Catalog | March 2025

Modicon M660

Advanced iPC Motion Controller

www.se.com

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Modicon

Discover Modicon

Edge control for industrial internet of things (IoT)

Modicon IIoT-native edge controllers manage complex interfaces across assets and devices or directly into the cloud, with embedded functional safety and cybersecurity. **Modicon** provides performance and scalability for a wide range of industrial applications up to high-performance multi-axis machines and high-available redundant processes.

Explore our offer

- Modicon HVAC Controllers
- Modicon PLC
- Modicon Motion Controllers
- Modicon PAC
- Modicon Edge I/O
- Modicon I/O
- Modicon Networking
- Modicon Power Supply
- Modicon Wiring
- Modicon Safety

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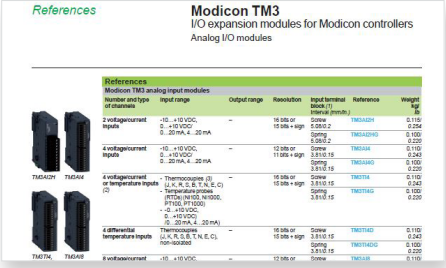
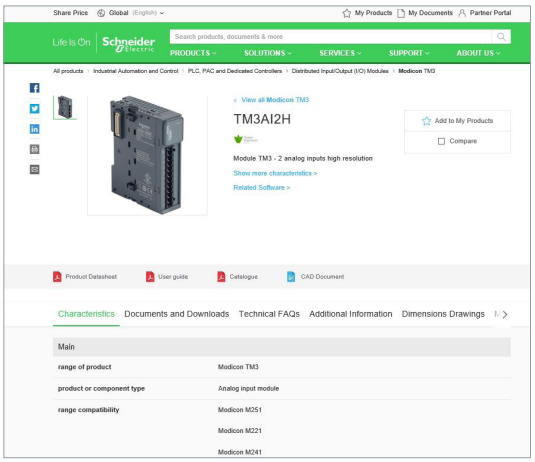
Quick access to product information

Get technical information about your product

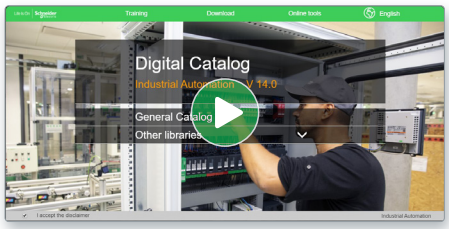


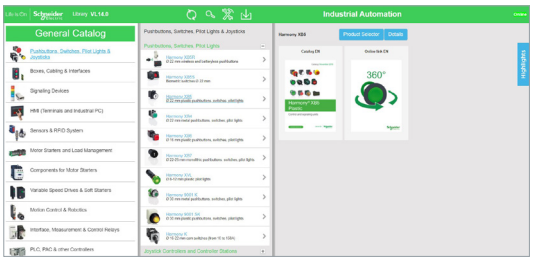


Each commercial reference presented in a catalog contains a hyperlink. Click on it to obtain the technical information of the product:

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

Find your catalog





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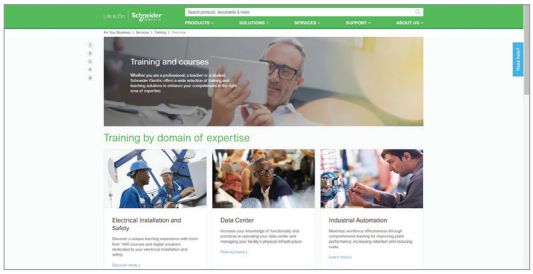

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Modicon M660

Advanced iPC Motion Controller

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EcoStruxure™

Innovation At Every Level

To be competitive in today's digital era, machine builders must be innovative. Smart machines, those that are better connected, more flexible, more efficient, and safe, are enabling machine builders to innovate in ways never before possible.

EcoStruxure, Schneider Electric's open, IoT-enabled architecture and platform, offers powerful solutions for the digital era. As part of this, EcoStruxure Machine brings powerful opportunities for machine builders and OEMs, empowering them to offer smart machines and compete in the new, digital era.

EcoStruxure Machine brings together key technologies for product connectivity and edge control on premises, and cloud technologies to provide analytics and digital services.
EcoStruxure Machine helps you bring more innovation and added value to your customers throughout the entire machine life cycle.

Innovation at Every Level for Machines is full systems across three layers:

– Connected products
Our connected products for measuring, actuating, device level monitoring, and control adhere to open standards to provide unmatched integration opportunities and flexibility
– Edge Control
We are IIoT-ready with a proven set of tested and validated reference architectures that enable the design of end-to-end open, connected, and interoperable systems based on industry standards. Ethernet and OPC UA facilitates IT/OT convergence meaning machine builders reap benefits from web interfaces and cloud.
– Apps, Analytics & Services
Seamless integration of machines to the IT layer allows the collection and aggregation of data ready for analysis – for machine builders and end users alike this means increased uptime and the ability to find information faster for more efficient operations and maintenance.

These levels are completely integrated from shop floor to top floor. And we have cloud offers and end-to-end cybersecurity wrapped around.

EcoStruxure Machine makes it easier for OEMs/machine builders to offer their customers smarter machines. The advent of smart machines is driven by the changing needs of end users:
– Evolving workforce
– Reducing costs
– Dynamic markets
– Shorter life cycles
– Prioritizing functional safety and cybersecurity

EcoStruxure Machine provides one solution for the whole machine life cycle:
– With Smart Design & Engineering the time to market is reduced by up to 30% using our automated engineering and the simulation capabilities
– During Commissioning & Operation of the machine, resources such as energy, material and loss can be improved, and with seamless integration to the IT world efficiency can be improved by up to 40%
– Smart Maintenance & Services reduces the time for corrective actions up to 50%

EcoStruxure™ Machine

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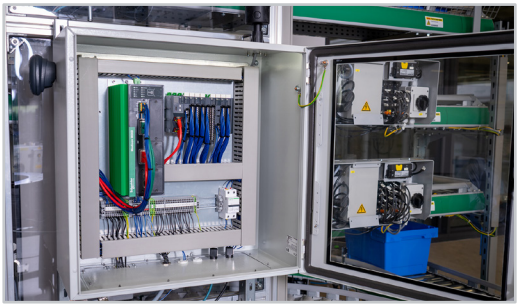
Modicon M660

Advanced iPC Motion Controller

Modicon M660



Brand purpose

- As a trusted partner in sustainability and efficiency, Schneider Electric's mission is to help OEMs, machine builders, and manufacturers to easily implement next-generation, software-centric machines, all while reducing cost and time to market.
- Advanced motion control systems, with motion controllers at their core, are fundamental components of next-generation machines. Given the higher precision, speed, and adaptability demanded by modern industrial processes, upgrading to motion controllers allows users to integrate the latest innovations, including connectivity, seamless integration with IoT platforms, and computing. This allows them to process and analyze data closer to the data source, enabling real-time decision-making, reducing latency, and enhancing overall system responsiveness.
- These systems are instrumental in achieving greater efficiency, flexibility, and connectivity, and they make a significant contribution to smart manufacturing.

Solution

- In a context of increasing demands for flexibility, connectivity, and efficiency in modern industrial automation, machine builders and manufacturers are looking for easy and cost-effective automation solutions for real-time data analytics, predictive maintenance capabilities, and seamless integration with Industry 4.0 technologies, to help ensure more precise control, faster response times and adaptation, and improved energy efficiency.
- The new generation of cutting-edge motion controllers can help manufacturers to overcome traditional constraints, improve performance, and meet the increasing demands for flexibility, connectivity, and efficiency in modern industrial automation.
- By providing a single integrated, IoT-ready platform encompassing the full motion control system, including robotics, automation control, and digital services, Schneider Electric is positioned to deliver maximum benefits throughout the life cycle. With the new Advanced iPC Motion Controller, easily programmed through an open and unified engineering environment, operational agility and cost efficiency are prioritized, taking the motion control system to the next level. The higher processing power with the latest generation Intel multicore-processor and advanced algorithms enable faster and more precise control of machines, ultimately leading to improved productivity and quality. This emphasis on cutting-edge technology and seamless integration sets a significant foundation for meeting evolving industry demands.

Overview

- The Modicon M660 is available in two configurations:
  - Motion controller
  - Compute Motion controllers
- This unique design combines the real-time control capabilities of a motion controller with the flexibility and computing power of an industrial PC in a single device.
- This integrated approach enables seamless integration of control, data processing, and communication in any applications where real-time control, low latency, and immediate decision-making are crucial, such as robotics and motion control systems in manufacturing.
- Modicon M660 incorporates high-speed processors, enhanced communication interfaces, and robust cybersecurity positioning it as an attractive choice for next-generation motion control systems with computing needs.
- Its modular design and simplified programming within a unified engineering environment provide operational agility and cost efficiency though easier upgrades and scalability, enabling it to meet diverse application requirements and accommodate future expansion, while also facilitating smooth integration with other automation devices.

Modicon M660

Explore Environmental Data on our offer.

Solution integration, data-driven perfomance

Connectivity

> Designed for seamless solution integration and data-driven performance, helping to ensure compatibility with connectivity enhancements and simulation integration

> Future-ready with TSN (Time Sensitive Networking) technology enabling communication over Ethernet (to be used with OPC UA FX)

Edge computing

In the iPC motion controller with data processing version, an additional operating system based on Windows is available, enabling the use of data processing and analytics

Programming

Programmed through EcoStruxure Automation Expert - Motion Module, an engineering software for motion control design, part of the unified automation environment, EcoStruxure Automation Expert platform, that enable to leverage digital twin and AI technologies for optimized performance

Performance, modularity, and scalability

The iPC motion controller with data processing merges the real-time control functions of a motion controller with the versatility and computational capacity of an industrial PC within a single device.

This integrated approach enables seamless integration of control, data processing, and communication in applications where real-time control, low latency, and immediate decision-making are crucial.

> Combining motion, functional safety, and edge computing in one device

> 64-bit runtime system

> Intel multi-core processors available based on customer needs (U300, i3, i5, and i7)

> Scalable RAM memory up to 64 GB and storage up to 1 TB

> Multiple Ethernet end points with different fieldbuses

Functional safety and cyber ready

The Modicon M660 Advanced iPC Motion Controller offers robust cybersecurity and embedded functional safety features to help maintain operational continuity, protect sensitive data, and ensure functional safety for personnel and equipment.

> Cybersecure: Designed with an embedded Trusted Platform Module (TPM) and compliant with IEC 62443-4-1/2, this solution helps ensure that your machinery and processes are safeguarded against cyber threats

> Functional safety
- Offering a comprehensive range of functional safety functions designed to align with industry-leading safety standards, including IEC 61508, ISO 13849-1, IEC 62061, and IEC 61800-5-2.
- Helping to ensure a functionally safe working environment, providing distributed functional safety solutions for peace of mind and compliance with global safety regulations.

Sustainability, energy efficiency, and resilience

Modicon M660 Advanced iPC Motion Controller optimizes energy usage, improves process efficiency, and enables predictive maintenance to reduce energy consumption, minimize waste, and prolong equipment lifespan, aligning with sustainable manufacturing practices.

Partnering with Schneider Electric provides access to the Environmental Data Program, which categorizes and measures product environmental attributes and footprints. It builds on the Green Premium Program, utilizing a fact-based methodology.

> Passive cooling (variants without fan and controlled fan)

> Power saving modes

Modicon M660
Advanced iPC Motion Controller

Applications		**For full motion control power including mechatronic and robotic functions**		**For full motion real-time performance and data processing**	
CPU		Intel U300E	Intel Core i3-1320	Intel Core i3-1320	Intel Core i5-1350
P-Cores + E-Cores/Hyperthreads		1P + 4E/6T	4P + 4E/12T	4P + 4E/12T	4P + 8E/16T
Frequency		1.1 GHz	1.7 GHz	1.7 GHz	1.8 GHz
RAM		4 GB	4 GB	8 GB	8 GB
Operating system		Real-time OS		Windows OS	
SD card interface		For managing application and firmware in an easy and secure manner: □ 1x SDHC support (32 GB)/SDXC support (2 TB) □ > 35 MB/s		For managing application and firmware in an easy and secure manner: □ 1x SDHC support (32 GB)/SDXC support (2 TB) □ > 35 MB/s	
Capacity	SSD local storage	–		256 GB	2x 512 GB
Communication interface	Single Ethernet (100/1000/2.5G Base-T)	2	2	2	2
	Dual switch SERCOS/TSN (100/1000 Base-T)	1	1	1	2
	USB 2/USB 3 Type A (up to 5 Gbps)	3	3	3	3
	USB 3.2 Type C (10 Gbps)	–	–	1	1
	NFC (Near Field Communication)	1	1	1	1
	Display Port	–	–	1	1
Fieldbuses		SERCOS III, PROFINET *(1)*, EtherCAT *(1)*, EtherNet/IP *(1)*		SERCOS III, PROFINET *(1)*, EtherCAT *(1)*, EtherNet/IP *(1)*	
Maximum number of servo axes over SERCOS III		16	32	32	130
Digital inputs		4 fast inputs type 1 (according to IEC 61131-2)			
Options	Optional module type *(1)*	□ Communication port module for TSN Ethernet, SERCOS III, EtherNet/IP, PROFINET, or EtherCAT □ Modem module □ WiFi module		□ Communication port module for TSN Ethernet, SERCOS III, EtherNet/IP, PROFINET, or EtherCAT □ Modem module □ WiFi module	
	Mini PCIe slots	2	2	2	2
	PCIe slots (half-size)	–	–	–	–
	Max. number of modules to be installed	2	2	2	2
I/O expansion module system compatibility	Via SERCOS III *(1)*	With Modicon Edge I/O NTS , please consult catalog ref. DIA3ED2240601EN			
Configuration software		With EcoStruxure automation Expert - Motion Module *(1)*			
Housing dimensions (height x width x depth)		310 mm *(12.2 in.)* x 100 mm *(3.94 in.)* x 197.75 mm *(7.79 in.)*			

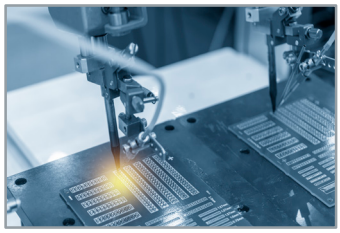
Motion controller	Type	**Motion controllers**		**Compute Motion controllers**	
	Reference	**MN660C153N1010**	**MN660C253N1010**	**MN660P253N2011W0**	**MN660P354N2013W0**
See page		14		14	

(1) For engineering M660 Motion/Compute Motion controllers, the customer needs the EcoStruxure Automation Expert - Motion Module;
Included in the EcoStruxure Automation Expert software.

Modicon M660

Advanced iPC Motion Controller

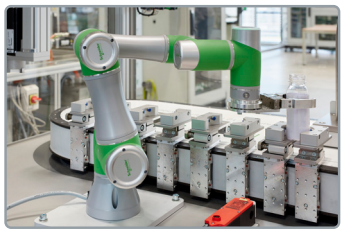
Modicon M660 Advanced iPC Motion Controller



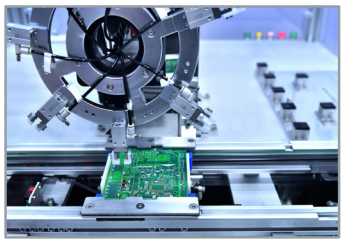
Electrical and Electronics application

Food & Beverage application

Packaging application



Material handling application



Semiconductor application

Modicon M660 range

Modicon M660 Advanced iPC *(1)* **Motion Controllers provide high precision, fast throughput, synchronization capabilities, real-time control, and customization options in industrial motion control applications.**

- Precise control over motion, allowing for accurate positioning and movement in industrial applications
- Processing of motion commands at high speeds, leading to faster throughput and increased productivity in manufacturing processes
- Synchronization of multiple axes of motion, enabling coordinated movement in multi-axis systems
- Real-time control and communication capabilities, enabling motion commands to be executed with minimal latency

Targeted applications

The Modicon M660 range is dedicated to industrial motion control applications, where real-time control, low latency, and immediate decision-making are crucial, such as robotics and motion control systems in the following manufacturing sectors :

- Electrical and Electronics
- Food & Beverage
- Packaging
- Material handling
- Semiconductor
- Life sciences
- Battery manufacturing
- Conveying
- Material working

System components

The Modicon M660 range consists of two types of motion controller, communication modules, gateways, and mounting accessories.

- The **MN660C** Motion controllers provide:
  - Full motion control power with embedded mechatronic and robotic functions
  - Synchronized axis: 16, 32, 64,130 axes via SERCOS
  - Real-time OS
  - Intel processors
- The **MN660P** Compute Motion controllers enhance the **MN660C** Motion controllers by incorporating industrial PC capabilities:
  - Industrial PC (iP-based controller including real-time motion and OS virtualization
  - Data acquisition and processing at the edge instead of at a remote host
  - OS virtualization (Windows)
  - Extensive logging, analytics, and diagnostics
  - Visualization, dashboards
  - Containers/Apps
  - Cybersecurity (TPM)
- The mounting accessories, reference **MNAH6**, complete the hardware offer:
  - Fan kit
  - Kits for rear wall mounting or side wall mounting
  - Cable holder
  - Spring connectors

(1) industrial PC

Modicon M660

Advanced iPC Motion Controller

MN660C *Motion controllers*

MN660P *Compute Motion controllers*

Modicon M660 range

Embedded equipment

- Embedded equipment on **MN660C** Motion controllers:
  - Device diagnosis and operation
  - Digital inputs
  - Watchdog output
  - 2x USB 3.1 type A and 1x USB 2.0 covered
  - SD card
  - 2x separate single Ethernet ports
  - 1x dual-port Ethernet interface for real-time communication
- Additional components on **MN660P** Compute Motion controllers:
  - 1x USB 3.2 Type C (also usable as a second display port)
  - 1x display port connector
  - Optional battery
  - Solid State Drive (SSD) for local storage

Performance

Multiple CPU types are available depending on the Modicon M660 Motion and Compute Motion controller model to accommodate the requirements of motion control.

- Processors and RAM

M660 controllers are equipped with Intel processors with a hybrid architecture using performance cores (P-Cores) and efficient cores (E-Cores):

Processor type	Intel U300E	Intel Core i3-1320	Intel Core i5-1350	Intel Core i7-1370
Cores (P-Cores + E-Cores)	5 (1P + 4E)	8 (4P + 4E)	12 (4P + 8E)	14 (6P + 8E)
Hyperthreads	6	12	16	20
Frequency	1.1 GHz	1.7 GHz	1.8 GHz	1.9 GHz
RAM for standard references (scalable up to 64 GB)	4 GB (LPDDR5)	4 or 8 GB (LPDDR5)	4 or 8 GB (LPDDR5)	4 or 8 GB (LPDDR5)

- Control performance and network characteristics

Controller type	MN660●153	MN660●253	MN660●354	MN660●455
Maximum number of synchronized axes via SERCOS	16	32	130	130
Minimum cycle time for axes (SERCOS)	1 ms	1 ms	1 ms	1 ms
Minimum cycle time for I/O (SERCOS)	1 ms	1 ms	1 ms	1 ms
Ethernet end points	3	3	4	5

Embedded I/O

Modicon M660 Motion and Compute Motion controllers embed four digital inputs (IEC 61131-2 Type 1) connected to the controller via removable spring terminal blocks on the controller front face. The digital inputs are used to connect controllers to their machine environment, to monitor and trigger a shutdown or reset, or to monitor an external inverter, for example.

Consult catalog ref. DIA3ED2240601EN

Modicon M660 range

Extended I/O with I/O systems

Modicon M660 Motion and Compute Motion controllers can be combined with **Modicon Edge I/O NTS** offer, allowing distributed I/O over EtherNet/IP network, Modbus TCP and SERCOS fieldbusses *(1)*.

Certifications and standards

- The Modicon M660 range meets the requirements of the following certifications:
  - CE
  - cULus (pending)
  - UKCA
  - EAC (pending)
  - RCM (pending)
  - TÜV (pending)
- The Modicon M660 range conforms to the following standards:
  - EN/IEC 61000-4-2
  - EN/IEC 61000-4-4
  - EN/IEC 61131-2
  - UL/CSA 61010-2-201

Characteristics

The Modicon M660 range complies with class 2K12 according to IEC 60721-3-3 (climatic conditions), and IEC 61800-5-2 safe motion functions.

Ambient air temperature for operation (vertical installation)	**MN660C153N1010:** - with fan kit and with all optional cards: 0 to 55 °C *(32 to 131 °F)* - without fan kit and without all optional cards: 0 to 55 °C *(32 to 131 °F)* - without fan kit and with all optional cards: 0 to 35 °C *(32 to 95 °F)* **MN660C253N1010**, **MN660P253N2011W0**, **MN660P354N2013W0**: - with fan kit and with all optional cards installed: 0 to 55 °C *(32 to 131 °F)* - without fan kit and without all optional cards: 0 to 45 °C *(32 to 113 °F)* - without fan kit and with all optional cards: 0 to 35 °C *(32 to 95 °F)*
Relative humidity (non-condensing)	5...95%
Operating altitude	< 2,000 m *(< 6,562 ft)*
Degree of protection	IP20 according to IEC 60529
Mounting location	Flat mounting and book mounting
Type of cooling	- Fanless - By fan (with optional kit)
RTC/Backup Battery	1 (Optional)
Watchdog	Yes, for resistive load maximum 24 V (+25%)/2A
Electrical connection	With removable terminal block, located on front or top of the controller (provided with the controller)
Cybersecurity	Secure Boot for Windows and real-time OS

Consult catalog ref. DIA3ED2170401EN

Power supply characteristics

The Modicon M660 Motion and Compute controllers are supplied by an external 24 V power supply unit that meets the following requirements:

- Rated supply voltage: 24 VDC (-15%/+25%/5% AC ripple)
- Supply voltage limits: 19.2 to 31.2 VDC
- Protective Extra Low Voltage (PELV) power supply unit

View our power supply offer in catalog ref. DIA3ED2170401EN

EcoStruxure Automation Expert - Motion Module

EcoStruxure Automation Expert – Motion Module

Engineering software

Modicon M660 Motion and Compute Motion controllers are engineered using **EcoStruxure Automation Expert – Motion Module** a single Engineering software for motion control design.

- **EcoStruxure Automation Expert – Motion Module** covers the full engineering lifecycle:
  - Version management
  - Testing
  - Deployment
  - Diagnostics and remote services

Furthermore, it connects with a range of engineering tools through open interfaces.

- **EcoStruxure Automation Expert – Motion Module** supports all the IEC 61131-3 languages, integrated fieldbus configurators, expert diagnostic and debugging functions, and motion design, as well as multiple capabilities for commissioning, maintenance, and visualization.

Capacity

EcoStruxure Automation Expert – Motion Module introduces innovative features for efficient machine development as a portal with different control applications:

- It allows you to manage your automation projects throughout the full lifecycle, including engineering and operation.
- Part of EcoStruxure Automation Platform, unified automation environment, it figures a collaborative environment with data sharing and integrated advanced apps such as **AI Copilot** and **Digital Twin**.
- It allows multi-user and versioning.
- It provides a functional view in a project tree to program machines in a modular way.
- It embeds:
  - **IIoT** standard libraries (MQTTs, HTTPs, JSON, etc.) to connect the controller to web APIs, our cloud services or third-party systems. Project examples and function templates help with how to use these technologies.
  - Python programming language interface:
    - to increase programming efficiency, by automating development and project generation
    - to integrate **EcoStruxure Automation Expert – Motion Module** in the company's individual environment and automate workflows
  - **ETEST** framework for a higher quality of application code thanks to automated IEC software unit test
  - Browser responsive documentation accessible offline or online from any smart device with an internet connection
  - The Multi Carrier Configurator:
    - a single editor developed to configure the complete Lexium MC12 multi carrier
    - including automatic generation of emulation data
    - integrated digital twin for emulation

EcoStruxure Automation Expert Platform

Automation Expert Platform is the unified software platform from Schneider Electric, bringing together your industrial software applications into one environment. This platform will enhance user experience, bringing new and improved capabilities such as collaboration across project teams and continuity. In this version, the platform will provide functionalities including user management, system management, and version control, leveraging a unified environment with a modular approach for all control and, in the future compute facets.

Integration into Schneider Electric Motion Control solution

- Modicon M660 Motion controllers and Compute Motion controllers monitor and control various motion-related devices, including servo drives, servo motors, stepper motors, actuators, robotics, and multi carrier systems. They coordinate the movement and positioning of these devices to achieve precise and synchronized operation within the automated system.

Apps, Analytics & Services

System Platform for Industrial Automation Software

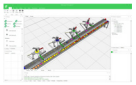
AVEVA™ Insight
Make decisions with complete visibility of your operations and assets in the cloud

Edge Control

EcoStruxure Automation Expert - Motion Module
Engineering software for motion control design

EcoStruxure Machine Expert
Simplify machine programming and commissioning

Extended Reality (XR) Solutions
Augmented reality, virtual reality, and mixed reality in a single industrial software solution



EcoStruxure Machine Expert Twin
Scalable d igital twin software suite

Modicon M660
Advanced iPC Motion Controller

PacDrive LMC Eco/Pro2:
Motion controller for automating machines/lines

Modicon TM5CSLC
Safety logic controller

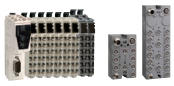
Modicon M262
Logic/Motion controllers

Lexium 62
Multi-axis servo drive

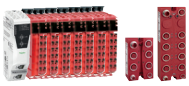
Lexium 32S
Servo drives

Lexium 62 ILM
Multi-axis integrated servo drives

Modicon Edge I/O NTS
The future-ready I/O system for data aggregation



Modicon TM5/Modicon TM7
Performance I/O systems



Modicon TM5/Modicon TM7
Performance Safety I/O systems

Connected Products

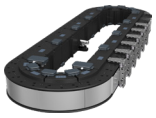
Lexium SCARA
Scara robot

Lexium PAS, PAD
Linear axes

Lexium MAX
Multi-axis system for three-dimensional positioning solutions

Altivar Machine ATV340S
Variable speed drive

Lexium T, Lexium P
Delta robot



Lexium MC12
Modular multi carrier system

Lexium Cobot
Collaborative robot

Integration as part of a complete EcoStruxure solution for targeted applications

- Control integration with hardware platforms from the Schneider portfolio configured with **EcoStruxure Automation Expert - Motion Module**
- Software integration: integration interface to robot library
- Communication integration with a wide range of fieldbuses to communicate with software and devices via Ethernet, SERCOS, and OPC UA *(1)* (including third-party PLC and devices for an open system approach)

(1) Planned commercialization.

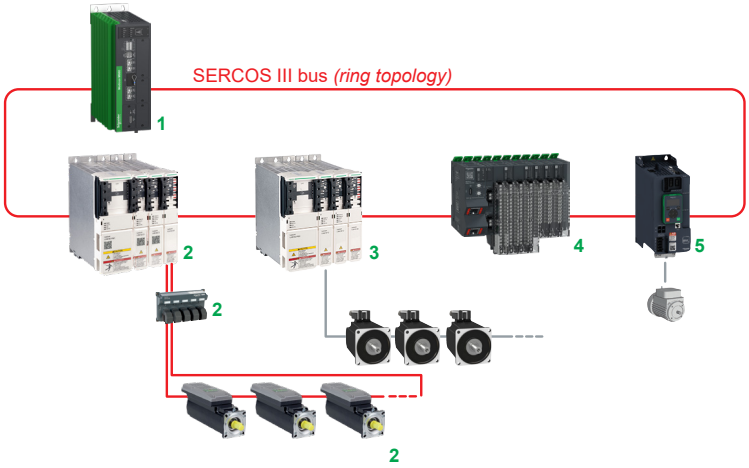
Ethernet-based synchronized motion communication

SERCOS

Modicon M660 Motion and Compute Motion controllers utilize the SERCOS fieldbus to exchange data with a variety of motion devices, including servo drives, motors, and sensors, through sending and receiving operations.

SERCOS Master:
1 *Modicon M660 Motion controller/Modicon M660 Compute Motion controller*

SERCOS slaves:
2 *Lexium 62 ILM integrated drive*
3 *Lexium 62 multi-axis drive system*
4 *Modicon Edge I/O NTS (1)*
5 *Altivar Machine ATV340S variable speed drive*

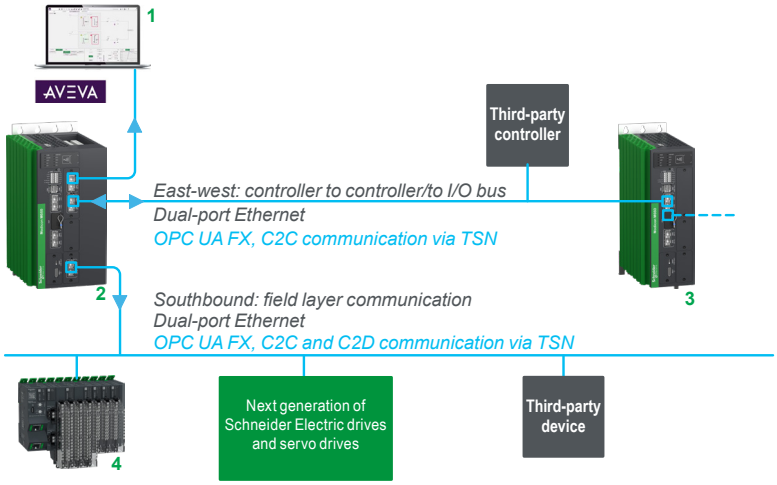


- One cable simplifies the architecture and fieldbus wiring. Manage EtherNet/IP and SERCOS devices on the same cable.
- Synchronized motion: up to 130 axes
- Redundancy
- Topology: line and ring

OPC UA/TSN *(1)*

OPC UA/TSN enables real-time communication and interoperability in industrial systems, providing for secure and deterministic communication over standard Ethernet, supporting the requirements of Industry 4.0 and IIoT (Industrial Internet of Things) applications. It is designed to meet the needs of high-performance industrial automation and control systems.

1 *Cloud Advisors MES SCADA Engineering*
2 *Modicon M660 Compute Motion controller*
3 *Modicon M660 Motion controller*
4 *Modicon Edge I/O NTS*

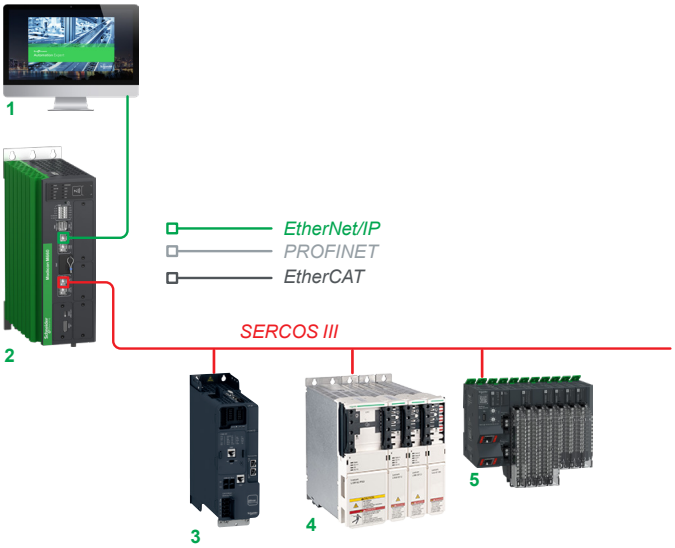


- Synchronized motion: up to 300 axes per controller
- Transparency: homogenous access from cloud to field device
- Flexible topology: peer-to-peer, cascading, and switched configurations for real-time data transfer and distributed synchronous motion
- Openness: third-party controller and device connectable
- Multiple cycle times on one wire
- Modular hardware and software: pluggable hardware modules for more connectivity; activation of functionality via firmware
- Integrated security: Secure OPC UA sessions with certificate-based authentication and optional encryption

(1) Planned commercialization.

Ethernet-based communication

With Profinet, EtherNet/IP, EtherCAT, and SERCOS



1 EcoStruxure Automation Expert – Motion Module (1)
2 Modicon M660 Motion controller
3 Altivar Machine ATV340S variable speed drive
4 Lexium 62 multi-axis drives
5 Modicon Edge I/O NTS

- In addition to the SERCOS III bus, M660 Motion controllers support the following communication standards:
  - EtherNet/IP
  - PROFINET
  - EtherCAT
- IT protocols:
  - TCP/IP
  - UDP/IP
  - OPC UA
  - Secure protocol variants FTPS, HTTPS
  - HTTP (embedded Web vizualization)

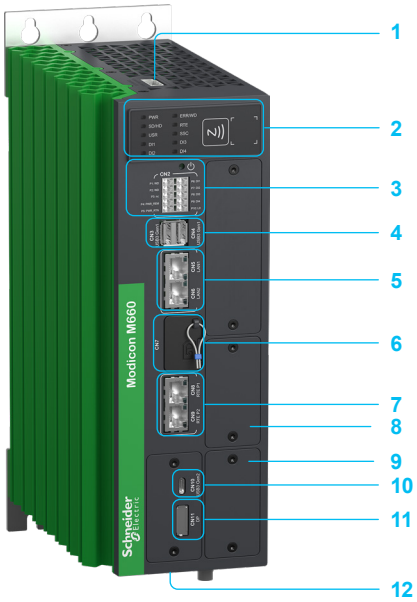
These protocols enable the motion controller to communicate with secondary ecosystem devices such as variable speed drives, Human machine interfaces, third-party programmable logic controller , and third-party devices.

- USB ports are embedded in M660 Motion and Compute Motion controllers.

(1) For engineering M660 Motion/Compute Motion controllers, the customer needs the EcoStruxure Automation Expert - Motion Module included in the EcoStruxure Automation Expert software.

Modicon M660

Advanced iPC Motion Controller



Description

Motion controller and Compute Motion controller

1 Connector for 24 VDC ower supply connector (top of housing, not shown)

2 Device diagnosis and operation
- 1x button (On, Sleep, Off)
- 6x LEDs (PWR, HDD, ERR/WD, SSC, RTE, User) and 4x DI LEDs
- NFC (Near Field Communication) – diagnostics with and without power

3 4x digital inputs, Watchdog output

4 2x USB 3.2 Gen 1 Type A connector and 1x USB 2.0 covered (inside device, sealable) (CN3, CN4)

5 2x RJ45 LAN 1/LAN 2 (CN5, CN6)

6 SD card (sealable) (CN7)
- RT firmware, IEC application, user data
- Remove and insert on device replacement

7 2x RJ45 Real-Time Ethernet ports RTE (CN8, CN9)
- Two single-port, separate endpoint Ethernet (Ethernet protocols)
- One dual-port Ethernet switch interface: redundant SERCOS

8 Standard PCIe PC cards half-size (optional) (on **MN660P** Compute Motion controllers)

9 2x mini PCIe slots (internal) and front connector slot

10 USB 3.2 port, Type C (CN10) (on **MN660P** Compute Motion controllers)

11 Display port (CN11) (on **MN660P** Compute Motion controllers)

12 Grounding screw (bottom of housing)

Modicon M660

Advanced iPC Motion Controller

MN660C/MN660P

MNAH6AFS01

MNAH6MBS

MNAH6MF

References

Synchronized axes over SERCOS	Ethernet endpoints	Memory	Storage capacity	Operating system	Reference	Weight kg/ *lb*
Motion controllers						
16	3x Ethernet ports	4 GB	–	Real-time	MN660C153N1010	4.650/ *10.25*
32	3x Ethernet ports	4 GB	–	Real-time	MN660C253N1010	4.650/ *10.25*
Compute Motion controllers						
32	3x Ethernet ports	8 GB	256 GB	Windows 11	MN660P253N2011W0	4.650/ *10.25*
130	4x Ethernet ports	8 GB	2x 512 GB	Windows 11	MN660P354N2013W0	4.650/ *10.25*

Mounting accessories

Designation	To use with	Reference	Weight kg/lb
Fan kit	MN660C and MN660P	MNAH6AFS01	0.176/ *0.39*
Book mounting kit	MN660C and MN660P	MNAH6MBS	–
Flat mounting installation kit	MN660C and MN660P	MNAH6MF	0.476/ *1.05*
Cable holder	MN660C and MN660P	MNAH6ACH	–
Complete spring connector set	MN660C and MN660P	MNSH6M4GM	–
Complete spring connector set	MN660C and MN660P	MNSH6M4GM	–

VW3E5001R●●●

References

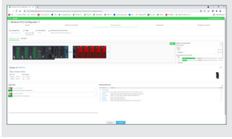
Spare parts

Designation			Reference	Weight kg/ *lb*
Compact flash memory card	512 MB		VW3E7037000000	0.025/ *0.06*
Battery	Lithium battery 3 V		VW3E6020	0.060/ *0.13*
SERCOS cables For redundant SERCOS ring Equiped with two RJ45 connectors	0.5 m	*1.6 ft*	VW3E5001R005	0.045/ *0.10*
	1 m	*3.3 ft*	VW3E5001R010	0.065/ *0.14*
	1.5 m	*4.9 ft*	VW3E5001R015	0.068/ *0.15*
	2 m	*6.6 ft*	VW3E5001R020	0.080/ *0.18*
	3 m	*9.8 ft*	VW3E5001R030	0.124/ *0.27*
	5 m	*16 ft*	VW3E5001R050	0.199/ *0.44*
	10 m	*33 ft*	VW3E5001R100	0.325/ *0.72*
	15 m	*49 ft*	VW3E5001R150	0.610/ *1.34*
	20 m	*66 ft*	VW3E5001R200	0.810/ *1.79*
	25 m	*82 ft*	VW3E5001R250	1.020/ *2.25*
	30 m	*98 ft*	VW3E5001R300	1.220/ *2.69*
	40 m	*131 ft*	VW3E5001R400	3.100/ *6.83*
	50 m	*164 ft*	VW3E5001R500	2.020/ *4.45*
DP-DVI cable Used to receive the image signal from the host on HMIFP6 Modular displays	5 m	*16 ft*	HMIYFPCBDPDV5M	0.50/ *1.10*
DP-DVI adapter Used to convert DP to DVI-D (socket), active type on HMIFP6 Modular displays			HMIYADDPDVI11	0.10/ *0.22*

Related offers via catalogs

	Catalog title	Catalog reference
Motion control	**PacDrive LMC Eco/Pro2** Motion controllers for automating machines/lines	DIA7ED2160303EN
	Lexium 62 & Motors Multi-axis servo drives and servo motors for PacDrive 3	DIA7ED2160305EN
	Lexium 62 ILM Multiaxis integrated servo drives for PacDrive 3	DIA7ED2160306EN
Distributed I/O	**Modicon Edge I/O NTS** The future-ready I/O system for data aggregation	DIA3ED2240601EN
Robotics	**Lexium T, P** Delta robots for pick & place solutions	DIA3ED2160307EN
	Lexium Cobot Collaborative robot	DIA7ED2220801EN
	Lexium Cartesian Robots Portal axes, Linear tables, Cantilever axes, Multi axes systems	DIA7ED2210101EN
	Lexium SCARA Ultra-compact high-speed and precise industrial robots	DIA7ED2240302EN
	Lexium MC12 The multi carrier transport system	DIA7ED2210701EN
Machine drives	**Altivar Machine ATV340** Variable speed drives for high-performance machines	DIA2ED2160701EN
Power supply	**Modicon Power Supply** Power supply for industrial use, rail mounting	DIA3ED2170401EN

Modicon M660
Advanced iPC Motion Controller

Industrial automation controllers	**Applications**	Controllers for industrial machines					
	Type	**Logic controllers**			**Logic/Motion controllers**	**Motion controllers**	**Advanced iPC Motion Controller**
	Range	Modicon M221/M221 Book	Modicon M241	Modicon M251	Modicon M262	PacDrive LMC Eco, LMC Pro2	Modicon M660
Consult the catalog Ref.		DIA3ED2140106EN	DIA3ED2140107EN	DIA3ED2140108EN	DIA3ED2180503EN	DIA7ED2160303EN	DIA3ED2241201EN
Memory		640 KB RAM, 2 MB Flash	64 MB RAM, 128 MB Flash	64 MB RAM, 128 MB Flash	192 MB RAM, 256 MB Flash	128 KB to 256 KB NV RAM, 512 MB DDR2 to 1 GB DDR3L	1,792 KB or 3,584 KB internal RAM (depending on processor type)
Supply voltage		24 VDC or 100...240 VAC	24 VDC or 100...240 VAC	24 VDC	24 VDC	24 VDC	24 VDC
Communication	Embedded communication fieldbuses and networks	> EtherNet/IP Adapter > Modbus TCP > RS 232/RS 485 Serial link > Mini USB-B programming port	> EtherNet/IP > Modbus TCP > CANopen (master) and SAE J1939 > Serial link > Mini USB-B programming port	> EtherNet/IP > Modbus TCP > CANopen (master) and SAE J1939 > Serial link > Mini USB-B programming port	> EtherNet/IP > Modbus TCP > Sercos III > Serial link > Mini USB-B programming port	> EtherNet/IP > Sercos III > CANopen > Profibus > Profinet > EtherCAT	> PROFINET > EtherCAT > EtherNet/IP > OPC UA FX *(1)* > Sercos III
	OPC Unified Architecture (OPC UA)	–	Server	Server	Server/Client (encrypted)	Server/Client (encrypted)	Client *(1)*
	Cybersecurity	With external firewall	With external firewall	With external firewall	Embedded	With external firewall	Embedded
	Optional communication fieldbuses and networks	> 1 Serial link	> Ethernet > Profibus DP	> Ethernet > Profibus DP	> Ethernet, EtherNet/IP Adapter > CANopen Master	> CANopen > Profibus DP > RT-Ethernet	> TSN Ethernet *(1)* > Sercos III > Ethernet/IP > PROFINET > EtherCAT
Embedded I/O (number and type)		> Up to 40 logic inputs > 2 analog inputs > Up to 16 relay outputs > Up to 16 transistor outputs	> Up to 24 logic inputs > Up to 16 transistor outputs > Up to 16 relay outputs > Up to 8 high speed inputs > Up to 4 high speed outputs	–	> 4 fast digital inputs > 4 fast digital outputs	> Up to 20 digital inputs > Up to 16 touch probe inputs > Up to 4 interrupt inputs > Up to 2 analog inputs > Up to 16 digital outputs > Up to 2 analog outputs	> 4 digital inputs
Synchronized axes		–	–	–	Up to 24 synchronized axes over Sercos III	Up to 130 synchronized axes over Sercos III	> Up to 130 synchronized axes over Sercos III > Up to 300 synchronized axes over OPC UA/TSN *(2)*
Dedicated configuration software		EcoStruxure Machine Expert - Basic	EcoStruxure Machine Expert				EcoStruxure Automation Expert - Motion Module
Compatibility with /O systems	*Click on the range name to open the product catalog*						
	Local I/O	■ Modicon **TM3**	■ Modicon **TM3**	■ Modicon **TM3**	■ Modicon **TM3**	–	–
	Remote I/O	■ Modicon **TM3**	■ Modicon **TM3**	■ Modicon **TM3**	■ Modicon **TM3**	–	–
	Distributed I/O – Over Ethernet	■ Modicon **TM3**	■ Modicon **TM3** ■ Modicon **Edge I/O NTS** ■ Modicon **TM5**	■ Modicon **TM3** ■ Modicon **Edge I/O NTS** ■ Modicon **TM5**	■ Modicon **TM3** ■ Modicon **Edge I/O NTS** ■ Modicon **TM5**	■ Modicon **Edge I/O NTS** ■ Modicon **TM5**	■ Modicon **Edge I/O NTS**
	Over CANopen	–	■ Modicon **TM3**	■ Modicon **TM3**	■ Modicon **TM3** ■ Modicon **TM5** & **TM7**	■ Modicon **TM3** ■ Modicon **TM5** & **TM7**	–
	Over Sercos	–	–	–	■ Modicon **Edge I/O NTS** *(1)* ■ Modicon **TM5**	■ Modicon **Edge I/O NTS** *(1)* ■ Modicon **TM5**	■ Modicon **Edge I/O NTS** *(1)*
	Over Modbus Serial Line	■ Modicon **TM3**	■ Modicon **TM3**	■ Modicon **TM3**	■ Modicon **TM3**	–	–
	Over Profibus	–	–	–	–	–	–
	Over AS-Interface master	–	–	–	–	–	–
	Safety I/O	■ Modicon **TM3** (functional safety)	■ Modicon **TM3** (functional safety)	■ Modicon **TM3** (functional safety)	■ Modicon TM3 (functional safety) ■ Modicon **Edge I/O NTS** *(2)* ■ Modicon **TM5** & **TM7**	■ Modicon **Edge I/O NTS** *(2)* ■ Modicon **TM5** & **TM7**	■ Modicon **Edge I/O NTS** *(2)*
Configuration tool			Modicon **PLC Configurator** *Select your controller and I/O architecture by usage and application, connectivity, services, and IIoT (protocols, Web, and communication services), I/O, and power supply.*				

(1) Available soon. (2) Planned commercialization.

Modicon M660

Advanced iPC Motion Controller

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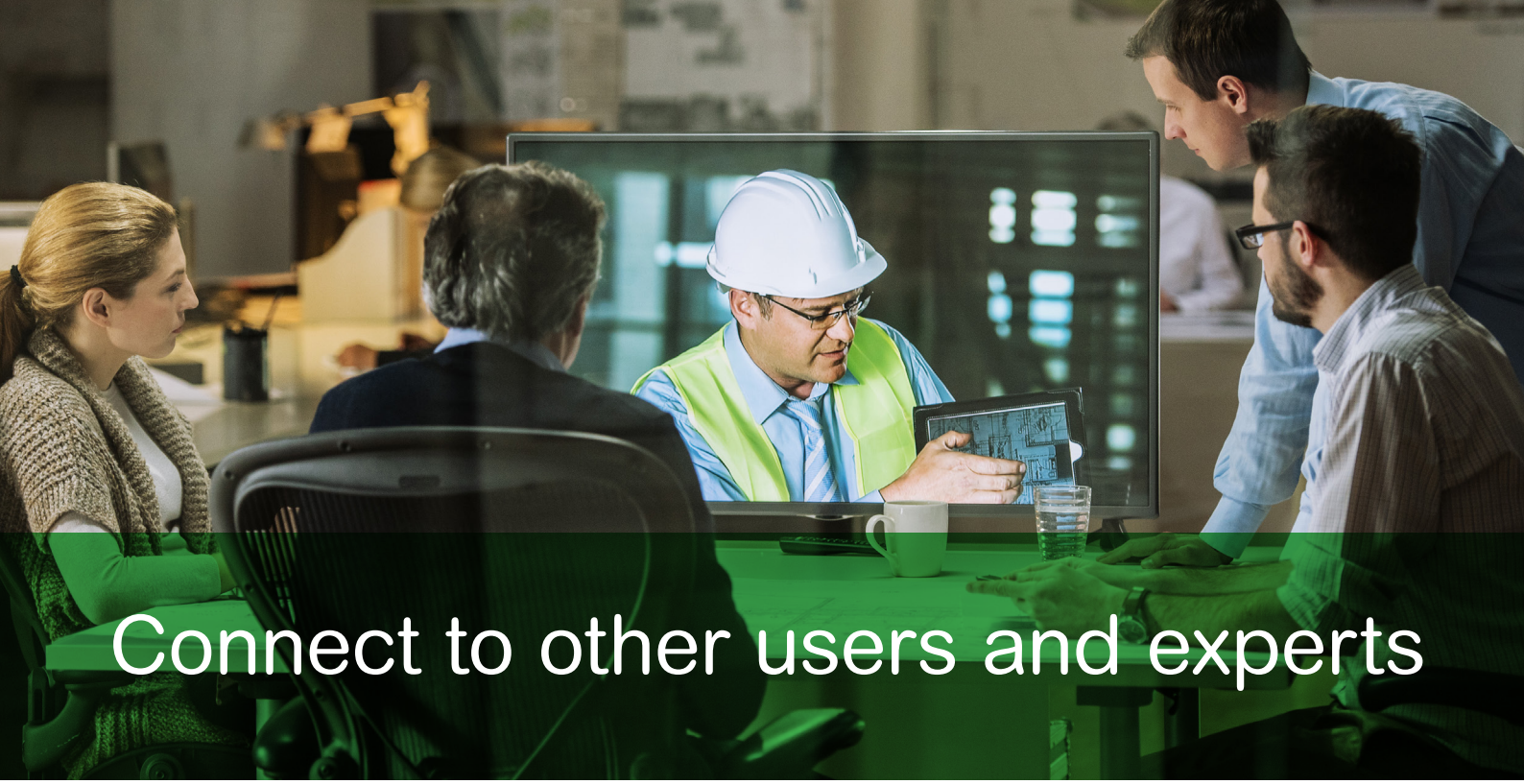

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- Engineering software

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