Product data sheet
Characteristics

XPSMF4020
Preventa safety PLC compact - Safe Ethernet, Modbus RTU

Main

Range of product	Preventa Safety automation
Product or component type	Preventa safety PLC compact
Safety module name	XPSMF40
Safety module application	F use with numerous machine safety functions and for the protection of personel
Safety use category	Category 4 maximum conforming to EN 954-1 Performance level e conforming to EN/ISO 13849-1 SIL 3 conforming to EN/IEC 61508
Structure type	10BASE-T/100BASE-TX safe Ethernet

Complementary

Function of module	Monitoring safety actuators discrete output Monitoring safety detection discrete input Monitoring safety dialogue discrete input Monitoring safety dialogue discrete output Monitoring short-circuit and line break line control outputs
[Us] rated supply voltage	24 V DC (- 15...20 %)
Supply	SELV or PELV conforming to EN/IEC 60950
No load current	0.5 A
Protection type	10 A internal fuse
Clock	With, supplied by backup capacitor for 1 week following loss of supply
Response time	Depending on size of application
Memory description	User logic 250 kB for application User logic 250 kB for data
Group of channels	2 groups of 4 line control outputs
Discrete I/O number	24 configurable
Discrete input number	<= 24, not isolated
Voltage state 0 guaranteed	<= 24 V for discrete input
Voltage state1 guaranteed	24...30 V for discrete input
Current state 0 guaranteed	<= 1.5 mA, discrete input
Current state 1 guaranteed	3.5...4.5 mA, discrete input
Discrete input voltage	20 V
Discrete input current	100 mA
Input resistance	<= 7 kOhm
Maximum overvoltage on input	-10...35 V for discrete input
Discrete output number	<= 24, not isolated
Discrete output voltage	24 V DC
Output voltage tolerance	+/- 2 %
Discrete output current	<= 7 A (all channels) 1 A at 60 °C (channels 4, 8, 12, 16, 20 and 24) 2 A at 50 °C (channels 4, 8, 12, 16, 20 and 24) 0.5 A at 60 °C (channels 1 to 3, 5 to 7, 9 to 11,13 to 15, 17 to 19, 21 to 23)
Minimum load	2 mA per discrete output
Leakage current	<= 1 mA, at 2 V at state 0 for discrete output
Overload protection	Shutdown of outputs concerned with cyclic reconnection
Output voltage	20 V line control outputs
Nominal output current	60 mA for line control outputs

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein.
This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications.
It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof.
Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

Communication port protocol	Modbus RTU with 1 RJ45 port(s), RS485, medium: shielded dual twisted pair cable Safe Ethernet with 2 RJ45 port(s), transmission rate: 100 Mbps, 10 Mbps, medium: dual twisted pair cable, category 5D or better
Exchange mode	Half duplex, full duplex, autonegotiation safe Ethernet
Method of access	Slave V0 Modbus serial
Number of addresses	122 Modbus RTU
Operating distance	<= 300 m (between station)discrete input <= 300 m (between station)discrete output
Number of terminal blocks	1 for power supply 2 for line control outputs 6 for discrete input/output circuit 8 for line control outputs
Connections - terminals	Captive screw clamp terminals, clamping capacity: 1 x 0.14...1 x 1.5 mm², 25...15 solid without cable end for discrete input/output circuit Captive screw clamp terminals, clamping capacity: 1 x 0.14...1 x 1.5 mm², 25...15 solid without cable end for line control outputs Captive screw clamp terminals, clamping capacity: 1 x 0.14...1 x 1.5 mm², 28...16 flexible without cable end for discrete input/output circuit Captive screw clamp terminals, clamping capacity: 1 x 0.14...1 x 1.5 mm², 28...16 flexible without cable end for line control outputs Captive screw clamp terminals, clamping capacity: 1 x 0.2...1 x 2.5 mm², 24...12 flexible without cable end for power supply Captive screw clamp terminals, clamping capacity: 1 x 0.2...1 x 2.5 mm², 24...12 solid without cable end for power supply Captive screw clamp terminals, clamping capacity: 1 x 0.25...1 x 0.5 mm², 23...20 flexible with cable end for discrete input/output circuit Captive screw clamp terminals, clamping capacity: 1 x 0.25...1 x 0.5 mm², 23...20 flexible with cable end for line control outputs Captive screw clamp terminals, clamping capacity: 1 x 0.25...1 x 1.5 mm², 23...15 flexible without cable end for discrete input/output circuit Captive screw clamp terminals, clamping capacity: 1 x 0.25...1 x 1.5 mm², 23...15 flexible without cable end for line control outputs Captive screw clamp terminals, clamping capacity: 1 x 0.25...1 x 2.5 mm², 23...14 flexible with cable end for power supply Captive screw clamp terminals, clamping capacity: 1 x 0.25...1 x 2.5 mm², 23...14 flexible without cable end for power supply Captive spring terminals, clamping capacity: 1 x 0.14...1 x 1.5 mm², 26...16 solid without cable end for discrete input/output circuit Captive spring terminals, clamping capacity: 1 x 0.14...1 x 1.5 mm², 26...16 solid without cable end for line control outputs Captive spring terminals, clamping capacity: 1 x 0.14...1 x 1.5 mm², 26...17 flexible without cable end for discrete input/output circuit Captive spring terminals, clamping capacity: 1 x 0.14...1 x 1.5 mm², 26...17 flexible without cable end for line control outputs Captive spring terminals, clamping capacity: 1 x 0.2...1 x 2.5 mm², 24...12 flexible without cable end for power supply Captive spring terminals, clamping capacity: 1 x 0.2...1 x 2.5 mm², 24...12 solid without cable end for power supply Captive spring terminals, clamping capacity: 1 x 0.25...1 x 0.34 mm², 22 flexible without cable end for discrete input/output circuit Captive spring terminals, clamping capacity: 1 x 0.25...1 x 0.34 mm², 22 flexible without cable end for line control outputs Captive spring terminals, clamping capacity: 1 x 0.25...1 x 2.5 mm², 23...12 flexible with cable end for power supply Captive spring terminals, clamping capacity: 1 x 0.25...1 x 2.5 mm², 23...12 flexible without cable end for power supply Captive spring terminals, clamping capacity: 1 x 0.5 mm², AWG 20 flexible with cable end for discrete input/output circuit Captive spring terminals, clamping capacity: 1 x 0.5 mm², AWG 20 flexible with cable end for line control outputs
Tightening torque	0.22...0.25 N.m for discrete input/output circuit captive screw clamp terminals 0.22...0.25 N.m for line control outputs captive screw clamp terminals 0.5 N.m for power supply captive screw clamp terminals
Wire stripping length	10 mm for power supply captive screw clamp terminals 9 mm for discrete input/output circuit captive screw clamp terminals 9 mm for discrete input/output circuit captive spring terminals 9 mm for line control outputs captive screw clamp terminals 9 mm for line control outputs captive spring terminals 9 mm for power supply captive spring terminals
Current consumption	8 A at 24 V DC on power supply
Mounting support	35 mm symmetrical DIN rail
Depth	153 mm
Height	151.5 mm

Width	74 mm
Product weight	1 kg

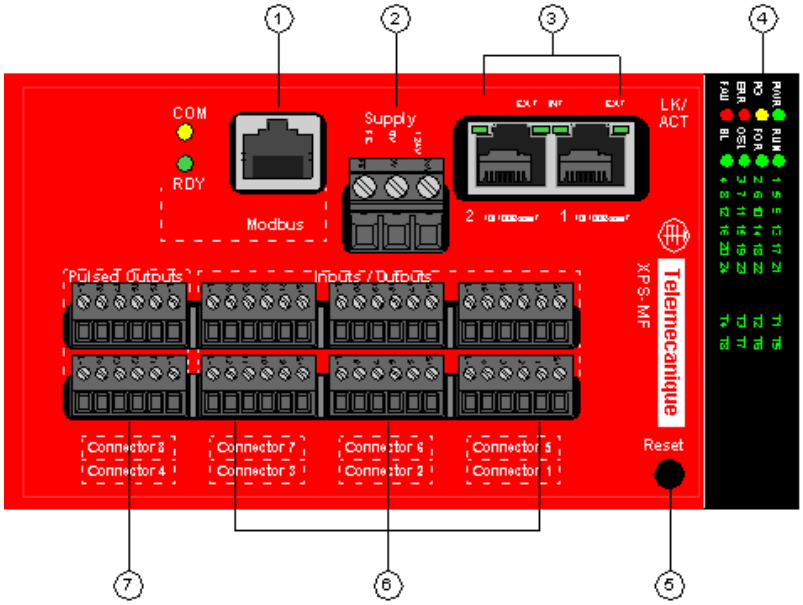
Environment

Standards	DIN VDE 0116 : 1989 EN 12067-2 : 2004 EN 230 : 1990 EN 298 : 2003 EN 50156-1 : 2004 EN 54-2 : 1997 EN 61000-6-2 : 2001 EN 61000-6-4 : 2001 EN/IEC 61131-2 : 2003 IEC 61511 part 1-3 : 2004 NFPA 72 : 2002 NFPA 85 : 2001
Immunity to microbreaks	10 ms
IP degree of protection	IP20 (enclosure)
Ambient air temperature for operation	0...60 °C conforming to EN 61131-2
Ambient air temperature for storage	-40...85 °C conforming to EN 61131-2
Relative humidity	95 % (supply not connected)
Operating altitude	< 2000 m
Pollution degree	2
Class of protection against electric shock	Class II conforming to IEC 61131-2
Electromagnetic compatibility	EN/IEC 61131-2
Vibration resistance	1 gn, 9...150 Hz conforming to EN 61131-2
Shock resistance	15 gn for 11 ms conforming to EN 61131-2
Resistance to electrostatic discharge	4 kV contact conforming to EN/IEC 61000-4-2 8 kV on air conforming to EN/IEC 61000-4-2
Resistance to electromagnetic fields	10 V/m (80 MHz...2 GHz), amplitude modulation 80 % conforming to EN/IEC 61000-4-3

Presentation

Housing Elements

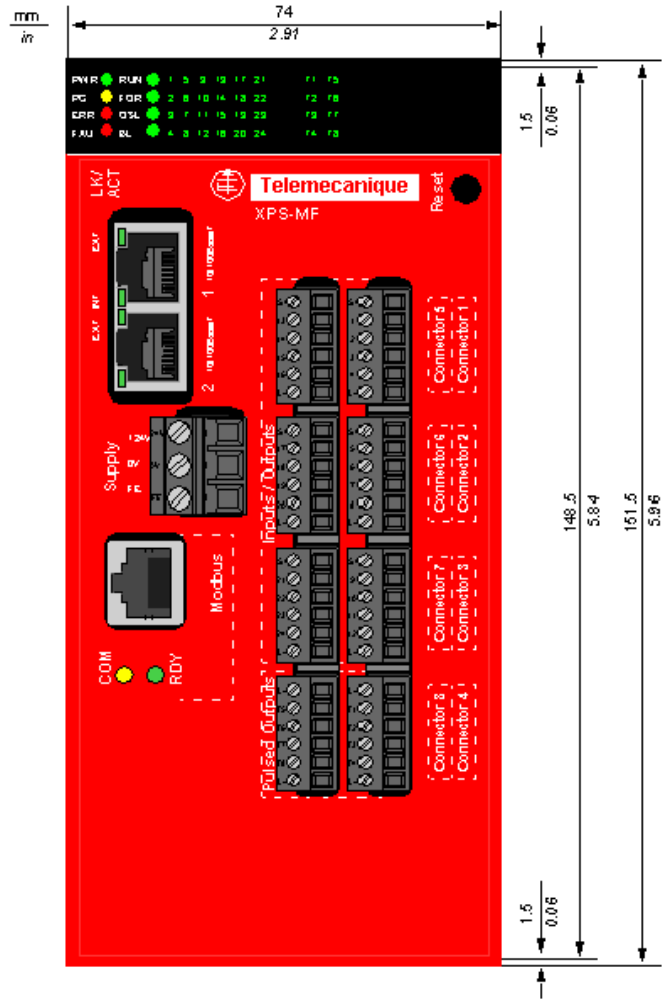
Front View



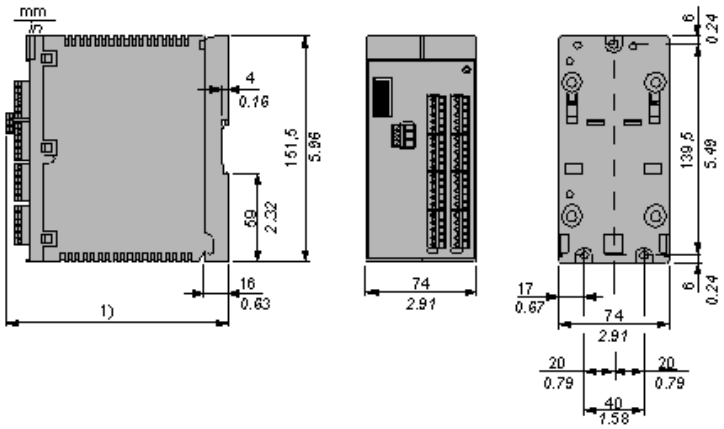
No.	Description
1	Modbus SL RJ-45 connector
2	24 V DC power supply input • 24 V is the + pole (24 VDC) • 0 V is the – pole (GND) • PE is the functional earth
3	Ethernet 10/100BaseT RJ-45 connectors
4	status LEDs
5	reset button
6	digital inputs / outputs
7	pulsed outputs (only use with line control)

Dimensions

Front View



Side, Front and Back Views

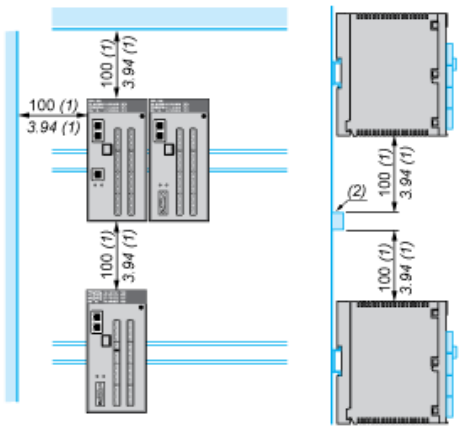


(1) 153 mm (6.02 in) with XPSMCTS•
151.4 mm (5.96 in) with XPSMCTC•

Mounting

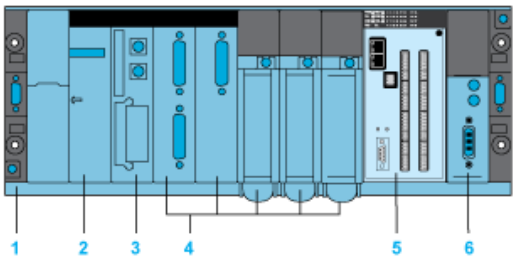
Mounting in Panel or Enclosure

mm
in.



(1) Minimum recommended value.
(2) Prefabricated electrical ducting for passage of cables.

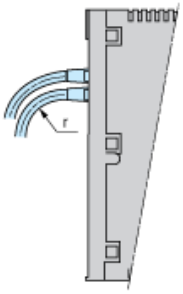
Mounting on Premium Rack



1 Premium rack
2 Premium supply
3 Premium CPU
4 Premium I/O module
5 Safety PLC XPSMF40•• (occupies 2 slots)
6 Premium As-interface master

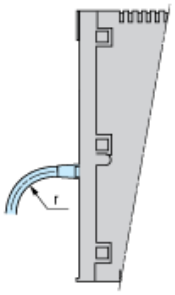
Mounting Precautions Relating to Connectors

Access to Ethernet network



r 22.5 mm/0.89 in. min.

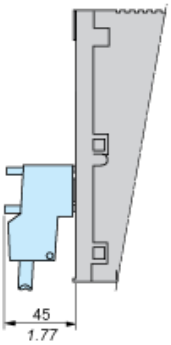
Access to Modbus serial link (RTU)



r 22.5 mm/0.89 in. min.

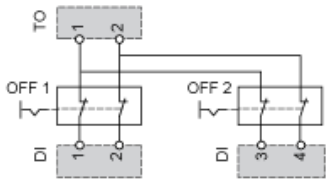
Access to Profibus DP bus

mm
in.



Wiring Diagrams

Emergency Stop Connections (Line Control)



Actuator Connections to the Outputs