Modular Safety Controller

Communication Guide

Original instructions

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www.se.com

Legal Information

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Safety Information

Important Information

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result** in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

Before You Begin

Do not use this product on machinery lacking effective point-of-operation guarding. Lack of effective point-of-operation guarding on a machine can result in serious injury to the operator of that machine.

⚠WARNING

UNGUARDED EQUIPMENT

- Do not use this software and related automation equipment on equipment which does not have point-of-operation protection.
- Do not reach into machinery during operation.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

This automation equipment and related software is used to control a variety of industrial processes. The type or model of automation equipment suitable for each application will vary depending on factors such as the control function required, degree of protection required, production methods, unusual conditions, government regulations, etc. In some applications, more than one processor may be required, as when backup redundancy is needed.

Only you, the user, machine builder or system integrator can be aware of all the conditions and factors present during setup, operation, and maintenance of the machine and, therefore, can determine the automation equipment and the related safeties and interlocks which can be properly used. When selecting automation and control equipment and related software for a particular application, you should refer to the applicable local and national standards and regulations. The National Safety Council's Accident Prevention Manual (nationally recognized in the United States of America) also provides much useful information.

In some applications, such as packaging machinery, additional operator protection such as point-of-operation guarding must be provided. This is necessary if the operator's hands and other parts of the body are free to enter the pinch points or other hazardous areas and serious injury can occur. Software products alone cannot protect an operator from injury. For this reason the software cannot be substituted for or take the place of point-of-operation protection.

Ensure that appropriate safeties and mechanical/electrical interlocks related to point-of-operation protection have been installed and are operational before placing the equipment into service. All interlocks and safeties related to point-of-operation protection must be coordinated with the related automation equipment and software programming.

NOTE: Coordination of safeties and mechanical/electrical interlocks for point-of-operation protection is outside the scope of the Function Block Library, System User Guide, or other implementation referenced in this documentation.

Start-up and Test

Before using electrical control and automation equipment for regular operation after installation, the system should be given a start-up test by qualified personnel to verify correct operation of the equipment. It is important that arrangements for such a check are made and that enough time is allowed to perform complete and satisfactory testing.

⚠WARNING

EQUIPMENT OPERATION HAZARD

- Verify that all installation and set up procedures have been completed.
- Before operational tests are performed, remove all blocks or other temporary holding means used for shipment from all component devices.
- Remove tools, meters, and debris from equipment.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Follow all start-up tests recommended in the equipment documentation. Store all equipment documentation for future references.

Software testing must be done in both simulated and real environments.

Verify that the completed system is free from all short circuits and temporary grounds that are not installed according to local regulations (according to the National Electrical Code in the U.S.A, for instance). If high-potential voltage testing is necessary, follow recommendations in equipment documentation to prevent accidental equipment damage.

Before energizing equipment:

- Remove tools, meters, and debris from equipment.
- Close the equipment enclosure door.
- Remove all temporary grounds from incoming power lines.
- Perform all start-up tests recommended by the manufacturer.

Operation and Adjustments

The following precautions are from the NEMA Standards Publication ICS 7.1-1995:

(In case of divergence or contradiction between any translation and the English original, the original text in the English language will prevail.)

- Regardless of the care exercised in the design and manufacture of equipment or in the selection and ratings of components, there are hazards that can be encountered if such equipment is improperly operated.
- It is sometimes possible to misadjust the equipment and thus produce unsatisfactory or unsafe operation. Always use the manufacturer’s instructions as a guide for functional adjustments. Personnel who have access to these adjustments should be familiar with the equipment manufacturer’s instructions and the machinery used with the electrical equipment.
- Only those operational adjustments required by the operator should be accessible to the operator. Access to other controls should be restricted to prevent unauthorized changes in operating characteristics.

About the Book

Document Scope

The present communication guide describes the fieldbus modules of the XPSMCM• Modular Safety Controller system, the operation of the fieldbus modules using a range of different fieldbusses, and the use of the BUS Configurator software.

The XPSMCM• Modular Safety Controller system consists of controller units XPSMCMCP0802(G), XPSMCMC10804(G) or XPSMCMC10804E(G), which can be configured using the SoSafe Configurable software. Fieldbus modules can be connected to the XPSMCMCP0802(G) or XPSMCMC10804(G) Modular Safety Controller and be configured using the BUS Configurator software. The XPSMCMC10804E(G) Modular Safety Controller has an embedded fieldbus interface, that can be configured using the SoSafe Configurable software.

Validity Note

This document has been updated for the release of BUS Configurator V5.1.0.

The characteristics of the products described in this document are intended to match the characteristics that are available on www.se.com. As part of our corporate strategy for constant improvement, we may revise the content over time to enhance clarity and accuracy. If you see a difference between the characteristics in this document and the characteristics on www.se.com, consider www.se.com to contain the latest information.

Available Languages of this Document

This document is available in these languages:

- English (EIO0000004014)
- French (EIO0000004015)
- German (EIO0000004016)
- Italian (EIO0000004017)
- Spanish (EIO0000004018)
- Chinese (EIO0000004019)
- Portuguese (EIO0000004020)

Related Documents

Document title	Reference
Modular Safety Controller Hardware Guide	EIO0000004000 (ENG); EIO0000004001 (FRE); EIO0000004002 (GER); EIO0000004003 (ITA); EIO0000004004 (SPA); EIO0000004005 (CHS) EIO0000004006 (POR)
Modular Safety Controller Library and Programming Guide	EIO0000004007 (ENG); EIO0000004008 (FRE); EIO0000004009 (GER); EIO0000004010 (ITA); EIO0000004011 (SPA); EIO0000004012 (CHS) EIO0000004013 (POR)
Cybersecurity Guidelines for EcoStruxure Machine Expert, Modicon and PacDrive Controllers and Associated Equipment, User Guide	EIO0000004242 (ENG)

You can download these technical publications and other technical information from our website at www.se.com/ww/en/download/ .

Trademark

EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

PROFINET® is a registered trademark of the PROFIBUS NutzerOrganisation e.V. (PNO).

Product Related Information

The XPSMCM• Modular Safety Controller system can reach a maximum Safety Integrity Level (SIL 3) as per IEC 61508, a maximum Safety Integrity Level Claim Limit (SILcl 3) as per IEC 62061, and a maximum Performance Level (PL) e, category 4, as per EN ISO 13849-1. However, the definitive SIL and PL of the application depends on a number of safety-related components, their parameters, and the connections that are made, as per the risk analysis.

The module must be configured in accordance with the application-specific risk analysis and all the applicable standards.

Pay particular attention in conforming to any safety information, different electrical requirements, and normative standards that would apply to your adaptation.

⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power from all equipment including connected input devices, contactors, and drives prior to removing any covers or doors, or installing or removing any accessories, hardware, cables, or wires.
- Install and use this equipment only in locations known to be non-hazardous.
- Do not use the equipment described herein to supply external equipment.
- Always use properly rated voltage sensing equipment to confirm that the power is removed.
- Avoid contacting terminals with hand or tools until the power has been confirmed removed.
- Follow all electrical safety regulations and standards (for example, lockout/tag-out, phase grounding, barriers) to reduce the possibility of contact with hazardous voltages in the work area.
- Remove locks, tags, barriers, temporary ground straps, and replace and secure all covers, doors, accessories, hardware, cables, and wires and confirm that a proper ground connection exists before reapplying power to the unit.
- Complete thorough hardware tests and system commissioning to verify that line voltages are not present on the control circuits before using your hardware operationally.
- Use only the specified voltage when operating this equipment and any associated products.

Failure to follow these instructions will result in death or serious injury.

⚠WARNING

UNINTENDED EQUIPMENT OPERATION

- Do not exceed any of the rated operating limits for the equipment specified in the present document.
- Immediately cease using and replace any equipment that has or might have been subjected to conditions in excess of its rated operating limits.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠WARNING

UNAUTHENTICATED ACCESS AND SUBSEQUENT UNAUTHORIZED MACHINE OPERATION

- Evaluate whether your environment or your machines are connected to your critical infrastructure and, if so, take appropriate steps in terms of prevention, based on Defense-in-Depth, before connecting the automation system to any network.
- Limit the number of devices connected to a network to the minimum necessary.
- Isolate your industrial network from other networks inside your company.
- Protect any network against unintended access by using firewalls, VPN, or other, proven security measures.
- Monitor activities within your systems.
- Prevent subject devices from direct access or direct link by unauthorized parties or unauthenticated actions.
- Prepare a recovery plan including backup of your system and process information.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

For more information on organizational measures and rules covering access to infrastructures, refer to ISO/IEC 27000 series, Common Criteria for Information Technology Security Evaluation, ISO/IEC 15408, IEC 62351, ISA/IEC 62443, NIST Cybersecurity Framework, Information Security Forum - Standard of Good Practice for Information Security and refer to Cybersecurity Guidelines for EcoStruxure Machine Expert, Modicon and PacDrive Controllers and Associated Equipment.

Terminology Derived from Standards

The technical terms, terminology, symbols and the corresponding descriptions in this manual, or that appear in or on the products themselves, are generally derived from the terms or definitions of international standards.

In the area of functional safety systems, drives and general automation, this may include, but is not limited to, terms such as *safety*, *safety function*, *safe state*, *fault*, *fault reset*, *malfunction*, *failure*, *error*, *error message*, *dangerous*, etc.

Among others, these standards include:

Standard	Description
IEC 61131-2:2007	Programmable controllers, part 2: Equipment requirements and tests.
ISO 13849-1:2015	Safety of machinery: Safety related parts of control systems. General principles for design.
EN 61496-1:2013	Safety of machinery: Electro-sensitive protective equipment. Part 1: General requirements and tests.
ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk reduction
EN 60204-1:2006	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
ISO 14119:2013	Safety of machinery - Interlocking devices associated with guards - Principles for design and selection
ISO 13850:2015	Safety of machinery - Emergency stop - Principles for design
EN IEC 62061:2021	Safety of machinery - Functional safety of safety-related electrical, electronic, and electronic programmable control systems
IEC 61508-1:2010	Functional safety of electrical/electronic/programmable electronic safety-related systems: General requirements.
IEC 61508-2:2010	Functional safety of electrical/electronic/programmable electronic safety-related systems: Requirements for electrical/electronic/programmable electronic safety-related systems.
IEC 61508-3:2010	Functional safety of electrical/electronic/programmable electronic safety-related systems: Software requirements.
IEC 61784-3:2016	Industrial communication networks - Profiles - Part 3: Functional safety fieldbuses - General rules and profile definitions.
2006/42/EC	Machinery Directive
2014/30/EU	Electromagnetic Compatibility Directive
2014/35/EU	Low Voltage Directive

In addition, terms used in the present document may tangentially be used as they are derived from other standards such as:

Standard	Description
IEC 60034 series	Rotating electrical machines
IEC 61800 series	Adjustable speed electrical power drive systems
IEC 61158 series	Digital data communications for measurement and control – Fieldbus for use in industrial control systems

Finally, the term *zone of operation* may be used in conjunction with the description of specific hazards, and is defined as it is for a *hazard zone* or *danger zone* in the *Machinery Directive* (*2006/42/EC*) and *ISO 12100:2010*.

NOTE: The aforementioned standards may or may not apply to the specific products cited in the present documentation. For more information concerning the individual standards applicable to the products described herein, see the characteristics tables for those product references.

Standards Relating to the Modular Safety Controller

The following list provides an overview of the standards that relate to the Modular Safety Controller:

Standard	Description
ISO 13849-1:2015	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design
ISO 13855:2010	Safety of machinery - Positioning of safeguards with respect to the approach speeds of parts of the human body
IEC 61131-2	Industrial-process measurement and control - Programmable controllers – Part 2: Equipment requirements and tests
EN 61496-1:2013	Safety of machinery - Electro-sensitive protective equipment - Part 1: General requirements and tests
IEC 61508-1:2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: General requirements
IEC 61508-2:2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 2: Requirements for electrical/ electronic/programmable electronic safety-related systems
IEC 61508-3:2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 3: Software requirements
IEC 61508-4:2010	Functional safety of electrical/electronic/programmable electronic safety-related systems- Part 4: Definitions and abbreviations
IEC 61800-5-2:2016	Adjustable speed electrical power drive systems - Part 5-2: Safety requirements – Functional
2014/65/EU	Restriction of the use of certain hazardous substances in Electrical and Electronic Equipment

The list of standards relating to the modular safety controller is not intended to be exhaustive relative to your specific application. Further, there may be additional functional safety standards that may apply to your particular application. Consult the User Guides of the Modular Safety Controller and visit the Schneider Electric website at www.se.com for product certifications which detail compliance with specific standards, regulations, and directives.

Information on Non-Inclusive or Insensitive Terminology

As a responsible, inclusive company, Schneider Electric is constantly updating its communications and products that contain non-inclusive or insensitive terminology. However, despite these efforts, our content may still contain terms that are deemed inappropriate by some customers.

Component-Specific Hardware Information

What's in This Part

Technical Features

What's in This Chapter

XPSMCM• Fieldbus Expansion Modules

Modules and Functional Description

Presentation

The XPSMCMCO0000CO(G), XPSMCMCO0000E(G), XPSMCMCO0000EC(G), XPSMCMCO0000EI(G), XPSMCMCO0000MB(G), XPSMCMCO0000EM(G), and XPSMCMCO0000PB(G) are fieldbus expansion modules for the XPSMCM• Modular Safety Controller system offer. The fieldbus expansion modules can only be used in conjunction with the XPSMCMCP0802(G), XPSMCMC10804(G) and XPSMCMC10804E(G) Modular Safety Controller.

The fieldbus modules allow the Modular Safety Controller to be integrated into a fieldbus, transmit status and diagnostic data to other equipment on the fieldbus, and receive data on the status of the fieldbus from such equipment.

The fieldbus expansion modules can be configured using the BUS Configurator software, page 120, part of the install package for SoSafe Configurable software.

NOTE: The fieldbus parameters of the XPSMCMC10804E(G) controller with integrated fieldbus interface are to be configured with the SoSafe Configurable Software (Refer to Modular Safety Controller, Library and Programming Guide).

One fieldbus expansion module can be added to your Modular Safety Controller system over the backplane expansion (Refer to Modular Safety Controller, Hardware Guide).

The following fieldbus expansion modules are available:

Module reference	Interface	Type (short name in software and on product)
XPSMCMCO0000CO(G)	CANopen	**CAN**
XPSMCMCO0000E(G)	Industrial Ethernet based (Multi-protocol EtherCAT, Ethernet/IP, Modbus TCP and Profinet)	**ETH**
XPSMCMCO0000EC(G)	EtherCAT	**ECT**
XPSMCMCO0000EI(G)	Ethernet/IP	**EIP**
XPSMCMCO0000MB(G)	Modbus Serial	**MBS**
XPSMCMCO0000EM(G)	Modbus TCP	**MTP**
XPSMCMCO0000PB(G)	Profibus DP	**PDP**

Connector Designations and Example Wiring Diagram

Fieldbus Expansion Modules Connector Designations

XPSMCMCO0000CO(G), XPSMCMCO0000E(G), XPSMCMCO0000EC(G), XPSMCMCO0000EI(G), XPSMCMCO0000MB(G), XPSMCMCO0000EM(G), XPSMCMCO0000PB(G)

Terminal	Signal	LED	Description
1	24 VDC	PWR	24 Vdc power supply
2	–	–	No Connection (N.C.)
3			
4	0 VDC	PWR	0 Vdc power supply
5 to 8	–	–	No Connection (N.C.)

⚠WARNING

UNINTENDED EQUIPMENT OPERATION

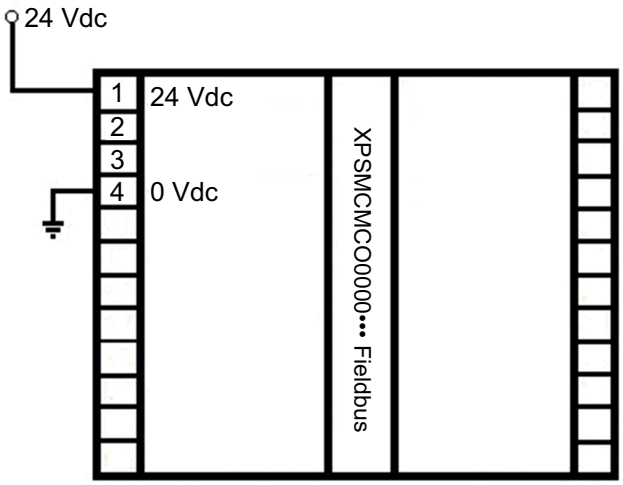
Do not connect wires to unused terminals and/or terminals indicated as "No Connection (N.C.)" or Not Connected.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

NOTE: For connector designations of the XPSMCMC10804E(G) controller with integrated fieldbus interface refer to Modular Safety Controller, Hardware Guide.

Fieldbus Expansion Modules Example Wiring Diagram

The following drawing shows an example of a fieldbus expansion module:



NOTE: Use a fuse on the incoming 24 Vdc power, sized appropriately for the requirements of the module.

NOTE: For wiring example of the XPSMCMC10804E(G) controller with integrated fieldbus interface, refer to Modular Safety Controller, Hardware Guide.

Technical Data

Cable types and wire sizes

For a 5.08 pitch removable **screw** terminal block:

mm / in. 7 / 0.28								
mm^2	0.2…2.5	0.2…2.5	0.25…2.5	0.25…1.5	2 x 0.2…1	2 x 0.2…1.5	2 x 0.25…1	2 x 0.5...1.5
AWG	*24…14*	*24…14*	*23...14*	*23...16*	*2 x 24…18*	*2 x 24…16*	*2 x 23…18*	*2 x 20...16*

Ø 3,5 mm (*0.14 in.*)		N•m	0.5
		lb-in	*4.42*

For a 5.08 pitch removable **spring** terminal block (used by XPSMCM•••G):

mm / in. 10 / 0.39					
mm^2	0.2…2.5	0.2…2.5	0.25…2.5	0.25…2.5	2 x 0.5...1
AWG	*24…14*	*24…14*	*23...14*	*23...14*	*2 x 20...18*

The following instructions concerning connection cables must be observed:

- Use 60/75 °C copper (Cu) conductor only. Maximum cable length 100 m (328 ft).
- Cables used for connections longer than 50 m (164 ft) must have a cross-section of at least 1 mm^2 (AWG 16).

Housing characteristics	
Housing material	Polyamide
Housing degree of protection	IP20
Terminal blocks degree of protection	IP2x
Mounting	35 mm DIN rail according to EN/IEC 60715
Mounting position	Any plane
Dimensions (h x l x d)	• with screw terminals: 108 x 22.5 x 114.5 mm (4.25 x 0.89 x 4.5 in) • with spring terminals: 118.5 x 22.5 x 114.5 mm (4.67 x 0.89 x 4.5 in)

NOTE: For technical data of the XPSMCMC10804E(G) controller with integrated fieldbus interface, refer to Modular Safety Controller, Hardware Guide.

LED Indicators

Frontface View

LEDs for Operation

The following table describes the states of the LED indicators of the fieldbus expansion modules:

PWR green	RUN green	E IN red	E EX red	First module-specific LED[1]	Second module-specific LED[1]	Meaning
ON	ON	ON	ON	ON	ON	Startup - Initial test
ON	Flashing	OFF	OFF	OFF	OFF	Waiting for configuration from the Modular Safety Controller
ON	ON	OFF	OFF	See the module-specific tables [1]		Received configuration from the Modular Safety Controller

[1] Two LEDs indicate the communication protocol status. These LEDs are described in the module-specific tables.

XPSMCMCO0000CO(G) CANopen LED Indicators, page 27

XPSMCMC10804E(G) and XPSMCMCO0000E(G) LED Indicators, page 36

XPSMCMCO0000EC(G) EtherCAT LED Indicators, page 81

XPSMCMCO0000EI(G) EtherNet/IP LED Indicators, page 89

XPSMCMCO0000MB(G) Modbus LED Indicators, page 96

XPSMCMCO0000EM(G) Modbus TCP LED Indicators, page 102

XPSMCMCO0000PB(G) Profibus LED Indicators, page 109

LED Indicators for Troubleshooting

The following table describes the states of the LED indicators between the different communication expansion modules, when the power (**PWR**) indicator is illuminated:

Detected error	RUN green	E IN red	E EX red	First module-specific LED[1]	Second module-specific LED[1]	Solution
Internal microcontroller error detected.	OFF	2 flashes	OFF	See the module-specific tables[1]		Replace the product if the condition persists after reboot.
Internal board error detected.	OFF	3 flashes	OFF			
Configuration error detected.	OFF	5 flashes	OFF			Verify correct configuration.
Fieldbus communication error detected.	OFF	5 flashes	OFF			Verify the fieldbus connections.
Fieldbus communication interruption detected.	OFF	ON	OFF			Verify wiring, connectors, and state of the fieldbus master.
Duplicate addresses detected on the fieldbus.	OFF	5 flashes	5 flashes			Set a correct fieldbus address

[1] Two LEDs indicate the communication status. These LEDs are described in the module-specific tables.

XPSMCMCO0000CO(G) CANopen LED Indicators, page 27

XPSMCMC10804E(G) and XPSMCMCO0000E(G) LED Indicators, page 36

XPSMCMCO0000EC(G) EtherCAT LED Indicators, page 81

XPSMCMCO0000EI(G) EtherNet/IP LED Indicators, page 89

XPSMCMCO0000MB(G) Modbus LED Indicators, page 96

XPSMCMCO0000EM(G) Modbus TCP LED Indicators, page 102

XPSMCMCO0000PB(G) Profibus LED Indicators, page 109

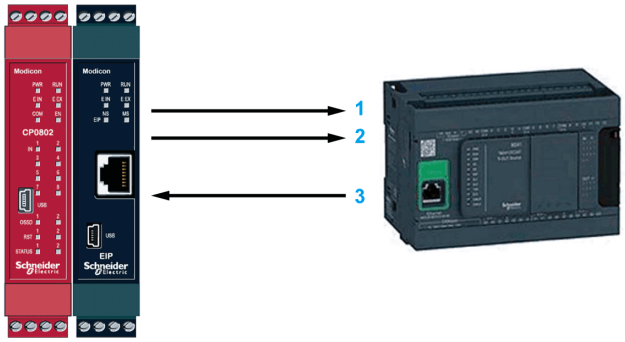
NOTE: The LED frequency of flashing is: ON for 300 ms and OFF for 400 ms with an interval between flash sequences of 1 second.

NOTE: For the LED indication of the XPSMCMC10804E(G) controller with integrated fieldbus interface, refer to Modular Safety Controller, Hardware Guide.

Data Provided Over the Fieldbus

Overview

The fieldbus expansion module exports the system state and diagnostics of the IOs configured on the Modular Safety Controller.



1 I/O state and feedback

2 I/O diagnostic

3 Input from logic controller

Overview of Process Data Map

If the Modular Safety Controller is connected to a fieldbus, it can receive and send I/O data from and to a connected device. This data is the process data map. The process data map is divided into the following sections:

Direction(1)	Common Name	Length	Usage
Out	Fieldbus Inputs	4 bytes	Data can be used for non-safety-related purposes by the logic controller. Refer to Fieldbus Inputs, page 21.
In	System Status	1 byte	System status information about the Modular Safety Controller: online/offline; presence of diagnostic messages. Refer to System Status, page 21.
In	Input Status	16 bytes	Status of the digital inputs of the Modular Safety Controller and potential I/O expansion modules, Restart Inputs are also part of the Input status.
In	Fieldbus Input Feedback	4 bytes	Mirror of the Fieldbus Inputs received by the logic controller. Refer to Fieldbus Inputs, page 21.
In	Probe Status	4 bytes	State of the probe bits. The probes allow you to obtain information on the state of function blocks which are not immediately connected to physical inputs as input function blocks, but which are located downstream in the SoSafe Configurable project. Refer to Probe Status, page 22
In	Safety-related Output Status	4 bytes	State of the Safety-related Outputs (OSSD) of the Modular Safety Controller and potential I/O expansion modules. Refer to Diagnostics Codes for Safety-related Output Function Blocks, page 24.
In	Analog Data	64 bytes	State of Analog values. Refer to Diagnostics Codes for Input Function Blocks, page 23.
In	CPU 0 Error	10 bytes	Detailed Error information on CPU 0 of the Modular Safety Controller
In	CPU 1 Error	10 bytes	Detailed Error information on CPU 1 of the Modular Safety Controller
In	Input Diagnostic	32 bytes	These values specify which error or alert has been detected on which input function block. Refer to Diagnostics Codes for Input Function Blocks, page 23.

Direction(1)	Common Name	Length	Usage
In	Safety-related Output Diagnostic	32 bytes	These values specify which error or alert has been detected for which output function block. Refer to Diagnostics Codes for Safety-related Output Function Blocks, page 24.
In	Project CRC	2 bytes	16 - bit CRC of the project running on the Modular Safety Controller.
(1)As seen from the perspective of the fieldbus master: Out: The data is received by the communication module from the fieldbus system and transmitted to the Modular Safety Controller In: The Modular Safety Controller provides the data and the communication module makes it available to the fieldbus system.			

The process data map is represented on the Monitor screen of the BUS Configurator (or SoSafe Configurable for the controller XPSMCMC10804E(G)) by means of check boxes. If a check box is selected, the value of the corresponding bit is 1. If a checkbox is cleared, the value of the corresponding bit is 0.

The fieldbus modules have a common set of data that is provided by the Modular Safety Controller.

The data accessible using fieldbus modules with XPSMCMCO0000••(G) SV2.0 and greater is documented in the tables of section Module Characteristics, page 26. Consider that each fieldbus has its specific tables.

As not all complete information can fit into the process data map for each fieldbus system, some data are available through acyclic communication where applicable.

Fieldbus Inputs, System status, Input status, Fieldbus Inputs feedback, Probe status and Safety-related Output status are available in the cyclic process image, while Input and Safety-related Output Diagnostics, detected system errors and the XPSMCM• Modular Safety Controller system program CRC are accessible as acyclic data.

The process image has a fixed size with subsections for each information group: there are sections showing the status of the XPSMCM• inputs, the status of the probes, the status of the safety-related outputs and, if the analog module is present, the measured analog values.

If there is a fieldbus module in the system, SoSafe Configurable includes in the report a table with the addresses for inputs, fieldbus inputs, probes and safety-related outputs in the project with the appropriate fieldbus syntax.

Process Data Map for XPSMCMC10804E(G) and XPSMCMCO0000E(G)

Process Data Map provided by XPSMCMC10804E(G) and XPSMCMCO0000E (G) module is extended compared to the other modules.

Direction(1)	Common Name	Length	Usage
Out	Fieldbus Inputs	4 bytes	Can be used as non-safety-related inputs to the logic executed on the Modular Safety Controller.
In	System Status	1 byte	System status information about the Modular Safety Controller (online/offline; presence of diagnostic messages (Refer to Input Diagnostic and OSSD Diagnostic).
In	Input Status	19 bytes (2)	Status of the digital input of the Modular Safety Controller and potential I/O expansion modules, Restart Inputs are also part of the Input status.
In	Fieldbus Input Feedback	4 bytes	Mirror of the Fieldbus Inputs sent to the device
In	Probe Status	4 bytes	Status of the probe bits. You can probe the logic with function blocks. The Probe function block monitors one of the probe bits.
In	Safety-related Output Status	4 bytes	Status of the OSSD outputs of the Modular Safety Controller and potential I/O expansion modules
In	Analog Data	64 bytes	State of analog values.
In	CPU 0 Error	9 bytes	Detailed Error information on CPU 0
In	CPU 1 Error	9 bytes	Detailed Error information on CPU 1

Direction(1)	Common Name	Length	Usage
In	Input Diagnostic	32 bytes	These values specify which error or alert has been detected on which input block.
In	Safety-related Output Diagnostic	32 bytes	These values specify which error or alert has been detected on which output block.
In	Project CRC	7 bytes / 2 bytes (3)	16-bit CRC of the project running on the Modular Safety Controller, including information on creation date and storage location of the project.
In	RFID Chain 1	2 bytes	Status bits for the first RFID sensor chain
In	RFID Chain 2	2 bytes	Status bits for the second RFID sensor chain
In	Speed Data	96 bytes	Speed monitoring data, only available on XPSMCMC10804E(G)

(1)As seen from the perspective of the fieldbus master:

Out: The data is received by the communication module from the fieldbus system and transmitted to the Modular Safety Controller

In: The Modular Safety Controller provides the data and the communication module makes it available to the fieldbus system.

(2) Restart inputs are usually part of the input status. Only for XPSMCMCO0000E(G) used as EtherCAT, the Restart inputs are implemented as a separate vendor defined object. In this case, the size of the input status is reduced to 16 bytes.

(3) The additional data on date and storage location of the project schematic are only available for XPSMCMC10804E(G). The contents for that object for XPSMCMCO0000E(G) are identical to the other XPSMCMCO0000••(G) modules.

Fieldbus Module Cyclic Data

System and I/O status are available on the cyclic process map.

Cyclic data is listed in the table below.

Data direction: from the module to the controller	
Data	Description
System status (status byte)	Indicates the status of the controller, the presence of diagnostics and detected errors.
Inputs	Indicates the status of inputs
Restart inputs	Indicates the status of the restart inputs (available with firmware version greater than or equal to 3.0.0)
Fieldbus feedback inputs status	_
Probe output status	State of the probes
OSSD output status	Indicates the status of the safety-related outputs
Analog data (float format)	Displays the value of the analog measurements (provided that at least one analog module is present and configured)
Data direction: from the controller to the module	
Fieldbus input status	_

You can select presence or absence of analog data and restart inputs through the BUS Configurator. Therefore, you can have four possible fixed maps.

Data direction	Data type	Map 1 (bytes)	Map 2 (bytes)	Map 3 (bytes)	Map 4 (bytes)
From controller to module	Fieldbus input status	4	4	4	4
Total from controller to module		4	4	4	4
From module to controller	System status (status byte)	2	2	2	2
From module to controller	Input status	16	16	16	16
From module to controller	Restart input status	0	0	3	3

From module to controller	Fieldbus feedback inputs status	4	4	4	4
From module to controller	Probe status (Probe)	4	4	4	4
From module to controller	Output status (OSSD)	4	4	4	4
From module to controller	Analog data	0	64	0	64
Total from module to controller		30	94	33	97

Fieldbus Modules Acyclic Data

Acyclic data is listed in the table below:

Data	Description
System I/O	System status + input/output status
I/O diagnostics	–
System errors detected (an error is detected)	Available with firmware version greater than or equal to 2.0.0 Available only with XPSMCMCP0802(G)/XPSMCMC10804(G) in version greater than or equal to 5.0
CRC program loaded on XPSMCMCP0802(G)/ XPSMCMC10804(G)	Available only with XPSMCMCP0802(G)/XPSMCMC10804(G) in version greater than or equal to 5.0
Analog measurement only with floating-point format	Available with firmware version greater than or equal to 2.0.0 Available only with XPSMCMCP0802(G)/XPSMCMC10804(G) in version greater than or equal to 5.0
Fieldbus input	–
RFID sensor data	Available with firmware version greater than or equal to 3.0.0 Available only with XPSMCMCP0802(G)/XPSMCMC10804(G) in version greater than or equal to 8.0

Fieldbus Inputs

The Fieldbus Inputs section of the process data map allow a connected device to cyclically send up to 32 ON/OFF status which can be used as non-safety-related inputs in the SoSafe Configurable project.

System Status

The System status section of the process data map provides the following bits:

- Bit 0: Modular Safety Controller online state
- Bit 1: Diagnostic presence
- Bit 2: Error presence

The acyclic data block for diagnostics or errors contains valid values if the corresponding bit in the status byte is set to 1.

Input Status

The section of the process data map for the states of the inputs has a size of 16 bytes and contains the states of up to 128 inputs.

The order of the modules and the allocated bits is as shown in the following table.

If two or more modules of the same type are installed the one with the lowest node number is shown first.

Module	Bit
XPSMCMCP0802•/XPSMCMC10804•	8
XPSMCMMX0802•	8
XPSMCMDI1600•	16
XPSMCMDI0800•	8
XPSMCMDI1200MT•	16
XPSMCMEN0200TT•/XPSMCMEN0200HT•/XPSMCMEN0200SC•	8
XPSMCMEN0100TT•/XPSMCMEN0100HT•/XPSMCMEN0100SC•	8
XPSMCMEN0200•	8
XPSMCMAI0400•	8
XPSMCMMX0804•	8

Probe Status

The section of the process data map for the states of the probes has a size of 4 bytes and contains the status of up to 32 probes that can be included in the SoSafe Configurable project.

Safety-Related Output Status

The section of the process data map for the states of the Safety-related Output has a size of 4 bytes and contains the status of up to 32 outputs.

The order of the modules and the allocated bits is as shown in the following table.

If two or more modules of the same type are installed the one with the lowest node number is first.

The number of bits used to represent the status of a Safety-related Output function block depends on the type of Safety-related Output selected:

- One dual-channel Safety-related Output is represented with 1 bit.
- One single-channel Safety-related Outputs is represented with 1 bit.
- Two single-channel Safety-related Outputs combined in a dual-channel are represented with 2 bits.

Module	Bit
XPSMCMCP0802•	2
XPSMCMC10804•	4
XPSMCMMX0802•	2
XPSMCMDO0002•	2
XPSMCMDO0004•	4
XPSMCMRO0004•	4
XPSMCMRO0004DA•	4
XPSMCMDO00042A•	4

Module	Bit
XPSMCMMX0804•	4
XPSMCMDO0004S•	4

Diagnostics Codes for Input Function Blocks

Each input function block can generate a diagnostic code.

When the Input function block is connected correctly, the diagnostic code is OK and is not transmitted over the fieldbus.

If an error on the Input function block is detected, the system transmits two bytes over the fieldbus with the following information:

- Index of the Input function block
- Diagnostic code of the Input function block

The Diagnostics code field for an Input function block can contain the following decimal values:

Code	Diagnostic message	Explanation
1	No signal edge transition detected	Both sets of contacts must first be reset before they can be evaluated by the function block.
2	Synchronization time exceeded	Both switches have to modify state within the defined synchronization time.
3	Synchronization time exceeded hand 1	Incorrect operation on one side of a two-hand switch.
4	Synchronization time exceeded hand 2	Incorrect operation on one side of a two-hand switch.
7	Selector switch inconsistent	The selector should not have more than one input set.
8	Switch disconnected	The selector should have at least one input set.
10	OUT_TEST error detected	OUT_TEST diagnostic tests were unsuccessful.
11	Redundant input mismatch	Redundancy verification unsuccessful on input.
13	OUT_TEST diagnostics wiring error	Test output not connected to the correct input.
14	Output OK, but input connected to 24 Vdc.	Invalid test input connection.
15	Short circuit between photo cell test and photo cell input.	Photo cell response time error detected.
16	No response from photo cell.	The test signal on the photo cell emitter is not detected by the receiver.
17	Short circuit between photo cells.	The test signal is present on two different photo cells.
18	Safety Mat not connected.	Incorrect Safety Mat connection.
19	Output inconsistent with feedback.	The test signal on input is present on more than one OUT_ TEST.
20	Connection incorrect.	The test signal is present on more than one input.
21	OUT_TEST error detected.	The test signal on the input is not present on the OUT_TEST.
22	Redundant OUT_TEST mismatch.	Redundancy verification unsuccessful on OUT_TEST.
23	Speed monitoring module- proximity sensor not detected	The proximity sensor is not detected or is inoperable.
24	Speed monitoring module- encoder not detected	Verify whether the encoder is powered and wired correctly.
25	Speed monitoring module- encoder, Proximity not detected	Verify whether the proximity sensor of the encoder is powered and wired correctly.
26	Speed monitoring module- Proximity1, Proximity2 not detected	One of the two proximity sensors is not connected.
27	Speed monitoring module- encoder1, encoder2 not detected	One of the two encoders is not connected.
28	Speed monitoring module- error congruence frequencies	Redundancy verification error detected during measurement.
29	Speed monitoring module- encoder supply not detected	Encoder incorrectly powered.
30	Error detected at speed monitoring module	Incorrect encoder signal

Code	Diagnostic message	Explanation
31	The selected threshold does not exist	-
32	Frequency at input Encoder 1 is too high	-
33	Frequency at input Encoder 2 is too high	-
34	Frequency at input Proximity 1 is too high	-
35	Frequency at input Proximity 2 is too high	-
40	The signal current supplied by the sensor is below the minimum threshold value	The measured value is below the minimum threshold value,
41	The signal current supplied by the sensor is above the maximum threshold value	The measured value is above the maximum threshold value.
42	Sensor is not connected or measured value is below the minimum threshold value	-
43	Incorrect current supply by the device to the sensor	The current supplied by the device to the sensor is above the maximum permissible value.
44	Incorrect current supply by the sensor to the device	The current supplied by the sensor to the device is above the maximum permissible value
53	Mismatch between redundant channels readings	The mismatch between the two channels is out of the threshold
54	Sensor 1 signal current below the minimum allowed value	The analog reading on channel 1 is under the minimum threshold
55	Sensor 2 signal current below the minimum allowed value	The analog reading on channel 2 is under the minimum threshold
56	Sensor 1 signal current exceeds the maximum allowed value	The analog reading on channel 1 is over the maximum threshold
57	Sensor 2 signal current exceeds the maximum allowed value	The analog reading on channel 2 is over the maximum threshold
58	Unconnected sensor 1	The sensor on channel 1 is not connected or the reading is under the minimum threshold
59	Unconnected sensor 2	The sensor on channel 2 is not connected or the reading is under the minimum threshold
60	Sensor 1 supply overload	The power supply current for channel 1 is excessive
61	Sensor 1 supply overload	The power supply current for channel 2 is excessive
62	Current value at sensor 1 input too high	The analog reading on channel 1 is excessive
63	Current value at sensor 2 input too high	The analog reading on channel 2 is excessive
133(1)	Two - hand operation is not simultaneously	Two-hand switches must modify state within the defined synchronization time
134(1)	Missing StartUp Test	Start up test unsuccessful
137(1)	Missing Restart	The input has manual reset and has not been restarted
(1): Diagnostics code 133, 134 and 137 are not represented by the LEDs of XPSMCMCP0802(G), XPSMCMC10804(G) and XPSMCMC10804E(G). **NOTE:** Codes not listed are reserved.		

Diagnostics Codes for Safety-Related Output Function Blocks

Each Safety-related Output function block can generate a diagnostic code.

When the Safety-related Output function block is connected correctly, the diagnostic code is OK and is not exported to the fieldbus; when an error on the Safety-related Output function block is detected, the system exports 2 bytes to the fieldbus with the following information:

- Index of the Safety-related Output function block
- Diagnostic code of the Safety-related Output function block

The Diagnostics code field for a Safety-related Output function block can contain the following decimal values.

Code	Error message	Explanation	Temporary inhibition, resets when conditions become valid	Blocking, necessary restart of the controller after fixing the blocking condition
1	Enable not detected	Modular Safety Controller inputs pin 2 and/or 3 not at 24V	x	-
2	Waiting Restart	Restart signal required to activate output	x	-
3	No K1/K2 feedback detected	No valid feedback from external relays detected	-	x
4	Waiting for internal synchronization	Internal microcontrollers not synchronized	x	-
5	No OSSD power supply	Supply for outputs is missing	x	-
6	Maximum restart time exceeded	Duration of positive restart pulse too long	x	-
7	Incorrect K1/K2 feedback	Signal at the FBK_K input does not change within the defined time (applicable to XPSMCMRO0004(G) and XPSMCMRO0004DA(G) modules configured in Cat.2 (ISO 13849-1) wiring)	-	x
8	Waiting for K1/K2 feedback	External relays did not react to a commanded change of state	x	-
9	OSSD Overload	The current drained from the OSSD is too high	x	-
10	External voltage at OSSD	The OSSD cannot be driven to 0V level due to external mis-wiring (Load connected to 24V instead of 0V)	x	-
NOTE: Codes not listed are reserved.				

System Errors

System error messages (used for customer support) are available through acyclic access; the members of the data set provide detailed information on errors detected by the Modular Safety Controller.

(Refer to chapter "Error Codes" on the Modular Safety Controller Library and Programming Guide).

Byte and Word Order

32-bit values used in the XPSMCMCO0000••(G) fieldbus communication module and mapped to data entities of a smaller size, are mapped as little-endian, least significant word first.

For example, a hexadecimal value of AABBCCDD hex would be mapped into two consecutive Modbus registers as follows:

- Register 0: CCDD hex
- Register 1: AABB hex

Floating Point Values

Floating-point numbers (exact name of the data type depends on the fieldbus system) are encoded according to IEEE 754 standard.

Module Characteristics

General Module Characteristics

Presentation

General characteristics	
Rated voltage	24 Vdc ± 20 % (PELV supply)
Dissipated power	3 W maximum
Overvoltage category	II
Ambient operating temperature	-10...+55 °C (14...131 °F)
Storage temperature	-20...+85 °C (-4...185 °F)
Relative humidity	10...95%
Maximum operation altitude	2000 m (6562 ft)
Pollution degree	2
Vibration resistance (IEC/EN 61496-1)	+/- 0.35 mm (0.014 in) 10...55 Hz
Shock resistance (IEC/EN 61496-1)	10 g (16 ms half-sine)
EMC Category	Zone B
Weight	0.125 kg (4.4 Oz)
Mini B-USB	Used for configuration of the fieldbus module with the BUS Configurator software.

Housing characteristics	
Housing material	Polyamide
Housing degree of protection	IP20
Terminal blocks degree of protection	IP2x
Mounting	35 mm DIN rail according to EN/IEC 60715
Mounting position	Any plane
Dimensions (h x l x d)	• with screw terminals: 108 x 22.5 x 114.5 mm (4.25 x 0.89 x 4.5 in) • with spring terminals: 118.5 x 22.5 x 114.5 mm (4.67 x 0.89 x 4.5 in)

NOTE: Mount the modules (Modular Safety Controller and any I/O expansion modules) in an electric cabinet with an IP54 degree of protection. The minimum clearance below and above the controller is 40 mm. Allow at least 100 mm distance between the cabinet door and the front face of the module (s). There are no clearances required on the left or right side of the module(s); however, other equipment in proximity may require larger distances and those clearances must also be taken into account.

The following table lists the Mean Time to Failure (MTTF) in years for the fieldbus modules:

Module reference	Fieldbus	Mean Time to Failure (MTTF) in years at an operating temperature of 30° C (86° F)
XPSMCMCO0000CO(G)	CANopen	196
XPSMCMC10804E(G) and XPSMCMCO0000E(G)	Multi protocol (Ethernet/IP, EtherCAT, Modbus TCP and Profinet)	XPSMCMC10804E(G) MTTF: 83,72 years XPSMCMCO0000E(G) MTTFd: 125,41 years.
XPSMCMCO0000EC•	EtherCAT	212
XPSMCMCO0000EI•	EtherNet/IP	212
XPSMCMCO0000MB•	Modbus Serial	245
XPSMCMCO0000EM(G)	Modbus TCP	212
XPSMCMCO0000PB(G)	Profibus DP	247

NOTE: For the characteristics common to all modules, refer to General Characteristics (see Modular Safety Controller, Hardware Guide).

XPSMCMCO0000CO• CANopen

LED Indicators

The **PWR**, **RUN**, **E IN** and **E EX** LED indicators are present on the module. They are described in the sections Common LEDs for Operation, page 17 and in Common LED Indicators for Troubleshooting, page 17.

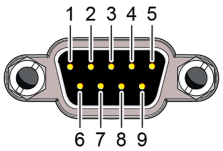
The following table presents the LED indicator **CAN RUN**:

State	Indication
OFF	No power.
Steady green	Online, connected.
Flashes slow green	Operating state Pre-Operational.
Periodic single green flash	Operating state Stopped.
Flashes fast green	Baud rate detection in progress.
Steady red	Fieldbus not operational.
Operating states mentioned in the table according to the CANopen state machine	

The following table presents the LED indicator **ERR**:

State	Indication
OFF	No error detected.
Periodic single red flash	A fieldbus error counter has reached an alert level.
Fast red flashing	Layer Setting Service (LSS) operational.
Periodic double red flash	Network monitoring event: node guarding or heartbeat not detected.
Steady red	Fieldbus not operational.

Connector Details

Module-specific characteristics	XPSMCMCO0000CO•
Reference description	CAN: CANopen non-safety-related communication module
Output and PIN number	DB9 - male 
Wiring	**Pin/ Signal** 1/ not used 2/ CAN_L 3/ CAN_GND 4/ not used 5/ CAN_SHLD 6/ not used 7/ CAN_H 8/ not used 9/ not used Housing CAN_SHIELD
Baudrate	10 kbit/s ...1 Mbit/s

XPSMCMCO0000CO• CANopen - Mapping Information

Device Identification

Item	Value	Object Index	Sub-Index	Remarks
Vendor ID	0700005A hex	1018 hex	01 hex	Vendor ID for Schneider Electric
Product Code	00B6B3D hex	1018 hex	02 hex	Product code for the XPSMCMCO0000CO•
Revision Number	*See remarks*	1018 hex	03 hex	Reflects the firmware version of the device (for example, 00020101 hex means SV2.1.1)
Vendor Name	'Schneider Electric'	-	-	-
Product Name	'XPSMCMCO0000CO'	1008 hex	00 hex	-

Cyclic Data Access - PDO Predefined Connection Set

PDO	Name	Length (bytes)	PDO Object	Mapping Object	Remarks
RxPDO 1	RPDO 1 - Fieldbus Inputs	4	1400 hex	1600 hex	Part of the standard communication set
RxPDO 2	RPDO 2 - Dummy	1	1401 hex	1601 hex	Part of the standard communication set; not used; disabled by default
RxPDO 3	RPDO 3 - Dummy	1	1402 hex	1602 hex	Part of the standard communication set; not used; disabled by default

PDO	Name	Length (bytes)	PDO Object	Mapping Object	Remarks
RxPDO 4	RPDO 4 - Dummy	1	1403 hex	1603 hex	Part of the standard communication set; not used; disabled by default
TxPDO 1	TPDO 1 - Status, Fieldbus Inputs feedback	8	1800 hex	1A00 hex	Part of the standard communication set
TxPDO 2	TPDO 2 - Inputs status 1	8	1801 hex	1A01 hex	Part of the standard communication set
TxPDO 3	TPDO 3 - Inputs status 2	8	1802 hex	1A02 hex	Part of the standard communication set
TxPDO 4	TPDO 4- Outputs & Probes status	8	1803 hex	1A03 hex	Part of the standard communication set
TxPDO 5	TPDO 5 – Analog data 1	8	1804 hex	1A04 hex	Available for user mapping
TxPDO 6	TPDO 6 – Analog data 2	8	1805 hex	1A05 hex	Available for user mapping
TxPDO 7	TPDO 7 – Analog data 3	8	1806 hex	1A06 hex	Available for user mapping
TxPDO 8	TPDO 8 – Analog data 4	8	1807 hex	1A07 hex	Available for user mapping
TxPDO 9	TPDO 9 – Analog data 5	8	1808 hex	1A08 hex	Available for user mapping
TxPDO 10	TPDO 10 – Analog data 6	8	1809 hex	1A09 hex	Available for user mapping
TxPDO 11	TPDO 11 – Analog data 7	8	180A hex	1A0A hex	Available for user mapping
TxPDO 12	TPDO 12 – Analog data 8	8	180B hex	1A0B hex	Available for user mapping

Cyclic Data Access - PDO Mapping

PDO Designation	Sub-index	bytes	PDO Object Index	Sub-index	Mapped object Index	Sub-index	Object name
RxPDO 1	01 hex	0	1600 hex	01 hex	2101 hex	01 hex	Fieldbus input bytes 0
	02 hex	1	1600 hex	02 hex	2101 hex	02 hex	Fieldbus input bytes 1
	03 hex	2	1600 hex	03 hex	2101 hex	03 hex	Fieldbus input bytes 2
	04 hex	3	1600 hex	04 hex	2101 hex	04 hex	Fieldbus input bytes 3
RxPDO 2	01 hex	0	1601 hex	01 hex	0005 hex	00 hex	Dummy entry (UNSIGNED8)
RxPDO 3	01 hex	0	1602 hex	01 hex	0005 hex	00 hex	Dummy entry (UNSIGNED8)
RxPDO 4	01 hex	0	1603 hex	01 hex	0005 hex	00 hex	Dummy entry (UNSIGNED8)
TxPDO 1	01 hex	0	1A00 hex	01 hex	2001 hex	01 hex	System status
	02 hex	1	1A00 hex	02 hex	0005 hex	00 hex	Dummy entry (UNSIGNED8)
	03 hex	2	1A00 hex	03 hex	0005 hex	00 hex	Dummy entry (UNSIGNED8)
	04 hex	3	1A00 hex	04 hex	0005 hex	00 hex	Dummy entry (UNSIGNED8)
	05 hex	4	1A00 hex	05 hex	2181 hex	01 hex	Fieldbus input bytes 0 feedback
	06 hex	5	1A00 hex	06 hex	2181 hex	02 hex	Fieldbus input bytes 1 feedback
	07 hex	6	1A00 hex	07 hex	2181 hex	03 hex	Fieldbus input bytes 2 feedback
	08 hex	7	1A00 hex	08 hex	2181 hex	04 hex	Fieldbus input bytes 3 feedback

PDO Designation	Sub-index	bytes	PDO Object Index	Sub-index	Mapped object Index	Sub-index	Object name
TxPDO 2	01 hex	0	1A01 hex	01 hex	2201 hex	01 hex	Input status bytes 0
	02 hex	1	1A01 hex	02 hex	2201 hex	02 hex	Input status bytes 1
	03 hex	2	1A01 hex	03 hex	2201 hex	03 hex	Input status bytes 2
	04 hex	3	1A01 hex	04 hex	2201 hex	04 hex	Input status bytes 3
	05 hex	4	1A01 hex	05 hex	2201 hex	05 hex	Input status bytes 4
	06 hex	5	1A01 hex	06 hex	2201 hex	06 hex	Input status bytes 5
	07 hex	6	1A01 hex	07 hex	2201 hex	07 hex	Input status bytes 6
	08 hex	7	1A01 hex	08 hex	2201 hex	08 hex	Input status bytes 7
TxPDO 3	01 hex	0	1A02 hex	01 hex	2201 hex	09 hex	Input status bytes 8
	02 hex	1	1A02 hex	02 hex	2201 hex	0A hex	Input status bytes 9
	03 hex	2	1A02 hex	03 hex	2201 hex	0B hex	Input status bytes 10
	04 hex	3	1A02 hex	04 hex	2201 hex	0C hex	Input status bytes 11
	05 hex	4	1A02 hex	05 hex	2201 hex	0D hex	Input status bytes 12
	06 hex	5	1A02 hex	06 hex	2201 hex	0E hex	Input status bytes 13
	07 hex	6	1A02 hex	07 hex	2201 hex	0F hex	Input status bytes 14
	08 hex	7	1A02 hex	08 hex	2201 hex	10 hex	Input status bytes 15
TxPDO 4	01 hex	0	1A03 hex	01 hex	2203 hex	01 hex	Probe status bytes 0
	02 hex	1	1A03 hex	02 hex	2203 hex	02 hex	Probe status bytes 1
	03 hex	2	1A03 hex	03 hex	2203 hex	03 hex	Probe status bytes 2
	04 hex	3	1A03 hex	04 hex	2203 hex	04 hex	Probe status bytes 3
	05 hex	4	1A03 hex	05 hex	2202 hex	01 hex	Safety-related Output status bytes 0
	06 hex	5	1A03 hex	06 hex	2202 hex	02 hex	Safety-related Output status bytes 1
	07 hex	6	1A03 hex	07 hex	2202 hex	03 hex	Safety-related Output status bytes 2
	08 hex	7	1A03 hex	08 hex	2202 hex	04 hex	Safety-related Output status bytes 3
TxPDO 5	01 hex	0-3	1A04 hex	01 hex	2204 hex	01 hex	Analog data float 0
	02 hex	4-7	1A04 hex	02 hex	2204 hex	02 hex	Analog data float 0
TxPDO 6	01 hex	0-3	1A05 hex	01 hex	2204 hex	03 hex	Analog data float 0
	02 hex	4-7	1A05 hex	02 hex	2204 hex	04 hex	Analog data float 0
TxPDO 7	01 hex	0-3	1A06 hex	01 hex	2204 hex	05 hex	Analog data float 0
	02 hex	4-7	1A06 hex	02 hex	2204 hex	06 hex	Analog data float 0
TxPDO 8	01 hex	0-3	1A07 hex	01 hex	2204 hex	07 hex	Analog data float 0
	02 hex	4-7	1A07 hex	02 hex	2204 hex	08 hex	Analog data float 0
TxPDO 9	01 hex	0-3	1A08 hex	01 hex	2204 hex	09 hex	Analog data float 0
	02 hex	4-7	1A08 hex	02 hex	2204 hex	0A hex	Analog data float 0
TxPDO 10	01 hex	0-3	1A09 hex	01 hex	2204 hex	0B hex	Analog data float 0
	02 hex	4-7	1A09 hex	02 hex	2204 hex	0C hex	Analog data float 0
TxPDO 11	01 hex	0-3	1A0A hex	01 hex	2204 hex	0D hex	Analog data float 0
	02 hex	4-7	1A0A hex	02 hex	2204 hex	0E hex	Analog data float 0

PDO Designation	Sub-index	bytes	PDO Object Index	Sub-index	Mapped object Index	Sub-index	Object name
TxPDO 12	01 hex	0-3	1A0B hex	01 hex	2204 hex	0F hex	Analog data float 0
	02 hex	4-7	1A0B hex	02 hex	2204 hex	010 hex	Analog data float 0

Vendor Specific Object Index 2001 hex – System Status

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	08 hex	RO
01 hex	UNSIGNED8	System status	00 hex	RO
02 hex	UNSIGNED8	Reserved	00 hex	RO
03 hex	UNSIGNED8	Reserved	00 hex	RO
04 hex	UNSIGNED8	Reserved	00 hex	RO
05 hex	UNSIGNED8	Reserved	00 hex	RO
06 hex	UNSIGNED8	Reserved	00 hex	RO
07 hex	UNSIGNED8	Reserved	00 hex	RO
08 hex	UNSIGNED8	Reserved	00 hex	RO

Vendor Specific Object Index 2003 hex – Error Data CPU 0

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	08 hex	RO
01 hex	UNSIGNED8	Module ID	00 hex	RO
02 hex	UNSIGNED8	Error code	00 hex	RO
03 hex	UNSIGNED8	Error address bytes 0	00 hex	RO
04 hex	UNSIGNED8	Error address bytes 1	00 hex	RO
05 hex	UNSIGNED8	Error address bytes 2	00 hex	RO
06 hex	UNSIGNED8	Error address bytes 3	00 hex	RO
07 hex	UNSIGNED8	CPU firmware version	00 hex	RO
08 hex	UNSIGNED8	Extended code 0 (optional)	00 hex	RO
09 hex	UNSIGNED8	Extended code 1 (optional)	00 hex	RO

Vendor Specific Object Index 2004 hex – Error Data CPU 1

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	08 hex	RO
01 hex	UNSIGNED8	Module ID	00 hex	RO
02 hex	UNSIGNED8	Error code	00 hex	RO
03 hex	UNSIGNED8	Error address bytes 0	00 hex	RO

Subindex	Type	Usage/Name	Default value	Access
04 hex	UNSIGNED8	Error address bytes 1	00 hex	RO
05 hex	UNSIGNED8	Error address bytes 2	00 hex	RO
06 hex	UNSIGNED8	Error address bytes 3	00 hex	RO
07 hex	UNSIGNED8	CPU firmware version	00 hex	RO
08 hex	UNSIGNED8	Extended code 0 (optional)	00 hex	RO
09 hex	UNSIGNED8	Extended code 1 (optional)	00 hex	RO

Vendor Specific Object Index 2005 hex – Input Diagnostics

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	20 hex	RO
01 hex	UNSIGNED8	Diagnostic index 0	00 hex	RO
02 hex	UNSIGNED8	Diagnostic code 0	00 hex	RO
03 hex	UNSIGNED8	Diagnostic index 1	00 hex	RO
04 hex	UNSIGNED8	Diagnostic code 1	00 hex	RO
05 hex	UNSIGNED8	Diagnostic index 2	00 hex	RO
06 hex	UNSIGNED8	Diagnostic code 2	00 hex	RO
07 hex	UNSIGNED8	Diagnostic index 3	00 hex	RO
08 hex	UNSIGNED8	Diagnostic code 3	00 hex	RO
09 hex	UNSIGNED8	Diagnostic index 4	00 hex	RO
0A hex	UNSIGNED8	Diagnostic code 4	00 hex	RO
0B hex	UNSIGNED8	Diagnostic index 5	00 hex	RO
0C hex	UNSIGNED8	Diagnostic code 5	00 hex	RO
0D hex	UNSIGNED8	Diagnostic index 6	00 hex	RO
0E hex	UNSIGNED8	Diagnostic code 6	00 hex	RO
0F hex	UNSIGNED8	Diagnostic index 7	00 hex	RO
10 hex	UNSIGNED8	Diagnostic code 7	00 hex	RO
11 hex	UNSIGNED8	Diagnostic index 8	00 hex	RO
12 hex	UNSIGNED8	Diagnostic code 8	00 hex	RO
13 hex	UNSIGNED8	Diagnostic index 9	00 hex	RO
14 hex	UNSIGNED8	Diagnostic code 9	00 hex	RO
15 hex	UNSIGNED8	Diagnostic index 10	00 hex	RO
16 hex	UNSIGNED8	Diagnostic code 10	00 hex	RO
17 hex	UNSIGNED8	Diagnostic index 11	00 hex	RO
18 hex	UNSIGNED8	Diagnostic code 11	00 hex	RO
19 hex	UNSIGNED8	Diagnostic index 12	00 hex	RO
1A hex	UNSIGNED8	Diagnostic code 12	00 hex	RO
1B hex	UNSIGNED8	Diagnostic index 13	00 hex	RO
1C hex	UNSIGNED8	Diagnostic code 13	00 hex	RO
1D hex	UNSIGNED8	Diagnostic index 14	00 hex	RO

Subindex	Type	Usage/Name	Default value	Access
1E hex	UNSIGNED8	Diagnostic code 14	00 hex	RO
1F hex	UNSIGNED8	Diagnostic index 15	00 hex	RO
20 hex	UNSIGNED8	Diagnostic code 15	00 hex	RO

Vendor Specific Object Index 2006 hex – Safety-Related Output Diagnostics

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	20 hex	RO
01 hex	UNSIGNED8	Diagnostic index 0	00 hex	RO
02 hex	UNSIGNED8	Diagnostic code 0	00 hex	RO
03 hex	UNSIGNED8	Diagnostic index 1	00 hex	RO
04 hex	UNSIGNED8	Diagnostic code 1	00 hex	RO
05 hex	UNSIGNED8	Diagnostic index 2	00 hex	RO
06 hex	UNSIGNED8	Diagnostic code 2	00 hex	RO
07 hex	UNSIGNED8	Diagnostic index 3	00 hex	RO
08 hex	UNSIGNED8	Diagnostic code 3	00 hex	RO
09 hex	UNSIGNED8	Diagnostic index 4	00 hex	RO
0A hex	UNSIGNED8	Diagnostic code 4	00 hex	RO
0B hex	UNSIGNED8	Diagnostic index 5	00 hex	RO
0C hex	UNSIGNED8	Diagnostic code 5	00 hex	RO
0D hex	UNSIGNED8	Diagnostic index 6	00 hex	RO
0E hex	UNSIGNED8	Diagnostic code 6	00 hex	RO
0F hex	UNSIGNED8	Diagnostic index 7	00 hex	RO
10 hex	UNSIGNED8	Diagnostic code 7	00 hex	RO
11 hex	UNSIGNED8	Diagnostic index 8	00 hex	RO
12 hex	UNSIGNED8	Diagnostic code 8	00 hex	RO
13 hex	UNSIGNED8	Diagnostic index 9	00 hex	RO
14 hex	UNSIGNED8	Diagnostic code 9	00 hex	RO
15 hex	UNSIGNED8	Diagnostic index 10	00 hex	RO
16 hex	UNSIGNED8	Diagnostic code 10	00 hex	RO
17 hex	UNSIGNED8	Diagnostic index 11	00 hex	RO
18 hex	UNSIGNED8	Diagnostic code 11	00 hex	RO
19 hex	UNSIGNED8	Diagnostic index 12	00 hex	RO
1A hex	UNSIGNED8	Diagnostic code 12	00 hex	RO
1B hex	UNSIGNED8	Diagnostic index 13	00 hex	RO
1C hex	UNSIGNED8	Diagnostic code 13	00 hex	RO
1D hex	UNSIGNED8	Diagnostic index 14	00 hex	RO
1E hex	UNSIGNED8	Diagnostic code 14	00 hex	RO
1F hex	UNSIGNED8	Diagnostic index 15	00 hex	RO
20 hex	UNSIGNED8	Diagnostic code 15	00 hex	RO

Vendor Specific Object Index 2007 hex – Project CRC

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	08 hex	RO
01 hex	UNSIGNED8	Project CRC, low bytes	00 hex	RO
02 hex	UNSIGNED8	Project CRC, high bytes	00 hex	RO
03 hex	UNSIGNED8	Reserved	00 hex	RO
04 hex	UNSIGNED8	Reserved	00 hex	RO
05 hex	UNSIGNED8	Reserved	00 hex	RO
06 hex	UNSIGNED8	Reserved	00 hex	RO
07 hex	UNSIGNED8	Reserved	00 hex	RO
08 hex	UNSIGNED8	Reserved	00 hex	RO

Vendor Specific Object Index 2101 hex – Fieldbus Inputs

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	08 hex	RO
01 hex	UNSIGNED8	Fieldbus inputs bytes 0	00 hex	RW
02 hex	UNSIGNED8	Fieldbus inputs bytes 1	00 hex	RW
03 hex	UNSIGNED8	Fieldbus inputs bytes 2	00 hex	RW
04 hex	UNSIGNED8	Fieldbus inputs bytes 3	00 hex	RW
05 hex	UNSIGNED8	Reserved	00 hex	RO
06 hex	UNSIGNED8	Reserved	00 hex	RO
07 hex	UNSIGNED8	Reserved	00 hex	RO
08 hex	UNSIGNED8	Reserved	00 hex	RO

Vendor Specific Object Index 2181 hex – Fieldbus Inputs Feedback

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	08 hex	RO
01 hex	UNSIGNED8	Fieldbus inputs feedback bytes 0	00 hex	RW
02 hex	UNSIGNED8	Fieldbus inputs feedback bytes 1	00 hex	RW
03 hex	UNSIGNED8	Fieldbus inputs feedback bytes 2	00 hex	RW
04 hex	UNSIGNED8	Fieldbus inputs feedback bytes 3	00 hex	RW
05 hex	UNSIGNED8	Reserved	00 hex	RO
06 hex	UNSIGNED8	Reserved	00 hex	RO
07 hex	UNSIGNED8	Reserved	00 hex	RO
08 hex	UNSIGNED8	Reserved	00 hex	RO

Vendor Specific Object Index 2201 hex – Input Status

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	10 hex	RO
01 hex	UNSIGNED8	Input status bytes 0	00 hex	RO
02 hex	UNSIGNED8	Input status bytes 1	00 hex	RO
03 hex	UNSIGNED8	Input status bytes 2	00 hex	RO
04 hex	UNSIGNED8	Input status bytes 3	00 hex	RO
05 hex	UNSIGNED8	Input status bytes 4	00 hex	RO
06 hex	UNSIGNED8	Input status bytes 5	00 hex	RO
07 hex	UNSIGNED8	Input status bytes 6	00 hex	RO
08 hex	UNSIGNED8	Input status bytes 7	00 hex	RO
09 hex	UNSIGNED8	Input status bytes 8	00 hex	RO
0A hex	UNSIGNED8	Input status bytes 9	00 hex	RO
0B hex	UNSIGNED8	Input status bytes 10	00 hex	RO
0C hex	UNSIGNED8	Input status bytes 11	00 hex	RO
0D hex	UNSIGNED8	Input status bytes 12	00 hex	RO
0E hex	UNSIGNED8	Input status bytes 13	00 hex	RO
0F hex	UNSIGNED8	Input status bytes 14	00 hex	RO
10 hex	UNSIGNED8	Input status bytes 15	00 hex	RO

Vendor Specific Object Index 2202 hex – Safety-related Output Status

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	08 hex	RO
01 hex	UNSIGNED8	Safety-related Output status bytes 0	00 hex	RO
02 hex	UNSIGNED8	Safety-related Output status bytes 1	00 hex	RO
03 hex	UNSIGNED8	Safety-related Output status bytes 2	00 hex	RO
04 hex	UNSIGNED8	Safety-related Output status bytes 3	00 hex	RO
05 hex	UNSIGNED8	Reserved	00 hex	RO
06 hex	UNSIGNED8	Reserved	00 hex	RO
07 hex	UNSIGNED8	Reserved	00 hex	RO
08 hex	UNSIGNED8	Reserved	00 hex	RO

Vendor Specific Object Index 2203 hex – Probe Status

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	08 hex	RO
01 hex	UNSIGNED8	Probe status bytes 0	00 hex	RO

Subindex	Type	Usage/Name	Default value	Access
02 hex	UNSIGNED8	Probe status bytes 1	00 hex	RO
03 hex	UNSIGNED8	Probe status bytes 2	00 hex	RO
04 hex	UNSIGNED8	Probe status bytes 3	00 hex	RO
05 hex	UNSIGNED8	Reserved	00 hex	RO
06 hex	UNSIGNED8	Reserved	00 hex	RO
07 hex	UNSIGNED8	Reserved	00 hex	RO
08 hex	UNSIGNED8	Reserved	00 hex	RO

Vendor Specific Object Index 2204 hex – Analog Data

Object Type: Array of REAL32

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	10 hex	RO
01 hex	REAL32	Analog data float 0	0.0f	RO
02 hex	REAL32	Analog data float 1	0.0f	RO
03 hex	REAL32	Analog data float 2	0.0f	RO
04 hex	REAL32	Analog data float 3	0.0f	RO
05 hex	REAL32	Analog data float 4	0.0f	RO
06 hex	REAL32	Analog data float 5	0.0f	RO
07 hex	REAL32	Analog data float 6	0.0f	RO
08 hex	REAL32	Analog data float 7	0.0f	RO
09 hex	REAL32	Analog data float 8	0.0f	RO
0A hex	REAL32	Analog data float 9	0.0f	RO
0B hex	REAL32	Analog data float 10	0.0f	RO
0C hex	REAL32	Analog data float 11	0.0f	RO
0D hex	REAL32	Analog data float 12	0.0f	RO
0E hex	REAL32	Analog data float 13	0.0f	RO
0F hex	REAL32	Analog data float 14	0.0f	RO
10 hex	REAL32	Analog data float 15	0.0f	RO

Acyclic Data Access

The data of the XPSMCMCO0000CO• can be accessed acyclically through SDO (service data object) access. The addressing schema uses indexes and sub-indexes.

The listed vendor specific objects are available to acyclic access.

XPSMCMC10804E(G) and XPSMCMCO0000E(G)

LED Indicators

The **PWR**, **RUN**, **E IN** and **E EX** LED indicators are present on the module. They are described in the sections Common LEDs for Operation, page 17 and in Common LED Indicators for Troubleshooting, page 17.

The following table presents the LED indicators **ETH MS and NS,** depending on the protocol selected:

NOTE: The additional LEDs located next to the Ethernet ports (RJ-45 sockets) indicate Ethernet connection state and Ethernet connection activity.

Ethernet/IP protocol

LED	State	Indication
ETH MS (module status)	OFF	No power
	Green	Operating state Operational
	Flashes green	Not configured or scanner is idle
	Flashes green/red	Self-test
	Red	One or more unrecoverable errors detected
	Flashes red	One or more recoverable errors detected
NS (node status)	OFF	No power or no IP address
	Green	Online, connected. One or more connections established (CIP Class 1 or 3)
	Flashes green	Online, not connected
	Flashes green/red	Self-test
	Red	Duplicate IP address
	Flashes Red	Connection timeout, one or more connections timed out (CIP class 1 or 3)

EtherCAT protocol

LED	State	Indication
ETH MS (module status)	OFF	Operating state Init or no power
	Green	Operating state Operational
	Flashes green	Operating state Pre-Operational
	Flashes green once	Operating state Safe-Operational
NS (node status)	OFF	No error or no power
	Flashes red	Configuration not valid Operating state transition not possible
	Flashes red once	Local error detected
	Flashes red twice	Timeout EtherCAT SynchManager watchdog

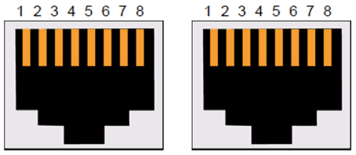
Modbus TCP protocol

LED	State	Indication
ETH MS (module status)	OFF	No power or no IP address
	Green	Online, connected
	Flashes green	Online, Modbus/TCP task is not yet configured
	Fast flashes green	Modbus/TCP task is configured
NS (node status)	OFF	No error or no power
	Flashes red	One or more system errors detected
	Red	One or more communication errors detected

Profinet protocol

LED	State	Indication
ETH MS (module status)	OFF	No error or no power
	Red	Watchdog timeout or system error
	Flashes red	Communication established through the bus
NS (node status)	OFF	No error or no power
	Red	No configuration
	Flashes red	No data exchange

Connector Details

Module-specific characteristics	XPSMCMC10804E(G)	XPSMCMCO0000E(G)
Reference description	**ETH**: Multi protocol module (Ethernet/IP, EtherCAT, Modbus TCP and Profinet)	
Output and PIN number	ETH (Ethernet/IP, EtherCat, Modbus TCP and Profinet)  RJ45 - female For EtherCAT, ETH 1 = IN and ETH 2 = OUT	
Wiring	PIN/Signal 1/ Tx+ 2/Tx- 3/Rx+ 4/not used 5/not used 6/Rx- 7/not used 8/not used	
Baud rate	10/100 Mbit/s (full duplex)	

XPSMCMC10804E(G) and XPSMCMCO0000E(G) EtherNet/IP — Mapping Information

Device Identification

Similar to the other bus systems, EtherNet/IP also uses three main characteristics of the device for the association between the device and its device description:

1. Vendor ID
2. Product Code
3. Revision Number, consisting of
   a. Major Revision
   b. Minor Revision

These values must be specified in the device description as well as provided by the device firmware when the device is scanned by the EtherNet/IP scanner. You can update the device description with customized values to be used in the programming tool.

Item	XPSMCMC10804E(G)	XPSMCMCO0000E(G)	Remarks
Vendor ID	243		Vendor ID for Schneider Electric
Product Code	4111	4112	Product code for the XPSMCMC10804E(G) or XPSMCMCO0000E(G)
Major Revision	*See remarks*		Reflects the firmware version of the device (for example, 21 means SV2.1.z; z depends on Minor Revision, see below)
Minor Revision	*See remarks*		Reflects the firmware version of the device (for example, 1 means SVx.y.1; x,y depends on Major Revision, see above)
Vendor Name	'Schneider Electric'		-
Product Name	'XPSMCM• EtherNet/IP Fieldb. exp.'		-
Product Type	12		Communications Adapter
Catalog Number	XPSMCMC10804E(G)	XPSMCMCO0000E(G)	-
Device icon			-

Cyclic Data Access

EtherNet/IP uses two assembly object instances to transfer process data:

- Assembly object 96 hex for consumed data
- Assembly object 64 hex for produced data

Each of these assembly objects contains several attributes that represent individual process data items.

Assembly Objects (XPSMCMC10804E(G))

Assembly Object 96 hex (Consuming Instance, Target > Originator)

Byte offset	Size	Name	Default value	Access
0	USINT	Fieldbus input byte 0	00 hex	RW
1	USINT	Fieldbus input byte 1	00 hex	RW
2	USINT	Fieldbus input byte 2	00 hex	RW
3	USINT	Fieldbus input byte 3	00 hex	RW

Assembly Object 64 hex (Producing Instance, Originator > Target)

Byte offset	Size	Name	Default value	Access
0	USINT	System status	00 hex	RO
1	USINT	Reserved	00 hex	RO
2	USINT	Input status byte 0	00 hex	RO
3	USINT	Input status byte 1	00 hex	RO
4	USINT	Input status byte 2	00 hex	RO

Byte offset	Size	Name	Default value	Access
5	USINT	Input status byte 3	00 hex	RO
6	USINT	Input status byte 4	00 hex	RO
7	USINT	Input status byte 5	00 hex	RO
8	USINT	Input status byte 6	00 hex	RO
9	USINT	Input status byte 7	00 hex	RO
10	USINT	Input status byte 8	00 hex	RO
11	USINT	Input status byte 9	00 hex	RO
12	USINT	Input status byte 10	00 hex	RO
13	USINT	Input status byte 11	00 hex	RO
14	USINT	Input status byte 12	00 hex	RO
15	USINT	Input status byte 13	00 hex	RO
16	USINT	Input status byte 14	00 hex	RO
17	USINT	Input status byte 15	00 hex	RO
18	USINT	Restart Input byte 0	00 hex	RO
19	USINT	Restart Input byte 1	00 hex	RO
20	USINT	Restart Input byte 2	00 hex	RO
21	USINT	Fieldbus input byte 0 feedback	00 hex	RO
22	USINT	Fieldbus input byte 1 feedback	00 hex	RO
23	USINT	Fieldbus input byte 2 feedback	00 hex	RO
24	USINT	Fieldbus input byte 3 feedback	00 hex	RO
25	USINT	Probe status byte 0	00 hex	RO
26	USINT	Probe status byte 1	00 hex	RO
27	USINT	Probe status byte 2	00 hex	RO
28	USINT	Probe status byte 3	00 hex	RO
29	USINT	OSSD status byte 0	00 hex	RO
30	USINT	OSSD status byte 1	00 hex	RO
31	USINT	OSSD status byte 2	00 hex	RO
32	USINT	OSSD status byte 3	00 hex	RO
33	REAL	Analog data float 0	0.0 f	RO
37	REAL	Analog data float 1	0.0 f	RO
41	REAL	Analog data float 2	0.0 f	RO
45	REAL	Analog data float 3	0.0 f	RO
49	REAL	Analog data float 4	0.0 f	RO
53	REAL	Analog data float 5	0.0 f	RO
57	REAL	Analog data float 6	0.0 f	RO
61	REAL	Analog data float 7	0.0 f	RO
65	REAL	Analog data float 8	0.0 f	RO
69	REAL	Analog data float 9	0.0 f	RO
73	REAL	Analog data float 10	0.0 f	RO
77	REAL	Analog data float 11	0.0 f	RO

Byte offset	Size	Name	Default value	Access
81	REAL	Analog data float 12	0.0 f	RO
85	REAL	Analog data float 13	0.0 f	RO
89	REAL	Analog data float 14	0.0 f	RO
93	REAL	Analog data float 15	0.0 f	RO
97	REAL	Speed data float 0	0.0 f	RO
101	REAL	Speed data float 1	0.0 f	RO
105	REAL	Speed data float 2	0.0 f	RO
109	REAL	Speed data float 3	0.0 f	RO
113	REAL	Speed data float 4	0.0 f	RO
117	REAL	Speed data float 5	0.0 f	RO
121	REAL	Speed data float 6	0.0 f	RO
125	REAL	Speed data float 7	0.0 f	RO
129	REAL	Speed data float 8	0.0 f	RO
133	REAL	Speed data float 9	0.0 f	RO
137	REAL	Speed data float 10	0.0 f	RO
141	REAL	Speed data float 11	0.0 f	RO
145	REAL	Speed data float 12	0.0 f	RO
149	REAL	Speed data float 13	0.0 f	RO
153	REAL	Speed data float 14	0.0 f	RO
157	REAL	Speed data float 15	0.0 f	RO
161	REAL	Speed data float 16	0.0 f	RO
165	REAL	Speed data float 17	0.0 f	RO
169	REAL	Speed data float 18	0.0 f	RO
173	REAL	Speed data float 19	0.0 f	RO
177	REAL	Speed data float 20	0.0 f	RO
181	REAL	Speed data float 21	0.0 f	RO
185	REAL	Speed data float 22	0.0 f	RO
189	REAL	Speed data float 23	0.0 f	RO

Assembly Objects (XPSMCMCO0000E(G))

Assembly Object 96 hex (Consuming Instance, Target > Originator)

Byte offset	Size	Name	Default value	Access
0	USINT	Fieldbus input byte 0	00 hex	RW
1	USINT	Fieldbus input byte 1	00 hex	RW
2	USINT	Fieldbus input byte 2	00 hex	RW
3	USINT	Fieldbus input byte 3	00 hex	RW

Assembly Object 64 hex (Producing Instance, Originator > Target)

Byte offset	Size	Name	Default value	Access
0	USINT	System status	00 hex	RO
1	USINT	Reserved	00 hex	RO

Byte offset	Size	Name	Default value	Access
2	USINT	Input status byte 0	00 hex	RO
3	USINT	Input status byte 1	00 hex	RO
4	USINT	Input status byte 2	00 hex	RO
5	USINT	Input status byte 3	00 hex	RO
6	USINT	Input status byte 4	00 hex	RO
7	USINT	Input status byte 5	00 hex	RO
8	USINT	Input status byte 6	00 hex	RO
9	USINT	Input status byte 7	00 hex	RO
10	USINT	Input status byte 8	00 hex	RO
11	USINT	Input status byte 9	00 hex	RO
12	USINT	Input status byte 10	00 hex	RO
13	USINT	Input status byte 11	00 hex	RO
14	USINT	Input status byte 12	00 hex	RO
15	USINT	Input status byte 13	00 hex	RO
16	USINT	Input status byte 14	00 hex	RO
17	USINT	Input status byte 15	00 hex	RO
18	USINT	Restart Input byte 0	00 hex	RO
19	USINT	Restart Input byte 1	00 hex	RO
20	USINT	Restart Input byte 2	00 hex	RO
21	USINT	Fieldbus input byte 0 feedback	00 hex	RO
22	USINT	Fieldbus input byte 1 feedback	00 hex	RO
23	USINT	Fieldbus input byte 2 feedback	00 hex	RO
24	USINT	Fieldbus input byte 3 feedback	00 hex	RO
25	USINT	Probe status byte 0	00 hex	RO
26	USINT	Probe status byte 1	00 hex	RO
27	USINT	Probe status byte 2	00 hex	RO
28	USINT	Probe status byte 3	00 hex	RO
29	USINT	OSSD status byte 0	00 hex	RO
30	USINT	OSSD status byte 1	00 hex	RO
31	USINT	OSSD status byte 2	00 hex	RO
32	USINT	OSSD status byte 3	00 hex	RO
33	REAL	Analog data float 0	0.0 f	RO
37	REAL	Analog data float 1	0.0 f	RO
41	REAL	Analog data float 2	0.0 f	RO
45	REAL	Analog data float 3	0.0 f	RO
49	REAL	Analog data float 4	0.0 f	RO
53	REAL	Analog data float 5	0.0 f	RO
57	REAL	Analog data float 6	0.0 f	RO
61	REAL	Analog data float 7	0.0 f	RO
65	REAL	Analog data float 8	0.0 f	RO

Byte offset	Size	Name	Default value	Access
69	REAL	Analog data float 9	0.0 f	RO
73	REAL	Analog data float 10	0.0 f	RO
77	REAL	Analog data float 11	0.0 f	RO
81	REAL	Analog data float 12	0.0 f	RO
85	REAL	Analog data float 13	0.0 f	RO
89	REAL	Analog data float 14	0.0 f	RO
93	REAL	Analog data float 15	0.0 f	RO

Acyclic Data Access

Addressing schema (XPSMCMC10804E(G) and XPSMCMCO0000E(G))

The data items are made available for acyclic access as specified in the following table:

Name	Class	Instance	Attribute	Length (byte)	Access type
Fieldbus Inputs	A2 hex	101 hex	05 hex	4	Get
System I/O	A2 hex	01 hex	05 hex	33	Get
Analog data	A2 hex	204 hex	05 hex	64	Get
Errors data CPU 0	A2 hex	03 hex	05 hex	9	Get
Errors data CPU 1	A2 hex	04 hex	05 hex	9	Get
Input diagnostics	A2 hex	05 hex	05 hex	32	Get
Safety-Related Output Diagnostics	A2 hex	06 hex	05 hex	32	Get
Project CRC	A2 hex	07 hex	05 hex	7 (XPSMCM-C10804E(G)) 2 (XPSMCMC-O0000E(G))	Get
RFID Chain 1	A2 hex	08 hex	05 hex	2	Get
RFID Chain 2	A2 hex	09 hex	05 hex	2	Get

NOTE: The Speed data is not available through acyclic access on Ethernet/IP.

NOTE: The modules XPSMCMC10804E(G) implement additional data in the Project CRC that are not available in the modules XPSMCMCO0000E(G).

Fieldbus Inputs

The inner structure of this item follows the same schema as for the cyclic data access:

Byte offset	Size	Name	Default value	Access
0	USINT	Fieldbus input byte 0	00 hex	Get
1	USINT	Fieldbus input byte 1	00 hex	Get
2	USINT	Fieldbus input byte 2	00 hex	Get
3	USINT	Fieldbus input byte 3	00 hex	Get

System I/O

This item aggregates the data that is usually transferred as cyclic input data except the analog data. The inner structure of this item follows the same schema as the cyclic data access:

Byte offset	Size	Name	Default value	Access
0	USINT	System status	00 hex	Get
1	USINT	Reserved	00 hex	Get
2	USINT	Input status byte 0	00 hex	Get
3	USINT	Input status byte 1	00 hex	Get
4	USINT	Input status byte 2	00 hex	Get
5	USINT	Input status byte 3	00 hex	Get
6	USINT	Input status byte 4	00 hex	Get
7	USINT	Input status byte 5	00 hex	Get
8	USINT	Input status byte 6	00 hex	Get
9	USINT	Input status byte 7	00 hex	Get
10	USINT	Input status byte 8	00 hex	Get
11	USINT	Input status byte 9	00 hex	Get
12	USINT	Input status byte 10	00 hex	Get
13	USINT	Input status byte 11	00 hex	Get
14	USINT	Input status byte 12	00 hex	Get
15	USINT	Input status byte 13	00 hex	Get
16	USINT	Input status byte 14	00 hex	Get
17	USINT	Input status byte 15	00 hex	Get
18	USINT	Restart Input byte 0	00 hex	Get
19	USINT	Restart Input byte 1	00 hex	Get
20	USINT	Restart Input byte 3	00 hex	Get
21	USINT	Fieldbus input byte 0 feedback	00 hex	Get
22	USINT	Fieldbus input byte 1 feedback	00 hex	Get
23	USINT	Fieldbus input byte 2 feedback	00 hex	Get
24	USINT	Fieldbus input byte 3 feedback	00 hex	Get
25	USINT	Probe status byte 0	00 hex	Get
26	USINT	Probe status byte 1	00 hex	Get
27	USINT	Probe status byte 2	00 hex	Get
28	USINT	Probe status byte 3	00 hex	Get
29	USINT	Safety-related Output status byte 0	00 hex	Get
30	USINT	Safety-related Output status byte 1	00 hex	Get
31	USINT	Safety-related Output status byte 2	00 hex	Get
32	USINT	Safety-related Output status byte 3	00 hex	Get

Analog Data

The inner structure of this item follows the same schema as the cyclic data access:

Byte offset	Size	Name	Default value	Access
0-3	REAL	Analog data float 0	0.0 f	Get
4-7	REAL	Analog data float 1	0.0 f	Get
8-11	REAL	Analog data float 2	0.0 f	Get
12-15	REAL	Analog data float 3	0.0 f	Get
16-19	REAL	Analog data float 4	0.0 f	Get
20-23	REAL	Analog data float 5	0.0 f	Get
24-27	REAL	Analog data float 6	0.0 f	Get
28-31	REAL	Analog data float 7	0.0 f	Get
32-35	REAL	Analog data float 8	0.0 f	Get
36-39	REAL	Analog data float 9	0.0 f	Get
40-43	REAL	Analog data float 10	0.0 f	Get
44-47	REAL	Analog data float 11	0.0 f	Get
48-51	REAL	Analog data float 12	0.0 f	Get
52-55	REAL	Analog data float 13	0.0 f	Get
56-59	REAL	Analog data float 14	0.0 f	Get
60-63	REAL	Analog data float 15	0.0 f	Get

CPU Error Data 0 and 1

The inner structure of these items follows the following schema:

Byte offset	Size	Name	Default value	Access
0	UINT8	Module	00 hex	Get
1	UINT8	Error code	00 hex	Get
2-5	UINT32	Error address	00000000 hex	Get
6	UINT8	CPU firmware version	00 hex	Get
7	UINT8	Extended code 0 (optional)	00 hex	Get
8	UINT8	Extended code 1 (optional)	00 hex	Get

Input & Safety-Related Output Diagnostics

The inner structure of these items follows the following schema:

Byte offset	Size	Name	Default value	Access
0	UINT8	Diagnostic index 0	00 hex	Get
1	UINT8	Diagnostic code 0	00 hex	Get
2	UINT8	Diagnostic index 1	00 hex	Get
3	UINT8	Diagnostic code 1	00 hex	Get
4	UINT8	Diagnostic index 2	00 hex	Get
5	UINT8	Diagnostic code 2	00 hex	Get

Byte offset	Size	Name	Default value	Access
6	UINT8	Diagnostic index 3	00 hex	Get
7	UINT8	Diagnostic code 3	00 hex	Get
8	UINT8	Diagnostic index 4	00 hex	Get
9	UINT8	Diagnostic code 4	00 hex	Get
10	UINT8	Diagnostic index 5	00 hex	Get
11	UINT8	Diagnostic code 5	00 hex	Get
12	UINT8	Diagnostic index 6	00 hex	Get
13	UINT8	Diagnostic code 6	00 hex	Get
14	UINT8	Diagnostic index 7	00 hex	Get
15	UINT8	Diagnostic code 7	00 hex	Get
16	UINT8	Diagnostic index 8	00 hex	Get
17	UINT8	Diagnostic code 8	00 hex	Get
18	UINT8	Diagnostic index 9	00 hex	Get
19	UINT8	Diagnostic code 9	00 hex	Get
20	UINT8	Diagnostic index 10	00 hex	Get
21	UINT8	Diagnostic code 10	00 hex	Get
22	UINT8	Diagnostic index 11	00 hex	Get
23	UINT8	Diagnostic code 11	00 hex	Get
24	UINT8	Diagnostic index 12	00 hex	Get
25	UINT8	Diagnostic code 12	00 hex	Get
26	UINT8	Diagnostic index 13	00 hex	Get
27	UINT8	Diagnostic code 13	00 hex	Get
28	UINT8	Diagnostic index 14	00 hex	Get
29	UINT8	Diagnostic code 14	00 hex	Get
30	UINT8	Diagnostic index 15	00 hex	Get
31	UINT8	Diagnostic code 15	00 hex	Get

Project CRC

The implementation of this object differs between XPSMCMC10804E(G) and XPSMCMCO0000E(G). The XPSMCMC10804E(G) provides additional information on the project schematic that is not available on XPSMCMCO0000E(G).

Object contents for XPSMCMC10804E(G)

The inner structure of this item follows the following schema:

Byte offset	Size	Name	Default value	Access
0	UINT8	Project CRC – low byte	00 hex	Get
1	UINT8	Project CRC – high byte	00 hex	Get
2	UINT8	Schematic Date (Day)	00 hex	Get
3	UINT8	Schematic Date (Month)	00 hex	Get
4	UINT8	Schematic Date (Year, low byte)	00 hex	Get

Byte offset	Size	Name	Default value	Access
5	UINT8	Schematic Date (Year, high byte)	00 hex	Get
6	UINT8	Schematic source	00 hex	Get

Object contents for XPSMCMCO0000E(G)

The inner structure of this item follows the following schema:

Byte offset	Size	Name	Default value	Access
0	UINT8	Project CRC – low byte	00 hex	Get
1	UINT8	Project CRC – high byte	00 hex	Get

RFID Chain 1 & 2

The inner structure of this item follows the following schema:

Byte offset	Size	Name	Default value	Access
0	UINT8	RFID chain status – low byte	00 hex	Get
1	UINT8	RFID chain status – high byte	00 hex	Get

XPSMCMC10804E(G) and XPSMCMCO0000E(G) EtherCAT — Mapping Information

Device identification

EtherCAT defines three main identification characteristics:

1. Vendor ID (32 bit unsigned)
2. Device Product Code (32 bit unsigned)
3. Device Revision Number (32 bit unsigned)

XPSMCMC10804E(G)

Item	Value	Object Index	Subindex	Remarks
Vendor ID	0800005A hex	1018 hex	01 hex	Vendor ID for Schneider Electric
Product Code	00000420 hex	1018 hex	02 hex	Product code for the XPSMCMC10804E(G).
Revision Number	*See remarks*	1018 hex	03 hex	Reflects the firmware version of the device (for example, 00020101 hex means SV2.1.1)
Vendor Name	'Schneider Electric'	-	-	-
Device Group Type	XPSMCM• fieldbus modules	-	-	-
Device Group Name	XPSMCM• fieldbus expansion modules	-	-	-
Product Name	XPSMCMC10804E(G)	1008 hex	00 hex	-
Device icon		-	-	-

Item	Value	Object Index	Subindex	Remarks
Manufacturer Software Version	*See remarks*	100A hex	00 hex	Not implemented by the device
Device Type	00000000 hex	1000 hex	00 hex	-

XPSMCMCO0000E(G)

Item	Value	Object Index	Subindex	Remarks
Vendor ID	0800005A hex	1018 hex	01 hex	Vendor ID for Schneider Electric
Product Code	00000430 hex	1018 hex	02 hex	Product code for the XPSMCMCO0000E(G).
Revision Number	*See remarks*	1018 hex	03 hex	Reflects the firmware version of the device (for example, 00020101 hex means SV2.1.1)
Vendor Name	'Schneider Electric'	-	-	-
Device Group Type	XPSMCM• fieldbus modules	-	-	-
Device Group Name	XPSMCM• Fieldbus Expansion Modules'	-	-	-
Product Name	XPSMCMCO0000E(G)	1008 hex	00 hex	-
Device icon		-	-	-
Manufacturer Software Version	*See remarks*	100A hex	00 hex	Not implemented by the device
Device Type	00000000 hex	1000 hex	00 hex	-

Cyclic Data Access (Process data image)

The EtherCAT protocol uses the same mechanisms and objects similar to CANopen to map the data objects to the process data image through CoE (CANopen over EtherCAT). Therefore, the same requirements apply:

1. As no device profile is supported, data must reside in the "vendor specific" index range.
2. Standard PDOs must be supported.

With EtherCAT, there is no 8-byte limit for the PDO payload length and therefore usually only one PDO per direction is supported.

Unlike for CANopen, the EtherCAT devices do not support re-mapping the PDOs at runtime. Only those data object need to be marked as PDO-mappable, that actually are mapped to the PDOs by default. For consistency across the systems and in case the restriction of the EtherCAT protocol is removed, use the same settings as for CANopen wherever possible.

Cyclic Data Access - PDO Overview (XPSMCMC10804E(G))

PDO	Name	Length	Mapping	Remarks
RxPDO 1	RxPDO 1	4 bytes	1600 hex	-
TxPDO 1	TxPDO 1	195 bytes	1A00 hex	-

Cyclic Data Access - PDO Mapping (XPSMCMC10804E(G))

RxPDO Index 1600 hex		Mapped object		Name
Subindex	Byte	Index	Subindex	
01 hex	0	2101 hex	01 hex	Fieldbus input byte 0
02 hex	1	2101 hex	02 hex	Fieldbus input byte 1
03 hex	2	2101 hex	03 hex	Fieldbus input byte 2
04 hex	3	2101 hex	04 hex	Fieldbus input byte 3

TxPDO Index 1A00 hex		Mapped object		Name
Subindex	Byte	Index	Subindex	
01 hex	0	2001 hex	01 hex	System status
02 hex	1	2001 hex	02 hex	Reserved_2001_02
03 hex	2	2001 hex	03 hex	Reserved_2001_03
04 hex	3	2001 hex	04 hex	Reserved_2001_04
05 hex	4	2201 hex	01 hex	Input status byte 0
06 hex	5	2201 hex	02 hex	Input status byte 1
07 hex	6	2201 hex	03 hex	Input status byte 2
08 hex	7	2201 hex	04 hex	Input status byte 3
09 hex	8	2201 hex	05 hex	Input status byte 4
0A hex	9	2201 hex	06 hex	Input status byte 5
0B hex	10	2201 hex	07 hex	Input status byte 6
0C hex	11	2201 hex	08 hex	Input status byte 7
0D hex	12	2201 hex	09 hex	Input status byte 8
0E hex	13	2201 hex	0A hex	Input status byte 9
0F hex	14	2201 hex	0B hex	Input status byte 10
10 hex	15	2201 hex	0C hex	Input status byte 11
11 hex	16	2201 hex	0D hex	Input status byte 12
12 hex	17	2201 hex	0E hex	Input status byte 13
13 hex	18	2201 hex	0F hex	Input status byte 14
14 hex	19	2201 hex	10 hex	Input status byte 15
15 hex	20	2201 hex	11 hex	Restart Input byte 0
16 hex	21	2201 hex	12 hex	Restart Input byte 1
17 hex	22	2201 hex	13 hex	Restart Input byte 2
18 hex	23	2181 hex	01 hex	Fieldbus input byte 0 feedback
19 hex	24	2181 hex	02 hex	Fieldbus input byte 1 feedback
1A hex	25	2181 hex	03 hex	Fieldbus input byte 2 feedback
1B hex	26	2181 hex	04 hex	Fieldbus input byte 3 feedback
1C hex	27	2203 hex	01 hex	Probe status byte 0
1D hex	28	2203 hex	02 hex	Probe status byte 1
1E hex	29	2203 hex	03 hex	Probe status byte 2
1F hex	30	2203 hex	04 hex	Probe status byte 3
20 hex	31	2202 hex	01 hex	Safety-related Output status byte 0
21 hex	32	2202 hex	02 hex	Safety-related Output status byte 1

TxPDO Index 1A00 hex		Mapped object		Name
Subindex	**Byte**	**Index**	**Subindex**	
22 hex	33	2202 hex	03 hex	Safety-related Output status byte 2
23 hex	34	2202 hex	04 hex	Safety-related Output status byte 3
24 hex	35-38	2206 hex	01 hex	Analog data float 0
25 hex	39-42	2206 hex	02 hex	Analog data float 1
26 hex	43-46	2206 hex	03 hex	Analog data float 2
27 hex	47-50	2206 hex	04 hex	Analog data float 3
28 hex	51-54	2206 hex	05 hex	Analog data float 4
29 hex	55-58	2206 hex	06 hex	Analog data float 5
2A hex	59-62	2206 hex	07 hex	Analog data float 6
2B hex	63-66	2206 hex	08 hex	Analog data float 7
2C hex	67-70	2206 hex	09 hex	Analog data float 8
2D hex	71-74	2206 hex	0A hex	Analog data float 9
2E hex	75-78	2206 hex	0B hex	Analog data float 10
2F hex	79-82	2206 hex	0C hex	Analog data float 11
30 hex	83-86	2206 hex	0D hex	Analog data float 12
31 hex	87-90	2206 hex	0E hex	Analog data float 13
32 hex	91-94	2206 hex	0F hex	Analog data float 14
33 hex	95-98	2206 hex	10 hex	Analog data float 15
34 hex	99-102	2206 hex	11 hex	Speed data float 0
35 hex	103-106	2206 hex	12 hex	Speed data float 1
36 hex	107-110	2206 hex	13 hex	Speed data float 2
37 hex	111-114	2206 hex	14 hex	Speed data float 3
38 hex	115-118	2206 hex	15 hex	Speed data float 4
39 hex	119-122	2206 hex	16 hex	Speed data float 5
3A hex	123-126	2206 hex	17 hex	Speed data float 6
3B hex	127-130	2206 hex	18 hex	Speed data float 7
3C hex	131-134	2206 hex	19 hex	Speed data float 8
3D hex	135-138	2206 hex	1A hex	Speed data float 9
3E hex	139-142	2206 hex	1B hex	Speed data float 10
3F hex	143-146	2206 hex	1C hex	Speed data float 11
40 hex	147-150	2206 hex	1D hex	Speed data float 12
41 hex	151-154	2206 hex	1E hex	Speed data float 13
42 hex	155-158	2206 hex	1F hex	Speed data float 14
43 hex	159-162	2206 hex	20 hex	Speed data float 15
44 hex	163-166	2206 hex	21 hex	Speed data float 16
45 hex	167-170	2206 hex	22 hex	Speed data float 17
46 hex	171-174	2206 hex	23 hex	Speed data float 18
47 hex	175-178	2206 hex	24 hex	Speed data float 19
48 hex	179-182	2206 hex	25 hex	Speed data float 20
49 hex	183-186	2206 hex	26 hex	Speed data float 21

TxPDO Index 1A00 hex		Mapped object		Name
Subindex	Byte	Index	Subindex	
4A hex	187-190	2206 hex	27 hex	Speed data float 22
4B hex	191-194	2206 hex	28 hex	Speed data float 23

Cyclic Data Access - PDO Overview (XPSMCMCO0000E(G))

PDO	Name	Length	Mapping	Remarks
RxPDO 1	RxPDO 1	4 bytes	1600 hex	-
TxPDO 1	TxPDO 1	99 bytes	1A00 hex	-

Cyclic Data Access - PDO Mapping (XPSMCMCO0000E(G))

RxPDO Index 1600 hex		Mapped object		Name
Subindex	Byte	Index	Subindex	
01 hex	0	2101 hex	01 hex	Fieldbus input byte 0
02 hex	1	2101 hex	02 hex	Fieldbus input byte 1
03 hex	2	2101 hex	03 hex	Fieldbus input byte 2
04 hex	3	2101 hex	04 hex	Fieldbus input byte 3

TxPDO Index 1A00 hex		Mapped object		Name
Subindex	Byte	Index	Subindex	
01 hex	0	2001 hex	01 hex	System status
02 hex	1	2001 hex	02 hex	Reserved_2001_02
03 hex	2	2001 hex	03 hex	Reserved_2001_03
04 hex	3	2001 hex	04 hex	Reserved_2001_04
05 hex	4	2201 hex	01 hex	Input status byte 0
06 hex	5	2201 hex	02 hex	Input status byte 1
07 hex	6	2201 hex	03 hex	Input status byte 2
08 hex	7	2201 hex	04 hex	Input status byte 3
09 hex	8	2201 hex	05 hex	Input status byte 4
0A hex	9	2201 hex	06 hex	Input status byte 5
0B hex	10	2201 hex	07 hex	Input status byte 6
0C hex	11	2201 hex	08 hex	Input status byte 7
0D hex	12	2201 hex	09 hex	Input status byte 8
0E hex	13	2201 hex	0A hex	Input status byte 9
0F hex	14	2201 hex	0B hex	Input status byte 10
10 hex	15	2201 hex	0C hex	Input status byte 11
11 hex	16	2201 hex	0D hex	Input status byte 12
12 hex	17	2201 hex	0E hex	Input status byte 13
13 hex	18	2201 hex	0F hex	Input status byte 14
14 hex	19	2201 hex	10 hex	Input status byte 15
15 hex	20	2207 hex	01 hex	Restart Input byte 0

TxPDO Index 1A00 hex		Mapped object		Name
Subindex	Byte	Index	Subindex	
16 hex	21	2207 hex	02 hex	Restart Input byte 1
17 hex	22	2207 hex	03 hex	Restart Input byte 2
18 hex	23	2181 hex	01 hex	Fieldbus input byte 0 feedback
19 hex	24	2181 hex	02 hex	Fieldbus input byte 1 feedback
1A hex	25	2181 hex	03 hex	Fieldbus input byte 2 feedback
1B hex	26	2181 hex	04 hex	Fieldbus input byte 3 feedback
1C hex	27	2203 hex	01 hex	Probe status byte 0
1D hex	28	2203 hex	02 hex	Probe status byte 1
1E hex	29	2203 hex	03 hex	Probe status byte 2
1F hex	30	2203 hex	04 hex	Probe status byte 3
20 hex	31	2202 hex	01 hex	Safety-related Output status byte 0
21 hex	32	2202 hex	02 hex	Safety-related Output status byte 1
22 hex	33	2202 hex	03 hex	Safety-related Output status byte 2
23 hex	34	2202 hex	04 hex	Safety-related Output status byte 3
24 hex	35-38	2204 hex	01 hex	Analog data float 0
25 hex	39-42	2204 hex	02 hex	Analog data float 1
26 hex	43-46	2204 hex	03 hex	Analog data float 2
27 hex	47-50	2204 hex	04 hex	Analog data float 3
28 hex	51-54	2204 hex	05 hex	Analog data float 4
29 hex	55-58	2204 hex	06 hex	Analog data float 5
2A hex	59-62	2204 hex	07 hex	Analog data float 6
2B hex	63-66	2204 hex	08 hex	Analog data float 7
2C hex	67-70	2204 hex	09 hex	Analog data float 8
2D hex	71-74	2204 hex	0A hex	Analog data float 9
2E hex	75-78	2204 hex	0B hex	Analog data float 10
2F hex	79-82	2204 hex	0C hex	Analog data float 11
30 hex	83-86	2204 hex	0D hex	Analog data float 12
31 hex	87-90	2204 hex	0E hex	Analog data float 13
32 hex	91-94	2204 hex	0F hex	Analog data float 14
33 hex	95-98	2204 hex	10 hex	Analog data float 15

Vendor Specific Objects (XPSMCMC10804E(G) and XPSMCMCO0000E(G))

Most of the object definitions for EtherCAT are identical in the XPSMCMC10804E (G) and XPSMCMCO0000E(G). The exceptions to that rule are as follows:

- Speed data is only available on XPSMCMC10804E(G).
- For XPSMCMC10804E(G), analog and speed data are grouped together in object 2206 hex while for XPSMCMCO0000E(G) (and all previous versions) the analog data is stored in object 2005 hex.
- Object Index 2007 hex— Project CRC contains additional information on XPSMCMC10804E(G).
- For XPSMCMC10804E(G), the new restart inputs are part of Object Index 2001 hex — Input Status; on XPSMCMCO0000E(G) they are stored separately in Object Index 2007 hex — Restart input data.

Vendor Specific Object Index 2001 hex – System Status

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	02 hex	RO
01 hex	UNSIGNED8	System status	00 hex	RO
02 hex	UNSIGNED8	Reserved_2001_02	00 hex	RO
03 hex	UNSIGNED8	Reserved_2001_03	00 hex	RO
04 hex	UNSIGNED8	Reserved_2001_04	00 hex	RO

Vendor Specific Object Index 2002 hex – Diagnostics

Object 2002 hex has been removed.

Vendor Specific Object Index 2003 hex – Error data CPU 0

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	09 hex	RO
01 hex	UNSIGNED8	Module ID	00 hex	RO
02 hex	UNSIGNED8	Error code	00 hex	RO
03 hex	UNSIGNED8	Error address byte 0	00 hex	RO
04 hex	UNSIGNED8	Error address byte 1	00 hex	RO
05 hex	UNSIGNED8	Error address byte 2	00 hex	RO
06 hex	UNSIGNED8	Error address byte 3	00 hex	RO
07 hex	UNSIGNED8	CPU firmware version	00 hex	RO
08 hex	UNSIGNED8	Extended code 0 (optional)	00 hex	RO
09 hex	UNSIGNED8	Extended code 1 (optional)	00 hex	RO

Vendor Specific Object Index 2004 hex – Error data CPU 1

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	09 hex	RO
01 hex	UNSIGNED8	Module ID	00 hex	RO
02 hex	UNSIGNED8	Error code	00 hex	RO
03 hex	UNSIGNED8	Error address byte 0	00 hex	RO
04 hex	UNSIGNED8	Error address byte 1	00 hex	RO
05 hex	UNSIGNED8	Error address byte 2	00 hex	RO
06 hex	UNSIGNED8	Error address byte 3	00 hex	RO
07 hex	UNSIGNED8	CPU firmware version	00 hex	RO

Subindex	Type	Usage/Name	Default value	Access
08 hex	UNSIGNED8	Extended code 0 (optional)	00 hex	RO
09 hex	UNSIGNED8	Extended code 1 (optional)	00 hex	RO

Vendor Specific Object Index 2005 hex – Input Diagnostics

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	20 hex	RO
01 hex	UNSIGNED8	Diagnostic index 0	00 hex	RO
02 hex	UNSIGNED8	Diagnostic code 0	00 hex	RO
03 hex	UNSIGNED8	Diagnostic index 1	00 hex	RO
04 hex	UNSIGNED8	Diagnostic code 1	00 hex	RO
05 hex	UNSIGNED8	Diagnostic index 2	00 hex	RO
06 hex	UNSIGNED8	Diagnostic code 2	00 hex	RO
07 hex	UNSIGNED8	Diagnostic index 3	00 hex	RO
08 hex	UNSIGNED8	Diagnostic code 3	00 hex	RO
09 hex	UNSIGNED8	Diagnostic index 4	00 hex	RO
0A hex	UNSIGNED8	Diagnostic code 4	00 hex	RO
0B hex	UNSIGNED8	Diagnostic index 5	00 hex	RO
0C hex	UNSIGNED8	Diagnostic code 5	00 hex	RO
0D hex	UNSIGNED8	Diagnostic index 6	00 hex	RO
0E hex	UNSIGNED8	Diagnostic code 6	00 hex	RO
0F hex	UNSIGNED8	Diagnostic index 7	00 hex	RO
10 hex	UNSIGNED8	Diagnostic code 7	00 hex	RO
11 hex	UNSIGNED8	Diagnostic index 8	00 hex	RO
12 hex	UNSIGNED8	Diagnostic code 8	00 hex	RO
13 hex	UNSIGNED8	Diagnostic index 9	00 hex	RO
14 hex	UNSIGNED8	Diagnostic code 9	00 hex	RO
15 hex	UNSIGNED8	Diagnostic index 10	00 hex	RO
16 hex	UNSIGNED8	Diagnostic code 10	00 hex	RO
17 hex	UNSIGNED8	Diagnostic index 11	00 hex	RO
18 hex	UNSIGNED8	Diagnostic code 11	00 hex	RO
19 hex	UNSIGNED8	Diagnostic index 12	00 hex	RO
1A hex	UNSIGNED8	Diagnostic code 12	00 hex	RO
1B hex	UNSIGNED8	Diagnostic index 13	00 hex	RO
1C hex	UNSIGNED8	Diagnostic code 13	00 hex	RO
1D hex	UNSIGNED8	Diagnostic index 14	00 hex	RO
1E hex	UNSIGNED8	Diagnostic code 14	00 hex	RO
1F hex	UNSIGNED8	Diagnostic index 15	00 hex	RO
20 hex	UNSIGNED8	Diagnostic code 15	00 hex	RO

Vendor Specific Object Index 2006 hex – Safety-Related Output Diagnostics

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	20 hex	RO
01 hex	UNSIGNED8	Diagnostic index 0	00 hex	RO
02 hex	UNSIGNED8	Diagnostic code 0	00 hex	RO
03 hex	UNSIGNED8	Diagnostic index 1	00 hex	RO
04 hex	UNSIGNED8	Diagnostic code 1	00 hex	RO
05 hex	UNSIGNED8	Diagnostic index 2	00 hex	RO
06 hex	UNSIGNED8	Diagnostic code 2	00 hex	RO
07 hex	UNSIGNED8	Diagnostic index 3	00 hex	RO
08 hex	UNSIGNED8	Diagnostic code 3	00 hex	RO
09 hex	UNSIGNED8	Diagnostic index 4	00 hex	RO
0A hex	UNSIGNED8	Diagnostic code 4	00 hex	RO
0B hex	UNSIGNED8	Diagnostic index 5	00 hex	RO
0C hex	UNSIGNED8	Diagnostic code 5	00 hex	RO
0D hex	UNSIGNED8	Diagnostic index 6	00 hex	RO
0E hex	UNSIGNED8	Diagnostic code 6	00 hex	RO
0F hex	UNSIGNED8	Diagnostic index 7	00 hex	RO
10 hex	UNSIGNED8	Diagnostic code 7	00 hex	RO
11 hex	UNSIGNED8	Diagnostic index 8	00 hex	RO
12 hex	UNSIGNED8	Diagnostic code 8	00 hex	RO
13 hex	UNSIGNED8	Diagnostic index 9	00 hex	RO
14 hex	UNSIGNED8	Diagnostic code 9	00 hex	RO
15 hex	UNSIGNED8	Diagnostic index 10	00 hex	RO
16 hex	UNSIGNED8	Diagnostic code 10	00 hex	RO
17 hex	UNSIGNED8	Diagnostic index 11	00 hex	RO
18 hex	UNSIGNED8	Diagnostic code 11	00 hex	RO
19 hex	UNSIGNED8	Diagnostic index 12	00 hex	RO
1A hex	UNSIGNED8	Diagnostic code 12	00 hex	RO
1B hex	UNSIGNED8	Diagnostic index 13	00 hex	RO
1C hex	UNSIGNED8	Diagnostic code 13	00 hex	RO
1D hex	UNSIGNED8	Diagnostic index 14	00 hex	RO
1E hex	UNSIGNED8	Diagnostic code 14	00 hex	RO
1F hex	UNSIGNED8	Diagnostic index 15	00 hex	RO
20 hex	UNSIGNED8	Diagnostic code 15	00 hex	RO

Vendor Specific Object Index 2007 hex – Project CRC

Object contents for XPSMCMC10804E(G).

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	07 hex	RO
01 hex	UNSIGNED8	Project CRC, low byte	00 hex	RO
02 hex	UNSIGNED8	Project CRC, high byte	00 hex	RO
03 hex	UNSIGNED8	Schematic Date (Day)	00 hex	RO
04 hex	UNSIGNED8	Schematic Date (Month)	00 hex	RO
05 hex	UNSIGNED8	Schematic Date (Year, low byte)	00 hex	RO
06 hex	UNSIGNED8	Schematic Date (Year, high byte)	00 hex	RO
07 hex	UNSIGNED8	Schematic source	00 hex	RO

Object contents for XPSMCMCO0000E(G)

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	02 hex	RO
01 hex	UNSIGNED8	Project CRC, low byte	00 hex	RO
02 hex	UNSIGNED8	Project CRC, high byte	00 hex	RO

Vendor Specific Object Index 2008 hex – RFID Chain 1

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	01 hex	RO
01 hex	UNSIGNED16	RFID Chain 1 status	00 hex	RO

Vendor Specific Object Index 2009 hex – RFID Chain 2

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	01 hex	RO
01 hex	UNSIGNED16	RFID Chain 2 status	00 hex	RO

Vendor Specific Object Index 2101 hex – Fieldbus Inputs

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	13 hex	RO
01 hex	UNSIGNED8	Fieldbus inputs byte 0	00 hex	RW
02 hex	UNSIGNED8	Fieldbus inputs byte 1	00 hex	RW
03 hex	UNSIGNED8	Fieldbus inputs byte 2	00 hex	RW
04 hex	UNSIGNED8	Fieldbus inputs byte 3	00 hex	RW

Vendor Specific Object Index 2181 hex – Fieldbus Inputs Feedback

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	04 hex	RO
01 hex	UNSIGNED8	Fieldbus inputs feedback byte 0	00 hex	RW
02 hex	UNSIGNED8	Fieldbus inputs feedback byte 1	00 hex	RW
03 hex	UNSIGNED8	Fieldbus inputs feedback byte 2	00 hex	RW
04 hex	UNSIGNED8	Fieldbus inputs feedback byte 3	00 hex	RW

Vendor Specific Object Index 2201 hex – Input Status

This object is implemented differently on XPSMCMC10804E(G) and XPSMCMCO0000E(G), as the Restart input information at the end of the object for XPSMCMCO0000E(G) is stored in a separate object.

Object contents for XPSMCMC10804E(G)

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	13 hex	RO
01 hex	UNSIGNED8	Input status byte 0	00 hex	RO
02 hex	UNSIGNED8	Input status byte 1	00 hex	RO
03 hex	UNSIGNED8	Input status byte 2	00 hex	RO
04 hex	UNSIGNED8	Input status byte 3	00 hex	RO
05 hex	UNSIGNED8	Input status byte 4	00 hex	RO
06 hex	UNSIGNED8	Input status byte 5	00 hex	RO
07 hex	UNSIGNED8	Input status byte 6	00 hex	RO
08 hex	UNSIGNED8	Input status byte 7	00 hex	RO
09 hex	UNSIGNED8	Input status byte 8	00 hex	RO
0A hex	UNSIGNED8	Input status byte 9	00 hex	RO
0B hex	UNSIGNED8	Input status byte 10	00 hex	RO
0C hex	UNSIGNED8	Input status byte 11	00 hex	RO
0D hex	UNSIGNED8	Input status byte 12	00 hex	RO
0E hex	UNSIGNED8	Input status byte 13	00 hex	RO
0F hex	UNSIGNED8	Input status byte 14	00 hex	RO
10 hex	UNSIGNED8	Input status byte 15	00 hex	RO
11 hex	UNSIGNED8	Restart Input byte 0	00 hex	RO
12 hex	UNSIGNED8	Restart Input byte 1	00 hex	RO
13 hex	UNSIGNED8	Restart Input byte 2	00 hex	RO

Object contents for XPSMCMCO0000E(G)

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	10 hex	RO
01 hex	UNSIGNED8	Input status byte 0	00 hex	RO
02 hex	UNSIGNED8	Input status byte 1	00 hex	RO
03 hex	UNSIGNED8	Input status byte 2	00 hex	RO
04 hex	UNSIGNED8	Input status byte 3	00 hex	RO
05 hex	UNSIGNED8	Input status byte 4	00 hex	RO
06 hex	UNSIGNED8	Input status byte 5	00 hex	RO
07 hex	UNSIGNED8	Input status byte 6	00 hex	RO
08 hex	UNSIGNED8	Input status byte 7	00 hex	RO
09 hex	UNSIGNED8	Input status byte 8	00 hex	RO
0A hex	UNSIGNED8	Input status byte 9	00 hex	RO
0B hex	UNSIGNED8	Input status byte 10	00 hex	RO
0C hex	UNSIGNED8	Input status byte 11	00 hex	RO
0D hex	UNSIGNED8	Input status byte 12	00 hex	RO
0E hex	UNSIGNED8	Input status byte 13	00 hex	RO
0F hex	UNSIGNED8	Input status byte 14	00 hex	RO
10 hex	UNSIGNED8	Input status byte 15	00 hex	RO

Vendor Specific Object Index 2202 hex – Safety-related Output Status

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	04 hex	RO
01 hex	UNSIGNED8	Safety-related Output status byte 0	00 hex	RO
02 hex	UNSIGNED8	Safety-related Output status byte 1	00 hex	RO
03 hex	UNSIGNED8	Safety-related Output status byte 2	00 hex	RO
04 hex	UNSIGNED8	Safety-related Output status byte 3	00 hex	RO

Vendor Specific Object Index 2203 hex – Probe status

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	04 hex	RO
01 hex	UNSIGNED8	Probe status byte 0	00 hex	RO
02 hex	UNSIGNED8	Probe status byte 1	00 hex	RO
03 hex	UNSIGNED8	Probe status byte 2	00 hex	RO
04 hex	UNSIGNED8	Probe status byte 3	00 hex	RO

Vendor Specific Object Index 2204 hex – Analog data

The implementation of this object differs between the XPSMCMC10804E(G) and XPSMCMCO0000E(G). For XPSMCMC10804E(G) analog data is stored together with speed data in Object Index 2206 hex – Analog & Speed data.

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	10 hex	RO
01 hex	REAL32	Analog data float 0	0.0f	RO
02 hex	REAL32	Analog data float 1	0.0f	RO
03 hex	REAL32	Analog data float 2	0.0f	RO
04 hex	REAL32	Analog data float 3	0.0f	RO
05 hex	REAL32	Analog data float 4	0.0f	RO
06 hex	REAL32	Analog data float 5	0.0f	RO
07 hex	REAL32	Analog data float 6	0.0f	RO
08 hex	REAL32	Analog data float 7	0.0f	RO
09 hex	REAL32	Analog data float 8	0.0f	RO
0A hex	REAL32	Analog data float 9	0.0f	RO
0B hex	REAL32	Analog data float 10	0.0f	RO
0C hex	REAL32	Analog data float 11	0.0f	RO
0D hex	REAL32	Analog data float 12	0.0f	RO
0E hex	REAL32	Analog data float 13	0.0f	RO
0F hex	REAL32	Analog data float 14	0.0f	RO
10 hex	REAL32	Analog data float 15	0.0f	RO

Vendor Specific Object Index 2206 hex – Analog and Speed data

This object is only available on XPSMCMC10804E(G) and not on XPSMCMCO0000E(G). For the modules XPSMCMCO0000E(G), the analog data resides in Object Index 2204 hex – Analog data.

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	28 hex	RO
01 hex	REAL32	Analog data float 0	0.0f	RO
02 hex	REAL32	Analog data float 1	0.0f	RO
03 hex	REAL32	Analog data float 2	0.0f	RO
04 hex	REAL32	Analog data float 3	0.0f	RO
05 hex	REAL32	Analog data float 4	0.0f	RO
06 hex	REAL32	Analog data float 5	0.0f	RO
07 hex	REAL32	Analog data float 6	0.0f	RO
08 hex	REAL32	Analog data float 7	0.0f	RO
09 hex	REAL32	Analog data float 8	0.0f	RO
0A hex	REAL32	Analog data float 9	0.0f	RO
0B hex	REAL32	Analog data float 10	0.0f	RO

Subindex	Type	Usage/Name	Default value	Access
0C hex	REAL32	Analog data float 11	0.0f	RO
0D hex	REAL32	Analog data float 12	0.0f	RO
0E hex	REAL32	Analog data float 13	0.0f	RO
0F hex	REAL32	Analog data float 14	0.0f	RO
10 hex	REAL32	Analog data float 15	0.0f	RO
11 hex	REAL32	Speed data float 0	0.0f	RO
12 hex	REAL32	Speed data float 1	0.0f	RO
13 hex	REAL32	Speed data float 2	0.0f	RO
14 hex	REAL32	Speed data float 3	0.0f	RO
15 hex	REAL32	Speed data float 4	0.0f	RO
16 hex	REAL32	Speed data float 5	0.0f	RO
17 hex	REAL32	Speed data float 6	0.0f	RO
18 hex	REAL32	Speed data float 7	0.0f	RO
19 hex	REAL32	Speed data float 8	0.0f	RO
1A hex	REAL32	Speed data float 9	0.0f	RO
1B hex	REAL32	Speed data float 10	0.0f	RO
1C hex	REAL32	Speed data float 11	0.0f	RO
1D hex	REAL32	Speed data float 12	0.0f	RO
1E hex	REAL32	Speed data float 13	0.0f	RO
1F hex	REAL32	Speed data float 14	0.0f	RO
20 hex	REAL32	Speed data float 15	0.0f	RO
21 hex	REAL32	Speed data float 16	0.0f	RO
22 hex	REAL32	Speed data float 17	0.0f	RO
23 hex	REAL32	Speed data float 18	0.0f	RO
24 hex	REAL32	Speed data float 19	0.0f	RO
25 hex	REAL32	Speed data float 20	0.0f	RO
26 hex	REAL32	Speed data float 21	0.0f	RO
27 hex	REAL32	Speed data float 22	0.0f	RO
28 hex	REAL32	Speed data float 23	0.0f	RO

Vendor Specific Object Index 2207 hex – Restart input data

This object is only available on modules XPSMCMCO0000E(G) as for XPSMCMC10804E(G) the restart input data is part of the object, Object Index 2201hex – Input status.

Object Type: RECORD

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	03 hex	RO
01 hex	UNSIGNED8	Restart Input byte 0	00 hex	RO
02 hex	UNSIGNED8	Restart Input byte 1	00 hex	RO
03 hex	UNSIGNED8	Restart Input byte 2	00 hex	RO

Acyclic Data Access

The data for EtherCAT can be accessed through the acyclic SDO (service data object) access of CoE (CANopen over EtherCAT). The addressing schema uses indexes and sub-indexes. To be able to map them, these addresses have already been defined for the data objects. By making the vendor specific objects available to acyclic access, the requirement for full data access (independently of what is mapped to the PDOs by default) can be met.

XPSMCMC10804E(G) and XPSMCMCO0000E(G) Modbus TCP/IP – Mapping Information

Device Identification

A Modbus device provides its device identification information through the function code read device identification, which is a sub-function of the function encapsulated interface transport. The objects provided on this interface are grouped into three categories:

- Basic (mandatory)
- Regular (optional)
- Extended (manufacturer/device specific, optional)

The goal is to support the basic objects as they are mandatory. If the function is implemented, use regular objects if possible .Only use extended objects if it is necessary for the functionality of the device, as the (XPSMCMC10804E(G) and XPSMCMCO0000E(G)) use individual device identification information to be distinguishable as they have slightly different behavior in terms of the data provided.

Item	XPSMCMC10804E(G)	XPSMCMCO0000E(G)	Object ID	Category	Remarks
Vendor Name	Schneider Electric		00 hex	Basic	-
Product Code	XPSMCMC10804E(G)	XPSMCMCO0000E(G)	01 hex	Basic	-
Major Minor Revision	See remarks		02 hex	Basic	Reflects the firmware revision
Vendor URL	‘www.se.com’		03 hex	Regular	-
Product Name	‘ModBus(TCP) communication unit’		04 hex	Regular	-
Model Name	‘XPSMCM• communication unit'		05 hex	Regular	-
User Application Name	-		06 hex	Regular	-
Unit ID	1 or 255		n/A	n/A	-

Cyclic Data Access (Process Data Image)

For Modbus in general, there is no intrinsic cyclic data communication protocol. Instead, if a periodic update of some registers is required, the Modbus Client (for example: logic controller) periodically polls the required information from the Server (for example: IO device, XPSMCMC10804E(G) and XPSMCMCO0000E (G) modules) using the appropriate function codes (see Acyclic Data Access, page 62).

The register mapping and the supported function codes for the XPSMCMC10804E(G) and XPSMCMCO0000E(G) Modbus TCP/IP communication modules are described in "Acyclic Data Access”.

Acyclic Data Access

The following function codes are supported by the XPSMCMC10804E(G) and XPSMCMCO0000E(G) communication modules:

For XPSMCMC10804E(G) and XPSMCMCO0000E(G):

Function Code	Description	Supported by devices
01 hex	Read Coils	yes
02 hex	Read Discrete Inputs	yes
03 hex	Read Holding Registers	yes
04 hex	Read Input Registers	yes
05 hex	Write Single Coil	yes
06 hex	Write Single Register	yes
0F hex	Write Multiple Coils	yes
10 hex	Write Multiple Registers	yes
17 hex	Read/Write Multiple Registers	no

Register Mapping — Holding Registers (4x)

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40001	0000 hex	low	UINT8	Fieldbus input byte 0	00 hex	RW
		high	UINT8	Fieldbus input byte 1	00 hex	RW
40002	0001 hex	low	UINT8	Fieldbus input byte 2	00 hex	RW
		high	UINT8	Fieldbus input byte 3	00 hex	RW

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
41025	0400 hex	low	UINT8	System status	00 hex	RO
		high	UINT8	Reserved	00 hex	RO
41026	0401 hex	low	UINT8	Input status byte 0	00 hex	RO
		high	UINT8	Input status byte 1	00 hex	RO
41027	0402 hex	low	UINT8	Input status byte 2	00 hex	RO
		high	UINT8	Input status byte 3	00 hex	RO
41028	0403 hex	low	UINT8	Input status byte 4	00 hex	RO
		high	UINT8	Input status byte 5	00 hex	RO
41029	0404 hex	low	UINT8	Input status byte 6	00 hex	RO
		high	UINT8	Input status byte 7	00 hex	RO
41030	0405 hex	low	UINT8	Input status byte 8	00 hex	RO
		high	UINT8	Input status byte 9	00 hex	RO
41031	0406 hex	low	UINT8	Input status byte 10	00 hex	RO
		high	UINT8	Input status byte 11	00 hex	RO
41032	0407 hex	low	UINT8	Input status byte 12	00 hex	RO
		high	UINT8	Input status byte 13	00 hex	RO
41033	0408 hex	low	UINT8	Input status byte 14	00 hex	RO
		high	UINT8	Input status byte 15	00 hex	RO

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
41034	0409 hex	low	UINT8	Restart Input byte 0	00 hex	RO
		high	UINT8	Restart Input byte 1	00 hex	RO
41035	040A hex	low	UINT8	Restart Input byte 2	00 hex	RO
		high	UINT8	Reserved	00 hex	RO
41036	040B hex	low	UINT8	Fieldbus input feedback byte 0	00 hex	RO
		high	UINT8	Fieldbus input feedback byte 1	00 hex	RO
41037	040C hex	low	UINT8	Fieldbus input feedback byte 2	00 hex	RO
		high	UINT8	Fieldbus input feedback byte 3	00 hex	RO
41038	040D hex	low	UINT8	Probe status byte 0	00 hex	RO
		high	UINT8	Probe status byte 1	00 hex	RO
41039	040E hex	low	UINT8	Probe status byte 2	00 hex	RO
		high	UINT8	Probe status byte 3	00 hex	RO
41040	040F hex	low	UINT8	Safety-related Output status byte 0	00 hex	RO
		high	UINT8	Safety-related Output status byte 1	00 hex	RO
41041	0410 hex	low	UINT8	Safety-related Output status byte 2	00 hex	RO
		high	UINT8	Safety-related Output status byte 3	00 hex	RO
41042	0411 hex	low	FLOAT	Analog data float 0	0.0f	RO
		high				
	0412 hex	low				
		high				
41044	0413 hex	low	FLOAT	Analog data float 1	0.0f	RO
		high				
	0414 hex	low				
		high				
41046	0415 hex	low	FLOAT	Analog data float 2	0.0f	RO
		high				
	0416 hex	low				
		high				
41048	0417 hex	low	FLOAT	Analog data float 3	0.0f	RO
		high				
	0418 hex	low				
		high				
41050	0419 hex	low	FLOAT	Analog data float 4	0.0f	RO
		high				
	041A hex	low				
		high				

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
41052	041B hex	low	FLOAT	Analog data float 5	0.0f	RO
		high				
	041C hex	low				
		high				
41054	041D hex	low	FLOAT	Analog data float 6	0.0f	RO
		high				
	041E hex	low				
		high				
41056	041F hex	low	FLOAT	Analog data float 7	0.0f	RO
		high				
	0420 hex	low	-	-	-	-
		high				
41058	0421 hex	low	FLOAT	Analog data float 8	0.0f	RO
		high				
	0422 hex	low				
		high				
41060	0423 hex	low	FLOAT	Analog data float 9	0.0f	RO
		high				
	0424 hex	low				
		high				
41062	0425 hex	low	FLOAT	Analog data float 10	0.0f	RO
		high				
	0426 hex	low				
		high				
41064	0427 hex	low	FLOAT	Analog data float 11	0.0f	RO
		high				
	0428 hex	low				
		high				
41066	0429 hex	low	FLOAT	Analog data float 12	0.0f	RO
		high				
	042A hex	low				
		high				
41068	042B hex	low	FLOAT	Analog data float 13	0.0f	RO
		high				
	042C hex	low				
		high				
41070	042D hex	low	FLOAT	Analog data float 14	0.0f	RO
		high				
	042E hex	low				
		high				
41072	042F hex	low	FLOAT	Analog data float 15	0.0f	RO
		high				
	0430 hex	low				
		high				

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
41074	0431hex	low	FLOAT	Speed data float 0 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
	0432 hex	low				
		high				
41076	0433 hex	low	FLOAT	Speed data float 1 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41077	0434 hex	low				
		high				
41078	0435 hex	low	FLOAT	Speed data float 2 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41079	0436 hex	low				
		high				
41080	0437 hex	low	FLOAT	Speed data float 3 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41081	0438 hex	low				
		high				
41082	0439 hex	low	FLOAT	Speed data float 4 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41083	043A hex	low				
		high				
41084	043B hex	low	FLOAT	Speed data float 5 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41085	043C hex	low				
		high				
41086	043D hex	low	FLOAT	Speed data float 6 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41087	043E hex	low				
		high				
41088	043F hex	low	FLOAT	Speed data float 7 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41089	0440 hex	low				
		high				
41090	0441 hex	low	FLOAT	Speed data float 8 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41091	0442 hex	low				
		high				
41092	0443 hex	low	FLOAT	Speed data float 9 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41093	0444 hex	low				
		high				
41094	0445 hex	low	FLOAT	Speed data float 10 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41095	0446 hex	low				
		high				

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
41096	0447 hex	low	FLOAT	Speed data float 11 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41097	0448 hex	low				
		high				
41098	0449 hex	low	FLOAT	Speed data float 12 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41099	044A hex	low				
		high				
41100	044B hex	low	FLOAT	Speed data float 13 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41101	044C hex	low				
		high				
41102	044D hex	low	FLOAT	Speed data float 14 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41103	044E hex	low				
		high				
41104	044F hex	low	FLOAT	Speed data float 15 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41105	0450 hex	low				
		high				
41106	0451 hex	low	FLOAT	Speed data float 16 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41107	0452 hex	low				
		high				
41108	0453 hex	low	FLOAT	Speed data float 17 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41109	0454 hex	low				
		high				
41110	0455 hex	low	FLOAT	Speed data float 18 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41111	0456 hex	low				
		high				
41112	0457 hex	low	FLOAT	Speed data float 19 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41113	0458 hex	low				
		high				
41114	0459 hex	low	FLOAT	Speed data float 20 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41115	045A hex	low				
		high				
41116	045B hex	low	FLOAT	Speed data float 21 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41117	045C hex	low				
		high				

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
41118	045D hex	low	FLOAT	Speed data float 22 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41119	045E hex	low				
		high				
41120	045F hex	low	FLOAT	Speed data float 23 These registers read as 0 on XPSMCMCO0000E (G).	0.0f	RO
		high				
41121	0460 hex	low				
		high				
41281	0500 hex	low	UINT8	Error CPU0 – Module	00 hex	RO
		high	UINT8	Error CPU0 – Error code	00 hex 00 hex	RO
	0501 hex	low	UINT32	Error CPU0 – Error address	00000000 hex	RO
		high				
41283	0502 hex	low	-	-	-	-
		high				
	0503 hex	low	UINT8	Error CPU0 – Firmware version	00 hex	RO
		high	UINT8	Error CPU0 – Extended code 0	00 hex	RO
41285	0504 hex	low	UINT8	Error CPU0 – Extended code 1	00 hex	RO
		high	UINT8	Reserved	00 hex	RO
41297	0510 hex	low	UINT8	Error CPU1 – Module	00 hex	RO
		high	UINT8	Error CPU1 – Error code	00 hex	RO
41298	0511 hex	low	UINT32	Error CPU1 – Error address	00000000 hex	RO
		high				
41299	0512 hex	low				
		high				
41300	0513 hex	low	UINT8	Error CPU1 – Firmware version	00 hex	RO
		high	UINT8	Error CPU1 – Extended code 0	00 hex	RO
41301	0514 hex	low	UINT8	Error CPU1 – Extended code 1	00 hex	RO
		high	UINT8	Reserved	00 hex	RO
41537	0600 hex	low	UINT8	Input diagnostics index 1	00 hex	RO
		high	UINT8	Input diagnostics code 1	00 hex	RO
41538	0601 hex	low	UINT8	Input diagnostics index 2	00 hex	RO
		high	UINT8	Input diagnostics code 2	00 hex	RO
41539	0602 hex	low	UINT8	Input diagnostics index 3	00 hex	RO
		high	UINT8	Input diagnostics code 3	00 hex	RO
41540	0603 hex	low	UINT8	Input diagnostics index 4	00 hex	RO
		high	UINT8	Input diagnostics code 4	00 hex	RO
41541	0604 hex	low	UINT8	Input diagnostics index 5	00 hex	RO
		high	UINT8	Input diagnostics code 5	00 hex	RO

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
41542	0605 hex	low	UINT8	Input diagnostics index 6	00 hex	RO
		high	UINT8	Input diagnostics code 6	00 hex	RO
41543	0606 hex	low	UINT8	Input diagnostics index 7	00 hex	RO
		high	UINT8	Input diagnostics code 7	00 hex	RO
41544	0607 hex	low	UINT8	Input diagnostics index 8	00 hex	RO
		high	UINT8	Input diagnostics code 8	00 hex	RO
41545	0608 hex	low	UINT8	Input diagnostics index 9	00 hex	RO
		high	UINT8	Input diagnostics code 9	00 hex	RO
41546	0609 hex	low	UINT8	Input diagnostics index 10	00 hex	RO
		high	UINT8	Input diagnostics code 10	00 hex	RO
41547	060A hex	low	UINT8	Input diagnostics index 11	00 hex	RO
		high	UINT8	Input diagnostics code 11	00 hex	RO
41548	060B hex	low	UINT8	Input diagnostics index 12	00 hex	RO
		high	UINT8	Input diagnostics code 12	00 hex	RO
41549	060C hex	low	UINT8	Input diagnostics index 13	00 hex	RO
		high	UINT8	Input diagnostics code 13	00 hex	RO
41550	060D hex	low	UINT8	Input diagnostics index 14	00 hex	RO
		high	UINT8	Input diagnostics code 14	00 hex	RO
41551	060E hex	low	UINT8	Input diagnostics index 15	00 hex	RO
		high	UINT8	Input diagnostics code 15	00 hex	RO
41552	060F hex	low	UINT8	Input diagnostics index 16	00 hex	RO
		high	UINT8	Input diagnostics code 16	00 hex	RO
41553	0610 hex	low	UINT8	Output diagnostics index 1	00 hex	RO
		high	UINT8	Output diagnostics code 1	00 hex	RO
41554	0611 hex	low	UINT8	Output diagnostics index 2	00 hex	RO
		high	UINT8	Output diagnostics code 2	00 hex	RO
41555	0612 hex	low	UINT8	Output diagnostics index 3	00 hex	RO
		high	UINT8	Output diagnostics code 3	00 hex	RO
41556	0613 hex	low	UINT8	Output diagnostics index 4	00 hex	RO
		high	UINT8	Output diagnostics code 4	00 hex	RO
41557	0614 hex	low	UINT8	Output diagnostics index 5	00 hex	RO
		high	UINT8	Output diagnostics code 5	00 hex	RO
41558	0615 hex	low	UINT8	Output diagnostics index 6	00 hex	RO
		high	UINT8	Output diagnostics code 6	00 hex	RO
41559	0616 hex	low	UINT8	Output diagnostics index 7	00 hex	RO
		high	UINT8	Output diagnostics code 7	00 hex	RO
41560	0617 hex	low	UINT8	Output diagnostics index 8	00 hex	RO
		high	UINT8	Output diagnostics code 8	00 hex	RO
41561	0618 hex	low	UINT8	Output diagnostics index 9	00 hex	RO
		high	UINT8	Output diagnostics code 9	00 hex	RO

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
41562	0619 hex	low	UINT8	Output diagnostics index 10	00 hex	RO
		high	UINT8	Output diagnostics code 10	00 hex	RO
41563	061A hex	low	UINT8	Output diagnostics index 11	00 hex	RO
		high	UINT8	Output diagnostics code 11	00 hex	RO
41564	061B hex	low	UINT8	Output diagnostics index 12	00 hex	RO
		high	UINT8	Output diagnostics code 12	00 hex	RO
41565	061C hex	low	UINT8	Output diagnostics index 13	00 hex	RO
		high	UINT8	Output diagnostics code 13	00 hex	RO
41566	061D hex	low	UINT8	Output diagnostics index 14	00 hex	RO
		high	UINT8	Output diagnostics code 14	00 hex	RO
41567	061E hex	low	UINT8	Output diagnostics index 15	00 hex	RO
		high	UINT8	Output diagnostics code 15	00 hex	RO
41568	061F hex	low	UINT8	Output diagnostics index 16	00 hex	RO
		high	UINT8	Output diagnostics code 16	00 hex	RO
41569	0620 hex	low	UINT8	Project CRC, high byte	00 hex	RO
		high	UINT8	Project CRC, low byte	00 hex	RO
41570	0621 hex	low	UINT8	Schematic Date (Day) These registers read as 0 on XPSMCMCO0000E(G)	00 hex	RO
		high	UINT8	Schematic Date (Month) These registers read as 0 on XPSMCMCO0000E(G)	00 hex	RO
41571	0622 hex	low	UINT8	Schematic Date (Year, low byte) These registers read as 0 on XPSMCMCO0000E(G)	00 hex	RO
		high	UINT8	Schematic Date (Year, high byte) These registers read as 0 on XPSMCMCO0000E(G)	00 hex	RO
41572	0623 hex	low	UINT8	Schematic source These registers read as 0 on XPSMCMCO0000E(G)	00 hex	RO
		high	UINT8	Reserved	00 hex	RO
41585	0630 hex	low	UINT16	RFID chain 1 status	0000 hex	RO
		high			00 hex	RO
41586	0631 hex	low	UINT16	RFID chain 2 status	00 hex	RO
		high			00 hex	RO

Coils Mapping

Data	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
Fieldbus Input byte 0	0007 hex	0006 hex	0005 hex	0004 hex	0003 hex	0002 hex	0001 hex	0000 hex
Fieldbus Input byte 1	000F hex	000E hex	000D hex	000C hex	000B hex	000A hex	0009 hex	0008 hex
Fieldbus Input byte 2	0017 hex	0016 hex	0015 hex	0014 hex	0013 hex	0012 hex	0011 hex	0010 hex
Fieldbus Input byte 3	001F hex	001E hex	001D hex	001C hex	001B hex	001A hex	0019 hex	0018 hex
System Status	0107 hex	0106 hex	0105 hex	0104 hex	0103 hex	0102 hex	0101 hex	0100 hex
Input Status byte 0	010F hex	010E hex	010D hex	010C hex	010B hex	010A hex	0109 hex	0108 hex
Input Status byte 1	0117 hex	0116 hex	0115 hex	0114 hex	0113 hex	0112 hex	0111 hex	0110 hex
Input Status byte 2	011F hex	011E hex	011D hex	011C hex	011B hex	011A hex	0119 hex	0118 hex
Input Status byte 3	0127 hex	0126 hex	0125 hex	0124 hex	0123 hex	0122 hex	0121 hex	0120 hex
Input Status byte 4	012F hex	012E hex	012D hex	012C hex	012B hex	012A hex	0129 hex	0128 hex
Input Status byte 5	0137 hex	0136 hex	0135 hex	0134 hex	0133 hex	0132 hex	0131 hex	0130 hex
Input Status byte 6	013F hex	013E hex	013D hex	013C hex	013B hex	013A hex	0139 hex	0138 hex
Input Status byte 7	0147 hex	0146 hex	0145 hex	0144 hex	0143 hex	0142 hex	0141 hex	0140 hex
Input Status byte 8	014F hex	014E hex	014D hex	014C hex	014B hex	014A hex	0149 hex	0148 hex
Input Status byte 9	0157 hex	0156 hex	0155 hex	0154 hex	0153 hex	0152 hex	0151 hex	0150 hex
Input Status byte 10	015F hex	015E hex	015D hex	015C hex	015B hex	015A hex	0159 hex	0158 hex
Input Status byte 11	0167 hex	0166 hex	0165 hex	0164 hex	0163 hex	0162 hex	0161 hex	0160 hex
Input Status byte 12	016F hex	016E hex	016D hex	016C hex	016B hex	016A hex	0169 hex	0168 hex
Input Status byte 13	0177 hex	0176 hex	0175 hex	0174 hex	0173 hex	0172 hex	0171 hex	0170 hex
Input Status byte 14	017F hex	017E hex	017D hex	017C hex	017B hex	017A hex	0179 hex	0178 hex
Input Status byte 15	0187 hex	0186 hex	0185 hex	0184 hex	0183 hex	0182 hex	0181 hex	0180 hex
Restart input byte 0	018F hex	018E hex	018D hex	018C hex	018B hex	018A hex	0189 hex	0188 hex
Restart input byte 1	0197 hex	0196 hex	0195 hex	0194 hex	0193 hex	0192 hex	0191 hex	0190 hex
Restart input byte 2	019F hex	019E hex	019D hex	019C hex	019B hex	019A hex	0199 hex	0198 hex
Fieldbus input feedback byte 0	01A7 hex	01A6 hex	01A5 hex	01A4 hex	01A3 hex	01A2 hex	01A1 hex	01A0 hex
Fieldbus input feedback byte 1	01AF hex	01AE hex	01AD hex	01AC hex	01AB hex	01AA hex	01A9 hex	01A8 hex
Fieldbus input feedback byte 2	01B7 hex	01B6 hex	01B5 hex	01B4 hex	01B3 hex	01B2 hex	01B1 hex	01B0 hex
Fieldbus input feedback byte 3	01BF hex	01BE hex	01BD hex	01BC hex	01BB hex	01BA hex	01B9 hex	01B8 hex
Probe status byte 0	01C7 hex	01C6 hex	01C5 hex	01C4 hex	01C3 hex	01C2 hex	01C1 hex	01C0 hex
Probe status byte 1	01CF hex	01CE hex	01CD hex	01CC hex	01CB hex	01CA hex	01C9 hex	01C8 hex
Probe status byte 2	01D7 hex	01D6 hex	01D5 hex	01D4 hex	01D3 hex	01D2 hex	01D1 hex	01D0 hex
Probe status byte 3	01DF hex	01DE hex	01DD hex	01DC hex	01DB hex	01DA hex	01D9 hex	01D8 hex
Safety-related Output status byte 0	01E7 hex	01E6 hex	01E5 hex	01E4 hex	01E3 hex	01E2 hex	01E1 hex	01E0 hex
Safety-related Output status byte 1	01EF hex	01EE hex	01ED hex	01EC hex	01EB hex	01EA hex	01E9 hex	01E8 hex
Safety-related Output status byte 2	01F7 hex	01F6 hex	01F5 hex	01F4 hex	01F3 hex	01F2 hex	01F1 hex	01F0 hex
Safety-related Output status byte 3	01FF hex	01FE hex	01FD hex	01FC hex	01FB hex	01FA hex	01F9 hex	01F8 hex
RFID Chain 1 Status low byte	0207 hex	0206 hex	0205 hex	0204 hex	0203 hex	0202 hex	0201 hex	0200 hex
RFID Chain 1 Status high byte	020F hex	020E hex	020D hex	020C hex	020B hex	020A hex	0209 hex	0208 hex

Data	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
RFID Chain 2 Status low byte	0217 hex	0216 hex	0215 hex	0214 hex	0213 hex	0212 hex	0211 hex	0210 hex
RFID Chain 2 Status high byte	021F hex	021E hex	021D hex	021C hex	021B hex	021A hex	0219 hex	0218 hex

XPSMCMC10804E(G) and XPSMCMCO0000E(G) PROFINET IO Mapping Information

Device Identification

Item	Values used in XPSMCMC10804E(G)	Values used in XPSMCMCO0000E(G)	Remarks
Vendor ID	0129 hex (297)		Vendor ID for Schneider Electric
Vendor name	Schneider Electric		-
Device ID	1B01 hex	1B02 hex	Device ID for XPSMCMC10804E(G) or XPSMCMCO0000E(G)
Product Family	XPSMCM		-
Type of Station	XPSMCM		-
Device type	XPSMCMC10804E(G)	XPSMCMCO0000E(G)	-
Order Number	XPSMCMC10804E(G)	XPSMCMCO0000E(G)	-
Software Release	See remarks		Reflects the firmware revision

Cyclic Data Access (Process Data Image)

Module Configuration (XPSMCMC10804E(G))

The default module configuration for XPSMCMC10804E(G) is as follows. The details for the individual modules are described in the below topics:

Slot	0	1	2	3	4
Usage	Device Access Point (DAP)	Fieldbus input module	System I/O module	Module with optional data	Module with optional data
Default Module	DAP not described here – no fieldbus data to be mapped	Fieldbus input	System I/O with restart inputs)	Analog data	Speed data

Module Fieldbus Input, XPSMCMC10804E(G) (ID = 0x00000101; Firmware V3.0.0)

ModuleIdentNumber	0x00000101
Data size [1]	0 byte IN / 4 bytes OUT
Slot(s)	1 (fixed)

[1] As seen from the perspective of the fieldbus master: “Out” means that the data item is received by the communication module from the bus system and transferred to the Modular Safety Controller. “In” means that the Modular Safety Controller provides the data and the communication module makes it available to the bus system.

Submodule ID	Dir	Size	Usage/Name	Default value
0x10000400	OUT	UINT8	Fieldbus input byte 0	00 hex
		UINT8	Fieldbus input byte 1	00 hex

Submodule ID	Dir	Size	Usage/Name	Default value
		UINT8	Fieldbus input byte 2	00 hex
		UINT8	Fieldbus input byte 3	00 hex

Module System I/O, XPSMCMC10804E(G) (ID = 0x00000001; Firmware V3.0.0)

ModuleIdentNumber	0x00000101
Data size[1]	33 bytes IN / 0 byte OUT
Slot(s)	2 (fixed)

[1] As seen from the perspective of the fieldbus master: “Out” means that the data item is received by the communication module from the bus system and transferred to the Modular Safety Controller. “In” means that the Modular Safety Controller provides the data and the communication module makes it available to the bus system.

Submodule ID	Dir	Size	Usage/Name	Default value
00001E00 hex	IN	UINT8	System status	00 hex
		UINT8	Reserved	00 hex
		UINT8	Input status byte 0	00 hex
		UINT8	Input status byte 1	00 hex
		UINT8	Input status byte 2	00 hex
		UINT8	Input status byte 3	00 hex
		UINT8	Input status byte 4	00 hex
		UINT8	Input status byte 5	00 hex
		UINT8	Input status byte 6	00 hex
		UINT8	Input status byte 7	00 hex
		UINT8	Input status byte 8	00 hex
		UINT8	Input status byte 9	00 hex
		UINT8	Input status byte 10	00 hex
		UINT8	Input status byte 11	00 hex
		UINT8	Input status byte 12	00 hex
		UINT8	Input status byte 13	00 hex
		UINT8	Input status byte 14	00 hex
		UINT8	Input status byte 15	00 hex
		UINT8	Restart Input byte 0	00 hex
		UINT8	Restart Input byte 1	00 hex
		UINT8	Restart Input byte 2	00 hex
		UINT8	Fieldbus input byte 0 feedback	00 hex
		UINT8	Fieldbus input byte 1 feedback	00 hex
		UINT8	Fieldbus input byte 2 feedback	00 hex
		UINT8	Fieldbus input byte 3 feedback	00 hex
		UINT8	Probe status byte 0	00 hex
		UINT8	Probe status byte 1	00 hex
		UINT8	Probe status byte 2	00 hex
		UINT8	Probe status byte 3	00 hex
		UINT8	Safety-related Output status byte 0	00 hex
		UINT8	Safety-related Output status byte 1	00 hex
		UINT8	Safety-related Output status byte 2	00 hex
		UINT8	Safety-related Output status byte 3	00 hex

Module Optional data: analog only, XPSMCMC10804E(G) (ID = 0x00000204; Firmware V3.0.0)

ModuleIdentNumber	0x00000204
Data size[1]	64 bytes IN / 0 byte OUT
Slot(s)	3 (default)

[1] As seen from the perspective of the fieldbus master: “Out” means that the data item is received by the communication module from the bus system and transferred to the Modular Safety Controller. “In” means that the Modular Safety Controller provides the data and the communication module makes it available to the bus system.

Submodule ID	Dir	Size	Usage/Name	Default value
0x00001000	IN	FLOAT32	Analog data float 0	0.0f
		FLOAT32	Analog data float 1	0.0f
		FLOAT32	Analog data float 2	0.0f
		FLOAT32	Analog data float 3	0.0f
		FLOAT32	Analog data float 4	0.0f
		FLOAT32	Analog data float 5	0.0f
		FLOAT32	Analog data float 6	0.0f
		FLOAT32	Analog data float 7	0.0f
		FLOAT32	Analog data float 8	0.0f
		FLOAT32	Analog data float 9	0.0f
		FLOAT32	Analog data float 10	0.0f
		FLOAT32	Analog data float 11	0.0f
		FLOAT32	Analog data float 12	0.0f
		FLOAT32	Analog data float 13	0.0f
		FLOAT32	Analog data float 14	0.0f
		FLOAT32	Analog data float 15	0.0f

Module Optional data: speed only, XPSMCMC10804E(G) (ID = 0x0x00000205; Firmware V3.0.0)

ModuleIdentNumber	0x00000205
Data size[1]	96 bytes IN / 0 byte OUT
Slot(s)	4 (default)

[1] As seen from the perspective of the fieldbus master: “Out” means that the data item is received by the communication module from the bus system and transferred to the Modular Safety Controller. “In” means that the Modular Safety Controller provides the data and the communication module makes it available to the bus system.

Submodule ID	Dir	Size	Usage/Name	Default value
0x00002000	IN	FLOAT32	Speed data float 0	0.0f
		FLOAT32	Speed data float 1	0.0f
		FLOAT32	Speed data float 2	0.0f
		FLOAT32	Speed data float 3	0.0f
		FLOAT32	Speed data float 4	0.0f
		FLOAT32	Speed data float 5	0.0f
		FLOAT32	Speed data float 6	0.0f
		FLOAT32	Speed data float 7	0.0f
		FLOAT32	Speed data float 8	0.0f
		FLOAT32	Speed data float 9	0.0f
		FLOAT32	Speed data float 10	0.0f
		FLOAT32	Speed data float 11	0.0f
		FLOAT32	Speed data float 12	0.0f
		FLOAT32	Speed data float 13	0.0f
		FLOAT32	Speed data float 14	0.0f

Submodule ID	Dir	Size	Usage/Name	Default value
		FLOAT32	Speed data float 15	0.0f
		FLOAT32	Speed data float 16	0.0f
		FLOAT32	Speed data float 17	0.0f
		FLOAT32	Speed data float 18	0.0f
		FLOAT32	Speed data float 19	0.0f
		FLOAT32	Speed data float 20	0.0f
		FLOAT32	Speed data float 21	0.0f
		FLOAT32	Speed data float 22	0.0f
		FLOAT32	Speed data float 23	0.0f

Module Configuration (XPSMCMCO0000E(G))

The default module configuration for XPSMCMCO0000E(G) is as follows. The details for the individual modules are described in the following:

Slot	0	1	2	3
Usage	Device Access Point (DAP)	Fieldbus input module	System I/O module	Module with optional data
Default Module	DAP not described here – no fieldbus data to be mapped	Fieldbus input	System I/O with restart inputs)	Analog data

Module Fieldbus input, XPSMCMCO0000E(G) (ID = 0x00000101; Firmware V3.0.0)

ModuleIdentNumber	0x00000101
Data size[1]	0 byte IN / 4 bytes OUT
Slot(s)	1 (fixed)

[1] As seen from the perspective of the fieldbus master: “Out” means that the data item is received by the communication module from the bus system and transferred to the Modular Safety Controller. “In” means that the Modular Safety Controller provides the data and the communication module makes it available to the bus system.

Submodule ID	Dir	Size	Usage/Name	Default value
0x10000400	OUT	UINT8	Fieldbus input byte 0	00 hex
		UINT8	Fieldbus input byte 1	00 hex
		UINT8	Fieldbus input byte 2	00 hex
		UINT8	Fieldbus input byte 3	00 hex

Module System I/O, XPSMCMCO0000E(G) (ID = 0x00000001; Firmware V3.0.0)

ModuleIdentNumber	0x00000001
Data size [1]	33 bytes IN / 0 byte OUT (default, with restart inputs = submodule ID 0x00002100)

Slot(s)	2 (fixed)

[1] As seen from the perspective of the fieldbus master: “Out” means that the data item is received by the communication module from the bus system and transferred to the Modular Safety Controller. “In” means that the Modular Safety Controller provides the data and the communication module makes it available to the bus system.

Submodule ID	Dir	Size	Usage/Name	Default value
0x00002100	IN	UINT8	System status	00 hex
		UINT8	Reserved	00 hex
		UINT8	Input status byte 0	00 hex
		UINT8	Input status byte 1	00 hex
		UINT8	Input status byte 2	00 hex
		UINT8	Input status byte 3	00 hex
		UINT8	Input status byte 4	00 hex
		UINT8	Input status byte 5	00 hex
		UINT8	Input status byte 6	00 hex
		UINT8	Input status byte 7	00 hex
		UINT8	Input status byte 8	00 hex
		UINT8	Input status byte 9	00 hex
		UINT8	Input status byte 10	00 hex
		UINT8	Input status byte 11	00 hex
		UINT8	Input status byte 12	00 hex
		UINT8	Input status byte 13	00 hex
		UINT8	Input status byte 14	00 hex
		UINT8	Input status byte 15	00 hex
		UINT8	Restart Input byte 0	00 hex
		UINT8	Restart Input byte 1	00 hex
		UINT8	Restart Input byte 2	00 hex
		UINT8	Fieldbus input byte 0 feedback	00 hex
		UINT8	Fieldbus input byte 1 feedback	00 hex
		UINT8	Fieldbus input byte 2 feedback	00 hex
		UINT8	Fieldbus input byte 3 feedback	00 hex
		UINT8	Probe status byte 0	00 hex
		UINT8	Probe status byte 1	00 hex
		UINT8	Probe status byte 2	00 hex
		UINT8	Probe status byte 3	00 hex
		UINT8	Safety-related Output status byte 0	00 hex
		UINT8	Safety-related Output status byte 1	00 hex
		UINT8	Safety-related Output status byte 2	00 hex
		UINT8	Safety-related Output status byte 3	00 hex

Module Optional data: analog only, XPSMCMCO0000E(G) (ID = 0x00000204; Firmware V3.0.0)

ModuleIdentNumber	0x00000204
Data size[1]	64 bytes IN / 0 byte OUT
Slot(s)	3 (default)

[1] As seen from the perspective of the fieldbus master: “Out” means that the data item is received by the communication module from the bus system and transferred to the Modular Safety Controller. “In” means that the Modular Safety Controller provides the data and the communication module makes it available to the bus system.

Submodule ID	Dir	Size	Usage/Name	Default value
0x00001000	IN	FLOAT32	Analog data float 0	0.0f
		FLOAT32	Analog data float 1	0.0f
		FLOAT32	Analog data float 2	0.0f
		FLOAT32	Analog data float 3	0.0f
		FLOAT32	Analog data float 4	0.0f
		FLOAT32	Analog data float 5	0.0f
		FLOAT32	Analog data float 6	0.0f
		FLOAT32	Analog data float 7	0.0f
		FLOAT32	Analog data float 8	0.0f
		FLOAT32	Analog data float 9	0.0f
		FLOAT32	Analog data float 10	0.0f
		FLOAT32	Analog data float 11	0.0f
		FLOAT32	Analog data float 12	0.0f
		FLOAT32	Analog data float 13	0.0f
		FLOAT32	Analog data float 14	0.0f
		FLOAT32	Analog data float 15	0.0f

Acyclic Data Access

Addressing schema for, XPSMCMC10804E(G) and XPSMCMCO0000E(G).

The data items are available for acyclic access as specified in the following table:

Name	Slot	Sub slot	Index	Length (bytes)	Access type
Fieldbus inputs	01 hex	00 hex	01 hex	4	Get
System I/O	00 hex	00 hex	00 hex	33	Get
Analog data	02 hex	00 hex	05 hex	64	Get
Error data CPU 0	00 hex	00 hex	02 hex	9	Get
Error data CPU 1	00 hex	00 hex	03 hex	9	Get
Input diagnostics	00 hex	00 hex	04 hex	32	Get
OSSD diagnostics	00 hex	00 hex	05 hex	32	Get
Project CRC	00 hex	00 hex	06 hex	7 (XPSMCMC10804E(G)) 2 (XPSMCMCO0000E(G))	Get
RFID Chain 1	00 hex	00 hex	07 hex	2	Get
RFID Chain 2	00 hex	00 hex	08 hex	2	Get

NOTE: Project CRC contains additional information on the schematic for the XPSMCMC10804E(G) that are not available on the modules XPSMCMCO0000E(G).

Fieldbus Inputs

Offset	Type	Content	Default value	Access type
0	UINT8	Fieldbus input byte 0	00 hex	Get
1	UINT8	Fieldbus input byte 1	00 hex	Get
2	UINT8	Fieldbus input byte 2	00 hex	Get
3	UINT8	Fieldbus input byte 3	00 hex	Get

System I/O (With Restart Input)

Offset	Type	Content	Default value	Access type
0	UINT8	System status	00 hex	Get
1	UINT8	Reserved	00 hex	Get
2	UINT8	Input status byte 0	00 hex	Get
3	UINT8	Input status byte 1	00 hex	Get
4	UINT8	Input status byte 2	00 hex	Get
5	UINT8	Input status byte 3	00 hex	Get
6	UINT8	Input status byte 4	00 hex	Get
7	UINT8	Input status byte 5	00 hex	Get
8	UINT8	Input status byte 6	00 hex	Get
9	UINT8	Input status byte 7	00 hex	Get
10	UINT8	Input status byte 8	00 hex	Get
11	UINT8	Input status byte 9	00 hex	Get
12	UINT8	Input status byte 10	00 hex	Get
13	UINT8	Input status byte 11	00 hex	Get
14	UINT8	Input status byte 12	00 hex	Get
15	UINT8	Input status byte 13	00 hex	Get
16	UINT8	Input status byte 14	00 hex	Get
17	UINT8	Input status byte 15	00 hex	Get
18	UINT8	Restart Input byte 0	00 hex	Get
19	UINT8	Restart Input byte 1	00 hex	Get
20	UINT8	Restart Input byte 2	00 hex	Get
21	UINT8	Fieldbus input byte 0 feedback	00 hex	Get
22	UINT8	Fieldbus input byte 1 feedback	00 hex	Get
23	UINT8	Fieldbus input byte 2 feedback	00 hex	Get
24	UINT8	Fieldbus input byte 3 feedback	00 hex	Get
25	UINT8	Probe status byte 0	00 hex	Get
26	UINT8	Probe status byte 1	00 hex	Get
27	UINT8	Probe status byte 2	00 hex	Get
28	UINT8	Probe status byte 3	00 hex	Get

Offset	Type	Content	Default value	Access type
29	UINT8	Safety-related Output status byte 0	00 hex	Get
30	UINT8	Safety-related Output status byte 1	00 hex	Get
31	UINT8	Safety-related Output status byte 2	00 hex	Get
32	UINT8	Safety-related Output status byte 3	00 hex	Get

Analog Data

Offset	Type	Content	Default value	Access type
0-3	FLOAT	Analog data float 0	0.0f	Get
4-7	FLOAT	Analog data float 1	0.0f	Get
8-11	FLOAT	Analog data float 2	0.0f	Get
12-15	FLOAT	Analog data float 3	0.0f	Get
16-19	FLOAT	Analog data float 4	0.0f	Get
20-23	FLOAT	Analog data float 5	0.0f	Get
24-27	FLOAT	Analog data float 6	0.0f	Get
28-31	FLOAT	Analog data float 7	0.0f	Get
32-35	FLOAT	Analog data float 8	0.0f	Get
36-39	FLOAT	Analog data float 9	0.0f	Get
40-43	FLOAT	Analog data float 10	0.0f	Get
44-47	FLOAT	Analog data float 11	0.0f	Get
48-51	FLOAT	Analog data float 12	0.0f	Get
52-55	FLOAT	Analog data float 13	0.0f	Get
56-59	FLOAT	Analog data float 14	0.0f	Get
60-63	FLOAT	Analog data float 15	0.0f	Get

CPU Error Data 0&1

Offset	Type	Content	Default value	Access type
0	UINT8	Module	00 hex	Get
1	UINT8	Error code	00 hex	Get
2-5	UINT32	Error address	00000000 hex	Get
6	UINT8	CPU firmware version	00 hex	Get
7	UINT8	Extended code 0 (optional)	00 hex	Get
8	UINT8	Extended code 1 (optional)	00 hex	Get

Input & Safety-Related Output Status Diagnostics

Offset	Type	Content	Default value	Access type
0	UINT8	Diagnostic index 0	00 hex	Get
1	UINT8	Diagnostic code 0	00 hex	Get
2	UINT8	Diagnostic index 1	00 hex	Get
3	UINT8	Diagnostic code 1	00 hex	Get

Offset	Type	Content	Default value	Access type
4	UINT8	Diagnostic index 2	00 hex	Get
5	UINT8	Diagnostic code 2	00 hex	Get
6	UINT8	Diagnostic index 3	00 hex	Get
7	UINT8	Diagnostic code 3	00 hex	Get
8	UINT8	Diagnostic index 4	00 hex	Get
9	UINT8	Diagnostic code 4	00 hex	Get
10	UINT8	Diagnostic index 5	00 hex	Get
11	UINT8	Diagnostic code 5	00 hex	Get
12	UINT8	Diagnostic index 6	00 hex	Get
13	UINT8	Diagnostic code 6	00 hex	Get
14	UINT8	Diagnostic index 7	00 hex	Get
15	UINT8	Diagnostic code 7	00 hex	Get
16	UINT8	Diagnostic index 8	00 hex	Get
17	UINT8	Diagnostic code 8	00 hex	Get
18	UINT8	Diagnostic index 9	00 hex	Get
19	UINT8	Diagnostic code 9	00 hex	Get
20	UINT8	Diagnostic index 10	00 hex	Get
21	UINT8	Diagnostic code 10	00 hex	Get
22	UINT8	Diagnostic index 11	00 hex	Get
23	UINT8	Diagnostic code 11	00 hex	Get
24	UINT8	Diagnostic index 12	00 hex	Get
25	UINT8	Diagnostic code 12	00 hex	Get
26	UINT8	Diagnostic index 13	00 hex	Get
27	UINT8	Diagnostic code 13	00 hex	Get
28	UINT8	Diagnostic index 14	00 hex	Get
29	UINT8	Diagnostic code 14	00 hex	Get
30	UINT8	Diagnostic index 15	00 hex	Get
31	UINT8	Diagnostic code 15	00 hex	Get

Project CRC

The implementation of this object differs between the XPSMCMC10804E(G) and XPSMCMCO0000E(G) . The XPSMCMC10804E(G) provides additional information on the project schematic that is not available on XPSMCMCO0000E (G).

Object contents for XPSMCMC10804E(G).

Offset	Type	Content	Default value	Access type
0	UINT8	Project CRC, low byte	00 hex	Get
1	UINT8	Project CRC, high byte	00 hex	Get
2	UINT8	Schematic Date (Day)	00 hex	Get
3	UINT8	Schematic Date (Month)	00 hex	Get
4	UINT8	Schematic Date (Year, low byte)	00 hex	Get

Offset	Type	Content	Default value	Access type
5	UINT8	Schematic Date (Year, high byte)	00 hex	Get
6	UINT8	Schematic source	00 hex	Get

Object contents for XPSMCMC10804E(G)

Offset	Type	Content	Default value	Access type
0	UINT8	Project CRC, low byte	00 hex	Get
1	UINT8	Project CRC, high byte	00 hex	Get

RFID Chain 1 & 2

Offset	Type	Content	Default value	Access type
0-1	UINT16	RFID chain status	0000 hex	Get

XPSMCMCO0000EC• EtherCAT

LED Indicators

The **PWR**, **RUN**, **E IN** and **E EX** LED indicators are present on the module. They are described in the sections Common LEDs for Operation, page 17 and in Common LED Indicators for Troubleshooting, page 17.

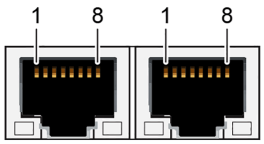
The following table presents the LED indicator **ECT RUN**:

State	Indication
OFF	Operating state Init or no power.
Green	Operating state Operational.
Flashes green	Operating state Pre-Operational.
Flashes green once	Operating state Safe-Operational.
Red	System locked
Operating states mentioned in the table according to the EtherCAT state machine.	

The following table presents the LED indicator **ERR**:

State	Indication
OFF	No error or no power.
Flashes red	Configuration not valid. Operating state transition requested by master not possible.
Flashes red twice	Timeout EtherCAT SynchManager watchdog.
Red	Error detected, fieldbus module not operational.

Connector Details

Module-specific characteristics	XPSMCMCO0000EC•
Reference description	ECT: EtherCAT non-safety-related communication module
Output and PIN number	RJ45 - female 
Wiring	**Pin/ Signal** 1/ Tx+ 2/ Tx- 3/ Rx+ 4/ not used 5/ not used 6/ Rx- 7/ not used 8/ not used
Baudrate	100 Mbit/s (full duplex)

Topology Options

With its 2 network ports, the XPSMCMCO0000EC• offers the full range of topologies available to an EtherCAT device. Depending on the overall composition of the EtherCAT system, this might be a line, star or tree topology or a more complex combination of these topologies.

The network redundancy is handled as part of the EtherCAT protocol and is only available in ring topologies.

XPSMCMCO0000EC• EtherCAT - Mapping Information

Device Identification

Item	Value	Object Index	Subindex	Remarks
Vendor ID	0800005A hex	1018 hex	01 hex	Vendor ID for Schneider Electric
Product Code	00000400 hex	1018 hex	02 hex	Product code for the XPSMCMCO0000EC(G)
Revision Number	*See remarks*	1018 hex	03 hex	Reflects the firmware version of the device (for example, 00020101 hex means SV2.1.1)
Vendor Name	'Schneider Electric'	-	-	-
Product Name	'XPSMCMCO0000EC'	1008 hex	00 hex	-

Cyclic Data Access - PDO Overview

PDO	Name	Length	Mapping	Remarks
RxPDO 1	RxPDO 1	4 bytes	1600 hex	-
TxPDO 1	TxPDO 1	96 bytes	1A00 hex	-

Cyclic Data Access - PDO Mapping

RxPDO Index 1600 hex		Mapped object		Name
Subindex	Byte	Index	Subindex	
01 hex	0	2101 hex	01 hex	Fieldbus input byte 0
02 hex	1	2101 hex	02 hex	Fieldbus input byte 1
03 hex	2	2101 hex	03 hex	Fieldbus input byte 2
04 hex	3	2101 hex	04 hex	Fieldbus input byte 3

TxPDO Index 1A00 hex		Mapped object		Name
Subindex	Byte	Index	Subindex	
01 hex	0	2001 hex	01 hex	System status
02 hex	1	2001 hex	02 hex	Reserved_2001_02
03 hex	2	2201 hex	03 hex	Reserved_2001_03
04 hex	3	2201 hex	04 hex	Reserved_2001_04
05 hex	4	2201 hex	01 hex	Input status byte 0
06 hex	5	2201 hex	02 hex	Input status byte 1
07 hex	6	2201 hex	03 hex	Input status byte 2
08 hex	7	2201 hex	04 hex	Input status byte 3
09 hex	8	2201 hex	05 hex	Input status byte 4
0A hex	9	2201 hex	06 hex	Input status byte 5
0B hex	10	2201 hex	07 hex	Input status byte 6
0C hex	11	2201 hex	08 hex	Input status byte 7
0D hex	12	2201 hex	09 hex	Input status byte 8
0E hex	13	2201 hex	0A hex	Input status byte 9
0F hex	14	2201 hex	0B hex	Input status byte 10
10 hex	15	2201 hex	0C hex	Input status byte 11
11 hex	16	2201 hex	0D hex	Input status byte 12
12 hex	17	2201 hex	0E hex	Input status byte 13
13 hex	18	2181 hex	0F hex	Input status byte 14
14 hex	19	2181 hex	10 hex	Input status byte 15
15 hex	20	2181 hex	01 hex	Fieldbus input byte 0 feedback
16 hex	21	2181 hex	02 hex	Fieldbus input byte 1 feedback
17 hex	22	2203 hex	03 hex	Fieldbus input byte 2 feedback
18 hex	23	2203 hex	04 hex	Fieldbus input byte 3 feedback
19 hex	24	2203 hex	01 hex	Probe status byte 0
1A hex	25	2203 hex	02 hex	Probe status byte 1
1B hex	26	2202 hex	03 hex	Probe status byte 0
1C hex	27	2202 hex	04 hex	Probe status byte 1
1D hex	28	2202 hex	01 hex	Safety-related Output status byte 0
1E hex	29	2202 hex	02 hex	Safety-related Output status byte 1
1F hex	30	2202 hex	03 hex	Safety-related Output status byte 2
20 hex	31	2202 hex	04 hex	Safety-related Output 3
21 hex	32-35	2204 hex	01 hex	Analog data float 0

TxPDO Index 1A00 hex		Mapped object		Name
Subindex	Byte	Index	Subindex	
22 hex	36-39	2204 hex	02 hex	Analog data float 1
23 hex	40-43	2204 hex	03 hex	Analog data float 2
24 hex	44-47	2204 hex	04 hex	Analog data float 3
25 hex	48-51	2204 hex	05 hex	Analog data float 4
26 hex	52-55	2204 hex	06 hex	Analog data float 5
27 hex	56-59	2204 hex	07 hex	Analog data float 6
28 hex	60-63	2204 hex	08 hex	Analog data float 7
29 hex	64-67	2204 hex	09 hex	Analog data float 8
2A hex	68-71	2204 hex	0A hex	Analog data float 9
2B hex	72-75	2204 hex	0B hex	Analog data float 10
2C hex	76-79	2204 hex	0C hex	Analog data float 11
2D hex	80-83	2204 hex	0D hex	Analog data float 12
2E hex	84-87	2204 hex	0E hex	Analog data float 13
2F hex	88-91	2204 hex	0F hex	Analog data float 14
30 hex	92-95	2204 hex	10 hex	Analog data float 15

Vendor Specific Object Index 2001 hex – System Status

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	02 hex	RO
01 hex	UNSIGNED8	System status	00 hex	RO
02 hex	UNSIGNED8	Reserved_2001_02	00 hex	RO
03 hex	UNSIGNED8	Reserved_2001_03	00 hex	RO
04 hex	UNSIGNED8	Reserved_2001_04	00 hex	RO

Vendor Specific Object Index 2003 hex – Error data CPU 0

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	09 hex	RO
01 hex	UNSIGNED8	Module ID	00 hex	RO
02 hex	UNSIGNED8	Error code	00 hex	RO
03 hex	UNSIGNED8	Error address byte 0	00 hex	RO
04 hex	UNSIGNED8	Error address byte 1	00 hex	RO
05 hex	UNSIGNED8	Error address byte 2	00 hex	RO
06 hex	UNSIGNED8	Error address byte 3	00 hex	RO
07 hex	UNSIGNED8	CPU firmware version	00 hex	RO
08 hex	UNSIGNED8	Extended code 0 (optional)	00 hex	RO
09 hex	UNSIGNED8	Extended code 1 (optional)	00 hex	RO

Vendor Specific Object Index 2004 hex – Error data CPU 1

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	09 hex	RO
01 hex	UNSIGNED8	Module ID	00 hex	RO
02 hex	UNSIGNED8	Error code	00 hex	RO
03 hex	UNSIGNED8	Error address byte 0	00 hex	RO
04 hex	UNSIGNED8	Error address byte 1	00 hex	RO
05 hex	UNSIGNED8	Error address byte 2	00 hex	RO
06 hex	UNSIGNED8	Error address byte 3	00 hex	RO
07 hex	UNSIGNED8	CPU firmware version	00 hex	RO
08 hex	UNSIGNED8	Extended code 0 (optional)	00 hex	RO
09 hex	UNSIGNED8	Extended code 1 (optional)	00 hex	RO

Vendor Specific Object Index 2005 hex – Input Diagnostics

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	20 hex	RO
01 hex	UNSIGNED8	Diagnostic index 0	00 hex	RO
02 hex	UNSIGNED8	Diagnostic code 0	00 hex	RO
03 hex	UNSIGNED8	Diagnostic index 1	00 hex	RO
04 hex	UNSIGNED8	Diagnostic code 1	00 hex	RO
05 hex	UNSIGNED8	Diagnostic index 2	00 hex	RO
06 hex	UNSIGNED8	Diagnostic code 2	00 hex	RO
07 hex	UNSIGNED8	Diagnostic index 3	00 hex	RO
08 hex	UNSIGNED8	Diagnostic code 3	00 hex	RO
09 hex	UNSIGNED8	Diagnostic index 4	00 hex	RO
0A hex	UNSIGNED8	Diagnostic code 4	00 hex	RO
0B hex	UNSIGNED8	Diagnostic index 5	00 hex	RO
0C hex	UNSIGNED8	Diagnostic code 5	00 hex	RO
0D hex	UNSIGNED8	Diagnostic index 6	00 hex	RO
0E hex	UNSIGNED8	Diagnostic code 6	00 hex	RO
0F hex	UNSIGNED8	Diagnostic index 7	00 hex	RO
10 hex	UNSIGNED8	Diagnostic code 7	00 hex	RO
11 hex	UNSIGNED8	Diagnostic index 8	00 hex	RO
12 hex	UNSIGNED8	Diagnostic code 8	00 hex	RO
13 hex	UNSIGNED8	Diagnostic index 9	00 hex	RO
14 hex	UNSIGNED8	Diagnostic code 9	00 hex	RO
15 hex	UNSIGNED8	Diagnostic index 10	00 hex	RO
16 hex	UNSIGNED8	Diagnostic code 10	00 hex	RO
17 hex	UNSIGNED8	Diagnostic index 11	00 hex	RO

Subindex	Type	Usage/Name	Default value	Access
18 hex	UNSIGNED8	Diagnostic code 11	00 hex	RO
19 hex	UNSIGNED8	Diagnostic index 12	00 hex	RO
1A hex	UNSIGNED8	Diagnostic code 12	00 hex	RO
1B hex	UNSIGNED8	Diagnostic index 13	00 hex	RO
1C hex	UNSIGNED8	Diagnostic code 13	00 hex	RO
1D hex	UNSIGNED8	Diagnostic index 14	00 hex	RO
1E hex	UNSIGNED8	Diagnostic code 14	00 hex	RO
1F hex	UNSIGNED8	Diagnostic index 15	00 hex	RO
20 hex	UNSIGNED8	Diagnostic code 15	00 hex	RO

Vendor Specific Object Index 2006 hex – Safety-Related Output Diagnostics

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	20 hex	RO
01 hex	UNSIGNED8	Diagnostic index 0	00 hex	RO
02 hex	UNSIGNED8	Diagnostic code 0	00 hex	RO
03 hex	UNSIGNED8	Diagnostic index 1	00 hex	RO
04 hex	UNSIGNED8	Diagnostic code 1	00 hex	RO
05 hex	UNSIGNED8	Diagnostic index 2	00 hex	RO
06 hex	UNSIGNED8	Diagnostic code 2	00 hex	RO
07 hex	UNSIGNED8	Diagnostic index 3	00 hex	RO
08 hex	UNSIGNED8	Diagnostic code 3	00 hex	RO
09 hex	UNSIGNED8	Diagnostic index 4	00 hex	RO
0A hex	UNSIGNED8	Diagnostic code 4	00 hex	RO
0B hex	UNSIGNED8	Diagnostic index 5	00 hex	RO
0C hex	UNSIGNED8	Diagnostic code 5	00 hex	RO
0D hex	UNSIGNED8	Diagnostic index 6	00 hex	RO
0E hex	UNSIGNED8	Diagnostic code 6	00 hex	RO
0F hex	UNSIGNED8	Diagnostic index 7	00 hex	RO
10 hex	UNSIGNED8	Diagnostic code 7	00 hex	RO
11 hex	UNSIGNED8	Diagnostic index 8	00 hex	RO
12 hex	UNSIGNED8	Diagnostic code 8	00 hex	RO
13 hex	UNSIGNED8	Diagnostic index 9	00 hex	RO
14 hex	UNSIGNED8	Diagnostic code 9	00 hex	RO
15 hex	UNSIGNED8	Diagnostic index 10	00 hex	RO
16 hex	UNSIGNED8	Diagnostic code 10	00 hex	RO
17 hex	UNSIGNED8	Diagnostic index 11	00 hex	RO
18 hex	UNSIGNED8	Diagnostic code 11	00 hex	RO
19 hex	UNSIGNED8	Diagnostic index 12	00 hex	RO
1A hex	UNSIGNED8	Diagnostic code 12	00 hex	RO

Subindex	Type	Usage/Name	Default value	Access
1B hex	UNSIGNED8	Diagnostic index 13	00 hex	RO
1C hex	UNSIGNED8	Diagnostic code 13	00 hex	RO
1D hex	UNSIGNED8	Diagnostic index 14	00 hex	RO
1E hex	UNSIGNED8	Diagnostic code 14	00 hex	RO
1F hex	UNSIGNED8	Diagnostic index 15	00 hex	RO
20 hex	UNSIGNED8	Diagnostic code 15	00 hex	RO

Vendor Specific Object Index 2007 hex – Project CRC

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	02 hex	RO
01 hex	UNSIGNED8	Project CRC, low byte	00 hex	RO
02 hex	UNSIGNED8	Project CRC, high byte	00 hex	RO

Vendor Specific Object Index 2101 hex – Fieldbus Inputs

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	04 hex	RO
01 hex	UNSIGNED8	Fieldbus inputs byte 0	00 hex	RW
02 hex	UNSIGNED8	Fieldbus inputs byte 1	00 hex	RW
03 hex	UNSIGNED8	Fieldbus inputs byte 2	00 hex	RW
04 hex	UNSIGNED8	Fieldbus inputs byte 3	00 hex	RW

Vendor Specific Object Index 2181 hex – Fieldbus Inputs Feedback

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	04 hex	RO
01 hex	UNSIGNED8	Fieldbus inputs feedback byte 0	00 hex	RW
02 hex	UNSIGNED8	Fieldbus inputs feedback byte 1	00 hex	RW
03 hex	UNSIGNED8	Fieldbus inputs feedback byte 2	00 hex	RW
04 hex	UNSIGNED8	Fieldbus inputs feedback byte 3	00 hex	RW

Vendor Specific Object Index 2201 hex – Input Status

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	13 hex	RO
01 hex	UNSIGNED8	Input status byte 0	00 hex	RO
02 hex	UNSIGNED8	Input status byte 1	00 hex	RO
03 hex	UNSIGNED8	Input status byte 2	00 hex	RO
04 hex	UNSIGNED8	Input status byte 3	00 hex	RO
05 hex	UNSIGNED8	Input status byte 4	00 hex	RO
06 hex	UNSIGNED8	Input status byte 5	00 hex	RO
07 hex	UNSIGNED8	Input status byte 6	00 hex	RO
08 hex	UNSIGNED8	Input status byte 7	00 hex	RO
09 hex	UNSIGNED8	Input status byte 8	00 hex	RO
0A hex	UNSIGNED8	Input status byte 9	00 hex	RO
0B hex	UNSIGNED8	Input status byte 10	00 hex	RO
0C hex	UNSIGNED8	Input status byte 11	00 hex	RO
0D hex	UNSIGNED8	Input status byte 12	00 hex	RO
0E hex	UNSIGNED8	Input status byte 13	00 hex	RO
0F hex	UNSIGNED8	Input status byte 14	00 hex	RO
10 hex	UNSIGNED8	Input status byte 15	00 hex	RO

Vendor Specific Object Index 2202 hex – Safety-related Output Status

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	04 hex	RO
01 hex	UNSIGNED8	Safety-related Output status byte 0	00 hex	RO
02 hex	UNSIGNED8	Safety-related Output status byte 1	00 hex	RO
03 hex	UNSIGNED8	Safety-related Output status byte 2	00 hex	RO
04 hex	UNSIGNED8	Safety-related Output status byte 3	00 hex	RO

Vendor Specific Object Index 2203 hex – Probe status

Object Type: Array of UNSIGNED8

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	04 hex	RO
01 hex	UNSIGNED8	Probe status byte 0	00 hex	RO
02 hex	UNSIGNED8	Probe status byte 1	00 hex	RO
03 hex	UNSIGNED8	Probe status byte 2	00 hex	RO
04 hex	UNSIGNED8	Probe status byte 3	00 hex	RO

Vendor Specific Object Index 2204 hex – Analog data

Object Type: Array of REAL32

Subindex	Type	Usage/Name	Default value	Access
00 hex	UNSIGNED8	Number Of Entries	10 hex	RO
01 hex	REAL32	Analog data float 0	0.0f	RO
02 hex	REAL32	Analog data float 1	0.0f	RO
03 hex	REAL32	Analog data float 2	0.0f	RO
04 hex	REAL32	Analog data float 3	0.0f	RO
05 hex	REAL32	Analog data float 4	0.0f	RO
06 hex	REAL32	Analog data float 5	0.0f	RO
07 hex	REAL32	Analog data float 6	0.0f	RO
08 hex	REAL32	Analog data float 7	0.0f	RO
09 hex	REAL32	Analog data float 8	0.0f	RO
0A hex	REAL32	Analog data float 9	0.0f	RO
0B hex	REAL32	Analog data float 10	0.0f	RO
0C hex	REAL32	Analog data float 11	0.0f	RO
0D hex	REAL32	Analog data float 12	0.0f	RO
0E hex	REAL32	Analog data float 13	0.0f	RO
0F hex	REAL32	Analog data float 14	0.0f	RO
10 hex	REAL32	Analog data float 15	0.0f	RO

Acyclic Data Access

The data of the XPSMCMCO0000EC• can be accessed acyclically through SDO (service data object) access of CoE (CANopen over EtherCAT). The addressing schema uses indexes and sub-indexes.

The listed vendor specific objects are available to acyclic access.

XPSMCMCO0000EI• EtherNet/IP

LED Indicators

The **PWR**, **RUN**, **E IN** and **E EX** LED indicators are present on the module. They are described in the sections Common LEDs for Operation, page 17 and in Common LED Indicators for Troubleshooting, page 17.

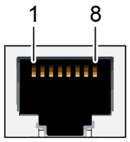
The following table presents the LED indicator **EIP NS**:

State	Indication
OFF	No power or no IP address.
Steady green	Online, connected. One or more connections established (CIP Class 1 or 3).
Green flashing	Online, not connected.
Steady red	Duplicate IP address.
Red flashing	Connection timeout, one or more connections timed out (CIP class 1 or 3).

The following table presents the LED indicator **MS**:

State	Indication
OFF	No power.
Steady green	Operating state Operational.
Green flashing	Not configured or scanner is idle.
Steady red	One or more non-recoverable errors detected.
Red flashing	One or more recoverable errors detected.
Operating states mentioned in the table according to the EtherNet/IP state machine	

Connector Details

Module-specific characteristics	XPSMCMCO0000EI•
Reference description	EIP: EtherNet/IP non-safety-related communication module.
Output and PIN number	RJ45 - female 
Wiring	**Pin/ Signal** 1/ Tx+ 2/ Tx- 3/ Rx+ 4/ not used 5/ not used 6/ Rx- 7/ not used 8/ not used
Baudrate	10/100 Mbit (full/half duplex)

XPSMCMCO0000EI• EtherNet/IP - Mapping Information

Device Identification

Item	Value	Remarks
Vendor ID	243	Vendor ID for Schneider Electric
Product Code	4101	Product code for the XPSMCMCO0000EI(G)
Major Revision	*See remarks*	Reflects the firmware version of the device (for example, 21 means SV2.1.z; z depends on Minor Revision, see below)
Minor Revision	*See remarks*	Reflects the firmware version of the device (for example, 1 means SVx.y.1; x,y depends on Major Revision, see above)
Vendor Name	'Schneider Electric'	-
Product Name	'XPSMCM EtherNet/IP Fieldb. exp.'	-
Product Type	12	Communications Adapter

Item	Value	Remarks
Catalog Number	'XPSMCMCO0000EI'	-
Device icon		Provided as a separate icon file 'Preventa_XPSMCM.ico' alongside the device description

Cyclic Data Access

EtherNet/IP uses to two assembly object instances to transport process data:

- Assembly object 96 hex for consumed data
- Assembly object 64 hex for produced data

Each of these assembly objects contains several attributes that represent individual process data items.

Assembly Object 96 hex (Consuming Instance)

Byte offset	Size	Name	Default value	Access
0	USINT	Fieldbus input byte 0	00 hex	RW
1	USINT	Fieldbus input byte 1	00 hex	RW
2	USINT	Fieldbus input byte 2	00 hex	RW
3	USINT	Fieldbus input byte 3	00 hex	RW

Assembly Object 64 hex (Producing Instance)

Byte offset	Size	Name	Default value	Access
0	USINT	System status	00 hex	RO
1	USINT	Reserved	00 hex	RO
2	USINT	Input status byte 0	00 hex	RO
3	USINT	Input status byte 1	00 hex	RO
4	USINT	Input status byte 2	00 hex	RO
5	USINT	Input status byte 3	00 hex	RO
6	USINT	Input status byte 4	00 hex	RO
7	USINT	Input status byte 5	00 hex	RO
8	USINT	Input status byte 6	00 hex	RO
9	USINT	Input status byte 7	00 hex	RO
10	USINT	Input status byte 8	00 hex	RO
11	USINT	Input status byte 9	00 hex	RO
12	USINT	Input status byte 10	00 hex	RO
13	USINT	Input status byte 11	00 hex	RO
14	USINT	Input status byte 12	00 hex	RO
15	USINT	Input status byte 13	00 hex	RO
16	USINT	Input status byte 14	00 hex	RO
17	USINT	Input status byte 15	00 hex	RO
18	USINT	Fieldbus input byte 0 feedback	00 hex	RO

Byte offset	Size	Name	Default value	Access
19	USINT	Fieldbus input byte 1 feedback	00 hex	RO
20	USINT	Fieldbus input byte 2 feedback	00 hex	RO
21	USINT	Fieldbus input byte 3 feedback	00 hex	RO
22	USINT	Probe status byte 0	00 hex	RO
23	USINT	Probe status byte 1	00 hex	RO
24	USINT	Probe status byte 2	00 hex	RO
25	USINT	Probe status byte 3	00 hex	RO
26	USINT	Safety-related Output status byte 0	00 hex	RO
27	USINT	Safety-related Output status byte 1	00 hex	RO
28	USINT	Safety-related Output status byte 2	00 hex	RO
29	USINT	Safety-related Output status byte 3	00 hex	RO
30	REAL	Analog data float 0	0.0 f	RO
34	REAL	Analog data float 1	0.0 f	RO
38	REAL	Analog data float 2	0.0 f	RO
42	REAL	Analog data float 3	0.0 f	RO
46	REAL	Analog data float 4	0.0 f	RO
50	REAL	Analog data float 5	0.0 f	RO
54	REAL	Analog data float 6	0.0 f	RO
58	REAL	Analog data float 7	0.0 f	RO
62	REAL	Analog data float 8	0.0 f	RO
66	REAL	Analog data float 9	0.0 f	RO
70	REAL	Analog data float 10	0.0 f	RO
74	REAL	Analog data float 11	0.0 f	RO
78	REAL	Analog data float 12	0.0 f	RO
82	REAL	Analog data float 13	0.0 f	RO
86	REAL	Analog data float 14	0.0 f	RO
90	REAL	Analog data float 15	0.0 f	RO

USINT: 1 byte; REAL: 4 byte

Acyclic Data Access

Use the service 0E hex (get attribute single) to access the errors data, input diagnostics, OSSD diagnostics and project CRC.

Name	Class	Instance	Attribute	Length (byte)	Access type
Fieldbus Inputs	A2 hex	101 hex	05 hex	4	Set/Get
System I/O	A2 hex	01 hex	05 hex	30	Get
Analog data	A2 hex	204 hex	05 hex	64	Get
Errors data CPU 0	A2 hex	03 hex	05 hex	9	Get
Errors data CPU 1	A2 hex	04 hex	05 hex	9	Get

Name	Class	Instance	Attribute	Length (byte)	Access type
Input diagnostics	A2 hex	05 hex	05 hex	32	Get
Safety-Related Output Diagnostics	A2 hex	06 hex	05 hex	32	Get
Project CRC	A2 hex	07 hex	05 hex	2	Get

Fieldbus Inputs

The inner structure of this item follows the same schema as the cyclic data access.

Byte offset	Size	Name	Default value	Access
0	USINT	Fieldbus input byte 0	00 hex	Get/Set
1	USINT	Fieldbus input byte 1	00 hex	Get/Set
2	USINT	Fieldbus input byte 2	00 hex	Get/Set
3	USINT	Fieldbus input byte 3	00 hex	Get/Set

System I/O

This item aggregates the data that is usually transferred as cyclic input data except the analog data. The inner structure of this item follows the same schema as the cyclic data access.

Byte offset	Size	Name	Default value	Access
0	USINT	System status	00 hex	Get
1	USINT	Reserved	00 hex	Get
2	USINT	Input status byte 0	00 hex	Get
3	USINT	Input status byte 1	00 hex	Get
4	USINT	Input status byte 2	00 hex	Get
5	USINT	Input status byte 3	00 hex	Get
6	USINT	Input status byte 4	00 hex	Get
7	USINT	Input status byte 5	00 hex	Get
8	USINT	Input status byte 6	00 hex	Get
9	USINT	Input status byte 7	00 hex	Get
10	USINT	Input status byte 8	00 hex	Get
11	USINT	Input status byte 9	00 hex	Get
12	USINT	Input status byte 10	00 hex	Get
13	USINT	Input status byte 11	00 hex	Get
14	USINT	Input status byte 12	00 hex	Get
15	USINT	Input status byte 13	00 hex	Get
16	USINT	Input status byte 14	00 hex	Get
17	USINT	Input status byte 15	00 hex	Get
18	USINT	Fieldbus input byte 0 feedback	00 hex	Get
19	USINT	Fieldbus input byte 1 feedback	00 hex	Get
20	USINT	Fieldbus input byte 2 feedback	00 hex	Get

Byte offset	Size	Name	Default value	Access
21	USINT	Fieldbus input byte 3 feedback	00 hex	Get
22	USINT	Probe status byte 0	00 hex	Get
23	USINT	Probe status byte 1	00 hex	Get
24	USINT	Probe status byte 2	00 hex	Get
25	USINT	Probe status byte 3	00 hex	Get
26	USINT	Safety-related Output status byte 0	00 hex	Get
27	USINT	Safety-related Output status byte 1	00 hex	Get
28	USINT	Safety-related Output status byte 2	00 hex	Get
29	USINT	Safety-related Output status byte 3	00 hex	Get

Analog Data

The inner structure of this item follows the same schema as the cyclic data access.

Byte offset	Size	Name	Default value	Access
0-3	REAL	Analog data float 0	0.0 f	Get
4-7	REAL	Analog data float 1	0.0 f	Get
8-11	REAL	Analog data float 2	0.0 f	Get
12-15	REAL	Analog data float 3	0.0 f	Get
16-19	REAL	Analog data float 4	0.0 f	Get
20-23	REAL	Analog data float 5	0.0 f	Get
24-27	REAL	Analog data float 6	0.0 f	Get
28-31	REAL	Analog data float 7	0.0 f	Get
32-35	REAL	Analog data float 8	0.0 f	Get
36-39	REAL	Analog data float 9	0.0 f	Get
40-43	REAL	Analog data float 10	0.0 f	Get
44-47	REAL	Analog data float 11	0.0 f	Get
48-51	REAL	Analog data float 12	0.0 f	Get
52-55	REAL	Analog data float 13	0.0 f	Get
56-59	REAL	Analog data float 14	0.0 f	Get
60-63	REAL	Analog data float 15	0.0 f	Get

CPU Error Data 0 and 1

The inner structure of these items follows the following schema:

Byte offset	Size	Name	Default value	Access
0	UINT8	Module	00 hex	Get
1	UINT8	Error code	00 hex	Get
2-5	UINT32	Error address	00000000 hex	Get
6	UINT8	CPU firmware version	00 hex	Get

Byte offset	Size	Name	Default value	Access
7	UINT8	Extended code 0 (optional)	00 hex	Get
8	UINT8	Extended code 1 (optional)	00 hex	Get

Input & Safety-Related Output Diagnostics

The inner structure of these items follows the following schema:

Byte offset	Size	Name	Default value	Access
0	UINT8	Diagnostic index 0	00 hex	Get
1	UINT8	Diagnostic code 0	00 hex	Get
2	UINT8	Diagnostic index 1	00 hex	Get
3	UINT8	Diagnostic code 1	00 hex	Get
4	UINT8	Diagnostic index 2	00 hex	Get
5	UINT8	Diagnostic code 2	00 hex	Get
6	UINT8	Diagnostic index 3	00 hex	Get
7	UINT8	Diagnostic code 3	00 hex	Get
8	UINT8	Diagnostic index 4	00 hex	Get
9	UINT8	Diagnostic code 4	00 hex	Get
10	UINT8	Diagnostic index 5	00 hex	Get
11	UINT8	Diagnostic code 5	00 hex	Get
12	UINT8	Diagnostic index 6	00 hex	Get
13	UINT8	Diagnostic code 6	00 hex	Get
14	UINT8	Diagnostic index 7	00 hex	Get
15	UINT8	Diagnostic code 7	00 hex	Get
16	UINT8	Diagnostic index 8	00 hex	Get
17	UINT8	Diagnostic code 8	00 hex	Get
18	UINT8	Diagnostic index 9	00 hex	Get
19	UINT8	Diagnostic code 9	00 hex	Get
20	UINT8	Diagnostic index 10	00 hex	Get
21	UINT8	Diagnostic code 10	00 hex	Get
22	UINT8	Diagnostic index 11	00 hex	Get
23	UINT8	Diagnostic code 11	00 hex	Get
24	UINT8	Diagnostic index 12	00 hex	Get
25	UINT8	Diagnostic code 12	00 hex	Get
26	UINT8	Diagnostic index 13	00 hex	Get
27	UINT8	Diagnostic code 13	00 hex	Get
28	UINT8	Diagnostic index 14	00 hex	Get
29	UINT8	Diagnostic code 14	00 hex	Get
30	UINT8	Diagnostic index 15	00 hex	Get
31	UINT8	Diagnostic code 15	00 hex	Get

Project CRC

The inner structure of these items follows the following schema:

Byte offset	Size	Name	Default value	Access
0	UINT8	Project CRC – low byte	00 hex	Get
1	UINT8	Project CRC – high byte	00 hex	Get

XPSMCMCO0000MB• Modbus

LED Indicators

The **PWR**, **RUN**, **E IN** and **E EX** LED indicators are present on the module. They are described in the sections Common LEDs for Operation, page 17 and in Common LED Indicators for Troubleshooting, page 17.

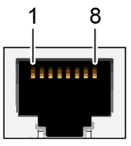
The following table presents the LED indicator **MBS COM**:

State	Indication
OFF	No power or no data exchange.
Yellow	Frame reception or transmission.
Steady red	One or more non-recoverable errors detected.

The following table presents the LED indicator **STS**:

State	Indication
OFF	No power or initializing.
Steady green	Module initialized.
Steady red	One or more non-recoverable errors detected.
Periodic single red flash	Communication or configuration error detected.
Periodic double red flash	Application diagnostics available.

Connector Details

Module-specific characteristics	XPSMCMCO0000MB•
Reference description	MBS (Modbus Serial) non-safety-related communication module.
Output and PIN number	RJ45 - female 

Module-specific characteristics	XPSMCMCO0000MB•
Wiring	**Pin/ Signal** 1/ not used 2/ not used 3/ not used 4/ D1 5/ D0 6/ not cused 7/ VP (5 Vdc supply) 8/ Common Housing/cable shield
Baudrate	Up to 115200 bps

XPSMCMCO0000MB• Modbus RTU - Mapping Information

Device Identification

The Modbus device provides its device identification information using the function code “Read Device Identification”, which is a sub-function of the function “Encapsulated Interface Transport”.

The objects provided on this interface are grouped into three categories:

- Basic (mandatory)
- Regular (optional)
- Extended (manufacturer/device specific, optional)

Object IDs for usage in function 43 (2B hex), sub-function 14 (0E hex): “Read Device Identification”

Item	Value	Object ID	Category	Remarks
Vendor Name	‘Schneider Electric’	00 hex	Basic	-
Product Code	‘XPSMCMCO0000MB’	01 hex	Basic	-
Major Minor Revision	*See remarks*	02 hex	Basic	Reflects the Firmware version of the device (for example, '2.1.1')
Vendor URL	‘www.se.com'	03 hex	Regular	Vendor link
Product Name	‘Modbus (RTU) communication unit'	04 hex	Regular	-
Model Name	‘XPSMCM communication unit'	05 hex	Regular	-
User Application Name	-	06 hex	Regular	-

Cyclic Data Access

For Modbus there is no intrinsic cyclic data communication protocol. Instead, if a periodic update of some registers is required, the Modbus Client (for example, logic controller) periodically polls the required information from the Server (for example, IO device, XPSMCMCO0000••(G) module) using the appropriate function codes (refer to Acyclic Data Access, page 98).

The register mapping and the supported function codes for the XPSMCMCO0000• Modbus serial communication module are described in the following chapter Acyclic Data Access, page 98.

Acyclic Data Access - Holding Registers (4x)

The following table describes Acyclic Data Access.

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40001	0000 hex	low	UINT8	Fieldbus input byte 0	00 hex	RW
		high	UINT8	Fieldbus input byte 1	00 hex	RW
40002	0001 hex	low	UINT8	Fieldbus input byte 2	00 hex	RW
		high	UINT8	Fieldbus input byte 3	00 hex	RW

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40257	0100 hex	low	UINT8	System status	00 hex	RO
		high	UINT8	Reserved	00 hex	RO
40258	0101 hex	low	UINT8	Input status byte 0	00 hex	RO
		high	UINT8	Input status byte 1	00 hex	RO
40259	0102 hex	low	UINT8	Input status byte 2	00 hex	RO
		high	UINT8	Input status byte 3	00 hex	RO
40260	0103 hex	low	UINT8	Input status byte 4	00 hex	RO
		high	UINT8	Input status byte 5	00 hex	RO
40261	0104 hex	low	UINT8	Input status byte 6	00 hex	RO
		high	UINT8	Input status byte 7	00 hex	RO
40262	0105 hex	low	UINT8	Input status byte 8	00 hex	RO
		high	UINT8	Input status byte 9	00 hex	RO
40263	0106 hex	low	UINT8	Input status byte 10	00 hex	RO
		high	UINT8	Input status byte 11	00 hex	RO
40264	0107 hex	low	UINT8	Input status byte 12	00 hex	RO
		high	UINT8	Input status byte 13	00 hex	RO
40265	0108 hex	low	UINT8	Input status byte 14	00 hex	RO
		high	UINT8	Input status byte 15	00 hex	RO
40266	0109 hex	low	UINT8	Fieldbus input feedback byte 0	00 hex	RO
		high	UINT8	Fieldbus input feedback byte 1	00 hex	RO
40267	010A hex	low	UINT8	Fieldbus input feedback byte 2	00 hex	RO
		high	UINT8	Fieldbus input feedback byte 3	00 hex	RO
40268	010B hex	low	UINT8	Probe status byte 0	00 hex	RO
		high	UINT8	Probe status byte 1	00 hex	RO
40269	010C hex	low	UINT8	Probe status byte 2	00 hex	RO
		high	UINT8	Probe status byte 3	00 hex	RO
40270	010D hex	low	UINT8	Safety-related Output status byte 0	00 hex	RO
		high	UINT8	Safety-related Output status byte 1	00 hex	RO
40271	010E hex	low	UINT8	Safety-related Output status byte 2	00 hex	RO
		high	UINT8	Safety-related Output status byte 3	00 hex	RO
40272	010F hex	low	FLOAT	Analog data float 0	0.0f	RO
		high				
40273	0110 hex	low				

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
		high				
40274	0111 hex	low	FLOAT	Analog data float 1	0.0f	RO
		high				
40275	0112 hex	low				
		high				
40276	0113 hex	low	FLOAT	Analog data float 2	0.0f	RO
		high				
40277	0114 hex	low				
		high				
40278	0115 hex	low	FLOAT	Analog data float 3	0.0f	RO
		high				
40279	0116 hex	low				
		high				
40280	0117 hex	low	FLOAT	Analog data float 4	0.0f	RO
		high				
40281	0118 hex	low				
		high				
40282	0119 hex	low	FLOAT	Analog data float 5	0.0f	RO
		high				
40283	011A hex	low				
		high				
40284	011B hex	low	FLOAT	Analog data float 6	0.0f	RO
		high				
40285	011C hex	low				
		high				
40286	011D hex	low	FLOAT	Analog data float 7	0.0f	RO
		high				
40287	011E hex	low				
		high				
40288	011F hex	low	FLOAT	Analog data float 8	0.0f	RO
		high				
40289	0120 hex	low				
		high				
40290	0121 hex	low	FLOAT	Analog data float 9	0.0f	RO
		high				
40291	0122 hex	low				
		high				
40292	0123 hex	low	FLOAT	Analog data float 10	0.0f	RO
		high				
40293	0124 hex	low				
		high				
40294	0125 hex	low	FLOAT	Analog data float 11	0.0f	RO
		high				
40295	0126 hex	low				

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
		high				
40296	0127 hex	low	FLOAT	Analog data float 12	0.0f	RO
		high				
40297	0128 hex	low				
		high				
40298	0129 hex	low	FLOAT	Analog data float 13	0.0f	RO
		high				
40299	012A hex	low				
		high				
40300	012B hex	low	FLOAT	Analog data float 14	0.0f	RO
		high				
40301	012C hex	low				
		high				
40302	012D hex	low	FLOAT	Analog data float 15	0.0f	RO
		high				
40303	012E hex	low				
		high				

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40561	0230 hex	low	UINT8	Error CPU0 – Module	00 hex	RO
		high	UINT8	Error CPU0 – Error code	00 hex	RO
40562	0231 hex	low	UINT32	Error CPU0 – Error address	00000000 hex	RO
		high				
40563	0232 hex	low				
		high				
40564	0233 hex	low	UINT8	Error CPU0 – Firmware version	00 hex	RO
		high	UINT8	Error CPU0 – Extended code 0	00 hex	RO
40565	0234 hex	low	UINT8	Error CPU0 – Extended code 1	00 hex	RO
		high	UINT8	Reserved	00 hex	RO

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40577	0240 hex	low	UINT8	Error CPU1 – Module	00 hex	RO
		high	UINT8	Error CPU1 – Error code	00 hex	RO
40578	0241 hex	low	UINT32	Error CPU1 – Error address	00000000 hex	RO
		high				
40579	0242 hex	low				
		high				
40580	0243 hex	low	UINT8	Error CPU1 – Firmware version	00 hex	RO
		high	UINT8	Error CPU1 – Extended code 0	00 hex	RO
40581	0244 hex	low	UINT8	Error CPU1 – Extended code 1	00 hex	RO
		high	UINT8	Reserved	00 hex	RO

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40593	0250 hex	low	UINT8	Input diagnostics index 1	00 hex	RO
		high	UINT8	Input diagnostics code 1	00 hex	RO
40594	0251 hex	low	UINT8	Input diagnostics index 2	00 hex	RO
		high	UINT8	Input diagnostics code 2	00 hex	RO
40595	0252 hex	low	UINT8	Input diagnostics index 3	00 hex	RO
		high	UINT8	Input diagnostics code 3	00 hex	RO
40596	0253 hex	low	UINT8	Input diagnostics index 4	00 hex	RO
		high	UINT8	Input diagnostics code 4	00 hex	RO
40597	0254 hex	low	UINT8	Input diagnostics index 5	00 hex	RO
		high	UINT8	Input diagnostics code 5	00 hex	RO
40598	0255 hex	low	UINT8	Input diagnostics index 6	00 hex	RO
		high	UINT8	Input diagnostics code 6	00 hex	RO
40599	0256 hex	low	UINT8	Input diagnostics index 7	00 hex	RO
		high	UINT8	Input diagnostics code 7	00 hex	RO
40600	0257 hex	low	UINT8	Input diagnostics index 8	00 hex	RO
		high	UINT8	Input diagnostics code 8	00 hex	RO
40601	0258 hex	low	UINT8	Input diagnostics index 9	00 hex	RO
		high	UINT8	Input diagnostics code 9	00 hex	RO
40602	0259 hex	low	UINT8	Input diagnostics index 10	00 hex	RO
		high	UINT8	Input diagnostics code 10	00 hex	RO
40603	025A hex	low	UINT8	Input diagnostics index 11	00 hex	RO
		high	UINT8	Input diagnostics code 11	00 hex	RO
40604	025B hex	low	UINT8	Input diagnostics index 12	00 hex	RO
		high	UINT8	Input diagnostics code 12	00 hex	RO
40605	025C hex	low	UINT8	Input diagnostics index 13	00 hex	RO
		high	UINT8	Input diagnostics code 13	00 hex	RO
40606	025D hex	low	UINT8	Input diagnostics index 14	00 hex	RO
		high	UINT8	Input diagnostics code 14	00 hex	RO
40607	025E hex	low	UINT8	Input diagnostics index 15	00 hex	RO
		high	UINT8	Input diagnostics code 15	00 hex	RO
40608	025F hex	low	UINT8	Input diagnostics index 16	00 hex	RO
		high	UINT8	Input diagnostics code 16	00 hex	RO
40609	0260 hex	low	UINT8	Output diagnostics index 1	00 hex	RO
		high	UINT8	Output diagnostics code 1	00 hex	RO
40610	0261 hex	low	UINT8	Output diagnostics index 2	00 hex	RO
		high	UINT8	Output diagnostics code 2	00 hex	RO
40611	0262 hex	low	UINT8	Output diagnostics index 3	00 hex	RO
		high	UINT8	Output diagnostics code 3	00 hex	RO
40612	0263 hex	low	UINT8	Output diagnostics index 4	00 hex	RO
		high	UINT8	Output diagnostics code 4	00 hex	RO
40613	0264 hex	low	UINT8	Output diagnostics index 5	00 hex	RO
		high	UINT8	Output diagnostics code 5	00 hex	RO

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40614	0265 hex	low	UINT8	Output diagnostics index 6	00 hex	RO
		high	UINT8	Output diagnostics code 6	00 hex	RO
40615	0266 hex	low	UINT8	Output diagnostics index 7	00 hex	RO
		high	UINT8	Output diagnostics code 7	00 hex	RO
40616	0267 hex	low	UINT8	Output diagnostics index 8	00 hex	RO
		high	UINT8	Output diagnostics code 8	00 hex	RO
40617	0268 hex	low	UINT8	Output diagnostics index 9	00 hex	RO
		high	UINT8	Output diagnostics code 9	00 hex	RO
40618	0269 hex	low	UINT8	Output diagnostics index 10	00 hex	RO
		high	UINT8	Output diagnostics code 10	00 hex	RO
40619	026A hex	low	UINT8	Output diagnostics index 11	00 hex	RO
		high	UINT8	Output diagnostics code 11	00 hex	RO
40620	026B hex	low	UINT8	Output diagnostics index 12	00 hex	RO
		high	UINT8	Output diagnostics code 12	00 hex	RO
40621	026C hex	low	UINT8	Output diagnostics index 13	00 hex	RO
		high	UINT8	Output diagnostics code 13	00 hex	RO
40622	026D hex	low	UINT8	Output diagnostics index 14	00 hex	RO
		high	UINT8	Output diagnostics code 14	00 hex	RO
40623	026E hex	low	UINT8	Output diagnostics index 15	00 hex	RO
		high	UINT8	Output diagnostics code 15	00 hex	RO
40624	026F hex	low	UINT8	Output diagnostics index 16	00 hex	RO
		high	UINT8	Output diagnostics code 16	00 hex	RO
40625	0270 hex	low	UINT8	Project CRC, low byte	00 hex	RO
		high	UINT8	Project CRC, high byte	00 hex	RO

XPSMCMCO0000EM• Modbus TCP

LED Indicators

The **PWR**, **RUN**, **E IN** and **E EX** LED indicators are present on the module. They are described in the sections Common LEDs for Operation, page 17 and in Common LED Indicators for Troubleshooting, page 17.

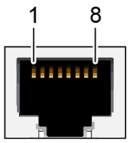
The following table presents the LED indicator **MTP NET**.

State	Indication
OFF	No power or no IP address.
Green	Online, connected.
Flashes green	Online, not connected.
Red	Duplicate IP address.
Flashes red	Connection timeout.

The following table presents the LED indicator **STS**.

State	Indication
OFF	No power.
Green	Running.
Red	One or more non-recoverable errors detected.
Flashes red	One or more recoverable errors detected.

Connector Details

Module-specific characteristics	XPSMCMCO0000EM•
Reference description	MTP (Modbus TCP) non-safety-related communication module
Output and PIN number	RJ45 - female 
Wiring	**Pin/ Signal** 1/ Tx+ 2/ Tx- 3/ Rx+ 4/ not used 5/ not used 6/ Rx- 7/ not used 8/ not used
Baudrate	10/100 Mbit (full/half duplex)

XPSMCMCO0000EM• Modbus TCP - Mapping Information

Device Identification

The Modbus device provides its device identification information using the function code “Read Device Identification”, which is a sub-function of the function “Encapsulated Interface Transport”.

The objects provided on this interface are grouped into three categories:

- Basic (mandatory)
- Regular (optional)
- Extended (manufacturer/device specific, optional)

Object IDs for usage in function 43 (2B hex), sub-function 14 (0E hex): “Read Device Identification”

Item	Value	Object ID	Category	Remarks
Vendor Name	‘Schneider Electric’	00 hex	Basic	-
Product Code	‘XPSMCMCO0000EM’	01 hex	Basic	-
Major Minor Revision	*See remarks*	02 hex	Basic	Reflects the firmware version of the device (for example, 2.1.1')

Item	Value	Object ID	Category	Remarks
Vendor URL	‘www.se.com'	03 hex	Regular	Vendor link
Product Name	‘ModBus(TCP) communication unit'	04 hex	Regular	-
Model Name	‘XPSMCM communication unit'	05 hex	Regular	-
User Application Name	-	06 hex	Regular	-

Cyclic Data Access

For Modbus in general, there is no intrinsic cyclic data communication protocol. Instead, if a periodic update of some registers is required, the Modbus Client (for example, logic controller) periodically polls the required information from the Server (for example, IO device, XPSMCMCO0000••(G) module) using the appropriate function codes (see "Acyclic Data Access" below).

The register mapping and the supported function codes for the XPSMCMCO0000••(G) Modbus TCP communication module are described in the following chapter "Acyclic Data Access".

Acyclic Data Access - Holding Registers (4x)

For XPSMCMCO0000EM•:

Function Code	Description	Supported by devices
01 hex	Read Coils	no
02 hex	Read Discrete Inputs	no
03 hex	Read Holding Registers	yes
04 hex	Read Input Registers	no
05 hex	Write Single Coil	no
06 hex	Write Single Register	yes
0F hex	Write Multiple Coils	no
10 hex	Write Multiple Registers	yes
17 hex	Read/Write Multiple Registers	yes

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40001	0000 hex	low	UINT8	Fieldbus input byte 0	00 hex	RW
		high	UINT8	Fieldbus input byte 1	00 hex	RW
40002	0001 hex	low	UINT8	Fieldbus input byte 2	00 hex	RW
		high	UINT8	Fieldbus input byte 3	00 hex	RW

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40257	0100 hex	low	UINT8	System status	00 hex	RO
		high	UINT8	Reserved	00 hex	RO
40258	0101 hex	low	UINT8	Input status byte 0	00 hex	RO
		high	UINT8	Input status byte 1	00 hex	RO
40259	0102 hex	low	UINT8	Input status byte 2	00 hex	RO
		high	UINT8	Input status byte 3	00 hex	RO

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40260	0103 hex	low	UINT8	Input status byte 4	00 hex	RO
		high	UINT8	Input status byte 5	00 hex	RO
40261	0104 hex	low	UINT8	Input status byte 6	00 hex	RO
		high	UINT8	Input status byte 7	00 hex	RO
40262	0105 hex	low	UINT8	Input status byte 8	00 hex	RO
		high	UINT8	Input status byte 9	00 hex	RO
40263	0106 hex	low	UINT8	Input status byte 10	00 hex	RO
		high	UINT8	Input status byte 11	00 hex	RO
40264	0107 hex	low	UINT8	Input status byte 12	00 hex	RO
		high	UINT8	Input status byte 13	00 hex	RO
40265	0108 hex	low	UINT8	Input status byte 14	00 hex	RO
		high	UINT8	Input status byte 15	00 hex	RO
40266	0109 hex	low	UINT8	Fieldbus input feedback byte 0	00 hex	RO
		high	UINT8	Fieldbus input feedback byte 1	00 hex	RO
40267	010A hex	low	UINT8	Fieldbus input feedback byte 2	00 hex	RO
		high	UINT8	Fieldbus input feedback byte 3	00 hex	RO
40268	010B hex	low	UINT8	Probe status byte 0	00 hex	RO
		high	UINT8	Probe status byte 1	00 hex	RO
40269	010C hex	low	UINT8	Probe status byte 2	00 hex	RO
		high	UINT8	Probe status byte 3	00 hex	RO
40270	010D hex	low	UINT8	Safety-related Output status byte 0	00 hex	RO
		high	UINT8	Safety-related Output status byte 1	00 hex	RO
40271	010E hex	low	UINT8	Safety-related Output status byte 2	00 hex	RO
		high	UINT8	Safety-related Output status byte 3	00 hex	RO
40272	010F hex	low	FLOAT	Analog data float 0	0.0f	RO
		high				
40273	0110 hex	low				
		high				
40274	0111 hex	low	FLOAT	Analog data float 1	0.0f	RO
		high				
	0112 hex	low				
		high				
40276	0113 hex	low	FLOAT	Analog data float 2	0.0f	RO
		high				
40277	0114 hex	low				
		high				
40278	0115 hex	low	FLOAT	Analog data float 3	0.0f	RO
		high				
40279	0116 hex	low				
		high				

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40280	0117 hex	low	FLOAT	Analog data float 4	0.0f	RO
		high				
40281	0118 hex	low				
		high				
40282	0119 hex	low	FLOAT	Analog data float 5	0.0f	RO
		high				
40283	011A hex	low				
		high				
40284	011B hex	low	FLOAT	Analog data float 6	0.0f	RO
		high				
40285	011C hex	low				
		high				
40286	011D hex	low	FLOAT	Analog data float 7	0.0f	RO
		high				
40287	011E hex	low				
		high				
40288	011F hex	low	FLOAT	Analog data float 8	0.0f	RO
		high				
40289	0120 hex	low				
		high				
40290	0121 hex	low	FLOAT	Analog data float 9	0.0f	RO
		high				
40291	0122 hex	low				
		high				
40292	0123 hex	low	FLOAT	Analog data float 10	0.0f	RO
		high				
40293	0124 hex	low				
		high				
40294	0125 hex	low	FLOAT	Analog data float 11	0.0f	RO
		high				
40295	0126 hex	low				
		high				
40296	0127 hex	low	FLOAT	Analog data float 12	0.0f	RO
		high				
40297	0128 hex	low				
		high				
40298	0129 hex	low	FLOAT	Analog data float 13	0.0f	RO
		high				
40299	012A hex	low				
		high				
40300	012B hex	low	FLOAT	Analog data float 14	0.0f	RO
		high				
40301	012C hex	low				
		high				

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40302	012D hex	low	FLOAT	Analog data float 15	0.0f	RO
		high				
40303	012E hex	low				
		high				

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40561	0230 hex	low	UINT8	Error CPU0 – Module	00 hex	RO
		high	UINT8	Error CPU0 – Error code	00 hex	RO
40562	0231 hex	low	UINT32	Error CPU0 – Error address	00000000 hex	RO
		high				
40563	0232 hex	low				
		high				
40564	0233 hex	low	UINT8	Error CPU0 – Firmware version	00 hex	RO
		high	UINT8	Error CPU0 – Extended code 0	00 hex	RO
40565	0234 hex	low	UINT8	Error CPU0 – Extended code 1	00 hex	RO
		high	UINT8	Reserved	00 hex	RO

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40577	0240 hex	low	UINT8	Error CPU1 – Module	00 hex	RO
		high	UINT8	Error CPU1 – Error code	00 hex	RO
40578	0241 hex	low	UINT32	Error CPU1 – Error address	00000000 hex	RO
		high				
40579	0242 hex	low				
		high				
40580	0243 hex	low	UINT8	Error CPU1 – Firmware version	00 hex	RO
		high	UINT8	Error CPU1 – Extended code 0	00 hex	RO
40581	0244 hex	low	UINT8	Error CPU1 – Extended code 1	00 hex	RO
		high	UINT8	Reserved	00 hex	RO

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40593	0250 hex	low	UINT8	Input diagnostics index 1	00 hex	RO
		high	UINT8	Input diagnostics code 1	00 hex	RO
40594	0251 hex	low	UINT8	Input diagnostics index 2	00 hex	RO
		high	UINT8	Input diagnostics code 2	00 hex	RO
40595	0252 hex	low	UINT8	Input diagnostics index 3	00 hex	RO
		high	UINT8	Input diagnostics code 3	00 hex	RO
40596	0253 hex	low	UINT8	Input diagnostics index 4	00 hex	RO
		high	UINT8	Input diagnostics code 4	00 hex	RO
40597	0254 hex	low	UINT8	Input diagnostics index 5	00 hex	RO
		high	UINT8	Input diagnostics code 5	00 hex	RO
40598	0255 hex	low	UINT8	Input diagnostics index 6	00 hex	RO
		high	UINT8	Input diagnostics code 6	00 hex	RO

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40599	0256 hex	low	UINT8	Input diagnostics index 7	00 hex	RO
		high	UINT8	Input diagnostics code 7	00 hex	RO
40600	0257 hex	low	UINT8	Input diagnostics index 8	00 hex	RO
		high	UINT8	Input diagnostics code 8	00 hex	RO
40601	0258 hex	low	UINT8	Input diagnostics index 9	00 hex	RO
		high	UINT8	Input diagnostics code 9	00 hex	RO
40602	0259 hex	low	UINT8	Input diagnostics index 10	00 hex	RO
		high	UINT8	Input diagnostics code 10	00 hex	RO
40603	025A hex	low	UINT8	Input diagnostics index 11	00 hex	RO
		high	UINT8	Input diagnostics code 11	00 hex	RO
40604	025B hex	low	UINT8	Input diagnostics index 12	00 hex	RO
		high	UINT8	Input diagnostics code 12	00 hex	RO
40605	025C hex	low	UINT8	Input diagnostics index 13	00 hex	RO
		high	UINT8	Input diagnostics code 13	00 hex	RO
40606	025D hex	low	UINT8	Input diagnostics index 14	00 hex	RO
		high	UINT8	Input diagnostics code 14	00 hex	RO
40607	025E hex	low	UINT8	Input diagnostics index 15	00 hex	RO
		high	UINT8	Input diagnostics code 15	00 hex	RO
40608	025F hex	low	UINT8	Input diagnostics index 16	00 hex	RO
		high	UINT8	Input diagnostics code 16	00 hex	RO
40609	0260 hex	low	UINT8	Output diagnostics index 1	00 hex	RO
		high	UINT8	Output diagnostics code 1	00 hex	RO
40610	0261 hex	low	UINT8	Output diagnostics index 2	00 hex	RO
		high	UINT8	Output diagnostics code 2	00 hex	RO
40611	0262 hex	low	UINT8	Output diagnostics index 3	00 hex	RO
		high	UINT8	Output diagnostics code 3	00 hex	RO
40612	0263 hex	low	UINT8	Output diagnostics index 4	00 hex	RO
		high	UINT8	Output diagnostics code 4	00 hex	RO
40613	0264 hex	low	UINT8	Output diagnostics index 5	00 hex	RO
		high	UINT8	Output diagnostics code 5	00 hex	RO
40614	0265 hex	low	UINT8	Output diagnostics index 6	00 hex	RO
		high	UINT8	Output diagnostics code 6	00 hex	RO
40615	0266 hex	low	UINT8	Output diagnostics index 7	00 hex	RO
		high	UINT8	Output diagnostics code 7	00 hex	RO
40616	0267 hex	low	UINT8	Output diagnostics index 8	00 hex	RO
		high	UINT8	Output diagnostics code 8	00 hex	RO
40617	0268 hex	low	UINT8	Output diagnostics index 9	00 hex	RO
		high	UINT8	Output diagnostics code 9	00 hex	RO
40618	0269 hex	low	UINT8	Output diagnostics index 10	00 hex	RO
		high	UINT8	Output diagnostics code 10	00 hex	RO
40619	026A hex	low	UINT8	Output diagnostics index 11	00 hex	RO
		high	UINT8	Output diagnostics code 11	00 hex	RO

Register number	Register offset	Byte	Size	Usage/Name	Default value	Access
40620	026B hex	low	UINT8	Output diagnostics index 12	00 hex	RO
		high	UINT8	Output diagnostics code 12	00 hex	RO
40621	026C hex	low	UINT8	Output diagnostics index 13	00 hex	RO
		high	UINT8	Output diagnostics code 13	00 hex	RO
40622	026D hex	low	UINT8	Output diagnostics index 14	00 hex	RO
		high	UINT8	Output diagnostics code 14	00 hex	RO
40623	026E hex	low	UINT8	Output diagnostics index 15	00 hex	RO
		high	UINT8	Output diagnostics code 15	00 hex	RO
40624	026F hex	low	UINT8	Output diagnostics index 16	00 hex	RO
		high	UINT8	Output diagnostics code 16	00 hex	RO
40625	0270 hex	low	UINT8	Project CRC, low byte	00 hex	RO
		high	UINT8	Project CRC, high byte	00 hex	RO

The holding registers can be accessed with function codes according to the table below.

Function code	Function name	Restrictions
03 (03 hex)	Read holding registers	-
06 (06 hex)	Write single register	Only registers with read/write access
16 (10 hex)	Write multiple registers	Only registers with read/write access
23 (17 hex)	Read/Write multiple registers	Only registers with read/write access can be written

XPSMCMCO0000PB• Profibus

LED Indicators

The **PWR**, **RUN**, **E IN** and **E EX** LED indicators are present on the module. They are described in the sections Common LEDs for Operation, page 17 and in Common LED Indicators for Troubleshooting, page 17.

The following table presents the LED indicator **PDP MODE**:

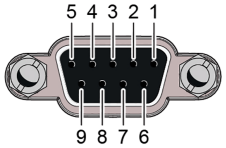
State	Indication
OFF	No power.
Steady green	Online, connected.
Green flashing	Online, clear.
Periodic single red flash	Parameterization error detected.
Periodic double red flash	Profibus DP configuration error detected (configuration data in master or slave incorrect).

The following table presents the LED indicator **STS**:

State	Indication
OFF	Module not initialized.
Green flashing	Diagnostics exchange active with master.
Steady green	Initialized.

State	Indication
Red flashing (1 Hz)	One or more recoverable errors detected.
Steady red	Non-recoverable error detected.

Connector Details

Module-specific characteristics	XPSMCMCO0000PB•
Reference description	PDP (Profibus DP V1) non-safety-related communication module.
Output and PIN number	DB9 – female 
Wiring	**Pin/ Signal** 1/ not used 2/ not used 3/ B Line / + RxD/TxD, RS485 level 4/ RTS / Request to send 5/ GND Bus/ 0 Vdc (isolated) 6/ 5 V / +5 V Bus Output / +5 V termination power (isolated, short-circuit protected) 7/ not used 8/ A Line / - RxD/TxD, RS485 level 9/ not used Housing/ cable shield / Internally connected to the protective earth using cable shield filters according to the PROFIBUS standard.
Baudrate	Automatic baud rate detection.

XPSMCMCO0000PB• Profibus - Mapping Information

Device Identification

Item	Value	Remarks
Vendor Name	'Schneider Electric'	-
Product Name	'XPSMCMCO0000PB'	-
Ident number	100F hex	Unique identification of the XPSMCM PROFIBUS device as defined by Profibus user organization (PNO)
Software release	*See remarks*	Reflects the firmware version of the device (for example, 'Version 2.1.1')

Cyclic Data Access

Two types of modules have been defined that can be used on the XPSMCM fieldbus module for PROFIBUS DP XPSMCMCO0000PB•.

Which one you use depends on your choice of Analog values.

The module with ID ‘1’ contains the set of cyclic data including the analog data. Module with ID ‘2’, on the other hand, contains the set of cyclic data except the analog data, thereby reducing the size of the module.

Module "In 30 Bytes 16 float, Out 4 Bytes" (ID = 1, Firmware V2.1.1)

Module ID	**1**
Data size	94 bytes In(1) / 4 bytes Out(1)
Slot(s)	1-22
Config String	91,9F,93,93,93,93,93,93,93,93,93,93,93,93,93,93,93,93,93,93,A3 hex
(1)As seen from the perspective of the fieldbus master: Out: The data is received by the communication module from the fieldbus system and transmitted to the Modular Safety Controller In: The Modular Safety Controller provides the data and the communication module makes it available to the fieldbus system.	

Slot	**Size**	**Dir.(1)**	**Type-code**	**Byte offset**		**Size**	**Usage/Name**	**Default value**
				Slot	**Global**			
1	2 bytes	In	91 hex	0	0	UINT8	System status	00 hex
				1	1	UINT8	Reserved	00 hex
2	16 bytes	In	9F hex	0	2	UINT8	Input status byte 0	00 hex
				1	3	UINT8	Input status byte 1	00 hex
				2	4	UINT8	Input status byte 2	00 hex
				3	5	UINT8	Input status byte 3	00 hex
				4	6	UINT8	Input status byte 4	00 hex
				5	7	UINT8	Input status byte 5	00 hex
				6	8	UINT8	Input status byte 6	00 hex
				7	9	UINT8	Input status byte 7	00 hex
				8	10	UINT8	Input status byte 8	00 hex
				9	11	UINT8	Input status byte 9	00 hex
				10	12	UINT8	Input status byte 10	00 hex
				11	13	UINT8	Input status byte 11	00 hex
				12	14	UINT8	Input status byte 12	00 hex
				13	15	UINT8	Input status byte 13	00 hex
				14	16	UINT8	Input status byte 14	00 hex
				15	17	UINT8	Input status byte 15	00 hex
3	4 bytes	In	93 hex	0	18	UINT8	Fieldbus Input byte 0	00 hex
				1	19	UINT8	Fieldbus Input byte 1	00 hex
				2	20	UINT8	Fieldbus Input byte 2	00 hex
				3	21	UINT8	Fieldbus Input byte 3	00 hex
4	4 bytes	In	93 hex	0	22	UINT8	Probe status byte 0	00 hex
				1	23	UINT8	Probe status byte 1	00 hex
				2	24	UINT8	Probe status byte 2	00 hex
				3	25	UINT8	Probe status byte 3	00 hex

Slot	Size	Dir.(1)	Type-code	Byte offset		Size	Usage/Name	Default value
				Slot	Global			
5	4 bytes	In	93 hex	0	26	UINT8	Safety-related Output status byte 0	00 hex
				1	27	UINT8	Safety-related Output status byte 1	00 hex
				2	28	UINT8	Safety-related Output status byte 2	00 hex
				3	29	UINT8	Safety-related Output status byte 3	00 hex
6	4 bytes	In	93 hex	0-3	30-33	FLOAT	Analog data float 0	0.0f
7	4 bytes	In	93 hex	0-3	34-37	FLOAT	Analog data float 1	0.0f
8	4 bytes	In	93 hex	0-3	38-41	FLOAT	Analog data float 2	0.0f
9	4 bytes	In	93 hex	0-3	42-45	FLOAT	Analog data float 3	0.0f
10	4 bytes	In	93 hex	0-3	46-49	FLOAT	Analog data float 4	0.0f
11	4 bytes	In	93 hex	0-3	50-53	FLOAT	Analog data float 5	0.0f
12	4 bytes	In	93 hex	0-3	54-57	FLOAT	Analog data float 6	0.0f
13	4 bytes	In	93 hex	0-3	58-61	FLOAT	Analog data float 7	0.0f
14	4 bytes	In	93 hex	0-3	62-65	FLOAT	Analog data float 8	0.0f
15	4 bytes	In	93 hex	0-3	66-69	FLOAT	Analog data float 9	0.0f
16	4 bytes	In	93 hex	0-3	70-73	FLOAT	Analog data float 10	0.0f
17	4 bytes	In	93 hex	0-3	74-77	FLOAT	Analog data float 11	0.0f
18	4 bytes	In	93 hex	0-3	78-81	FLOAT	Analog data float 12	0.0f
19	4 bytes	In	93 hex	0-3	82-85	FLOAT	Analog data float 13	0.0f
20	4 bytes	In	93 hex	0-3	86-89	FLOAT	Analog data float 14	0.0f
21	4 bytes	In	93 hex	0-3	90-93	FLOAT	Analog data float 15	0.0f
22	4 bytes	Out	A3 hex	0	0	UINT8	Fieldbus input byte 0	00 hex
				1	1	UINT8	Fieldbus input byte 1	00 hex
				2	2	UINT8	Fieldbus input byte 2	00 hex
				3	3	UINT8	Fieldbus input byte 3	00 hex

(1)As seen from the perspective of the fieldbus master:

Out: The data is received by the communication module from the fieldbus system and transmitted to the Modular Safety Controller

In: The Modular Safety Controller provides the data and the communication module makes it available to the fieldbus system.

Module "In 30 Bytes, Out 4 Bytes" (ID = 2, Firmware V2.1.1)

Module ID	2
Data size	30 bytes In(1) / 4 bytes Out(1)
Slot(s)	1-6
Config String	91,9F,93,93,93 A3 hex

(1)As seen from the perspective of the fieldbus master:

Out: The data is received by the communication module from the fieldbus system and transmitted to the Modular Safety Controller

In: The Modular Safety Controller provides the data and the communication module makes it available to the fieldbus system.

Slot	Size	Dir.(1)	Type-code	Byte offset		Size	Usage/Name	Default value
				Slot	Global			
1	2 bytes	In	91 hex	0	0	UINT8	System status	00 hex
				1	1	UINT8	Reserved	00 hex
2	16 bytes	In	9F hex	0	2	UINT8	Input status byte 0	00 hex
				1	3	UINT8	Input status byte 1	00 hex
				2	4	UINT8	Input status byte 2	00 hex
				3	5	UINT8	Input status byte 3	00 hex
				4	6	UINT8	Input status byte 4	00 hex
				5	7	UINT8	Input status byte 5	00 hex
				6	8	UINT8	Input status byte 6	00 hex
				7	9	UINT8	Input status byte 7	00 hex
				8	10	UINT8	Input status byte 8	00 hex
				9	11	UINT8	Input status byte 9	00 hex
				10	12	UINT8	Input status byte 10	00 hex
				11	13	UINT8	Input status byte 11	00 hex
				12	14	UINT8	Input status byte 12	00 hex
				13	15	UINT8	Input status byte 13	00 hex
				14	16	UINT8	Input status byte 14	00 hex
				15	17	UINT8	Input status byte 15	00 hex
3	4 bytes	In	93 hex	0	18	UINT8	Fieldbus Input byte 0	00 hex
				1	19	UINT8	Fieldbus Input byte 1	00 hex
				2	20	UINT8	Fieldbus Input byte 2	00 hex
				3	21	UINT8	Fieldbus Input byte 3	00 hex
4	4 bytes	In	93 hex	0	22	UINT8	Probe status byte 0	00 hex
				1	23	UINT8	Probe status byte 1	00 hex
				2	24	UINT8	Probe status byte 2	00 hex
				3	25	UINT8	Probe status byte 3	00 hex
5	4 bytes	In	93 hex	0	26	UINT8	Safety-related Output status byte 0	00 hex
				1	27	UINT8	Safety-related Output status byte 1	00 hex
				2	28	UINT8	Safety-related Output status byte 2	00 hex
				3	29	UINT8	Safety-related Output status byte 3	00 hex
6	4 bytes	Out	A3 hex	0	0	UINT8	Fieldbus input byte 0	00 hex
				1	1	UINT8	Fieldbus input byte 1	00 hex
				2	2	UINT8	Fieldbus input byte 2	00 hex
				3	3	UINT8	Fieldbus input byte 3	00 hex

(1)As seen from the perspective of the fieldbus master:

Out: The data is received by the communication module from the fieldbus system and transmitted to the Modular Safety Controller

In: The Modular Safety Controller provides the data and the communication module makes it available to the fieldbus system.

Acyclic Data Access

Name	Slot	Index	Length (byte)	Access type
Fieldbus Inputs	01 hex	01 hex	4	Get/Set
System I/O	00 hex	00 hex	30	Get
Analog data	02 hex	05 hex	64	Get
Error data CPU0	00 hex	02 hex	9	Get
Error data CPU1	00 hex	03 hex	9	Get
Input diagnostics	00 hex	04 hex	32	Get
Safety-Related Output Diagnostics	00 hex	05 hex	32	Get
Project CRC	00 hex	06 hex	2	Get

Fieldbus Inputs

Offset	Type	Content	Default value	Access type
0	UINT8	Fieldbus input byte 0	00 hex	Get/Set
1	UINT8	Fieldbus input byte 1	00 hex	Get/Set
2	UINT8	Fieldbus input byte 2	00 hex	Get/Set
3	UINT8	Fieldbus input byte 3	00 hex	Get/Set

System I/O

Offset	Type	Content	Default value	Access type
0	UINT8	System status	00 hex	Get
1	UINT8	Reserved	00 hex	Get
2	UINT8	Input status byte 0	00 hex	Get
3	UINT8	Input status byte 1	00 hex	Get
4	UINT8	Input status byte 2	00 hex	Get
5	UINT8	Input status byte 3	00 hex	Get
6	UINT8	Input status byte 4	00 hex	Get
7	UINT8	Input status byte 5	00 hex	Get
8	UINT8	Input status byte 6	00 hex	Get
9	UINT8	Input status byte 7	00 hex	Get
10	UINT8	Input status byte 8	00 hex	Get
11	UINT8	Input status byte 9	00 hex	Get
12	UINT8	Input status byte 10	00 hex	Get
13	UINT8	Input status byte 11	00 hex	Get
14	UINT8	Input status byte 12	00 hex	Get
15	UINT8	Input status byte 13	00 hex	Get
16	UINT8	Input status byte 14	00 hex	Get
17	UINT8	Input status byte 15	00 hex	Get
18	UINT8	Fieldbus input byte 0 feedback	00 hex	Get
19	UINT8	Fieldbus input byte 1 feedback	00 hex	Get
20	UINT8	Fieldbus input byte 2 feedback	00 hex	Get

Offset	Type	Content	Default value	Access type
21	UINT8	Fieldbus input byte 3 feedback	00 hex	Get
22	UINT8	Probe status byte 0	00 hex	Get
23	UINT8	Probe status byte 1	00 hex	Get
24	UINT8	Probe status byte 2	00 hex	Get
25	UINT8	Probe status byte 3	00 hex	Get
26	UINT8	Safety-related Output status byte 0	00 hex	Get
27	UINT8	Safety-related Output status byte 1	00 hex	Get
28	UINT8	Safety-related Output status byte 2	00 hex	Get
29	UINT8	Safety-related Output status byte 3	00 hex	Get

Analog Data

Offset	Type	Content	Default v alue	Access type
0-3	FLOAT	Analog data float 0	0.0f	Get
4-7	FLOAT	Analog data float 1	0.0f	Get
8-11	FLOAT	Analog data float 2	0.0f	Get
12-15	FLOAT	Analog data float 3	0.0f	Get
16-19	FLOAT	Analog data float 4	0.0f	Get
20-23	FLOAT	Analog data float 5	0.0f	Get
24-27	FLOAT	Analog data float 6	0.0f	Get
28-31	FLOAT	Analog data float 7	0.0f	Get
32-35	FLOAT	Analog data float 8	0.0f	Get
36-39	FLOAT	Analog data float 9	0.0f	Get
40-43	FLOAT	Analog data float 10	0.0f	Get
44-47	FLOAT	Analog data float 11	0.0f	Get
48-51	FLOAT	Analog data float 12	0.0f	Get
52-55	FLOAT	Analog data float 13	0.0f	Get
56-59	FLOAT	Analog data float 14	0.0f	Get
60-63	FLOAT	Analog data float 15	0.0f	Get

Error Data CPU0 and CPU1

Offset	Type	Content	Default v alue	Access type
0	UINT8	Module ID	00 hex	Get
1	UINT8	Error code	00 hex	Get
2-5	UINT32	Error address	00000000 hex	Get
6	UINT8	Fieldbus input byte 3	00 hex	Get
7	UINT8	CPU firmware version	00 hex	Get
8	UINT8	Extended code 0 (Optional)	00 hex	Get
9	UINT8	Extended code 1 (Optional)	00 hex	Get

Input Diagnostics

Offset	Type	Content	Default value	Access type
0	UINT8	Diagnostic index 0	00 hex	Get
1	UINT8	Diagnostic code 0	00 hex	Get
2	UINT8	Diagnostic index 1	00 hex	Get
3	UINT8	Diagnostic code 1	00 hex	Get
4	UINT8	Diagnostic index 2	00 hex	Get
5	UINT8	Diagnostic code 2	00 hex	Get
6	UINT8	Diagnostic index 3	00 hex	Get
7	UINT8	Diagnostic code 3	00 hex	Get
8	UINT8	Diagnostic index 4	00 hex	Get
9	UINT8	Diagnostic code 4	00 hex	Get
10	UINT8	Diagnostic index 5	00 hex	Get
11	UINT8	Diagnostic code 5	00 hex	Get
12	UINT8	Diagnostic index 6	00 hex	Get
13	UINT8	Diagnostic code 6	00 hex	Get
14	UINT8	Diagnostic index 7	00 hex	Get
15	UINT8	Diagnostic code 7	00 hex	Get
16	UINT8	Diagnostic index 8	00 hex	Get
17	UINT8	Diagnostic code 8	00 hex	Get
18	UINT8	Diagnostic index 9	00 hex	Get
19	UINT8	Diagnostic code 9	00 hex	Get
20	UINT8	Diagnostic index 10	00 hex	Get
21	UINT8	Diagnostic code 10	00 hex	Get
22	UINT8	Diagnostic index 11	00 hex	Get
23	UINT8	Diagnostic code 11	00 hex	Get
24	UINT8	Diagnostic index 12	00 hex	Get
25	UINT8	Diagnostic code 12	00 hex	Get
26	UINT8	Diagnostic index 13	00 hex	Get
27	UINT8	Diagnostic code 13	00 hex	Get
28	UINT8	Diagnostic index 14	00 hex	Get
29	UINT8	Diagnostic code 14	00 hex	Get
30	UINT8	Diagnostic index 15	00 hex	Get
31	UINT8	Diagnostic code 15	00 hex	Get

Safety-related Output Diagnostic

Offset	Type	Content	Default value	Access type
0	UINT8	Diagnostic index 0	00 hex	Get
1	UINT8	Diagnostic code 0	00 hex	Get
2	UINT8	Diagnostic index 1	00 hex	Get
3	UINT8	Diagnostic code 1	00 hex	Get

Offset	Type	Content	Default value	Access type
4	UINT8	Diagnostic index 2	00 hex	Get
5	UINT8	Diagnostic code 2	00 hex	Get
6	UINT8	Diagnostic index 3	00 hex	Get
7	UINT8	Diagnostic code 3	00 hex	Get
8	UINT8	Diagnostic index 4	00 hex	Get
9	UINT8	Diagnostic code 4	00 hex	Get
10	UINT8	Diagnostic index 5	00 hex	Get
11	UINT8	Diagnostic code 5	00 hex	Get
12	UINT8	Diagnostic index 6	00 hex	Get
13	UINT8	Diagnostic code 6	00 hex	Get
14	UINT8	Diagnostic index 7	00 hex	Get
15	UINT8	Diagnostic code 7	00 hex	Get
16	UINT8	Diagnostic index 8	00 hex	Get
17	UINT8	Diagnostic code 8	00 hex	Get
18	UINT8	Diagnostic index 9	00 hex	Get
19	UINT8	Diagnostic code 9	00 hex	Get
20	UINT8	Diagnostic index 10	00 hex	Get
21	UINT8	Diagnostic code 10	00 hex	Get
22	UINT8	Diagnostic index 11	00 hex	Get
23	UINT8	Diagnostic code 11	00 hex	Get
24	UINT8	Diagnostic index 12	00 hex	Get
25	UINT8	Diagnostic code 12	00 hex	Get
26	UINT8	Diagnostic index 13	00 hex	Get
27	UINT8	Diagnostic code 13	00 hex	Get
28	UINT8	Diagnostic index 14	00 hex	Get
29	UINT8	Diagnostic code 14	00 hex	Get
30	UINT8	Diagnostic index 15	00 hex	Get
31	UINT8	Diagnostic code 15	00 hex	Get

Project CRC

Offset	Type	Content	Default value	Access type
0	UINT8	Project CRC, low byte	00 hex	Get
1	UINT8	Project CRC, high byte	00 hex	Get

Checklist After Installation

The following must be verified:

Step	Action
1	Conduct a full functional test of the system (see *Validation* in the *Modular Safety Controller User Guide*.)
2	Verify that all the cables are correctly inserted and the terminal blocks are within correct torque for screw terminals.
3	Verify that all the LED indicators are correctly illuminating for the inputs and outputs used.
4	Verify the positioning and function of all input and output sensors and actuators used with the XPSMCM•.
5	Verify the correct mounting of XPSMCM• to the DIN rail.
6	Verify that all the external indicators (lamps/beacons/sirens) are correctly functioning.

BUS Configurator Software

What's in This Part

BUS Configurator Overview

Overview

The BUS Configurator software is intended for use with the fieldbus modules with the exception of the integrated fieldbus interface in the XPSMCMC10804E(G) controllers.

NOTE: The integrated fieldbus interface in the XPSMCMC10804E(G) controllers can be configured with the SoSafe Configurable Software, refer to the Modular Safety Controller, Library and Programming Guide.

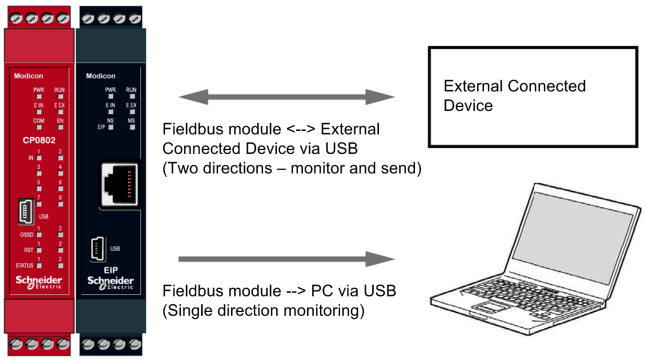
The BUS Configurator is used to set up the parameters of the fieldbus modules and to display the data provided by the Modular Safety Controller system over the fieldbus as well as the input data from the fieldbus.

The BUS Configurator is installed along with the SoSafe Configurable setup but needs to be launched separately, for example, with help of the dark grey desktop icon  .

For connection with the PC, the fieldbus modules are equipped with a USB interface with Mini B USB sockets, with exception of the multi-protocol module XPSMCMCO0000E(G), which comes with a USB-C socket.

Example of Connection

Example of a connection XPSMCMCP0802(G) to XPSMCMCO0000••(G) (fieldbus):

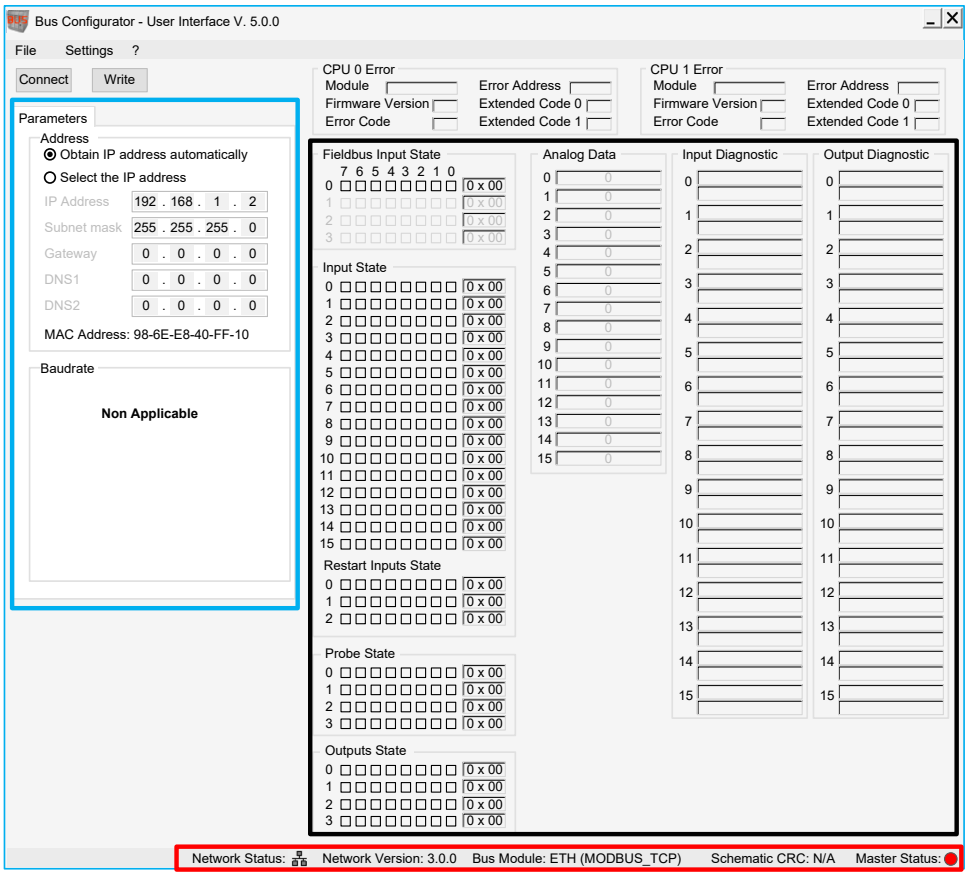


Bus Configurator

The bus module is connected to the configuration PC through the USB C or Mini B-USB interface located on the front panel. Configuration is performed with the BUS Configurator software that is part of the SoSafe Configurable setup.

Presentation of the Graphical User Interface (GUI)

The BUS Configurator user interface looks similar to the following figure.



At the top right there are the boxes **CPU Error 0** and **CPU Error 1**, which display the diagnostic information if the Modular Safety Controller detects an error.

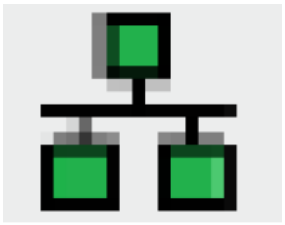
The box highlighted in black contains information about the inputs and outputs, together with diagnostics.

The box highlighted in blue displays the network parameters and settings that are specific to each stack:

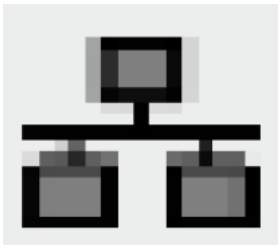
Stacks	Enable DHCP	Fixed network parameters	Station name	Baud rate
EtherNet/IP	YES	YES	YES	YES
Modbus TCP	YES	YES	NO	NO
PROFINET	NO	YES	YES	NO
EtherCAT	NO	NO	YES	NO

At the bottom right (red rectangle), five types of information are available:

- **Network status**
  - Indicates status of network connection to the controller.
  - Modbus TCP stack: Indicates status of network connection if the controller is not connected. When the controller is connected to the module, it indicates status of the network connection to the controller.
  - PROFINET stack :Indicates whether there is or not a network connection if the controller is not connected. When the controller is connected to the module, then it indicates the presence or not of the connection to the controller.
  - Network status icon color changes when network or controller is present:

    Network Status color changes when a network or controller is not present:

  - **Network version:** Indicates the firmware version of the bus module.
  - **BUS module:** Indicates if a filedbus module is connected to the USB port and if so, it indicates the type of connected module (if the **Connect** button was pressed)
  - **Schematic CRC**: Indicates the CRC of the configuration loaded to the Modular Safety Controller.
  - **Master Status**: Indicates the status of the connection with the XPSMCM• controller. Possible statuses:

    grey: Fieldbus module is not connected

    orange: Fieldbus module is receiving/sending the configuration from/to the Bus configurator

    green: Controller is active (RUN)

    red: Controller is not active (for example, while communication with SoSafe Configurable Software)

	GUI section	Description
1	**Parameter**	This section provides access to the two parameters to configure the XPSMCMCO0000••(G) fieldbus: • **Address** • **Baudrate**
2	**Fieldbus Input/Output**	This section provides information on the states of: • **Fieldbus Input State** • **Inputs State** • **Probe State** • **Outputs State**
3	**> > Analog Data**	This section is used to enable or disable the transfer of the analog data from the Modular Safety Controller to the logic controller.

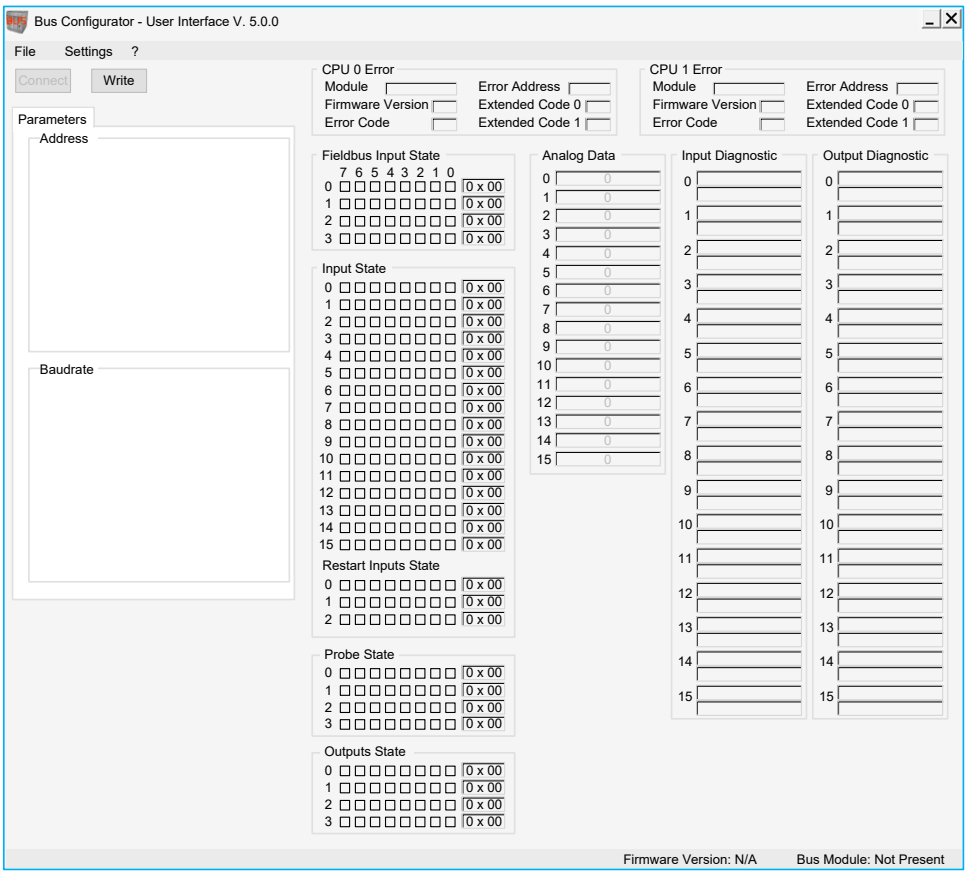
	GUI section	Description
4	**Input Diagnostic** and **Output Diagnostic**	These sections provide diagnostics information on the input and output function blocks.
5	**CPU 0 Error** and **CPU 1 Error**	These sections provide information on detected errors on the processors of the Modular Safety Controller: • **Module in error** • **Error address** • **Error code**

Connection, Configuration and Monitoring/ Diagnostics

Connecting to the Communication Module

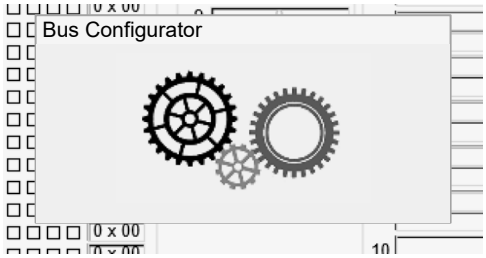
The **Connect** button is available as soon as a powered fieldbus module is connected to the configuration PC through a USB cable.

The figure shows software interface without the fieldbus module.



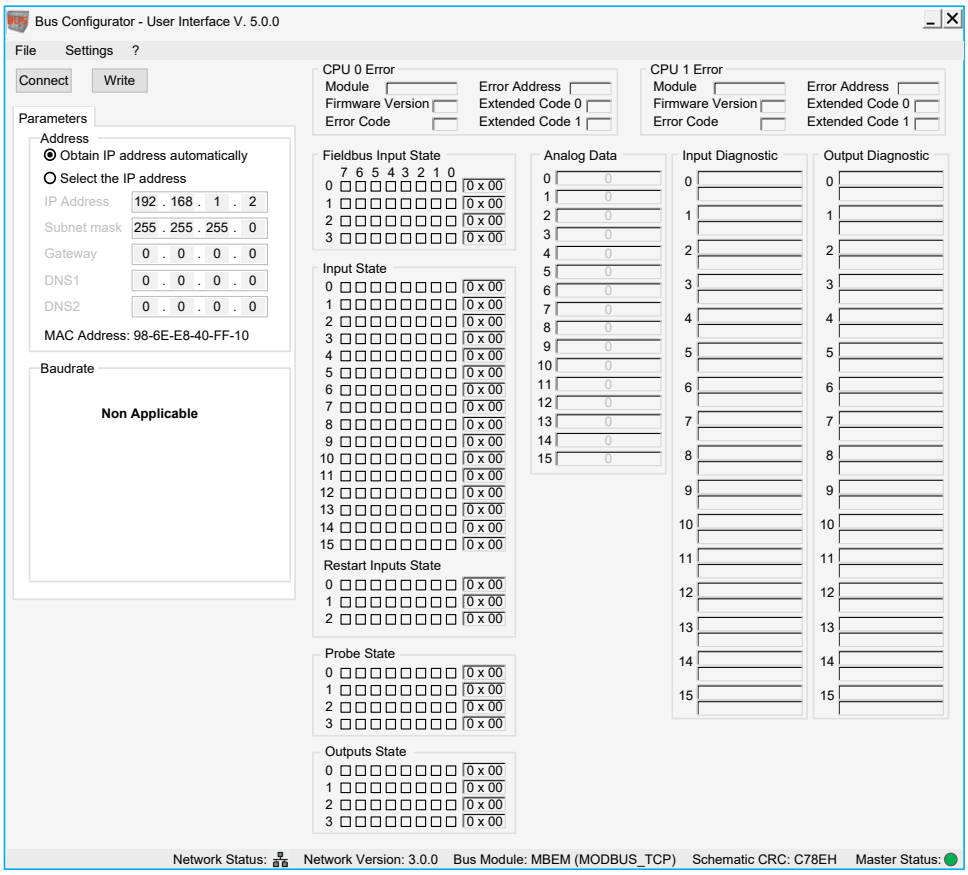
NOTE: When **Connect** button is not available, the **Bus Module** label at the bottom right shows the module as **Not Present.**

When **Connect** button is pressed, a window displaying animated Bus Configurator appears showing that waiting for a successful communication between the module and the BUS Configurator software.



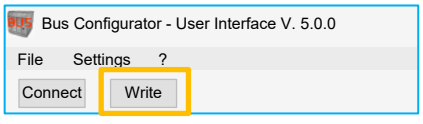
If the communication is successful:

- Information regarding the network configuration, network status, module status and process map status is received (If **Analog data** or **Restart Input Status** have been previously selected).
- The monitor automatically starts enabling the process data cyclical reception from the fieldbus module. The data is populated in the BUS Configurator software interface.



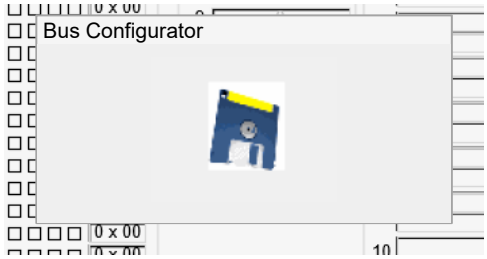
Writing the Configuration on the Communication Module

The **Write** button is used to write the configuration on the module. The configuration connects the network and the processes the map parameters (either fixed or in backwards-compatible mode).

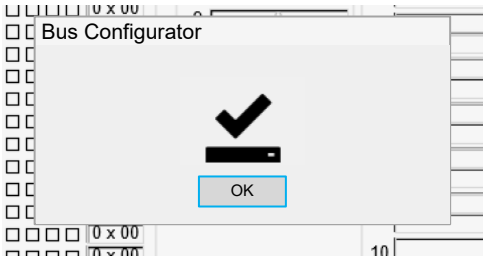


The configurable network parameters depend on the type of stack installed.

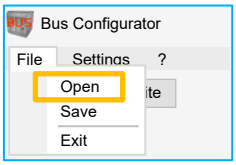
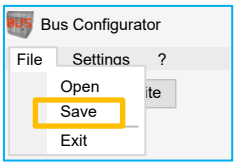
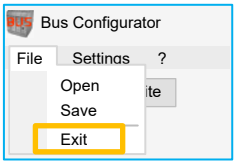
When the button is pressed, if the parameters are correct, a window displaying animated BUS configurator appears indicating that the fieldbus module is being saved.



If data is saved successfully, the following figure appears indicating the confirmation of data being saved.



File Menu

Command	Description
Open	Opens a previously saved configuration from a file. 
Save	Saves the configuration of the fieldbus module as a file. 
Exit	Exits the software and closes. 

Settings Menu

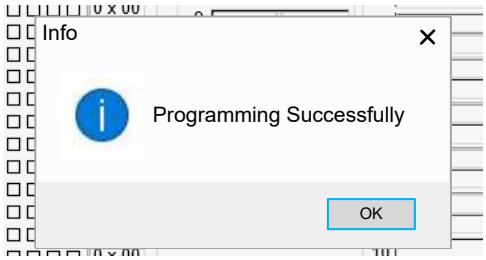
Select Language Command: This command enables you to change the language of the software.

Stack Selection Command: This command enables you to select the stack installed on the fieldbus module.

> **NOTE:** This command is enabled exclusively for the XPSMCMCO0000E(G) modules. The software autonomously recognizes the type of connected module and enables or disables this command according to the detected module.

The progress is displayed when the command is performed.

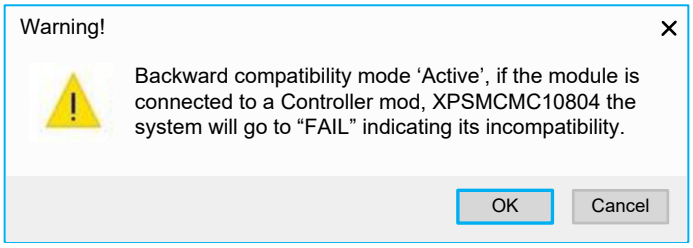
If the command has been performed successfully, the following message appears:



Enable Backward Compatibility Command:

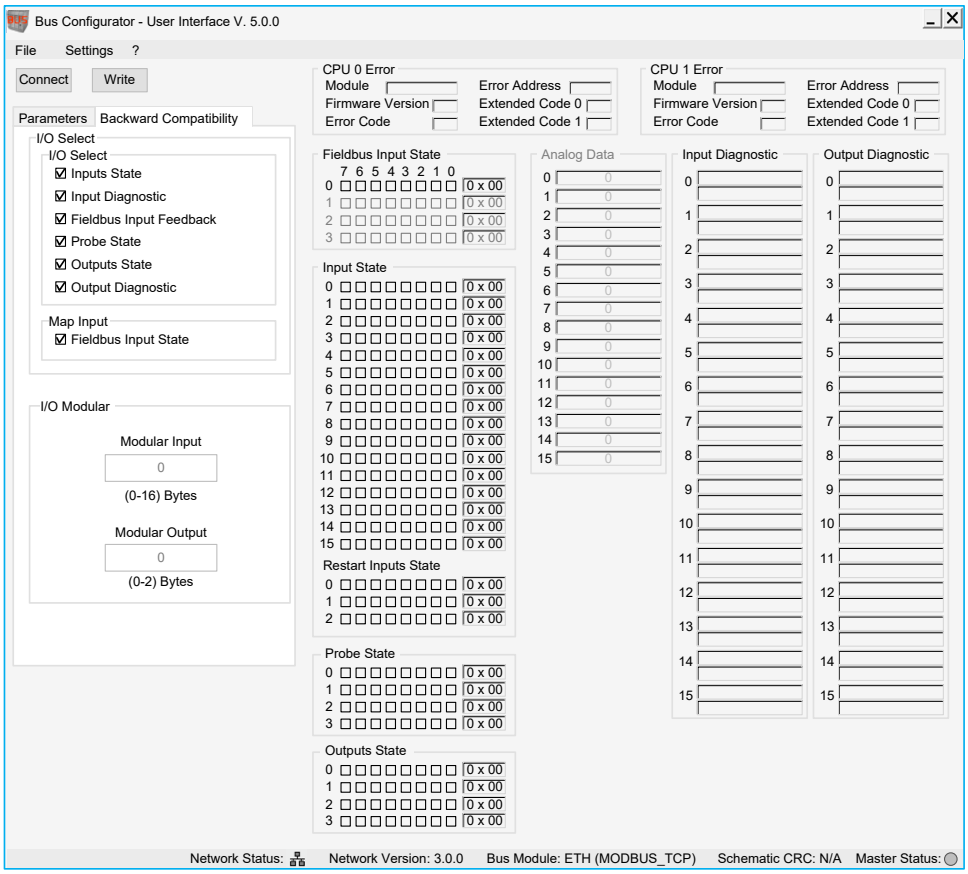
The Backward compatibility mode allows you to customize the fieldbus mapping to use the SoSafe Configurable Software with an XPSMCMCP0802(G) modular safety controller with a firmware version lower than 5.0.0.

When the command is performed, a pop-up window appears displaying the following message:



A **Backward Compatibility** tab appears enabling you to choose the subsection to be exported to the fieldbus by changing the size of each process map and, therefore, the size used in the physical memory of the Modular Safety Controller.

When the controller is connected, data is displayed in the main software window.



When the configuration data are set, press the **Write** button to send them to the module.

The backward compatibility mode allows the fieldbus module to use the variable process map. This allows to replace an existing fieldbus module without modifying the controller program.

NOTE: The backward compatibility mode only works if the fieldbus module is connected to an XPSMCMCP0802(G) controller module.

System status, I/O status and I/O diagnostics are available in the cyclic process map.

The process map contains the sets of the information listed in the previous paragraph, which are repeated for clarity along with their possible size.

Data direction	Data type	Bytes
From controller to module	Fieldbus input status	1
Total from controller to module	_	1
From module to controller	System status (status byte)	1
From module to controller	Input status	1 to 16
From module to controller	Input diagnostics	2
From module to controller	Fieldbus input feedback	1
From module to controller	Probe status (Probes)	2
From module to controller	Output status (OSSD)	1 to 2
From module to controller	Output diagnostics	2
Module to controller total	_	variable

The **Fieldbus inputs state** set allows the controller to cyclically send up to eight ON/OFF statuses that are used as non-safe inputs in the SoSafe Configurable configuration.

In the status byte, the system status BITs are described in the following table.

BIT	BIT value meaning
7	-
6	-
5	-
4	-
3	-
2	-
1	0: no diagnostics 1: diagnostics
0	0: Master not available 1: Master available

The troubleshooting sections report significant data if BIT 1 in the status byte is set to 1.

The section dedicated to the input status regards the status of maximum 128 inputs. The priority order of modules is as follows:

- **XPSMCMCP0802(G), XPSMCMMX0802(G), XPSMCMDI0800(G), XPSMCMDI1600(G), XPSMCMDI1200MT(G), XPSMCMEN0100●, XPSMCMEN0200(G).**

The section dedicated to safety-related output status regards the status of maximum 16 outputs. The priority order of modules is as follows:

- **XPSMCMCP0802(G), XPSMCMMX0802(G), XPSMCMDO0002(G), XPSMCMDO0004(G), XPSMCMRO0004(G), XPSMCMRO0004DA(G), XPSMCMDO00042A(G)**

If two or more modules of the same type are installed, the one with the lowest node number is displayed first.

Each module equipped with inputs has a number of BITs corresponding to the number of physical inputs; XPSMCMCP0802(G), XPSMCMMX0802(G), XPSMCMDI0800(G) modules therefore use 1 byte, and XPSMCMDI1200MT(G) and XPSMCMDI1600(G) modules use 2 bytes. XPSMCMEN0100● and XPSMCMEN0200(G) modules use 1 byte each.

In fieldbuses where the assignment is important (for example, Profibus, PROFINET) the fieldbus input bytes must be mapped before the output bytes.

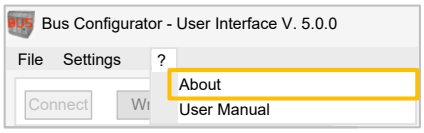
If a fieldbus module is present in the XPSMCM• Modular Safety Controller system, then the SoSafe Configurable Software includes in the report a table showing the I/O index of the inputs, fieldbus inputs, probes, and safety-related outputs of the wiring diagram.

The diagnostics items use 2 bytes indicating the number of the I/O showing the diagnostics and the value of the diagnostics item. If there is more than one diagnostics item, the relevant values alternate every 500 ms.

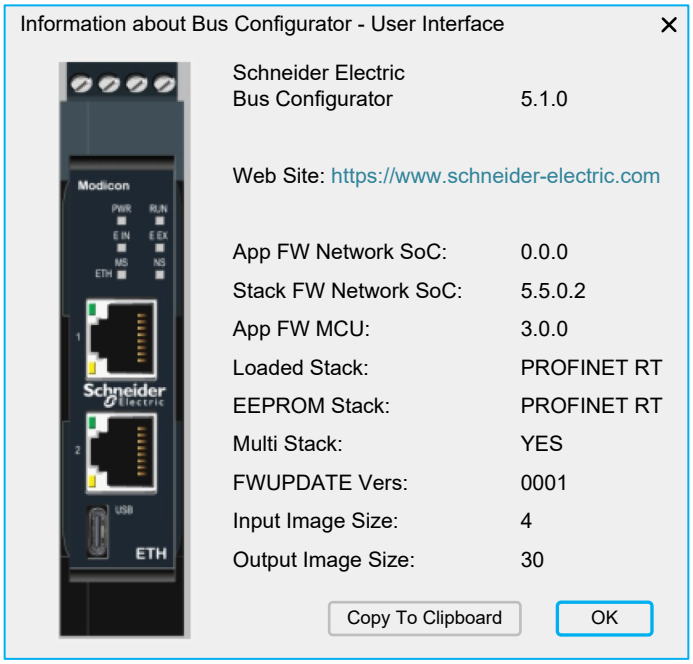
The input and output process map definition is shown from the XPSMCM• perspective.

? Menu

About Command



When this command is performed, a window is displayed that summarizes some information about the connected module.



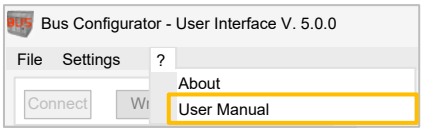
- **App fw Network SoC**: firmware version of the network controller (if available)
- **Stack fw Network SoC**: version of the network stack (if available)
- **App fw MCU**: main microcontroller firmware version (if available)
- **Loaded Stack**: stack loaded on the network controller (if available)
- **EEPROM Stack**: type of stack which the module has been configured with (if available)

- **Multi Stack**: indicates if the module is multi-stack or not (if available)
- **FWUPDATE Vers**: displays the version of the binary image loaded on the network controller (if available)
- **Input Image Size**: displays the size (in bytes) of the data transferred from the controller to the fieldbus module through network/fieldbus (if available)
- **Output Image Size:** displays the size (in bytes) of the data transferred from the fieldbus module to the controller through network/fieldbus (if available)

The **Copy to Clipboard** button enables you to copy the information to the **clipboard** of the PC that the module is connected to.

The information displayed is available exclusively after performing the **Connect** command.

User Manual Command



This command is used to open this manual in PDF format.

Configuration Section

The options available for the address depend on the type of fieldbus detected.

Communication Parameters

The following table indicates the default addresses depending on the fieldbus type:

Fieldbus	Address
XPSMCMCO0000CO• CANopen	127
XPSMCMCO0000E(G) • EtherNet/IP • ModBus TCP • EtherCAT • Profinet RT	DHCP assigned address DHCP assigned address N/A • IP Address 192.168. 1 . 2 • Subnet Mask 255.255.255. 0 • Gateway 0 . 0 . 0 . 0
XPSMCMCO0000EC• EtherCAT	N/A
XPSMCMCO0000EI• EtherNet/IP	DHCP assigned address
XPSMCMCO0000MB• ModBus RTU	1
XPSMCMCO0000EM• ModBus TCP	DHCP assigned address
XPSMCMCO0000PB• Profibus	126

The following table indicates the default communication rates depending on the Fieldbus type:

Fieldbus	Rate
XPSMCMCO0000CO• CANopen	AUTOBAUD
XPSMCMCO0000E(G) • EtherNet/IP • ModBus TCP	AUTO AUTO

Fieldbus	Rate
• EtherCAT • Profinet RT	AUTO AUTO
XPSMCMCO0000EC• EtherCAT	AUTO
XPSMCMCO0000EI• EtherNet/IP	AUTO
XPSMCMCO0000MB• ModBus RTU	AUTO
XPSMCMCO0000EM• ModBus TCP	AUTO
XPSMCMCO0000PB• Profibus	AUTOBAUD

The options available for the address and communication rate depend on the type of Fieldbus detected. To manually configure addresses and rates, select the **Parameters** tab.

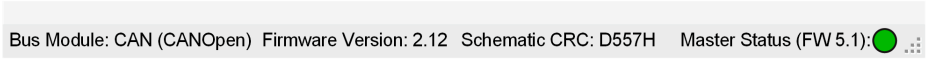
Monitor Section

The monitor section displays the status of the I/O of the system, if the Modular Safety Controller is running.

Status Bar

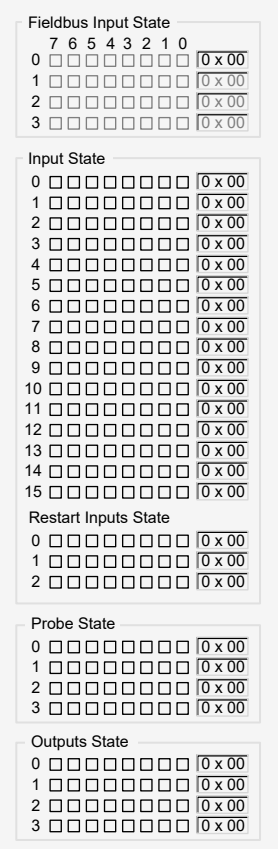
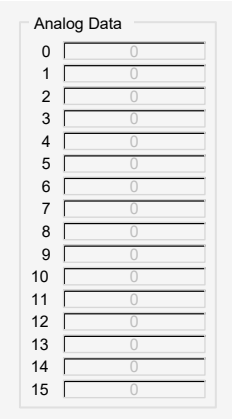
At the bottom of the main BUS Configurator window, the LED shows the status of the XPSMCM• Modular Safety Controller:

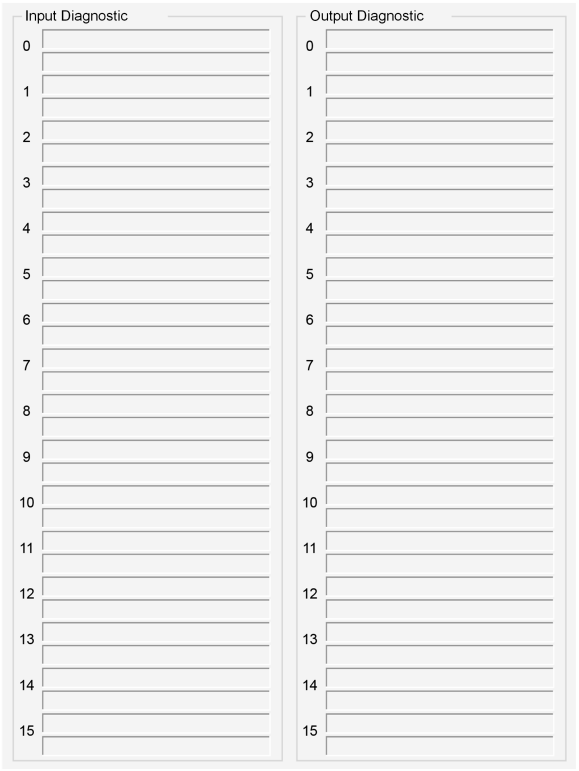
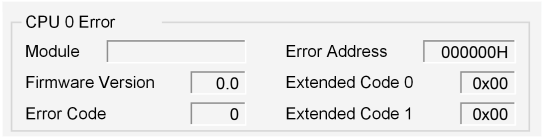
- **Gray** = not connected
- **Green** = XPSMCM•Modular Safety Controller active (RUN)
- **Red** = XPSMCM• Modular Safety Controller not active (for example, Modular Safety Controller is connected to the SoSafe Configurable software)
- **Orange** = configuration data transmitted to and from XPSMCM• Modular Safety Controller



Monitor Data

The following table describes the status of the system I/O shown in the monitor section.

Representation	Description
	**Fieldbus Input State** This section provides the states of the following function blocks: • Fieldbus inputs • Inputs • Restart inputs state • Fieldbus probes • Safety-related outputs
	**Analog Data** This section provides the states of the analog data function blocks.

Representation	Description
	**Input Diagnostic** and **Output Diagnostic** These sections provide diagnostics information on the input function blocks and the output function blocks.
	**CPU 0 Error** and **CPU 1 Error** These sections provide information on detected system errors.

Examples

System Status Bits

The System status byte is the first byte of the process data map and provides information on the system status:

Bit 0	Meaning
0	Modular Safety Controller not online.
1	Modular Safety Controller online.

Bit 1	Meaning
0	No diagnostic detected.
1	Diagnostic detected.

Bit 2	Meaning
0	No error detected.
1	Error detected.

Input Status Bits

The number of bits used to represent the state of an input function block depends on the number of inputs of the function block and the corresponding number of physical inputs of the module.

The state of the input function block reflects the status of its physical inputs. If all the physical inputs are HIGH then the status is set to 1, otherwise it is set to 0.

In addition to the information on the logical state of the input function block, diagnostics information about the input function blocks is provided in the **Input Diagnostic** section, available using acyclic data.

Example 1

The function blocks `E-STOP`, `LIGHT CURTAIN` and `SWITCH` are used with Modular Safety Controller XPSMCMCP0802(G).

The function block `E-STOP` has the lowest index value. It uses two physical inputs of the module. Therefore, the first two bits (b0, b1) are assigned to the function block `E-STOP`.

The function block `LIGHT CURTAIN` has the index value 2. It also uses two physical inputs. Therefore the next two bits (b2, b3) are assigned to the function block `LIGHT CURTAIN`.

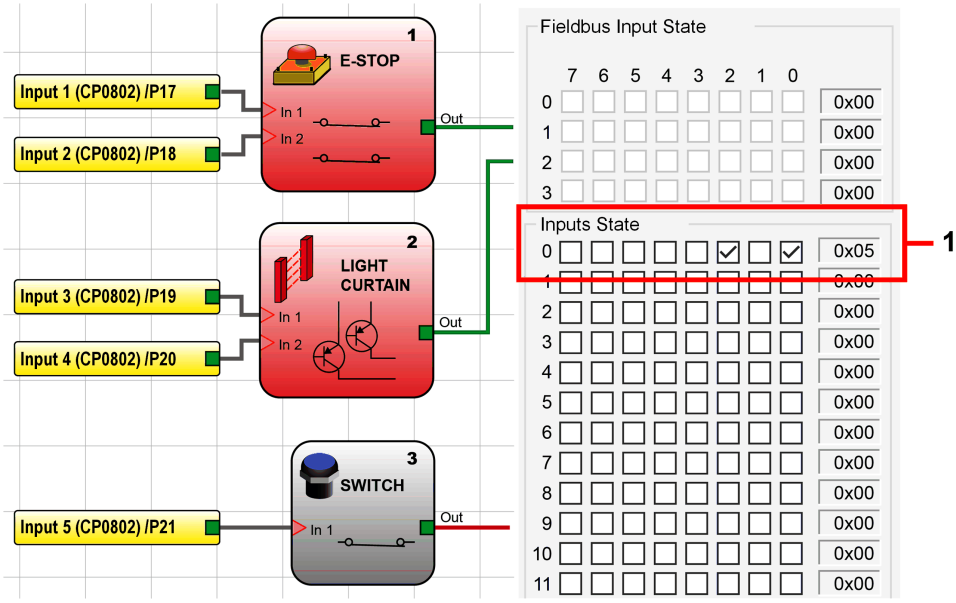
The function block `SWITCH` has the index value 3. It uses one physical input, therefore the next bit (b4) is assigned to the function block `SWITCH`.

In the example, no further function blocks are used with the module.

Each input function block uses the number of bits that corresponds to the number of the physical inputs it uses. Of those bits the first bit represents the state of the input function block (0 = FALSE, 1 = TRUE). The next bit or bits are fixed to zero.

If all the physical inputs of a function block are HIGH, then the state of the input function block is set to 1. If at least one of the physical inputs of a function block is LOW then the state of the input is set to 0.

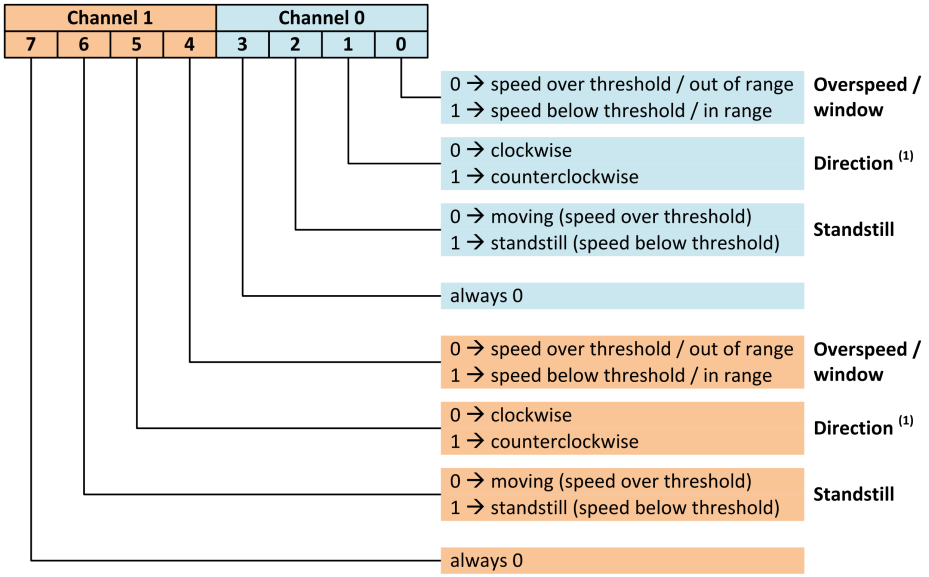
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Not used			State of input function block SWITCH is FALSE. The corresponding physical input is LOW.	State of input function block LIGHT CURTAIN is TRUE. The corresponding physical inputs are HIGH.		State of input function block E STOP is TRUE. The corresponding physical inputs are HIGH.	



Special Case: Input Function Blocks used for Speed Monitoring Modules XPSMCMEN•

If XPSMCMEN• modules for speed monitoring are used, the corresponding bytes in the Input section of the process data contain additional information and not the input state, as opposed to the bytes for other inputs.

Bits 0 to 3 of the byte represent the first channel, bits 4 to 7 of the byte the second channel. Depending on the type of monitoring (zero speed monitoring, speed range monitoring) and the type of hardware used (encoder and/or proximity sensor), the information in the following table is encoded in the bytes.



(1) Direction is only indicated if encoders are used. The value of the bit is of no relevance if only proximity sensors are used.

Safety-related Output State Bits

The number of bits used to represent the status of a safety-related output function block depends on the type of safety-related output selected:

- One dual-channel safety-related output is represented with 1 bit.
- One single channel safety-related outputs is represented with 1 bit.
- Two single channel safety-related outputs combined in a dual channel are represented with 2 bits.

In addition to the information on the logical state of the safety-related output function block, diagnostics information about the safety-related output function blocks is provided in the **Output Diagnostic** section, available using acyclic data.

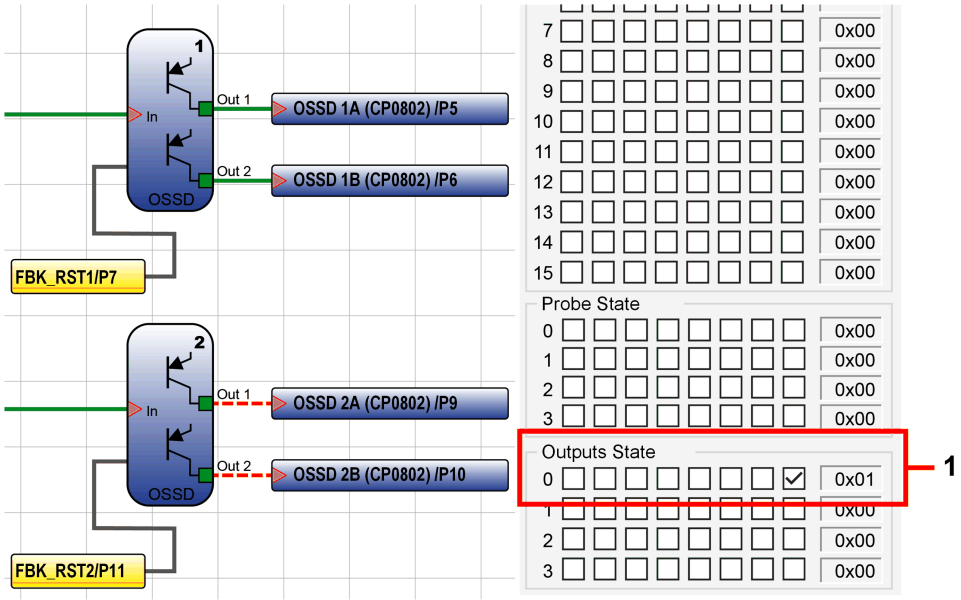
Example 2

Two dual-channel output function blocks `OSSD` are used with controller XPSMCMCP0802(G) (see the following figure):

- Bit 0 is assigned to the function block safety-related output 1 because it has the lowest index value.
- Bit 1 is assigned to the function block safety-related output 2.

The bit assigned to a safety-related output function block represents the state of the output function block (0 = FALSE, 1 = TRUE). If the bit of a safety-related output function block is 1, the physical outputs of the module to which this function block is assigned are HIGH. If the bit of a safety-related output function block is 0, at least one of the physical outputs of the module to which this function block is assigned is LOW.

Graphical representation of byte 0 of data block states of safety-related output (byte 19 of output data map):



Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Not used						State of output function block safety-related output 2 is FALSE. The corresponding physical outputs are LOW.	State of output function block safety-related output 1 is TRUE. The corresponding physical outputs are HIGH.

If diagnostics information is available on an output function block, the first byte of the data block with the diagnostics information (byte 21 of the output data map) contains the index number of the output function block without this offset. For example, the index number 2 of an output function block in SoSafe Configurable corresponds to the number 93 in the output data map.

The diagnostics code for an input function block or an output function block is contained in byte 22 of the output data map. The corresponding error message is displayed in BUS Configurator.

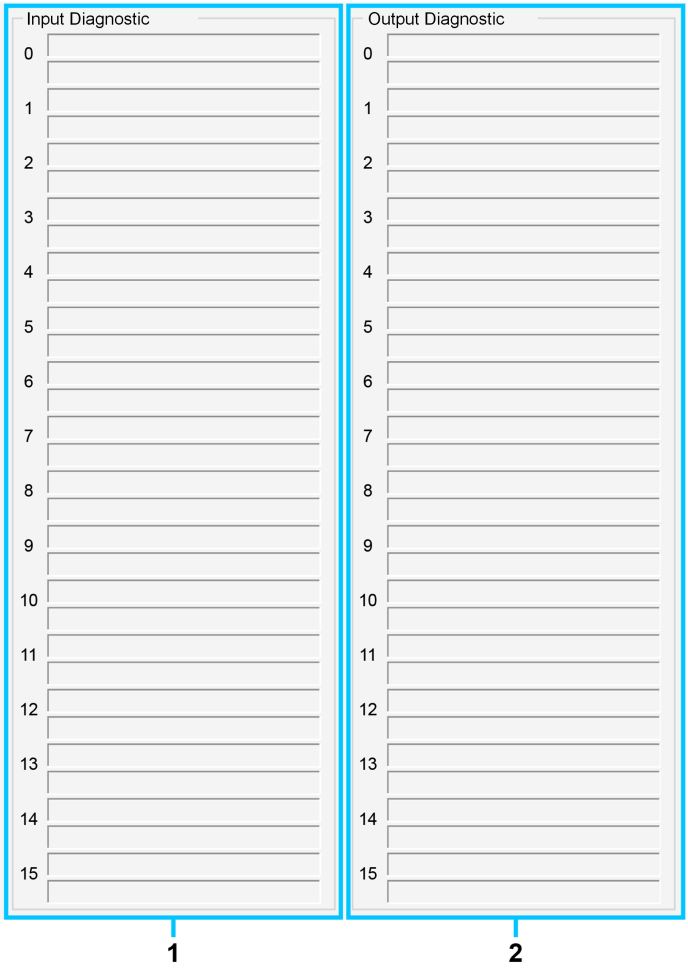
If no error has been detected, no diagnostic information is available and the value of byte 22 is 128.

Diagnostics Information on the Input and Output Function Blocks

The data regarding diagnostics information of the input function blocks and the safety-related output functions blocks are available as acyclic data. Two bytes are assigned to a single block.

The first byte contains the index number that identifies the function block, while the second byte contains the diagnostic information of the function block. The index number of a function block corresponds to the number shown in SoSafe Configurable.

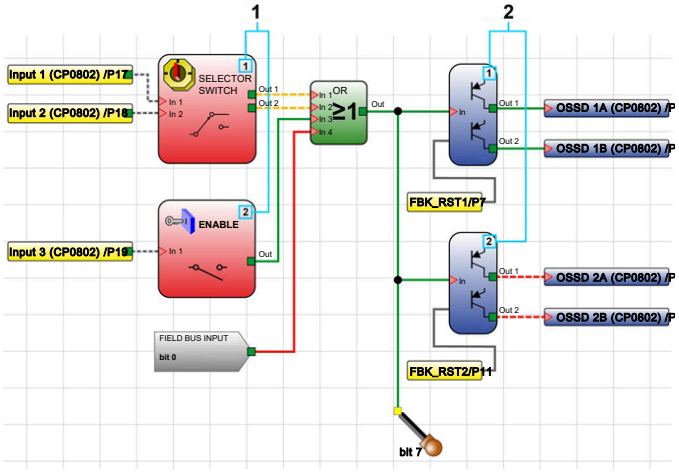
There are two sections in the BUS Configurator to show the diagnostics information. A maximum of 16 diagnostics for both input and safety-related output blocks are available. If more than 16 function blocks report diagnostic, only the first 16 are shown.



1 Diagnostics information on input function blocks

2 Diagnostics information on output function blocks

The index number is also shown on the function blocks in SoSafe Configurable.

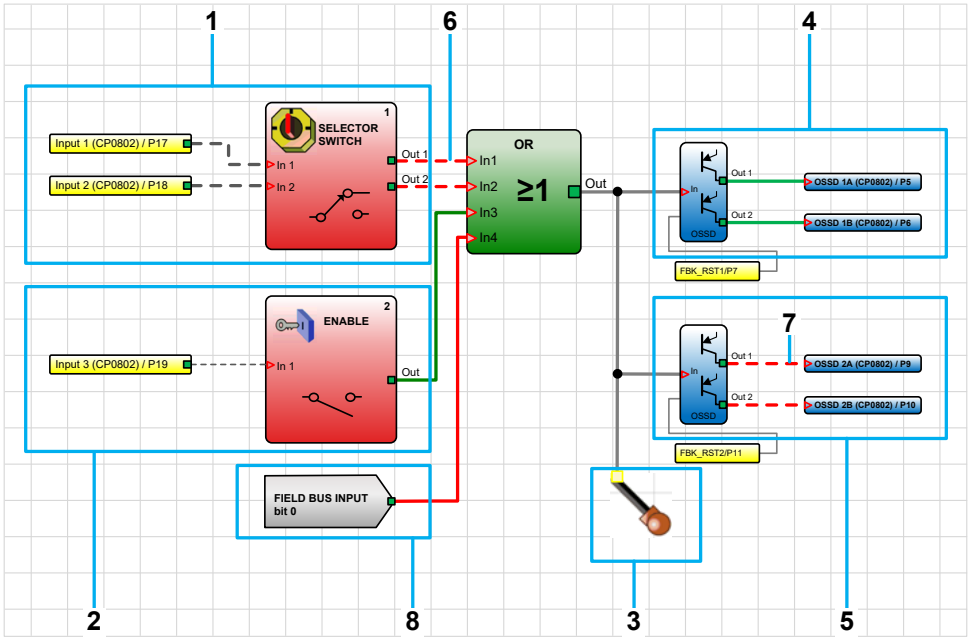


Configuration Example in SoSafe Configurable and Representation in BUS Configurator

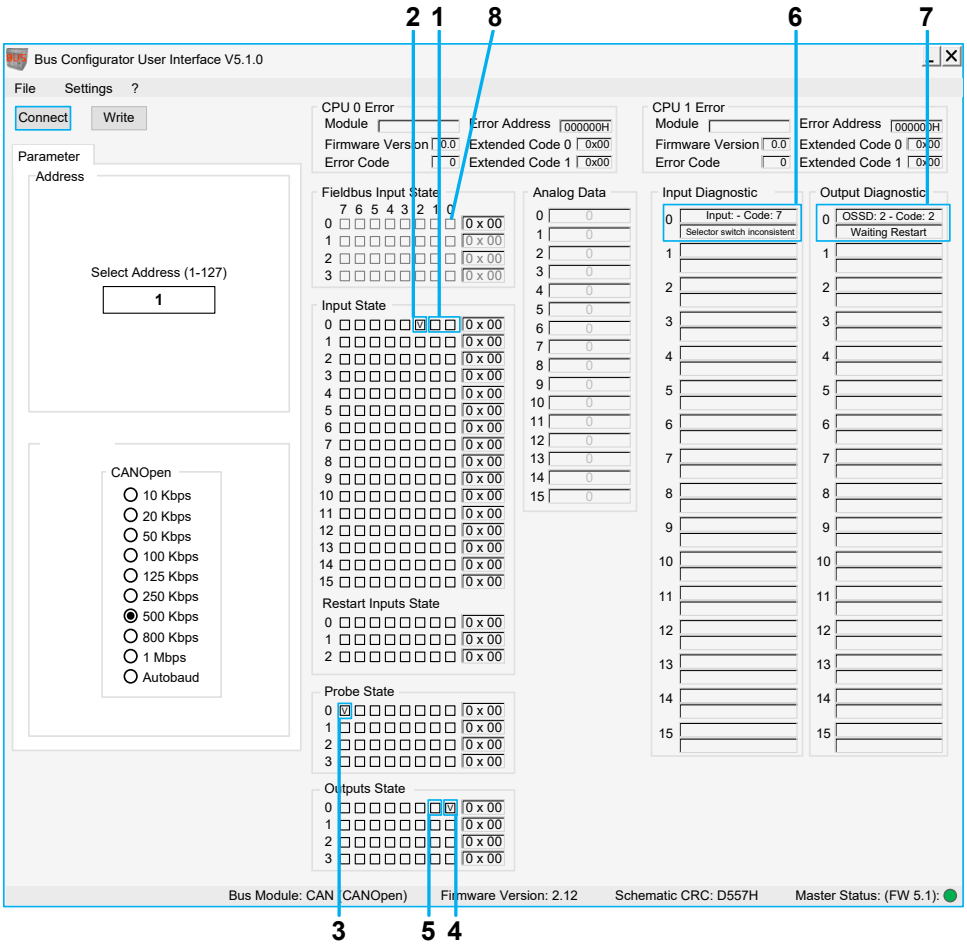
Configuration Example in SoSafe Configurable

The table below, page 140 the following two screenshots provides detailed descriptions of the numbered items in the screenshots and allows you to correlate these items with the same items as represented in SoSafe Configurable, page 139 and in BUS Configurator.

SoSafe Configurable:



BUS Configurator:



Configuration Example in SoSafe Configurable and Representation in BUS Configurator

The following table provides detailed descriptions of the numbered items in the configuration example in SoSafe Configurable, page 139 and the corresponding representation in BUS Configurator.

Number	Description
1	The input function block *SELECTOR SWITCH* with index 1 is connected to physical inputs 1 and 2 of XPSMCM• Modular Safety Controller. Since the input function block has two inputs, bits b0 and b1 of byte 0 of the **Inputs State** section are assigned to this function block. None of the physical inputs are connected to 24 V.The logical state of the input function block *SELECTOR SWITCH* is FALSE. In BUS Configurator, this is indicated by the fact that none of the checkboxes representing the bits b0 and b1 are checked. In SoSafe Configurable, this is indicated by the dashed orange line (incorrect connection). At least one of the corresponding physical inputs of XPSMCM• Modular Safety Controller is LOW.
2	The input function block *ENABLE* with index 2 is connected to physical input 3 of XPSMCM• Modular Safety Controller. Since the input function block has one input, bit b2 of byte 1 of the **Inputs State** section is assigned to the function block. The logical state of the input function block *ENABLE* is TRUE. In BUS Configurator, this is indicated by the fact that the checkbox representing the bit b2 is checked. In SoSafe Configurable, this is indicated by the green line (connected). The corresponding physical input of XPSMCM• Modular Safety Controller is HIGH.
3	The logical state of the probe assigned to bit 7 is TRUE. In BUS Configurator, this is indicated by the fact that the checkbox representing the bit b7 of byte 1 is checked. In SoSafe Configurable, this is indicated by the green line.
4	The output function block Safety-related Output 1 with index 1 is connected to physical outputs 1A and 1B of XPSMCM• Modular Safety Controller. Bit b0 of byte 1 of the

Number	Description
	Outputs State section is assigned to this function block. The logical state of the output function block Safety-related Output is TRUE. In BUS Configurator, this is indicated by the fact that the checkbox representing the bit b0 is checked. In SoSafe Configurable, this is indicated by the green line (connected). The corresponding physical outputs 1A and 1B of XPSMCM• Modular Safety Controller are HIGH.
5	The output function block Safety-related Output with index 2 is connected to physical outputs 2A and 2B of XPSMCM• Modular Safety Controller. Bit b1 of byte 0 of the **Outputs State** section is assigned to this function block. The restart signal is not activated. The logical state of the output function block Safety-related Output is FALSE. In BUS Configurator, this is indicated by the fact that the checkbox representing the bit b1 is not checked. In SoSafe Configurable, this is indicated by the dashed red line (incorrect signal). The corresponding physical outputs 2A and 2B of XPSMCM• Modular Safety Controller are LOW.
6	The Input function block `SELECTOR SWITCH` with index number 1 reports a diagnostic since none of the physical inputs are connected to 24V. The first field in the **Input Diagnostic** section display the index number of the Input function block (1) and the second field shows the diagnostics message. In SoSafe Configurable, diagnostics information is graphically represented on the Monitor screen (see Modular Safety Controller, Library and Programming Guide), not on this screen.
7	The output function block Safety-related Output with index 1 reports a diagnostic since the restart signal is not activated. The first field in the **Output Diagnostic** section displays the index number of the output function block (2) and the second field shows the diagnostics message. In SoSafe Configurable, diagnostics information is graphically represented on the Monitor screen (see Modular Safety Controller, Library and Programming Guide), not on this screen.

XPSMCMCO0000••(G) Fieldbus Modules Compatibility

Firmware Versions

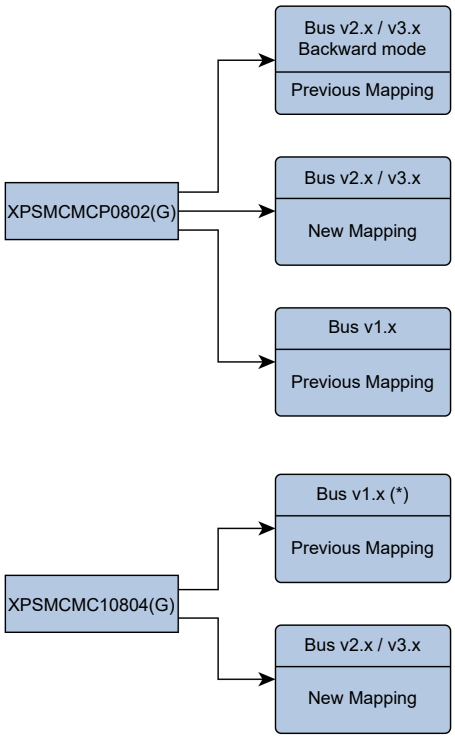
The XPSMCM• Modular Safety Controller is compatible with XPSMCMCO0000• communication modules of firmware versions 1.8/1.95, 2.x and 3.x, however the process mappings are different.

The process data mapping of the XPSMCMCO0000••(G) depends on their firmware version: previous mapping as described in the previous documentation for the firmware version 1.8/1.9.5, or new mapping as described in the present document with firmware version 2.x respectively 3.x.

> **NOTE:** The XPSMCMCO0000••(G) modules with firmware versions 2.x and 3.x can be set up to support the mapping of firmware versions 1.8/1.9.5 if they are set to backward compatibility mode during the configuration. Refer to Enable Backward Compatibility in the section Settings Menu, page 126.

If an XPSMCMC10804(G) configuration uses a limited number of resources that fits in the previous mapping, then the XPSMCMCO0000••(G) of version 1.8/1.9.5 can be used. Otherwise the XPSMCMC10804(G) cannot be set to run as long as no XPSMCMCO0000••(G) 2.x or 3.x is connected.

If a communication module is added to a system that includes the XPSMCMC10804E(G) Modular Safety Controller with an integrated fieldbus interface, the compatibility characteristics remain the same as those of the XPSMCMC10804(G) controller without the integrated interface.



***** This combination is available when the XPSMCMC10804(G) application does not exceed the XPSMCMCP0802(G) application capabilities (for example, does not use more than 8 safety-related function blocks or 16 fieldbus probe function blocks or 8 fieldbus inputs function blocks).

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As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

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