ports | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on DC power ports<br>±4 kV line-earth (CM) on Ethernet ports<br>±1 kV line-line (DM) and ±2 kV line-earth (CM) on alarm ports |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz | |
| Magnetic field immunity<br>IEC 6100-4-8 | 300 A/m long duration and 1000 A/m short duration at 50 Hz and 60 Hz | |
| Magnetic pulse immunity<br>IEC 6100-4-9 | 300 A/m pulse | |
| Damped oscillatory wave immunity<br>IEC 61000-4-18 | ±1 kV line-line (DM) and ±2.5 kV line-earth (CM) on DC power ports<br>±2.5 kV line-earth (CM) on Ethernet ports | ±1 kV line-line (DM) and ±2.5 kV line-earth (CM) on DC power and alarm ports<br>±2.5 kV line-earth (CM) on Ethernet ports |
| Environmental rating | IP66, IP67 | |

## Table 26 - Certifications—ArmorStratix 5700 Switches

| Certifications (when product is marked)[1] | 1783-ZMS8TA, 1783-ZMS16TA, 1783-ZMS24TA | 1783-ZMS4T4E2TGP, 1783-ZMS8T8E2TGP, 1783-ZMS4T4E2TGN, 1783-ZMS8T8E2TGN |
|---|---|---|
| c-UL-us | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. | |
| CE | European Union 2004/108/EC EMC Directive, compliant with:<br>• EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>• EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>European Union 2011/65/EU RoHS, compliant with:<br>• EN 50581; Technical Documentation | |
| RCM | Australian Radiocommunications Act, compliant with:<br>• EN 61000-6-4; Industrial Emissions | |
| KC | Korean Registration of Broadcasting and Communications Equipment, compliant with:<br>• Article 58-2 of Radio Waves Act, Clause 3 | |
| EtherNet/IP | ODVA conformance tested to EtherNet/IP specifications | |
| Anatel | Brazilian regulations (Federal Law 9472/97) | |
| EAC | Russian Customs Union TR CU 020 EMC Technical Regulation | |
| BSMI | CNS 13438 (95); CNS14336-1 (99) Taiwan | |

(1) See the Product Certification link at http://www.ab.com for declarations of conformity, certificates, and other certification details.

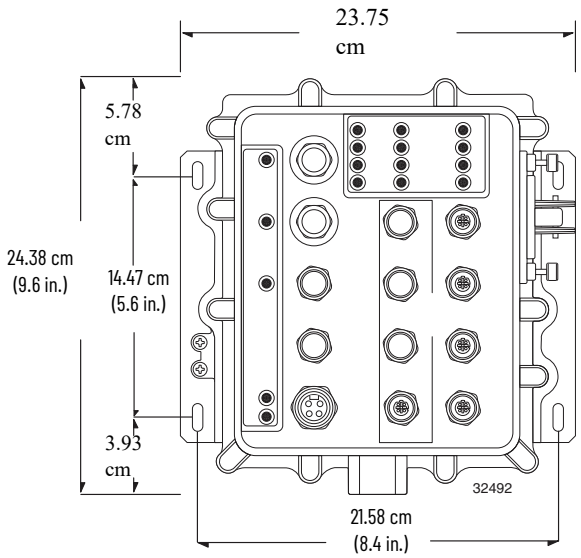
# Dimensions—ArmorStratix 5700 Switches

To prevent the switch from overheating, observe the following minimum clearances:

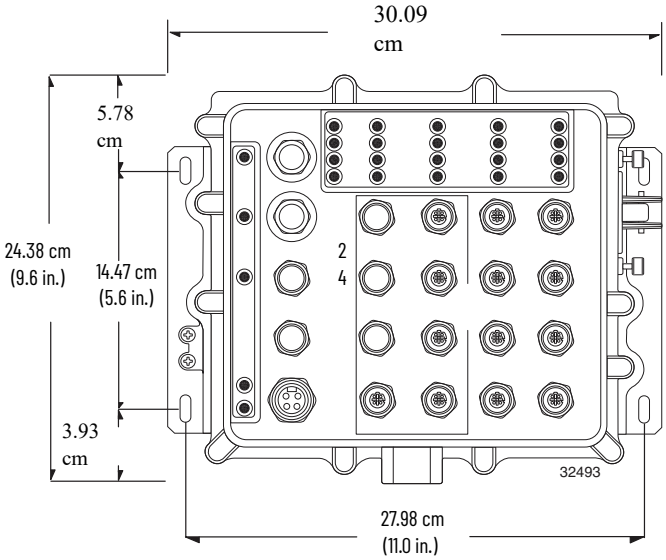
- Top and bottom: 50.8 mm (2.0 in.)
- Sides: 50.8 mm (2.0 in.)
- Front: 50.8 mm (2.0 in.)

These diagrams are representative of the ArmorStratix 5700 switches. Actual faceplates vary depending on the catalog number.

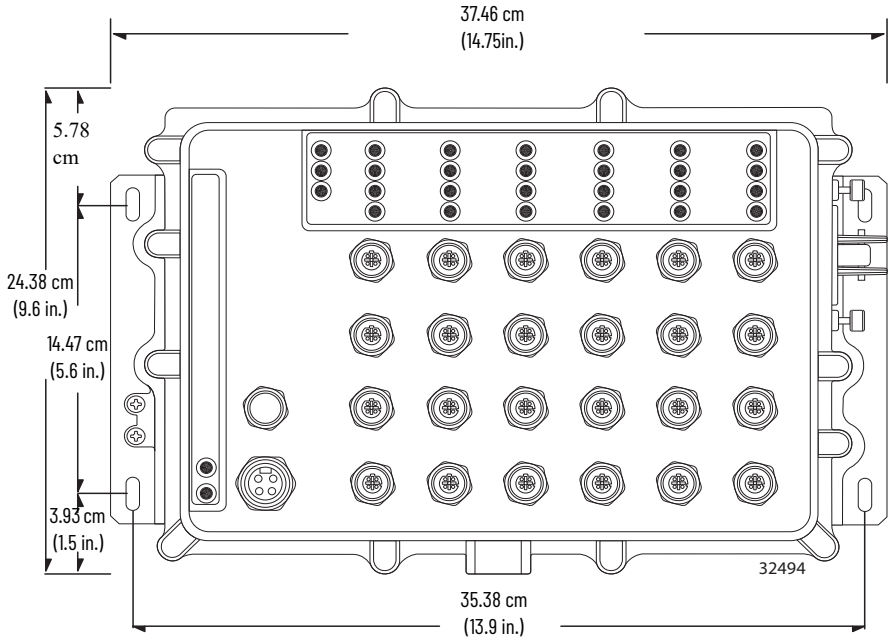
8-port and 10-port Switches
1783-ZMS8TA, 1783-ZMS4T4E2TGP, 1783-ZMS4T4E2TGN



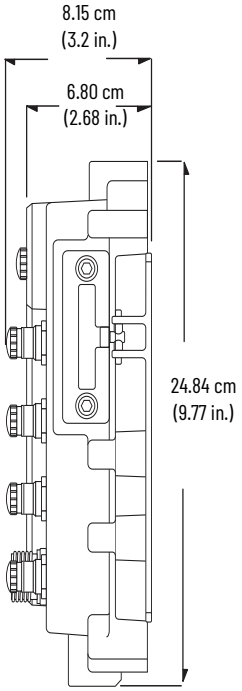

16-port and 18-port Switches
1783-ZMS16TA, 1783-ZMS8T8E2TGP, 1783-ZMS8T8E2TGN



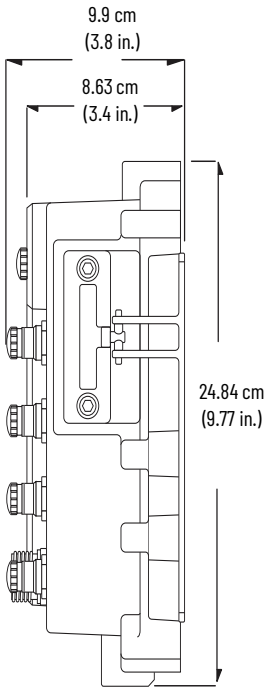

24-port Switch
1783-ZMS24TA



16-port and 24-port Switches
1783-ZMS16TA, 1783-ZMS24TA,
1783-ZMS8T8E2TGP,
1783-ZMS8T8E2TGN

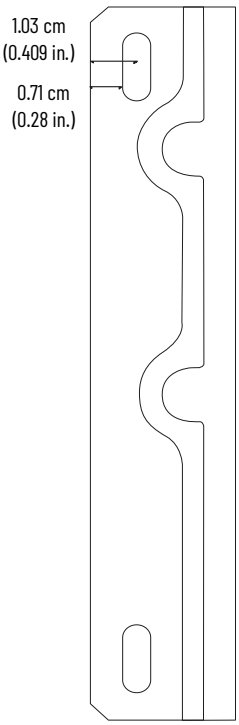



8-port and 10-port Switches
1783-ZMS8TA, 1783-ZMS4T4E2TGP,
1783-ZMS4T4E2TGN




32496

All Switches



# Stratix 5800 Ethernet Managed Switches and Expansion Modules

| Cat. No. | Total Ports | RJ45 Ports[1] | PoE/PoE+ Ports[2] | SFP Slots | Modular | Firmware Type | Advanced Feature Support |
|---|---|---|---|---|---|---|---|
| **Switches** | | | | | | | |
| 1783-MMS10B | 10 | 8 GE | – | 2 GE | No | Layer 2 | No |
| 1783-MMS10BE | 10 | – | 8 GE | 2 GE | No | Layer 2 | No |
| 1783-MMS10 | 10 | 8 GE | – | 2 GE | Yes | Layer 2 | No |
| 1783-MMS10E | 10 | – | 8 GE | 2 GE | Yes | Layer 2 | No |
| 1783-MMS10EA | 10 | – | 8 GE | 2 GE | Yes | Layer 2 | Yes |
| 1783-MMS10R | 10 | 8 GE | – | 2 GE | Yes | Layer 3 | No |
| 1783-MMS10ER | 10 | – | 8 GE | 2 GE | Yes | Layer 3 | No |
| 1783-MMS10EAR | 10 | – | 8 GE | 2 GE | Yes | Layer 3 | Yes |
| **Expansion Modules** | | | | | | | |
| 1783-MMX8T | 8 | 8 GE | – | – | – | – | No |
| 1783-MMX8E | 8 | – | 8 GE | – | – | – | No |
| 1783-MMX8EA | 8 | – | 8 GE | – | – | – | Yes |
| 1783-MMX8S | 8 | – | – | 8 GE | – | – | No |
| 1783-MMX8SA | 8 | – | – | 8 GE | – | – | Yes |
| 1783-MMX6T2S | 8 | 6 GE | – | 2 GE | – | – | No |
| 1783-MMX16T | 16 | 16 GE | – | – | – | – | No |
| 1783-MMX16E | 16 | – | 16 GE | – | – | – | No |
| 1783-MMX14T2S | 16 | 14 GE | – | 2 GE | – | – | No |

(1) GE = Gigabit Ethernet
(2) There is a power budget of 360 W shared across PoE/PoE+ ports.

These restrictions apply to Stratix 5800 expansion modules:

- Only one expansion module can be mated to one modular switch.
- Expansion modules with PoE ports are supported only on modular switches with PoE ports.
- Expansion modules with advanced feature support are supported only on modular switches with advanced feature support.

**Table 27 - Stratix 5800 Switches and Expansion Module Compatibility**

| Cat. No. | 1783-MMX8T | 1783-MMX8E | 1783-MMX8EA | 1783-MMX8S | 1783-MMX8SA | 1783-MMX6T2S | 1783-MMX16T | 1783-MMX16E | 1783-MMX14T2S |
|---|---|---|---|---|---|---|---|---|---|
| 1783-MMS10B | No expansion module support | | | | | | | | |
| 1783-MMS10BE | No expansion module support | | | | | | | | |
| 1783-MMS10 | Supported | Not Supported | Not Supported | Supported | Not Supported | Supported | Supported | Not Supported | Supported |
| 1783-MMS10E | Supported | Supported | Not Supported | Supported | Not Supported | Supported | Supported | Supported | Supported |
| 1783-MMS10EA | Supported | Supported | Supported | Supported | Supported | Supported | Supported | Supported | Supported |
| 1783-MMS10R | Supported | Not Supported | Not Supported | Supported | Not Supported | Supported | Supported | Not Supported | Supported |
| 1783-MMS10ER | Supported | Supported | Not Supported | Supported | Not Supported | Supported | Supported | Supported | Supported |
| 1783-MMS10EAR | Supported | Supported | Supported | Supported | Supported | Supported | Supported | Supported | Supported |

**Table 28 - Technical Specifications - Stratix 5800 Expansion Modules**

| Attribute | 1783-MMX8T | 1783-MMX8E | 1783-MMX8EA | 1783-MMX8S | 1783-MMX8SA | 1783-MMX6T2S | 1783-MMX16E | 1783-MMX16T | 1783-MMX14T2S |
|---|---|---|---|---|---|---|---|---|---|
| Power consumption | 6 W | 6 W @ 24 VDC<br>Max PoE power @ 50V: 240 W | 20 W @ 24 VDC<br>Max PoE power @ 50V: 240 W | 19 W | 27 W | 9 W | 12 W @ 24 VDC<br>Max PoE power @ 50V: 240 W | 15 W | 16 W |
| Power dissipation | 6 W | 14 W | 20 W | 19 W | 27 W | 9 W | 21 W | 15 W | 16 W |

## Table 29 - Technical Specifications - Stratix 5800 Switches

| Attribute | 1783-MMS10BE | 1783-MMS10E, 1783-MMS10ER | 1783-MMS10EA 1783-MMS10EAR | 1783-MMS10 1783-MMS10R | 1783-MMS10B |
|---|---|---|---|---|---|
| Alarm relay | 30V DC, 1 A or 48V DC, 0.5 A | | | | |
| Power input, max | 12...54V DC, 5.5 A | 12...54V DC, 10.6 A | 12...54V DC, 10.7 A | 12...48V DC, 4.0 A | 12...48V DC, 2.2 A |
| PoE input power | 44...54V DC for PoE<br>50...54V DC for PoE+ or a combination of PoE and PoE+ | | | – | |
| Power consumption | 23 W @ 24 DC<br>Max PoE power @ 50V: 240 W | 23 W @ 24 DC<br>Max PoE power @ 50V: 240 W | 36 W @ 24 VDC<br>Max PoE power @ 50V: 240 W | 23 W | 23 W |
| Power dissipation | 32 W | 32 W | 47 W | 23 W | 23 W |
| Wire size, Ethernet connections | RJ45 connector according to IEC 60603-7, 2 or 4 pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702 | | | | |
| Wire size, DC power connections, max | 0.5...0.8 $mm^2$ (20...18 AWG) solid or stranded, UL/CSA-rated style 1007 or 1569 twisted-pair copper appliance wiring material (AWM) wire, such as Belden part number 9318), 6.3 mm (0.25 in.) ± 0.5 mm (0.02 in.) strip length | | | | |
| Wire size, ground connection, max | 4.0 $mm^2$ (12 AWG) minimum, stranded copper wire | | | | |
| Wire size, alarm connections, max | 0.5... 0.8 $mm^2$ (20...18 AWG) solid or stranded, UL/CSA-rated style 1007 or 1569 twisted-pair copper appliance wiring material (AWM) wire, such as Belden part number 9318), 6.3 mm (0.25 in.) ± 0.5 mm (0.02 in.) strip length | | | | |
| Screw torque, power terminals | 0.565 N•m (5.0 in•lb) | | | | |
| Screw torque, power terminal captive screw | 0.226 N•m (2.0 in•lb) | | | | |
| Screw torque, ground connection | 0.51 N•m (4.5 in•lb) max | | | | |
| Screw torque, alarm connection | 0.23 N•m (2.0 in•lb) max | | | | |
| Wiring category | 3 - on console and alarm ports<br>2 - on DC power ports<br>2 - on Ethernet ports | | | | |
| Pilot duty rating | Alarm not rated | | | | |
| Enclosure type rating | None (open-style) | | | | |
| North America temp code | T4 | | | | |
| ATEX temp code | T4 | | | | |
| Memory card | 1784-SDHC8 | | | | |
| SFP modules[1] | 1783-SFP100FX<br>1783-SFP100LX<br>1783-SFP100EXC<br>1783-SFP100ZXC<br>1783-SFP1GSX<br>1783-SFP1GLX<br>1783-SFP1GEXE<br>1783-SFP1GZX<br>1783-SFP1GTE | | | | |

(1) SFP modules are supported only on switches with combo ports or SFP slots. For SFP specifications, see page 72.

## Table 30 - Environmental Specifications - Stratix 5800 Switches

| Attribute | 1783-MMS10BE, 1783-MMS10E | 1783-MMS10B, 1783-MMS10, 1783-MMS10EA, 1783-MMS10R, 1783-MMS10ER, 1783-MMS10EAR |
|---|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock): | Series A: -40 °C < Ta < +55 °C (-40 °F < Ta < +131 °F) | -40 °C < Ta < +60 °C (-40 °F < Ta < +140 °F) |
| | Series B: -40 °C < Ta < +60 °C (-40 °F < Ta < +140 °F) | |
| Temperature, surrounding air, max | Series A: 55 °C (131 °F) | 60 °C (140 °F) |
| | Series B: 60 °C (140 °F) | |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F) | |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5...95% noncondensing | |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 2 g @ 10...500 Hz | |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 15 g | |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g | |
| Emissions | IEC 61000-6-4 | |
| ESD immunity<br>IEC 61000-4-2 | 6 kV contact discharges<br>8 kV air discharges | |
| Radiated RF immunity<br>IEC 61000-4-3 | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz | |
| EFT/B immunity<br>IEC 61000-4-4 | ±4 kV at 5 kHz on power ports<br>±4 kV at 100 kHz on Alarm ports<br>±2 kV at 5 kHz on Ethernet ports | |
| Surge transient immunity<br>IEC 61000-4-5 | ±1 kV line-line(DM) and ±2 kV line-earth(CM) on power ports<br>no signal ports - omit from publication<br>no shielded ports - omit from publication<br>±2 kV line-earth(CM) on Ethernet ports | |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz | |
| Environmental rating | IP30 | |
| Electric Power Stations Communications Networking<br>EEE 1613 | EEE 1613 | |
| Electric Substations Communications Networking<br>IEC 61850-3 | IEC 61850-3(1) | |

(1) The switch only meets the requirements of IEC 61850-3 when powered by a redundant power supply configuration.

## Table 31 - Certifications - Stratix 5800 Switches

| Certifications (when product is marked)[1] | Stratix 5800 Switches |
|---|---|
| c-UL-us | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.<br>UL Listed for Class I, Zone 2 Hazardous Locations, certified for U.S. and Canada. See UL File Exxxxx.<br>AEx/Ex nA nC IIC T4X Gc |
| CE | European Union 2014/30/EU EMC Directive, compliant with:<br>• EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>• EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>European Union 2011/65/EU RoHS, compliant with:<br>• EN 50581; Technical documentation |
| RCM | Australian Radiocommunications Act, compliant with:<br>• AS/NZS CISPR 11; Industrial Emissions |
| Ex | European Union 2014/34/EU ATEX Directive, compliant with:<br>• EN 60079-0; General Requirements<br>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>• II 3 G Ex nA nC IIC T4X Gc<br>• DEMKO 19 ATEX 2207X |
| KC | Korean Registration of Broadcasting and Communications Equipment, compliant with:<br>• Article 58-2 of Radio Waves Act, Clause 3 |
| EtherNet/IP | ODVA conformance tested to EtherNet/IP specifications |

(1) See the Product Certification link at http://www.ab.com for declarations of conformity, certificates, and other certification details.

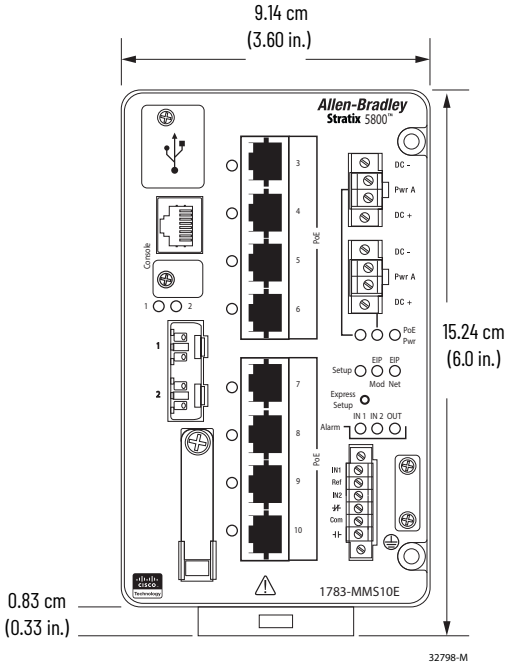
# Dimensions—Stratix 5800 Switches and Expansion Modules

To prevent the switch from overheating, observe the following minimum clearances:

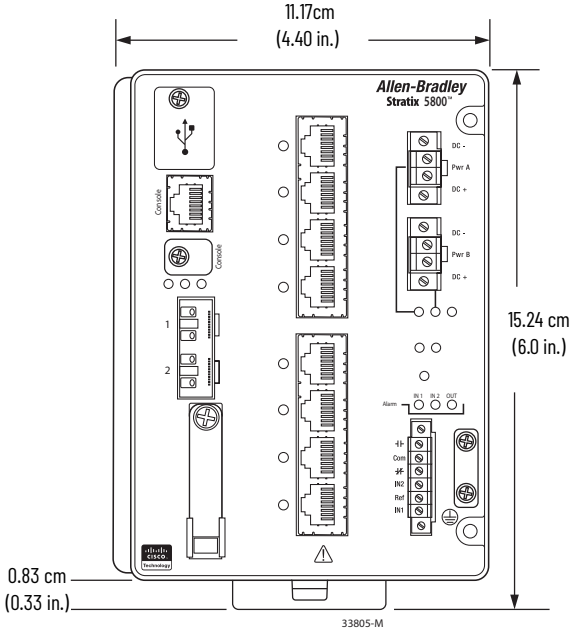
- Top and bottom: 50.8 mm (2.0 in.)
- Sides: 50.8 mm (2.0 in.)
- Front: 50.8 mm (2.0 in.)

These diagrams are representative of the Stratix 5800 switches. Actual faceplates vary depending on the catalog number.

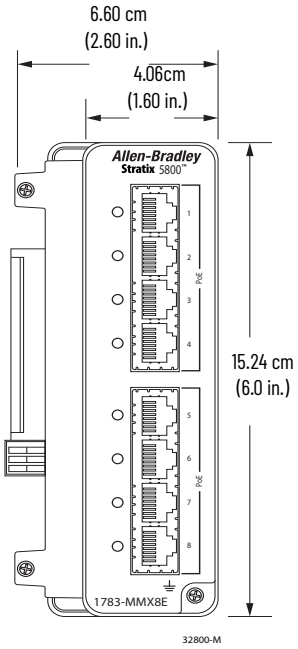
Base Switches without Advanced Feature Support
1783-MMS10B, 1783-MMS10BE, 1783-MMS10,
1783-MMS10E, 1783-MMS10R, 1783-MMS10ER



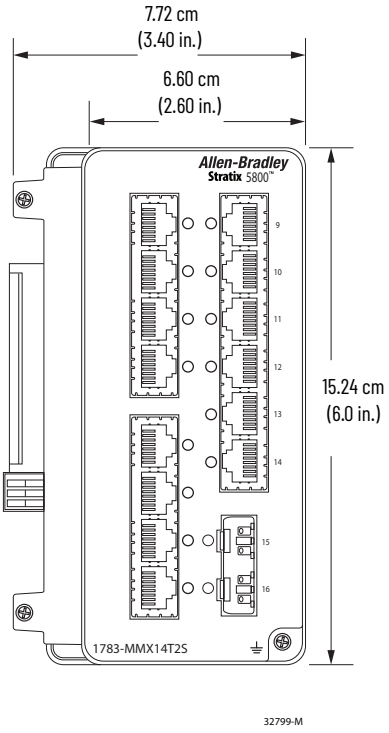

Base Switches with Advanced Feature Support
1783-MMS10EA, 1783-MMS10EAR



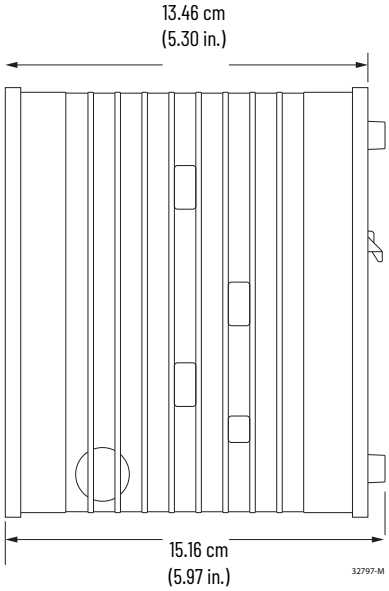
8-port Expansion Modules
1783-MMX8T, 1783-MMX8E,
1783-MMX8EA, 1783-MMX8S,
1783-MMX8SA, 1783-MMX6T2S



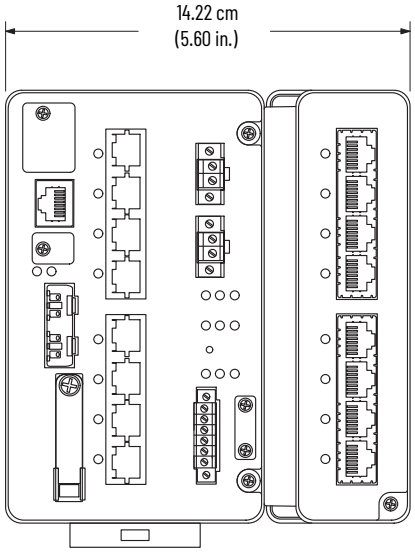

16-port Expansion Modules
1783-MMX16T, 1783-MMX16E, 1783-MMX14T2S



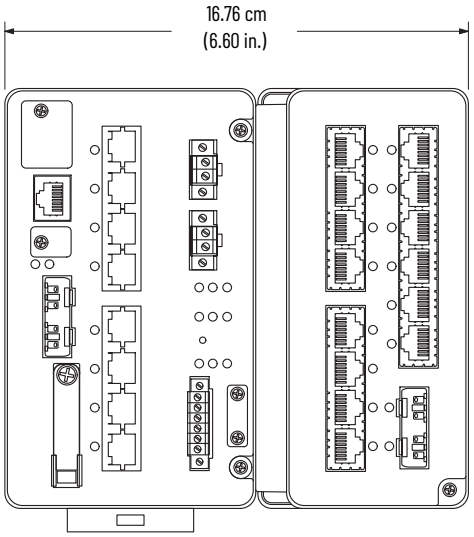

All Switches and Expansion Modules



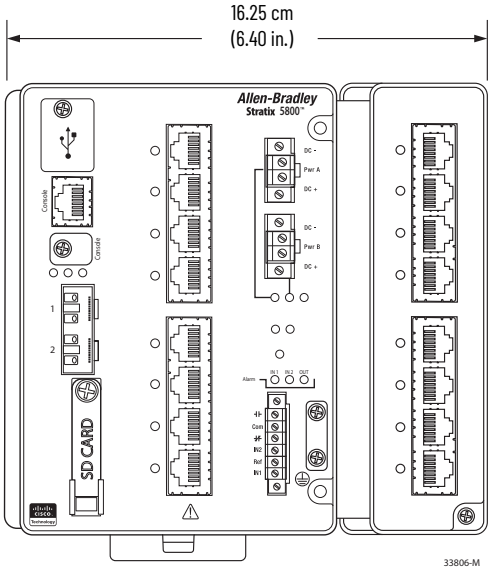
Base Switches without Advanced Feature Support
Mated with Any 8-port Expansion Module
1783-MMS10B, 1783-MMS10BE, 1783-MMS10,
1783-MMS10E, 1783-MMS10R, 1783-MMS10ER



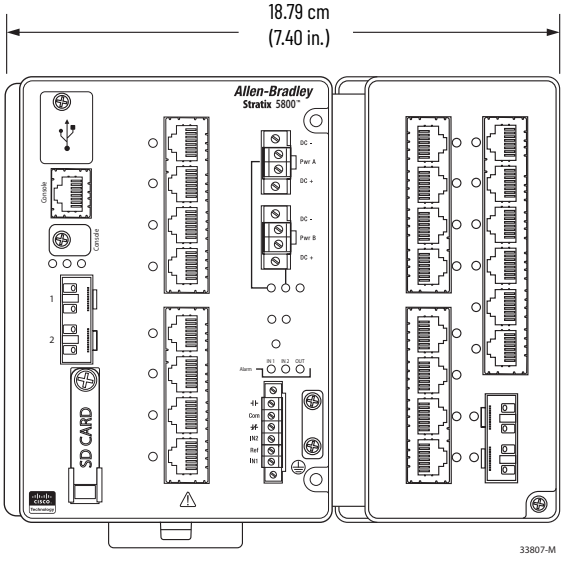

Base Switches without Advanced Feature Support
Mated with Any 16-port Expansion Module
1783-MMS10B, 1783-MMS10BE, 1783-MMS10,
1783-MMS10E, 1783-MMS10R, 1783-MMS10ER




Base Switches with Advanced Feature Support
Mated with Any 8-port Expansion Module
1783-MMS10EA, 1783-MMS10EAR




Base Switches with Advanced Feature Support
Mated with Any 16-port Expansion Module
1783-MMS10EA, 1783-MMS10EAR



# Stratix 6000 Ethernet Managed Switches

### Table 32 - Technical Specifications - Stratix 6000 Switches

| Attribute | 1783-EMS08T | 1783-EMS04T |
|---|---|---|
| Description | Stratix 6000 managed switch<br>• 8 ports<br>• 1 fiber SFP slot | Stratix 6000 managed switch<br>4 ports |
| Power input | 250 mA @ 24V DC (12...48V DC) CL 2/SELV | 100 mA @ 24V DC (12...48V DC) CL 2/SELV |
| Power dissipation, max | 5.8 W | 2.6 W |
| Thermal dissipation, max | 24.6 BTU/hr @ 60 °C (140 °F) | |
| Network ports | 8 RJ45 10/100 full/half duplex ports; optional SFP port | 4 RJ45 10/100 full/half duplex ports |
| Protocols | TCP/IP, EtherNet/IP, Telnet, Http, DHCP, BOOTP, FTP, IGMP, SMTP | |
| Indicators | 16 port indicators<br>3 status indicators | 8 port indicators<br>2 status indicators |
| EtherNet/IP features | MAC ID management, bandwidth alarming, port control, link status, scaled bandwidth information, and connections active | |
| Switch features | VLAN, IGMP snooping, IGMP query V1 and V2,<br>DHCP server, BOOTP server, QoS, port mirroring | IGMP snooping, IGMP query V1 and V2,<br>DHCP server, BOOTP server, QoS, port mirroring |
| Options | 1 GB fiber-optic transceiver | — |
| Inrush current, max | 2.2 A | |
| Isolation voltage | 50V (continuous), basic insulation type, power to ground and power to network channels<br>No isolation between individual network channels<br>Routine tested at 707V AC for 1 s | |
| Wire size, Ethernet connection(1) | RJ45 connector according to IEC 60603-7, 2- or 4-pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702 | |
| Wire size, DC power connection | 0.33...3.3 $mm^2$ (22...12 AWG) solid or stranded copper wire rated at 75 °C (167 °F) or greater, 1.2 mm (3/64 in.) insulation max | |
| Wire size, ground connection | 3.3 $mm^2$ (12 AWG) solid or stranded copper wire rated at 75 °C (167 °F) or greater | |
| Screw torque, power and ground terminals | 1.36 N•m (12 in•lb) | |
| Wiring category(2) | 2 - on DC power ports<br>2 - on communication ports | |
| Enclosure type rating | None (open-style) | |
| North American temp code | T4 | |
| ATEX temp code | T4 | |
| SFP modules(3) | 1783-SFP1GSX<br>1783-SFP1GLX | |

(1) See page 74 for recommended products.
(2) Use this conductor category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
(3) SFP modules are supported only on switches with combo ports or SFP slots. For SFP specifications, see page 72.

## Table 33 - Environmental Specifications - Stratix 6000 Switches

| Attribute | 1783-EMS04T, 1783-EMS08T |
|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock) | 0 °C < Ta < +60 °C (+32 °F < Ta < +140 °F) |
| Temperature, ambient, max | 60 °C (140 °F) |
| Temperature, surrounding air, max | 60 °C (140 °F) |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F) |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5...95% noncondensing |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 2 g @ 10...500 Hz |
| Operating shock<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 15 g |
| Nonoperating shock<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g |
| Emissions<br>IEC 61000-6-4 | IEC 61000-6-4 |
| ESD immunity<br>IEC 61000-4-2 | 6 kV contact discharges<br>8 kV air discharges |
| Radiated RF immunity<br>IEC 61000-4-3 | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>1V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz |
| EFT/B immunity<br>IEC 61000-4-4 | ±2 kV at 5 kHz on power ports<br>±1 kV at 5 kHz on communication ports |
| Surge transient immunity<br>IEC 61000-4-5 | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on AC power ports<br>±2 kV line-earth (CM) on communication ports |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz |
| Magnetic field immunity<br>IEC 61000-4-8 | 30 A/m long duration and 300 A/m short duration at 50 Hz and 60 Hz |
| Voltage variation<br>IEC 61000-4-29 | 10 ms interruption on DC supply ports |
| Environmental rating | IP20 |

**Table 34 - Certifications - Stratix 6000 Switches**

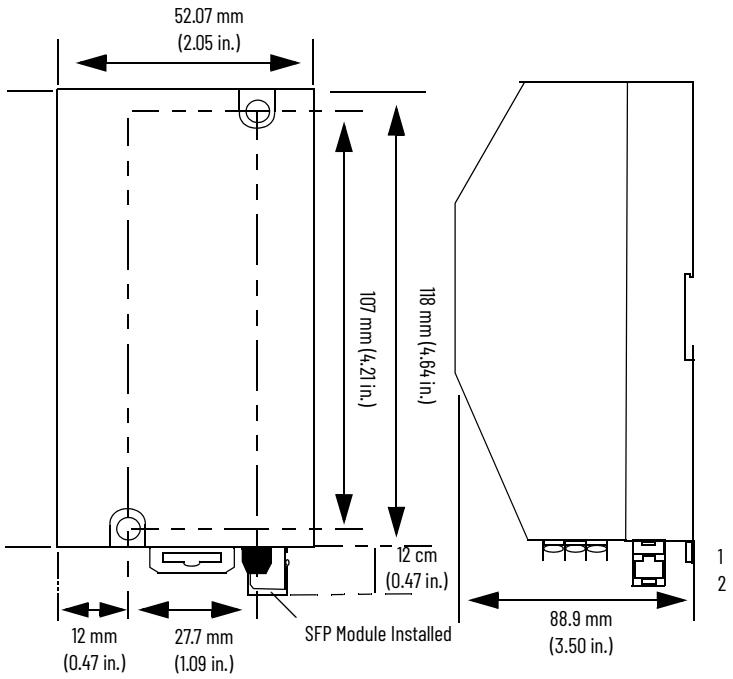
| Certifications (when product is marked)[1] | 1783-EMS08T, 1783-EMS04T |
|---|---|
| c-UL-us | UL Listed Information Technology Equipment, certified for US and Canada. See UL File E151729. |
| c-ETL-us | ETL Listed Industrial Control Equipment, certified for US and Canada. |
| c-ETL-us | ETL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada |
| CE | European Union 2004/108/EC EMC Directive, compliant with:<br>EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>EN 61000-6-2; Industrial Immunity<br>EN 61000-6-4; Industrial Emissions<br>EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>European Union 2011/65/EU RoHS, compliant with:<br>EN 50581; Technical documentation |
| RCM | Australian Radiocommunications Act, compliant with:<br>EN 61000-6-4; Industrial Emissions |
| Ex | EN 60079-0; General Requirements<br>EN 60079-11; Explosive Atmospheres, Protection "i"<br>EN 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>II 3 Ex ic nA IIC T4 Gc |
| KC | Korean Registration of Broadcasting and Communications Equipment, compliant with:<br>Article 58-2 of Radio Waves Act, Clause 3 |
| EtherNet/IP | ODVA conformance tested to EtherNet/IP specifications |

(1) See the Product Certification link at www.ab.com for Declarations of Conformity, Certificates, and other certification details.

## Dimensions—Stratix 6000 Switches

Mount the switches, as shown, in the vertical position only. We do not recommend horizontal mounting due to thermal considerations. Follow these guidelines:

- Provide 50 mm (2 in.) of space on all sides for adequate heat dissipation.
- Leave 100 mm (4 in.) for installation and removal if using the fiber-optic port on the bottom of the 1783-EMS08T switch.



# Stratix 8000 and 8300 Ethernet Managed Switches

## Table 35 - Technical Specifications - Stratix 8000 and 8300 Switches

| Attribute | 1783-MS06T | 1783-MS10T | 1783-RMS06T | 1783-RMS10T |
|---|---|---|---|---|
| Description | Stratix 8000 managed switch, Layer 2, 6 ports | Stratix 8000 managed switch, Layer 2, 10 ports | Stratix 8300 managed switch, Layer 3, 6 ports | Stratix 8300 managed switch, Layer 3, 10 ports |
| Inrush current, max | 2.0 A | | | |
| Power input, max | 2 A max @ 18...60V DC, CL 2/SELV | | | |
| Alarm relay, max | 1 A max @ 30V DC, CL 2/SELV | | | |
| Power consumption, max (Expansion module power not included) | 15.1 W | 15.7 W | 15.1 W | 15.7 W |
| Power dissipation | 15.1 W | 15.7 W | 15.1 W | 15.7 W |
| Isolation voltage | 75V (continuous), basic insulation type, power to ground, power to network channels, and power to alarm<br>No isolation between individual Ethernet ports<br>No isolation between console port and system<br>Type tested at 1000V AC for 60 s | | | |
| Wire size, Ethernet connection(1) | RJ45 connector according to IEC 60603-7, 2- or 4-pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702 | | | |
| Wire size, DC power and alarm connections | 0.5...0.8 $mm^2$ (20...18 AWG) solid or stranded copper wire rated at 90 °C (194 °F) or greater, 1.2 mm (3/64 in.) insulation max | | | |
| Wire size, ground connection | 3.3...5.3 $mm^2$ (12...10 AWG) solid or stranded copper wire rated at 75 °C (167 °F) or greater | | | |
| Screw torque, power and alarm terminals | 0.23 N•m (2.0 in•lb) | | | |
| Wiring category(2) | 2 - on alarm ports<br>2 - on power ports<br>2 - on Ethernet ports | | | |
| Enclosure type rating | None (open-style) | | | |
| Pilot duty rating | Not rated | | | |
| North American temp code | T4 | | | |
| IEC temp code | T4 | | | |
| SFP modules(3) | 1783-SFP100FX<br>1783-SFP100LX<br>1783-SFP100EXC<br>1783-SFP100ZXC<br>1783-SFP100T(4)<br>1783-SFP1GSX<br>1783-SFP1GLX<br>1783-SFP1GEXE<br>1783-SFP1GZX<br>1783-SFP1GTE | | 1783-SFP100FX<br>1783-SFP100LX<br>1783-SFP100EXC<br>1783-SFP100ZXC<br>1783-SFP1GSX<br>1783-SFP1GLX<br>1783-SFP1GEXE<br>1783-SFP1GZX<br>1783-SFP1GTE | |
| Memory card | 1783-MCF | | 1783-RMCF | |

(1) See page 74 for recommended products.
(2) Use this conductor category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
(3) SFP modules are supported only on switches with combo ports or SFP slots. For SFP specifications, see page 72.
(4) The 1783-SFP100T module requires Stratix 8000 firmware revision 12.001or later.

## Table 36 - Environmental Specifications - Stratix 8000 and 8300 Switches

| Attribute | 1783-MS06T, 1783-MS10T, 1783-RMS06T, 1783-RMS10T |
|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock) | -40...+60 °C (-40...+140 °F) |
| Temperature, surrounding air, max | 60 °C (140 °F) |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F) |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5...95% noncondensing |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 2 g @ 10...500 Hz |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 20 g |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g |

## Table 36 - Environmental Specifications - Stratix 8000 and 8300 Switches

| Attribute | 1783-MS06T, 1783-MS10T, 1783-RMS06T, 1783-RMS10T |
|---|---|
| Emissions<br>CISPR11 (IEC 61000-6-4) | Class A |
| ESD immunity<br>IEC 61000-4-2 | 8 kV contact discharges<br>15 kV air discharges |
| Radiated RF immunity<br>IEC 61000-4-3 | 20V/m with 1 kHz sine-wave 80% AM from 80...1000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>10V/m with 1 kHz sine-wave 80% AM from 1000...2700 MHz |
| EFT/B immunity<br>IEC 61000-4-4 | ±4 kV at 2.5 kHz and ±2 kV at 5 kHz on power ports<br>±4 kV at 2.5 kHz and ±2 kV at 5 kHz on alarm ports<br>±4 kV at 2.5 kHz and ±2 kV at 5 kHz on Ethernet ports |
| Surge transient immunity<br>IEC 61000-4-5 | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports<br>±1 kV line-line (DM) and ±2 kV line-earth (CM) on alarm ports<br>±2 kV line-earth (CM) on Ethernet ports |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz |
| Magnetic field immunity<br>IEC 61000-4-8 | 30 A/m long duration and 300 A/m short duration at 50 Hz and 60 Hz |
| Oscillatory surge withstand<br>IEEE C37.90.1 | 2.5 kV |
| Voltage variation<br>IEC 61000-4-29 | 10 ms interruption on DC supply ports |
| Environmental rating | IP20 |

## Table 37 - Certifications - Stratix 8000 and 8300 Switches

| Certifications (when product is marked)[1] | 1783-MS06T, 1783-MS10T, 1783-RMS06T, 1783-RMS10T |
|---|---|
| c-UL-us | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810. |
| CE | European Union 2004/108/EC EMC Directive, compliant with:<br>• EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>• EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>European Union 2011/65/EU RoHS, compliant with:<br>• EN 50581; Technical Documentation |
| RCM | ACMA EMC Std 08 |
| Ex | European Union 94/9/EC ATEX Directive, compliant with:<br>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>• EN 60079-0; General Requirements<br>• II 3 G Ex nA nC IIC T4 Gc X |
| KC | Korean Certification of Broadcasting and Communications Equipment, compliant with:<br>• Framework Act on Telecommunications and Radio Waves Act |
| EtherNet/IP | ODVA conformance tested to EtherNet/IP specifications |
| EAC | Russian Customs Union TR CU 020 EMC Technical Regulation |
| BSMI | CNS 13438 (95); CNS14336-1 (99) Taiwan |

(1) See the Product Certification link at http://www.ab.com for declarations of conformity, certificates, and other certification details.

# Optional Expansion Modules—Stratix 8000 and 8300 Switches

| Cat. No. | Description |
|---|---|
| 1783-MX08T | Expansion module with 8 10/100 Base-T copper Ethernet ports |
| 1783-MX08F | Expansion module with 8 100 Base-F fiber-optic Ethernet ports |
| 1783-MX04S | Expansion module with 4 100 FX fiber-optic SFP slots |
| 1783-MX08S | Expansion module with 8 100 FX fiber-optic SFP slots |
| 1783-MX04E | Expansion module with 4 PoE ports |
| 1783-MX04T04E | Ethernet expansion module with 4 10/100 Base-T copper Ethernet ports and 4 PoE ports |

## Table 38 - Technical Specifications - Stratix 8000 and 8300 Expansion Modules

| Attribute | 1783-MX08T | 1783-MX08F | 1783-MX04S | 1783-MX08S |
|---|---|---|---|---|
| Description | Expansion module<br>8 ports, copper | Expansion module<br>8 ports, fiber | Expansion module<br>4 SFP ports, fiber | Expansion module<br>8 SFP ports, fiber |
| Backplane power, max | 3.3V DC, 1.7 A | 3.3V DC, 3.6 A | 3.3V DC, 2.5 A | 3.3V DC, 4.0 A |
| Power consumption, max | 2.8 W | 10.1 W | 7.6 W | 12.2 W |
| Power dissipation | 2.8 W | 10.1 W | 7.6 W | 12.2 W |
| Isolation voltage | 75V (continuous), basic insulation type, expansion backplane to network channels<br>No isolation between individual Ethernet ports<br>Type tested at 1000V AC for 60 s | — | | |
| Wire size, Ethernet connection[1] | RJ45 connector according to IEC 60603-7, 2- or 4-pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702 | — | | |
| Wiring category[2] | 2 - on Ethernet ports | — | | |
| Enclosure type rating | None (open-style) | | | |
| North American temp code | T4 | | | |
| IEC temp code | T4 | | | |
| SFP modules[3] | — | | 1783-SFP100FX<br>1783-SFP100LX<br>1783-SFP100EXC<br>1783-SFP100ZXC<br>1783-SFP100T[4] | |

(1) See page 74 for recommended products.
(2) Use this conductor category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
(3) For SFP specifications, see page 72.
(4) The 1783-SFP100T module requires Stratix 8000 firmware revision 12.001or later.

## Table 39 - Technical Specifications - Stratix 8000 and 8300 Fiber Expansion Module

| Attribute | 1783-MX08F |
|---|---|
| Ethernet data rate | 100 Mbps |
| Connecting mode | Full-duplex |
| Optical wavelength | 1310 nm |
| Optical cable length, max | Graded index multimode fiber; 2000 m |
| Optical link budget | 8 dB with 62.5/125 µm multimode cable<br>4 dB with 50/125 µm multimode cable |
| Connector type | IEC 61754-20 LC connector |

## Table 40 - Technical Specifications - Stratix 8000 and 8300 PoE Expansion Modules

| Attribute | 1783-MX04E | 1783-MX04T04E |
|---|---|---|
| Description | Expansion module<br>4 ports, PoE | Expansion module<br>• 4 ports, copper<br>• 4 ports, PoE |
| Backplane power | 3.3V DC, 0.94 A max | 3.34V DC, 1.08 A max |
| PoE power input(1) | 48V DC for PoE<br>54V DC for PoE+ for a combination of PoE and PoE+<br>2.5 A max | 48V DC for PoE<br>54V DC for PoE+ for a combination of PoE and PoE+<br>2.4 A max |
| Power consumption(2) | 3 W @ 24V DC @ 40°C (104°F), 7.3 W max<br>PoE power at 44V: 62 W max | 3.5 W @ 24V DC @ 40°C (104°F), 7.9 W max<br>PoE power at 44V: 62 W max |
| Power dissipation | 7.3 W | 7.9 W |
| Isolation voltage | 60V (continuous), basic insulation type, expansion backplane to network ports, expansion backplane to power ports, and power ports to network ports<br>No isolation between individual network ports<br>Type tested at 1570V DC for 60 s | |
| Wire size, Ethernet connection(3) | RJ45 connector according to IEC 60603-7, 2 or 4 pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702 | |
| Wiring category(4) | 2 - on Ethernet ports<br>2 - on power ports | |
| Enclosure type rating | None (open-style) | |
| North American temp code | T4 | |
| IEC temp code | T4 | |
| SFP modules | — | |

(1) The initial power allocation and the maximum power allocation on a PoE port are configurable in Device Manager or the Logix Designer application. For details about PoE power budgets, see the Stratix Managed Switches User Manual, publication 1783-UM007.

(2) For PoE configurations, the power consumption values listed represent the highest values that can be configured using all ports. A general guideline is 0.5 W per 30 W PoE+ port used.
(3) See page 74 for recommended products.
(4) Use this conductor category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

## Table 41 - Environmental Specifications - Stratix 8000 and 8300 Expansion Modules

| Attribute | 1783-MX08T | 1783-MX08F | 1783-MX04S, 1783-MX08S | 1783-MX04E, 1783-MX04T04E |
|---|---|---|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock) | -40...+60 °C (-40...+140 °F) | | | |
| Temperature, surrounding air, max | 60 °C (140 °F) | | | |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F) | | | |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5...95% noncondensing | | | |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 2 g @ 10...500 Hz | | | |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 20 g | | 15 g | |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g | | | |
| Emissions<br>CISPR11 (IEC 61000-6-4) | Group 1, Class A | | | |
| ESD immunity<br>IEC 61000-4-2 | 8 kV contact discharges<br>15 kV air discharges | | 8 kV air discharges | |
| Radiated RF immunity<br>IEC 61000-4-3 | 20V/m with 1 kHz sine-wave 80% AM from 80...1000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>10V/m with 1 kHz sine-wave 80% AM from 1000...2700 MHz | | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz | |

## Table 41 - Environmental Specifications - Stratix 8000 and 8300 Expansion Modules (continued)

| Attribute | 1783-MX08T | 1783-MX08F | 1783-MX04S, 1783-MX08S | 1783-MX04E, 1783-MX04T04E |
|---|---|---|---|---|
| EFT/B immunity<br>IEC 61000-4-4 | ±4 kV at 2.5 kHz and ±2 kV at 5 kHz on Ethernet ports | – | | ±2 kV at 5 kHz on power ports and ±2 kV at 5 kHz on Ethernet ports |
| Surge transient immunity<br>IEC 61000-4-5 | ±2 kV line-earth (CM) on Ethernet ports | – | | ±1 kV line-line(DM) and ±2 kV line-earth(CM) on power ports<br>±2 kV line-earth(CM) on communication ports |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz | – | | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz |
| Magnetic field immunity<br>IEC 61000-4-8 | 30 A/m long duration and 300 A/m short duration at 50 Hz and 60 Hz | | 30 A/m long duration and 300 A/m short duration at 50 Hz | |
| Magnetic pulse immunity<br>IEC 61000-4-9 | – | | 300 A/m pulse | |
| Oscillatory surge withstand<br>IEEE C37.90.1 | 2.5 kV | – | | |
| Damped oscillatory wave immunity<br>IEC 61000-4-18 | – | | | ±1 kV line-line(DM) and ±2.5 kV line-earth(CM) on power ports |

## Table 42 - Certifications - Stratix 8000 and 8300 Expansion Modules

| Certifications (when product is marked)[1] | 1783-MX08T, 1783-MX08F, 1783-MX04S, 1783-MX08S, 1783-MX04E, 1783-MX04T04E |
|---|---|
| c-UL-us | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.<br>UL Listed for Class I, Zone 2 Hazardous Locations, certified for U.S. and Canada. See UL File E194810.<br>AEx/Ex nA IIC T4 Gc X |
| CE | European Union 2004/108/EC EMC Directive, compliant with:<br>• EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>• EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>European Union 2011/65/EU RoHS, compliant with:<br>• EN 50581; Technical Documentation |
| RCM | ACMA EMC Std 08 |
| Ex | European Union 94/9/EC ATEX Directive, compliant with:<br>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>• EN 60079-0; General Requirements<br>• II 3 G Ex nA IIC T4 Gc X |
| KC | Korean Certification of Broadcasting and Communications Equipment, compliant with:<br>• Framework Act on Telecommunications and Radio Waves Act |
| EtherNet/IP | ODVA conformance tested to EtherNet/IP specifications |
| BSMI | CNS 13438 (95); CNS14336-1 (99) Taiwan |

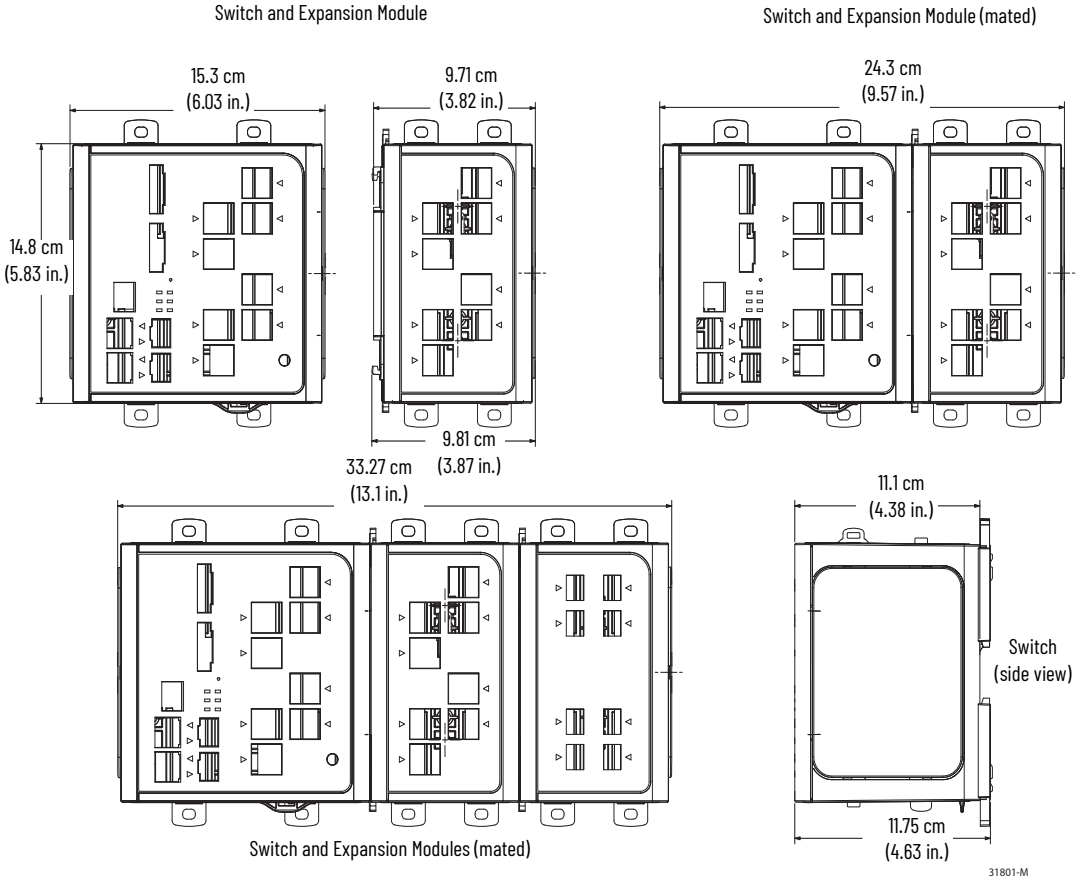
(1) See the Product Certification link at http://www.ab.com for declarations of conformity, certificates, and other certification details.

# Dimensions—Stratix 8000 and 8300 Switches

This illustration shows dimensions for the 1783-MS10T switch and the 1783-MX08T expansion module. Dimensions for the other switches are the same as the 1783-MS10T switch. Dimensions for the other expansion modules are the same as the 1783-MX08T expansion module.

Airflow around the switch and through the vents is unrestricted. To prevent the switch from overheating, these minimum clearances must be met:

- Top and bottom: 105 mm (4.13 in.)
- Left and right: 90 mm (3.54 in.)
- Front: 65 mm (2.56 in.)




For panel-mounting, the height of the center of the mounting holes on both the top and bottom latches measures 8.73 mm (0.34 in.) above the top surface (or below the bottom surface) of the switch.
On the switch base unit, the tab hole center-to-center spacing is 6.83 cm (2.69 in.).
For expansion modules, the tab hole center-to-center spacing is 4.36 cm (1.72 in.).

# Stratix 5100 Wireless Access Point/Workgroup Bridge

## Table 43 - Technical Specifications - Stratix 5100 Wireless Access Point/Workgroup Bridge

| Attribute | 1783-WAPBK9<br>United States | 1783-WAPAK9<br>Canada/Latin America | 1783-WAPEK9<br>European Union | 1783-WAPZK9<br>Australia/New Zealand | 1783-WAPCK9<br>China |
|---|---|---|---|---|---|
| Dimensions (LxWxD) | 22.04 x 22.04 x 4.67 cm<br>(8.68 x 8.68 x 1.84 in.) | 22.04 x 22.04 x 4.67 cm<br>(8.68 x 8.68 x 1.84 in.) | 22.04 x 22.04 x 4.67 cm<br>(8.68 x 8.68 x 1.84 in.) | 22.04 x 22.04 x 4.67 cm<br>(8.68 x 8.68 x 1.84 in.) | 22.04 x 22.04 x 4.67 cm<br>(8.68 x 8.68 x 1.84 in.) |
| Weight | 1.22 kg (2.7 lb) | 1.22 kg (2.7 lb) | 1.22 kg (2.7 lb) | 1.22 kg (2.7 lb) | 1.22 kg (2.7 lb) |
| Power input | 48V DC, 350 mA | 48V DC, 350 mA | 48V DC, 350 mA | 48V DC, 350 mA | 48V DC, 350 mA |
| Power consumption | 12.95 W | 12.95 W | 12.95 W | 12.95 W | 12.95 W |
| Power dissipation | 12.95 W | 12.95 W | 12.95 W | 12.95 W | 12.95 W |
| Antennas | External | External | External | External | External |
| Power adapter | AIR-PWR-B<br>Input: 100...240 50/60 Hz VAC<br>Output: 48V DC, 380 mA | AIR-PWR-B<br>Input: 100...240 50/60 Hz VAC<br>Output: 48V DC, 380 mA | AIR-PWR-B<br>Input: 100...240 50/60 Hz VAC<br>Output: 48V DC, 380 mA | AIR-PWR-B<br>Input: 100...240 50/60 Hz VAC<br>Output: 48V DC, 380 mA | AIR-PWR-B<br>Input: 100...240 50/60 Hz VAC<br>Output: 48V DC, 380 mA |

## Table 44 - Environmental Specifications - Stratix 5100 Wireless Access Point/Workgroup Bridge

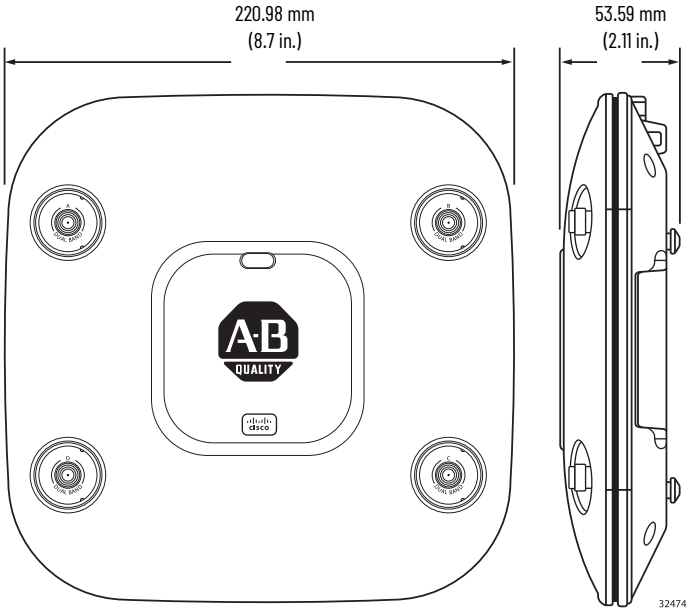
| Attribute | 1783-WAPBK9 | 1783-WAPAK9 | 1783-WAPEK9 | 1783-WAPZK9 | 1783-WAPCK9 |
|---|---|---|---|---|---|
| Temperature, operating | -20...+55 °C (-4...+131 °F) | -20...+55 °C (-4...+131 °F) | -20...+55 °C (-4...+131 °F) | -20...+55 °C (-4...+131 °F) | -20...+55 °C (-4...+131 °F) |
| Temperature, nonoperating/storage | -30...+85 °C (-22...+185 °F) | -30...+85 °C (-22...+185 °F) | -30...+85 °C (-22...+185 °F) | -30...+85 °C (-22...+185 °F) | -30...+85 °C (-22...+185 °F) |
| Relative humidity | 10...90% noncondensing | 10...90% noncondensing | 10...90% noncondensing | 10...90% noncondensing | 10...90% noncondensing |

## Table 45 - Certifications - Stratix 5100 Wireless Access Point/Workgroup Bridge

| Catalog Number | Certifications (when product is marked)(1) | |
|---|---|---|
| 1783-WAPBK9<br>Regulatory Domain B | FCC ID: LDK102080 | This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operations. |
| 1783-WAPAK9<br>Regulatory Domain A | Industry Canada: 2461B-102080 | RSS-210 - License Exempt Radio Apparatus: Category I Equipment |
| 1783-WAPEK9<br>Regulatory Domain E | CE | For use in the EU, Iceland, Liechtenstein, Norway, Switzerland, Turkey and all other Countries that recognize the EU Directive 1999/5/EC. |
| 1783-WAPZK9<br>Regulatory Domain Z | <br>E134 | For use in Australia, New Zealand and all other Countries that recognize the Radiocommunications (Short Range Devices) Standard. |
| 1783-WAPCK9<br>Regulatory Domain C | CMIIT ID: 2014AJ2894 | For use in China and all other Countries that recognize The Bureau of Radio Administration of MIIT (Fixed Radio Devices). |

(1) See the Product Certification link at http://www.ab.com for Declarations of Conformity, Certificates, and other certification details.

## Dimensions—Stratix 5100 Wireless Access Point/Workgroup Bridge



# Stratix 5900 Services Router

## Table 46 - Technical Specifications - Stratix 5900 Services Router

| Attribute | 1783-SR |
|---|---|
| Input voltages | 5V, 4 A Class 2<br>Requires LITEON PA-1220-1SA2 power adapter (100...240V AC, 50/60Hz, 0.8A) |
| Power consumption, max | 11 W |
| Power dissipation | 11 W |
| Isolation voltage | Not rated |
| Weight | 1.5 kg (3.2 lb) |
| Wiring category(1) | 3 - on power ports<br>2 - on Ethernet ports |
| Enclosure type rating | Meets IP41 |
| **Router AC Power Adapter(2)** | |
| Input voltage | 85...264V AC<br>100...240V AC nom |
| Power consumption, max | 25 W |
| Output power, max | 20 W<br>(5V DC, 4 A) |

(1) Use this conductor category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
(2) AC power adapter is not IP41 rated. Installation must include protection of the adapter and power plug from water.

## Table 47 - Environmental Specifications - Stratix 5900 Services Router

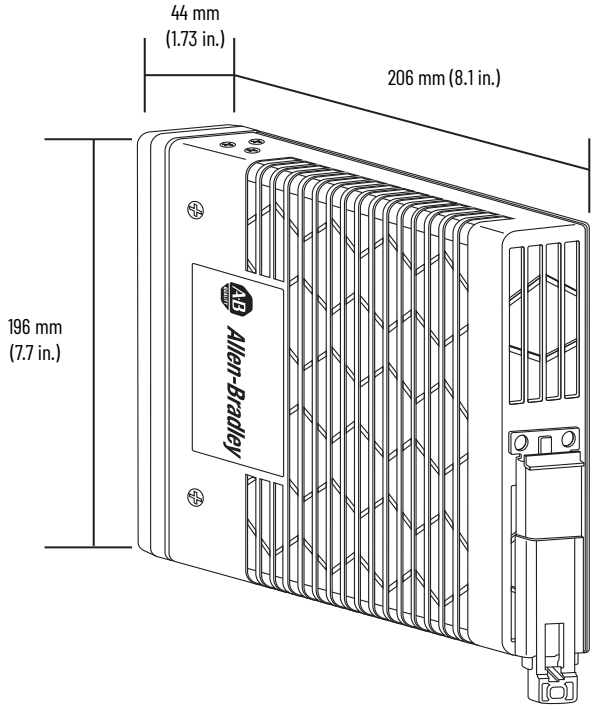
| Attribute | 1783-SR |
|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock) | -25...+60 °C (-13...+140 °F) |
| Temperature, surrounding air, max | 60 °C (140 °F) |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F) |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5...95% noncondensing |
| Vibration<br>IEC 60068-2-64 (Test Fh, Operating) | 1.12 Grms random |
| Operating shock<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 15 g |
| Nonoperating shock<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 15 g |
| Emissions<br>CISPR22 (IEC 61000-6-4) | Class B |
| ESD immunity<br>IEC 61000-4-2 | 8 kV contact discharges<br>15 kV air discharges |
| Radiated RF immunity<br>IEC 61000-4-3 | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz |
| EFT/B immunity<br>IEC 61000-4-4 | ±500 kV at 5 kHz on Ethernet ports |
| Surge transient immunity<br>IEC 61000-4-5 | ±1 kV line-earth (CM) on shielded Ethernet port |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz |
| Environmental rating | IP30 |

### Table 48 - Certifications - Stratix 5900 Services Router

| Certifications (when product is marked)[1] | 1783-SR |
|---|---|
| c-UL-us | UL Listed Information Technology Equipment, certified for US and Canada. See UL File E136709. |
| CE | European Union 1999/5/EC R&TTE Directive, compliant with:<br>• EN 55022; ITE Emissions<br>• EN 55024; ITE Immunity<br>• EN 60950; ITE Safety<br>European Union 2011/65/EU RoHS, compliant with:<br>• EN 50581; Technical documentation |
| RCM | Australian Radiocommunications Act, compliant with:<br>• ACMA EMC Std 08 |
| CCC | GB 4943. 1, GB 9254, YD/T993 |
| KC | Korean Registration of Broadcasting and Communications Equipment, compliant with:<br>Article 58-2 of Radio Waves Act, Clause 3 |
| EAC | Russian Customs Union TR CU 020 EMC Technical Regulation |
| BSMI | CNS 13438 (95); CNS14336-1 (99) Taiwan |

(1) See the Product Certification link at http://www.ab.com for Declarations of Conformity, Certificates, and other certification details.

## Dimensions - Stratix 5900 Services Router



# Stratix 5950 Security Appliance

## Table 49 - Technical Specifications - Stratix 5950 Security Appliance

| Attribute | 1783-SAD4T0SBK9, 1783-SAD4T0SPK9, 1783-SAD2T2SBK9, 1783-SAD2T2SPK9 |
|---|---|
| Power consumption | 24 W |
| Power dissipation | 24 W |
| Enclosure type rating | None (open-style) |
| Voltage and current ratings | 12...48V DC, 2.0 A Max – User Supply<br>Alarm relay: 30V DC, 1 A or 48V DC, 0.5 A |
| Isolation voltage | 60V (continuous), Basic Insulation Type, all ports to Ground.<br>No isolation between individual ports. |
| Wire size, Ethernet connection | RJ45 connector according to IEC 60603-7, 2 or 4 pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702 |
| Wire size, ground connection | 4 $mm^2$ (12...10 AWG) solid or stranded copper wire |
| Wire size, alarm connection | 0.8...1.0 $mm^2$ (18...16 AWG) solid or stranded, UL/CSA-rated style 1007 or 1569 twisted-pair copper appliance wiring material (AWM) wire (such as Belden part number 9318), 6.3 mm (0.25 in.) ± 0.5 mm (0.02 in.) strip length |
| Wire size, DC power connection | 0.8...1.0 $mm^2$ (18...16 AWG) solid or stranded copper wire rated at 75 °C (167 °F) or greater, 1.2 mm (3/64 in.) insulation max, 6.3 mm (0.25 in.) ± 0.5 mm (0.02 in.) strip length |
| Insulation stripping length | 6.3 mm (0.25 in.) ± 0.5 mm (0.02 in.) |
| Wire type | Copper |
| Pilot duty rating | Alarm: Not rated |
| Wiring category(1) | 3 - on Console ports<br>2 -on Power and Alarm ports<br>2 - on Ethernet ports |
| Voltage variation<br>IEC 61000-4-29 | 30 % dip for 10 ms on DC supply ports<br>60 % dips for 100 ms and 1 s on DC supply ports<br>100 % dips for 10 ms and 5 s on DC supply ports |
| Alarm relay | 30V DC, 1 A, or 48V DC, 0.5 A |
| Screw torque, ground terminal | 0.4 N•m (3.5 lb•in) |
| Screw torque, power terminal | 0.56 N•m (5 lb•in) |
| Screw torque, alarm terminal | 0.56 N•m (5 lb•in) |
| North American temp code | T4 |
| ATEX temp code | T4 |
| SFP modules(2) | 1783-SFP100FX<br>1783-SFP100LX<br>1783-SFP1GSX<br>1783-SFP1GLX |
| Memory card replacement | 1784-SD1 |

(1) Use this Conductor Category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
(2) For SFP specifications, see page 72.

## Table 50 - Environmental Specifications - Stratix 5950 Security Appliance

| Attribute | 1783-SAD4T0SBK9, 1783-SAD4T0SPK9, 1783-SAD2T2SBK9, 1783-SAD2T2SPK9 |
|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock): | -40...+60 °C (-40...+140 °F) |
| Temperature, ambient, max | For UL certified enclosed equipment: 60 °C (140 °F) |
| Temperature, surrounding air, max | For UL certified enclosed equipment: 60 °C (140 °F) |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock): | -40...+85 °C (-40...+185 °F) |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5...95% noncondensing |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 1 g @ 5...150 Hz |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 15 g |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g |
| Emissions | IEC 61000-6-4 |
| ESD Immunity<br>IEC 61000-4-2 | 6 kV contact discharges<br>8 kV air discharges |

**Table 50 - Environmental Specifications - Stratix 5950 Security Appliance (continued)**

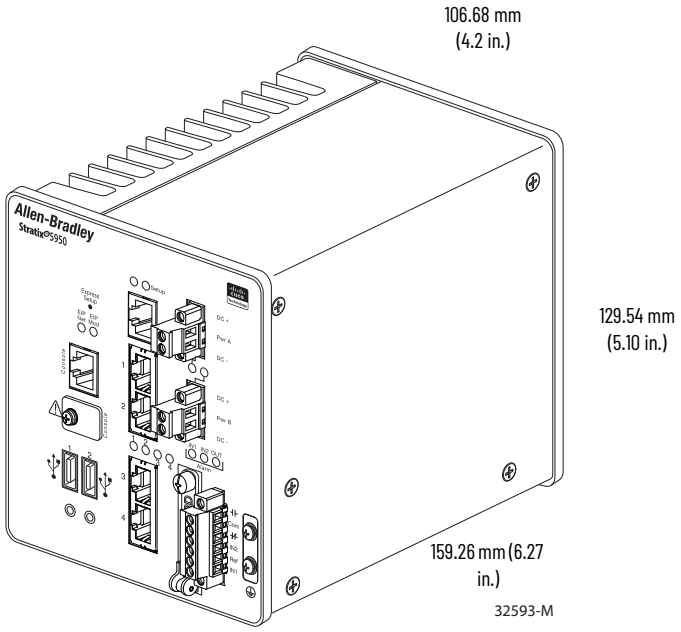
| Attribute | 1783-SAD4T0SBK9, 1783-SAD4T0SPK9, 1783-SAD2T2SBK9, 1783-SAD2T2SPK9 |
|---|---|
| Radiated RF Immunity<br>IEC 61000-4-3 | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>1V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz |
| EFT/B Immunity<br>IEC 61000-4-4 | ±2 kV at 5 kHz on power ports<br>±2 kV at 5 kHz on signal ports<br>±2 kV at 5 kHz on communications ports |
| Surge Transient Immunity<br>IEC 61000-4-5 | ±1 kV line-line(DM) and ±2 kV line-earth(CM) on power ports<br>±500V line-line(DM) and ±1 kV line-earth(CM) on signal ports<br>±2 kV line-earth(CM) on communications ports |
| Conducted RF Immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz |
| Damped Oscillatory Wave Immunity<br>IEC 61000-4-18 | ±500V line-line(DM) and ±1 kV line-earth(CM) on signal ports<br>±1 kV line-line(DM) and ±2.5 kV line-earth(CM) on power ports<br>±500V line-earth(CM) on communication ports |

**Table 51 - Certifications - Stratix 5950 Security Appliance**

| Certifications (when product is marked)[1] | 1783-SAD4T0SBK9, 1783-SAD4T0SPK9, 1783-SAD2T2SBK9, 1783-SAD2T2SPK9 |
|---|---|
| c-UL-us | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.<br>UL Listed for Class I, Zone 2 Hazardous Locations, certified for U.S. and Canada. See UL File E194810.<br>• Class 1, Zone 2, Ex nA nC IIC T4 Gc X<br>• Class 1, Zone 2, AEx nA nC IIC T4 Gc |
| CE | European Union 1999/5/EC R&TTE Directive, compliant with:<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>European Union 2011/65/EU RoHS, compliant with:<br>• EN 50581; Technical documentation |
| RCM | ACMA EMC Std 08 |
| Ex | EN 60079-0; General Requirements<br>EN 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>Ex nA nC IIC T4 Gc<br>DEMKO 15 ATEX 1595X |
| KCC | KN11 (Group1, Class A), IEC61000-6-2 |
| EAC | Russian Customs Union TR CU 020 EMC Technical Regulation |
| BSMI | CNS 13438 (95); CNS14336-1 (99) Taiwan |

(1) See the Product Certification link at http://www.ab.com for Declarations of Conformity, Certificates, and other certification details.

# Dimensions - Stratix 5950 Security Appliance



# Embedded Switch Technology

## Table 52 - Technical Specifications - Ethernet Taps

| Attribute | 1783-ETAP, 1783-ETAPK | 1783-ETAP1F, 1783-ETAP1FK | 1783-ETAP2F, 1783-ETAP2FK |
|---|---|---|---|
| Description | EtherNet/IP tap<br>3 copper ports | EtherNet/IP tap<br>• 2 copper ports<br>• 1 fiber port | EtherNet/IP tap<br>• 1 copper port<br>• 2 fiber ports |
| Tap type | Copper | Fiber, single-port | Fiber, dual-port |
| Current consumption, max | 125 mA @ 24V DC | 200 mA @ 24V DC | 260 mA @ 24V DC |
| DC power supply voltage rating | 24V DC (20.4...27.6V DC) CL 2/SELV | | |
| Isolation voltage | 30V (continuous), basic insulation type, network channels to power and network channels to network channels | | |
| | Type tested at 1250V DC for 60 s | Type tested at 853V AC for 60 s | |
| Power consumption, max | 3 W | 4.8 W | 6.24 W |
| Power dissipation | 3 W | 4.8 W | 6.24 W |
| Wire size, Ethernet connection(1) | RJ45 connector according to IEC 60603-7, 2- or 4-pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702 | | |
| Wire size, DC power connection | One 0.33...3.3 $mm^2$ (22...12 AWG) or two 0.33...1.3 $mm^2$ (22...16 AWG) solid or stranded copper wire rated at 75 °C (167 °F) or greater, 1.2 mm (3/64 in.) insulation max | | |
| Screw torque, power terminal | 0.6...0.8 N•m (5...7 in•lb) | | |
| Wiring category(2) | 1 - on power ports<br>2 - on communication ports | | |
| Enclosure type rating | None (open-style) | | |
| North American temp code | T5 | T4A | T4 |
| IEC temp code | T5 | T4 | T4 |

(1) See page 74 for recommended products.
(2) Use this conductor category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

## Table 53 - Technical Specifications - Ethernet Tap Fiber Connections

| Attribute | 1783-ETAP1F, 1783-ETAP1FK, 1783-ETAP2F, 1783-ETAP2FK |
|---|---|
| Fiber transceiver type | 100Base-FX IEEE802.3u |
| Optical wavelength | 1310 nm no cap |
| Transmitter launch power at Beginning of Life (BOL), min<br>Allow -1 dB at End of Life (EOL) | -19 dBm into 62.5/125 µm fiber, N/A = 0.275<br>-22.5 dBm into 50/125 µm fiber, N/A = 0.20 |
| Receiver sensitivity, min | -31.8 dBm |
| Receiver sensitivity, max | -14 dBm |
| Fiber channel power budget at rated BER<br>(2 connected taps, either 1783-ETAP1F or 1783-ETAP2F) | 12.8 dB for 62.5/125 µm multimode fiber<br>9.3 dB for 50/125 µm multimode fiber |
| Fiber connection, glass | 62.5/125 µm and 50/125 µm multimode fiber |
| Fiber connection, simplex or duplex | Jacket type and jacket diameter is dependent on connector selection |
| Fiber connection, graded index (GI) | Per IEC 60794-1-1, IEC 60793-2-10 category A1 fibers |
| Connector type | IEC 61754-20 LC connector, maximum insertion loss 0.75 dB per connection |
| Channel length, max | 2 km (1.24 mi) (1) |

(1) The channel (connectors and cable) must not exceed the allowable power budget.

## Table 54 - Environmental Specifications - Ethernet Taps

| Attribute | 1783-ETAP, 1783-ETAPK | 1783-ETAP1F, 1783-ETAP1FK,<br>1783-ETAP2F, 1783-ETAP2FK |
|---|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold)<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat)<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock) | -25...+70 °C (-13...+158 °F) | -25...+60 °C (-13...+140 °F) |
| Temperature, surrounding air, max | 70° C (158 °F) | 60° C (140 °F) |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold)<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat)<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F) | |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5...95% noncondensing | |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 5 g @ 10...500 Hz | |

## Table 54 - Environmental Specifications - Ethernet Taps

| Attribute | 1783-ETAP, 1783-ETAPK | 1783-ETAP1F, 1783-ETAP1FK, 1783-ETAP2F, 1783-ETAP2FK |
|---|---|---|
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g | |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 50 g | |
| Emissions<br>CISPR11 (IEC 61000-6-4) | Class A | |
| ESD immunity<br>IEC 61000-4-2 | 6 kV contact discharges<br>8 kV air discharges | |
| Radiated RF immunity<br>IEC 61000-4-3 | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz | |
| EFT/B immunity<br>IEC 61000-4-4 | ±4 kV at 5 kHz on power ports<br>±3 kV at 5 kHz on communication ports | |
| Surge transient immunity<br>IEC 61000-4-5 | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports<br>±2 kV line-earth (CM) on communication ports | |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz | |
| Voltage variation<br>IEC 61000-4-29 | 10 ms interruption on DC supply ports | |

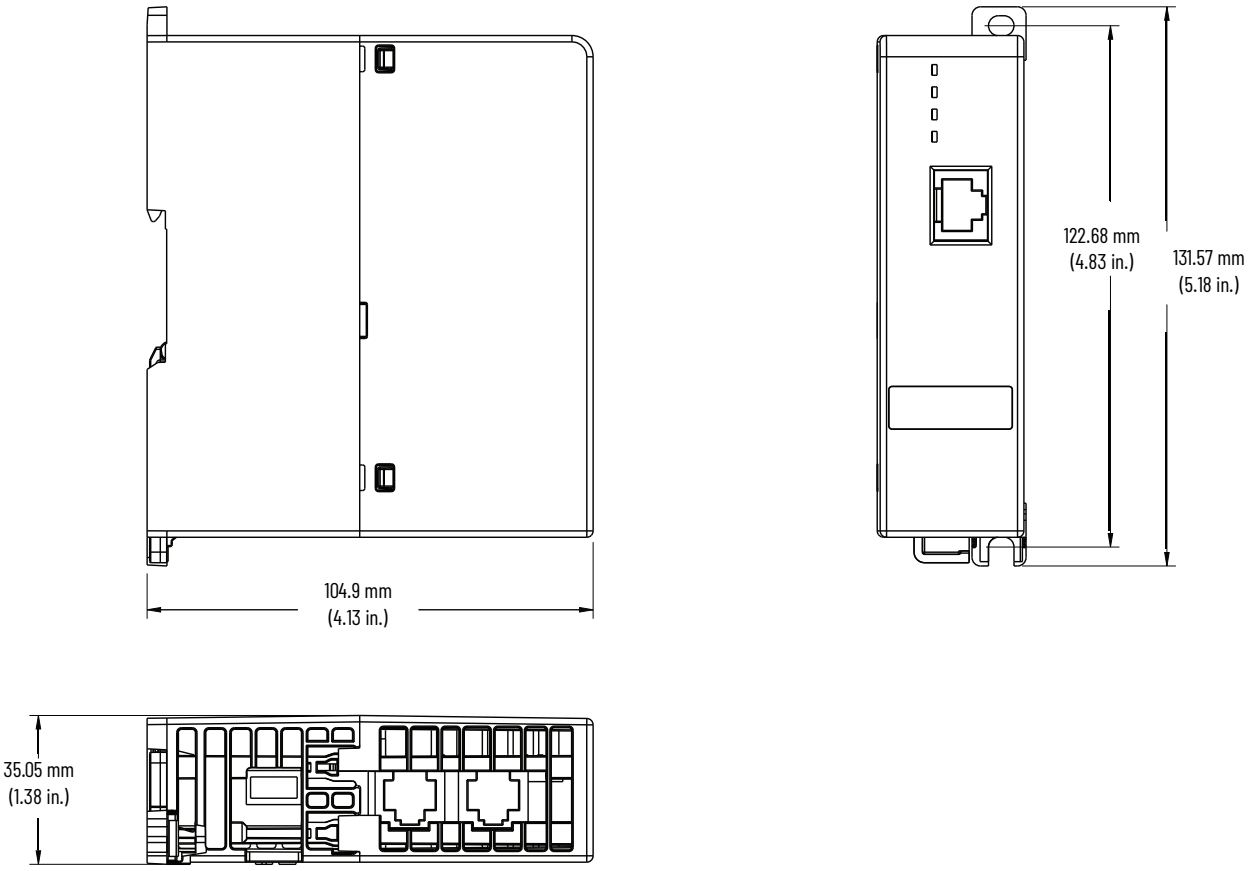
## Table 55 - Certifications - Ethernet Taps

| Certification[1] | 1783-ETAP, 1783-ETAPK | 1783-ETAP1F, 1783-ETAP1FK, 1783-ETAP2F, ETAP2FK |
|---|---|---|
| c-UL-us | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810. | |
| CE | European Union 2004/108/EC EMC Directive, compliant with:<br>• EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>• EN 61131-2; Programmable Controllers (Clause 8, Zone A and B)<br>European Union 2011/65/EU RoHS, compliant with:<br>• EN 50581; Technical Documentation | |
| C-Tick | Australian Radiocommunications Act, compliant with:<br>• AS/NZS CISPR 11; Industrial Emissions | |
| Ex | European Union 94/9/EC ATEX Directive, compliant with:<br>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>• EN 60079-0; General Requirements<br>• II 3 G Ex nA IIC T5 X | European Union 94/9/EC ATEX Directive, compliant with:<br>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>• EN 60079-0; General Requirements<br>• II 3 G Ex nA IIC T4 X |
| KC | Korean Registration of Broadcasting and Communications Equipment, compliant with:<br>• Article 58-2 of Radio Waves Act, Clause 3 | |
| EtherNet/IP | ODVA conformance tested to EtherNet/IP specifications | |
| BSMI | CNS 13438 (95); CNS14336-1 (99) Taiwan | |

(1) When product is marked. See the Product Certification link at http://www.ab.com for Declarations of Conformity, Certificates, and other certification details.

# Dimensions —Ethernet Taps

This illustration shows dimensions for the 1783-ETAP tap. The dimensions for the other catalog numbers are the same.



# Configurable NAT Router

### Table 56 - Technical Specifications - Configurable NAT Router

| Attribute | 1783-NATR |
|---|---|
| Enclosure type rating | None (open-style) |
| Voltage and current ratings | DC power supply input: 20.4...27.6V DC/limited voltage<br>Current rating: 150 mA |
| Power consumption, max | 3 W |
| Isolation voltage | Functional insulation type (IEC-61010-2-201), Ethernet Ports to Power ports |
| Wire size, power connection | Single wire: 0.33...3.3 $mm^2$ (22...12 AWG) stranded copper wire rated at 75 °C (167 °F), or greater, 1.2 mm (3/64 in.) insulation max<br>Double wire: 0.33...1.3 $mm^2$ (22...16 AWG) solid copper wire rated at 75 °C (167 °F), or greater, 1.2 mm (3/64 in.) insulation max |
| Wiring category(1) | 2 - on power ports<br>2 - on Ethernet ports |
| North American temp code | T4 |
| ATEX temp code | T4 |
| IECEx temp code | T4 |

(1) Use this Conductor Category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

### Table 57 - Environmental Specifications - Configurable NAT Router

| Attribute | 1783-NATR |
|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold)<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat)<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock) | -25...+70 °C (-13...+158 °F) |
| Temperature, surrounding air, max | 70 °C (158 °F) |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold)<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat)<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F) |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5...95% noncondensing |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 5 g @ 10...500 Hz |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 50 g |
| Emissions | IEC 61000-6-4 |
| ESD immunity<br>IEC 61000-4-2 | 6 kV contact discharges<br>8 kV air discharges |
| Radiated RF immunity<br>IEC 61000-4-3 | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz<br>3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz |
| EFT/B immunity<br>IEC 61000-4-4 | ±2 kV at 5 kHz on power ports<br>±2 kV at 5 kHz on Ethernet ports |
| Surge transient immunity<br>IEC 61000-4-5 | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports<br>±2 kV line-earth (CM) on Ethernet ports |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz |

### Table 58 - Certifications - Configurable NAT Router

| Certification(1) | 1783-NATR |
|---|---|
| c-UL-us | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810. |
| CE | European Union 2004/108/EC EMC Directive, compliant with:<br>• EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>• EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) |
| RCM | Australian Radiocommunications Act, compliant with:<br>• EN 61000-6-4; Industrial Emissions |

**Table 58 - Certifications - Configurable NAT Router**

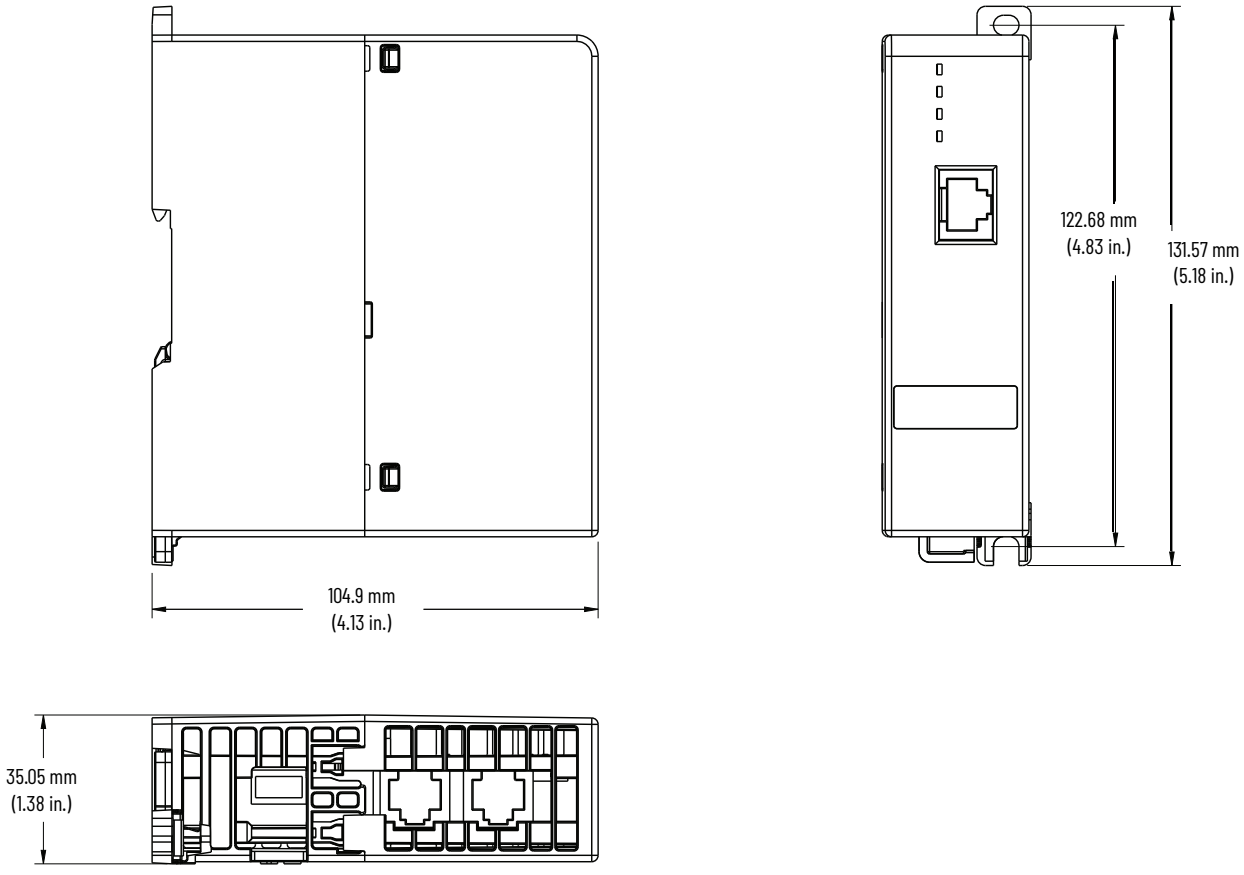
| Certification[1] | 1783-NATR |
|---|---|
| Ex | European Union 94/9/EC ATEX Directive, compliant with:<br>• EN 60079-0; General Requirements<br>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>• II 3 G Ex nA IIC T4 Gc<br>• DEMKO 15 ATEX 1459X |
| IECEx | IECEx System, compliant with:<br>• IEC 60079-0; General Requirements<br>• IEC 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>• II 3 G Ex nA IIC T4 Gc<br>• IECEx UL 15.0026X |
| KC | Korean Registration of Broadcasting and Communications Equipment, compliant with:<br>Article 58-2 of Radio Waves Act, Clause 3 |
| EtherNet/IP | ODVA conformance tested to EtherNet/IP specifications |
| BSMI | CNS 13438 (95); CNS14336-1 (99) Taiwan |

(1) When product is marked. See the Product Certification link at http://www.ab.com for Declarations of Conformity, Certificates, and other certification details.

## Dimensions - Configurable NAT Router

This illustration shows dimensions for the 1783-NATR device.

When mounting the 1783-NATR device, allow a minimum clearance between the device and adjacent equipment of 2.54 cm (1 in.) on all sides.



# CIP Security Proxy

### Table 59 - Technical Specifications - CIP Security Proxy

| Attribute | 1783-CSP |
|---|---|
| Packet Rate Capacity (packets/second)( | See page 6 of 1756-TD003 for context and how the 1756-EN4TR shows the spec |
| Enclosure type rating | None (open-style) |
| DC power supply voltage rating | 24V DC (18...32V DC) |
| Power consumption, max | 4 W |
| Current consumption, max | 220 mA |
| Ethernet connections | • RJ45 connector according to IEC 60603-7<br>• 2 or 4 pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702 |
| Device connections | • RJ45 connector according to IEC 60603-7<br>• 2 or 4 pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702 |
| DC power connections | One 0.33...3.3 $mm^2$ (22...12 AWG) or two 0.33...1.3 $mm^2$ (22...16 AWG) solid or stranded copper wire(s) rated at 75 °C (167 °F) or greater, 1.2 mm (3/64 in.) insulation max |
| Torque, power connector | 0.6...0.8 N•m (5...7 lb•In) |
| Isolation voltage | |
| North American temp code | T4 |
| ATEX temp code | T4 |
| IECEx temp code | T4 |

### Table 60 - Environmental Specifications - CIP Security Proxy

| Attribute | 1783-CSP |
|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold)<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat)<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock) | -25 °C < Ta < + 70 °C (-13 °F < Ta < +158 °F) |
| Temperature, surrounding air, max | 70 °C (158 °F) |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold)<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat)<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F) |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5...95% noncondensing |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 2 g @ 10...500 Hz |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 15 g |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g |
| Emissions | IEC 61000-6-4 |
| ESD immunity<br>IEC 61000-4-2 | 6 kV contact discharges<br>8 kV air discharges |
| Radiated RF immunity<br>IEC 61000-4-3 | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz<br>3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz<br>3V/m with 1 kHz sine-wave 80% AM from 2700...6000 MHz |
| EFT/B immunity<br>IEC 61000-4-4 | ±3 kV at 5 kHz on power ports<br>±3 kV at 5 kHz on communication ports |
| Surge transient immunity<br>IEC 61000-4-5 | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports<br>±2 kV line-earth (CM) on communication ports |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz |

## Table 61 - Certifications - CIP Security Proxy

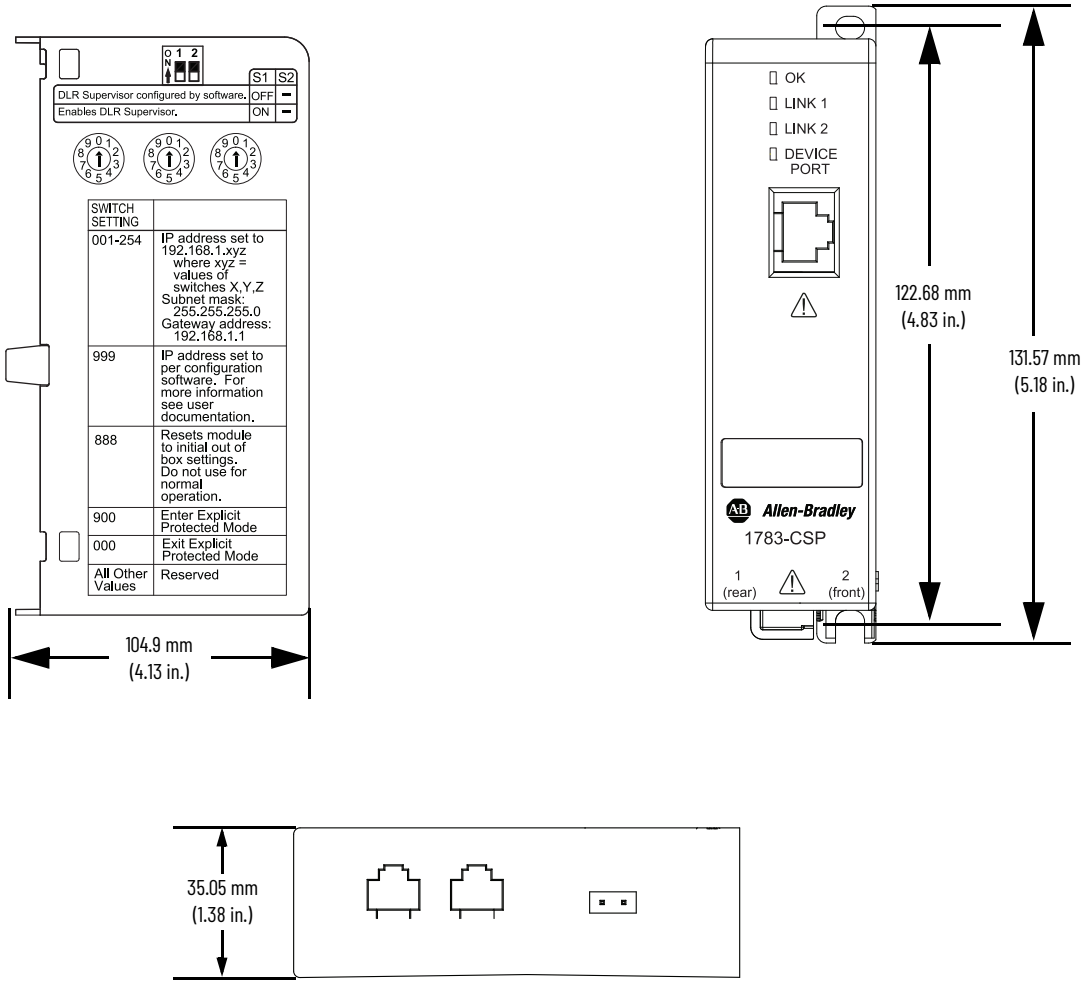
| Certification[1] | 1783-CSP |
|---|---|
| c-UL-us | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E194810 |
| CE | European Union 2014/30/EU EMC Directive, compliant with:<br>• EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>• EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>European Union 2011/65/EU RoHS, compliant with:<br>• EN 50581; Technical documentation |
| RCM | Australian Radiocommunications Act, compliant with:<br>• EN 61000-6-4; Industrial Emissions |
| Ex | European Union 2014/34/EU ATEX Directive, compliant with:<br>• EN 60079-0; General Requirements<br>• EN 60079-7; Explosive Atmospheres, Protection "e"<br>• II 3 G Ex ec IIC T4 Gc<br>• DEMKO 20 ATEX 2349X |
| IECEx | IECEx System, compliant with:<br>• IEC 60079-0; General Requirements<br>• IEC 60079-7; Explosive Atmospheres, Protection "e"<br>• II 3 G Ex ec IIC T4 Gc<br>• IECEx UL 20.0023X |
| EtherNet/IP | ODVA conformance tested to EtherNet/IP specifications |

(1) See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

# Dimensions - CIP Security Proxy

This illustration shows dimensions for the 1783-CSP CIP Security™ proxy.

When mounting the 1783-CSP CIP Security proxy, leave a minimum clearance between the device and adjacent equipment of 2.54 cm (1 in.) on all sides.



# Accessories

## Small Form-factor Pluggable (SFP) Modules

### Table 62 - SFP Modules Technical Specifications

| Cat. No. | Description | Interface Connector | Wavelength (nm) | Core Size/ Cladding Size (micron) | Modal Bandwidth (MHz/km) | Cable Length | DOM[1] | Transmit Power (dBm) | Receive Power (dBm) |
|---|---|---|---|---|---|---|---|---|---|
| 1783-SFP100FX | 100BASE-FX multimode fiber | Dual LC | 1310 | 50/125 | 500 | 2 km (6562 ft) | Yes | -14 (max)...-20 (min) | -14 (max)...-31 (min) |
| | | | | 62.5/125 | 500 | | | | |
| 1783-SFP100LX | 100BASE-LX singlemode fiber | Dual LC | 1310 | G.652 | – | 10 km (32,808 ft) | Yes | -8 (max)...-15 (min) | -8 (max)...-28 (min) |
| 1783-SFP100EXC | 100BASE-EX singlemode fiber | Dual LC | 1310 | G.652[2] | – | 40 km (131,234 ft) | No | 0 (max)...-5 (min) | -8 (max)...-28 (min) |
| 1783-SFP100ZXC | 100BASE-ZX singlemode fiber | Dual LC | 1550 | G.652[2] | – | 80 km (262,467 ft) | No | +2 (max)...-3 (min) | -8 (max)...-30 (min) |
| 1783-SFP100T[3] | 100BASE-T copper | RJ-45 | – | – | – | 100 m (328 ft) | No | – | – |
| 1783-SFP1GSX | 1000BASE-SX multimode fiber | Dual LC | 850 | 62.5/125 | 160 | 220 m (722 ft) | Yes | -3 (max)...-9.5 (min) | 0 (max)...-17 (min) |
| | | | | 62.5/125 | 200 | 275 m (902 ft) | | | |
| | | | | 50/125 | 400 | 500 m (1640 ft) | | | |
| | | | | 50/125 | 500 | 550 m (1804 ft) | | | |
| 1783-SFP1GLX | 1000BASE-LX/LH singlemode fiber | Dual LC | 1310 | G.652 | – | 10 km (32,808 ft) | Yes | -3 (max)...-9.5 (min) | -3 (max)...-20 (min) |
| 1783-SFP1GEXE[4] | 1000BASE-EX singlemode fiber | Dual LC | 1310 | G.652[2] | – | 40 km (131,234 ft) | Yes | +3 (max)... -1 (min) | +1 (max)...-22 (min) |
| 1783-SFP1GZX[5] | 1000BASE-ZX singlemode fiber | Dual LC | 1550 | G.652[2] | – | 70 km (229,659 ft) | Yes | +5 (max)...0 (min) | -3 (max)...-23 (min) |
| 1783-SFP1GTE | 1000BASE-T copper | RJ-45 | – | – | – | 100 m (328 ft) | No | – | – |
| 1783-SFP10GSRE | 10GBASE-SR multimode fiber | Dual LC | 850 | 62.5/125 | 160 (FDDI) | 26 m (85 ft) | Yes | -1.2 (max)...-7.3 (min) | -1.0 (max)...-9.9 (min) |
| | | | | 62.5/125 | 200 (OM1) | 33 m (108 ft) | | | |
| | | | | 50/125 | 400 | 66 m (216 ft) | | | |
| | | | | 50/125 | 500 (OM2) | 82 m (269 ft) | | | |
| | | | | 50/125 | 2000 | 300 m (984 ft) | | | |
| | | | | 50/125 | 4700 | 400 m (1312 ft) | | | |
| 1783-SFP10GLRE | 10GBASE-LR singlemode fiber | Dual LC | 1310 | G.652[2] | – | 10 km (32,808 ft) | Yes | +0.5 (max)...-8.2 (min) | +0.5 (max)...-14.4 (min) |

(1) Digital Optical Monitoring (DOM) iis supported on the switches via the command-line interface (CLI).
(2) ITU-T G.652 SMF as specified by the IEEE 802.3z standard.
(3) The 1783-SFP100T module requires Stratix 5400 or 5410 firmware revision 3.001or later, Stratix 5700 firmware revision 8.001or later, or Stratix 8000 firmware revision 12.001 or later.
(4) The 1783-SFP1GEXE module operates on standard single-mode fiber-optic link spans of up to 40 km in length. For back-to-back connectivity, insert a 5-dB inline optical attenuator between the fiber-optic cable and the receiving port on the SFP module at each end of the link.
(5) When shorter distances of single-mode fiber (SMF) are used, you can avoid overloading the receiver by inserting an inline optical attenuator in the link. If the fiber-optic cable span loss is less than 8 dB, insert a10-dB inline optical attenuator between the fiber-optic cable plant and the receiving port on the SFP module at each end of the link.

### Table 63 - SFP Modules Temperature Ratings

| Cat. No. | Commercial(1)<br>0 ...+70 °C (+32 ...+158 °F) | Extended(1)<br>-5 ...+85 °C (+23...+185 °F) | Industrial(1)<br>-40 ...+85 °C (-40...+185 °F) |
|---|---|---|---|
| 1783-SFP100FX | No | No | Yes |
| 1783-SFP100LX | No | No | Yes |
| 1783-SFP100EXC | Yes | No | No |
| 1783-SFP100ZXC | Yes | No | No |
| 1783-SFP100T | No | No | Yes |
| 1783-SFP1GSX | No | No | Yes |
| 1783-SFP1GLX | No | No | Yes |
| 1783-SFP1GEXE | No | Yes | No |
| 1783-SFP1GZX | No | No | Yes |
| 1783-SFP1GTE | No | Yes | No |
| 1783-SFP10GSRE | No | Yes | No |
| 1783-SFP10GLRE | No | Yes | No |

(1) Once you install SFP modules in the switch, the overall temperature rating of the combined modules (switch and SFP modules) is limited to the lowest maximum temperature rating and the highest minimum temperature rating.

### Table 64 - SFP and Switch Compatibility

| Cat. No. | Stratix 2000(1) (2) | Stratix 5400 | Stratix 5410 | Stratix 5700 | Stratix 5800 | Stratix 5950 | Stratix 6000 | Stratix 8000 | Stratix 8300 |
|---|---|---|---|---|---|---|---|---|---|
| 1783-SFP100FX | Supported | Supported | Supported | Supported | Supported | Supported | Not Supported | Supported | Supported |
| 1783-SFP100LX | Supported | Supported | Supported | Supported | Supported | Supported | Not Supported | Supported | Supported |
| 1783-SFP100EXC | Supported | Supported | Supported | Supported | Supported | Not Supported | Not Supported | Supported | Supported |
| 1783-SFP100ZXC | Supported | Supported | Supported | Supported | Supported | Not Supported | Not Supported | Supported | Supported |
| 1783-SFP100T(3) | Not Supported | Supported | Supported | Supported | Not Supported | Not Supported | Not Supported | Supported | Not Supported |
| 1783-SFP1GSX(4) | Supported | Supported | Supported | Supported | Supported | Supported | Supported | Supported | Supported |
| 1783-SFP1GLX(4) | Supported | Supported | Supported | Supported | Supported | Supported | Supported | Supported | Supported |
| 1783-SFP1GEXE(4) | Supported | Supported | Supported | Supported | Supported | Not Supported | Not Supported | Supported | Supported |
| 1783-SFP1GZX(4) | Supported | Supported | Supported | Supported | Supported | Not Supported | Not Supported | Supported | Supported |
| 1783-SFP1GTE(4) | Not Supported | Supported | Supported | Supported | Supported | Not Supported | Not Supported | Supported | Supported |
| 1783-SFP10GSRE | Not Supported | Not Supported | Supported | Not Supported | Not Supported | Not Supported | Not Supported | Not Supported | Not Supported |
| 1783-SFP10GLRE | Not Supported | Not Supported | Supported | Not Supported | Not Supported | Not Supported | Not Supported | Not Supported | Not Supported |

(1) The SFP modules shown in this table for Stratix 2000 switches must be ordered separately and are not the same as the preinstalled SFP modules that ship with the switches.
(2) Stratix 2000 Gigabit Ethernet (GE) SFP slots support only GE SFP modules 1783-SFP1GSX,1783-SFP1GLX, 1783-SFP1GEXE, and 1783-SFP1GZX.
(3) The 1783-SFP100T module requires Stratix 5400 or 5410 firmware revision 3.001or later, Stratix 5700 firmware revision 8.001or later, or Stratix 8000 firmware revision 12.001 or later.
(4) Gigabit Ethernet (GE) SFP modules work only in GE SFP slots.

## Memory Cards

| Cat. No. | Description | Compatibility |
|---|---|---|
| 1784-SD1 | 1 GB industrial SD card | Stratix 5700<br>Stratix 5950 |
| 1784-SDHC8 | 8 GB industrial SDHC card | Stratix 5800 |
| 1783-MCF | CompactFlash card (spare) | Stratix 8000 |
| 1783-RMCF | CompactFlash card (spare) | Stratix 8300 |

# Ethernet Cables

| Cat. No. | Category | Description |
|---|---|---|
| **Industrial Ethernet Patchcords[1]** | | |
| **RJ45 to RJ45** | | |
| 1585J-M8TBJM-2 | Category 5 | Male RJ45 to male RJ45, unshielded twisted pair, teal, high-flex TPE, 8-conductor (4-pair), 2 m (6.56 ft) cable |
| 1585J-M4TBJM-2 | | Male RJ45 to male RJ45, unshielded twisted pair, teal, high-flex TPE, 4-conductor (2-pair), 2 m (6.56 ft) cable |
| 1585J-M8UBJM-2 | | Male RJ45 to male RJ45, foil and braided shield, teal, high-flex PUR, 8-conductor (4-pair), 2 m (6.56 ft) cable |
| 1585J-M4UBJM-2 | | Male RJ45 to male RJ45, foil and braided shield, teal, high-flex PUR, 4-conductor (2-pair), 2 m (6.56 ft) cable |
| 1585J-M8PBJM-2 | | Male RJ45 to male RJ45, unshielded twisted pair, teal, riser PVC, 8-conductor (4-pair), 2 m (6.56 ft) cable |
| 1585J-M4PBJM-2 | | Male RJ45 to male RJ45, unshielded twisted pair, teal, riser PVC, 4-conductor (2-pair), 2 m (6.56 ft) cable |
| 1585J-M8HBJM-2 | | Male RJ45 to male RJ45, foil shield, teal, 600V PVC, 8-conductor (4-pair), 2 m (6.56 ft) cable |
| 1585J-M4HBJM-2 | | Male RJ45 to male RJ45, foil shield, teal, 600V PVC, 4-conductor (2-pair), 2 m (6.56 ft) cable |
| 1585J-M8TGJM-2 | Category 6 | Male RJ45 to male RJ45, foil shield, teal, high-flex TPE, 8-conductor (4-pair), 2 m (6.56 ft) cable |
| **M12 to M12, D-code** | | |
| 1585D-M4TBDM-2 | Category 5e | M12 D-code to M12 D-code, unshielded twisted pair, teal, high-flex TPE, 4-conductor (2-pair), 2 m (6.56 ft) cable |
| 1585D-M4UBDM-2 | | M12 D-code to M12 D-code, foil and braided shield, teal, high-flex PUR, 4-conductor (2-pair), 2 m (6.56 ft) cable |
| 1585D-M4PBDM-2 | | M12 D-code to M12 D-code, foil and braided shield, teal, riser PVC, 4-conductor (2-pair), 2 m (6.56 ft) cable |
| **M12 X-code to M12 X-code** | | |
| 1585D-M8TGDM-2 | Category 6 | M12 X-code to M12 X-code, foil and braided shield, teal, high-flex TPE, 8-conductor (4-pair), 2 m (6.56 ft) cable |
| **Industrial Ethernet Cable Spools[2]** | | |
| 1585-C8TB-S100 | Category 5e | Cable spool, unshielded twisted pair, teal, high-flex TPE, 8-conductor (4-pair), 100 m (328.08 ft) |
| 1585-C8UB-S100 | | Cable spool, foil and braided shield, teal, high-flex PUR, 8-conductor (4-pair), 100 m (328.08 ft) |
| 1585-C8PB-S100 | | Cable spool, unshielded twisted pair, teal, riser PVC, 8-conductor (4-pair), 100 m (328.08 ft) |
| 1585-C8HB-S100 | | Cable spool, foil shield, teal, 600V PVC, 8-conductor (4-pair), 100 m (328.08 ft) |
| **Accessories** | | |
| 1585J-M8CC-H | Category 5e | RJ45 IDC connector |
| 1585D-M4DC-H | | M12 D-code IDC connector |
| 1585D-M4DC-SH | | M12 D-code IDC connector compatible with 600V cable spools |

(1) Patchcords are available in lengths of up to 80 m (262.46 ft) in 0.1 m (0.328 ft) increments. Refer to http://www.ab.com/catalogs for full product offering.
(2) Cable spools are available in 100,300 m (328.08 ft) and 600 m (1968.5 ft) lengths.

# Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

| Resource | Description |
|---|---|
| Configurable NAT Router User Manual, publication 1783-UM008 | Describes how to install, configure, and troubleshoot the NAT router. |
| EtherNet/IP Industrial Protocol White Paper, publication ENET-WP001 | Describes how to implement services and data objects on a TCP/UDP/IP based Ethernet network. |
| Stratix Managed Switches User Manual, publication 1783-UM007 | Describes how to configure and troubleshoot Stratix 5400, 5410, 5700, 8000, 8300, and ArmorStratix 5700 switches. |
| Stratix 2000 Ethernet Unmanaged Switches User Manual, publication 1783-UM011 | Describes how to use DIP switches and status indicators on Stratix 2000 switches. |
| Stratix 2500 Lightly Managed Switches User Manual, publication 1783-UM009 | Describes how to configure and troubleshoot Stratix 2500 switches. |
| Stratix 5800 Ethernet Managed Switches User Manual, publication 1783-UM012 | Describes how to configure and troubleshoot Stratix 5800 switches. |
| Stratix 6000 Ethernet Managed Switches User Manual, publication 1783-UM001 | Describes how to configure and troubleshoot Stratix 6000 switches. |
| Stratix 5100 Wireless Access Point/Workgroup Bridge User Manual, publication 1783-UM006 | Describes how to install, configure, and troubleshoot the wireless access point. |
| Stratix 5900 Services Router User Manual, publication 1783-UM005 | Describes how to install, configure, and troubleshoot the router. |
| Stratix 5950 Security Appliance User Manual, publication 1783-UM010 | Describes how to install, configure, and troubleshoot the security appliance. |
| CIP Security Proxy User Manual, publication 1783-UM013 | Describes how to configure an troubleshoot the CIP Security proxy. |
| EtherNet/IP Network Devices User Manual, ENET-UM006 | Describes how to configure and use EtherNet/IP devices to communicate on the EtherNet/IP network. |
| Ethernet Reference Manual, ENET-RM002 | Describes basic Ethernet concepts, infrastructure components, and infrastructure features. |
| Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1 | Provides general guidelines for installing a Rockwell Automation industrial system. |
| Product Certifications website, rok.auto/certifications. | Provides declarations of conformity, certificates, and other certification details. |
| Industrial Components Preventive Maintenance, Enclosures, and Contact Ratings Specifications, publication IC-TD002 | Provides a quick reference tool for Allen-Bradley industrial automation controls and assemblies. |
| Safety Guidelines for the Application, Installation, and Maintenance of Solid-state Control, publication SGI-1.1 | Designed to harmonize with NEMA Standards Publication No. ICS 1.1-1987 and provides general guidelines for the application, installation, and maintenance of solid-state control in the form of individual devices or packaged assemblies incorporating solid-state components. |

You can view or download publications at rok.auto/literature.

# Rockwell Automation Support

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| | | |
|---|---|---|
| **Technical Support Center** | Find help with how-to videos, FAQs, chat, user forums, and product notification updates. | rok.auto/support |
| **Knowledgebase** | Access Knowledgebase articles. | rok.auto/knowledgebase |
| **Local Technical Support Phone Numbers** | Locate the telephone number for your country. | rok.auto/phonesupport |
| **Literature Library** | Find installation instructions, manuals, brochures, and technical data publications. | rok.auto/literature |
| **Product Compatibility and Download Center (PCDC)** | Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes. | rok.auto/pcdc |

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