MCO Sense Multi Logic Control Unit
Installation and Commissioning Manual

Safety Information

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, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

NOTICE

SHORT CIRCUIT AND ELECTROSTATIC DISCHARGE

- Remove all power from the fire detection panel before you connect or disconnect wires in the fire detection system, and before you install or replace any parts.
- First disconnect the battery, then the main power supply.
- Use electrostatic discharge (ESD) protection when you connect or disconnect wires in the fire detection system, when you install or replace any parts and when you handle circuit boards and set jumpers or dip switches.

Failure to follow these instructions can result in equipment damage.

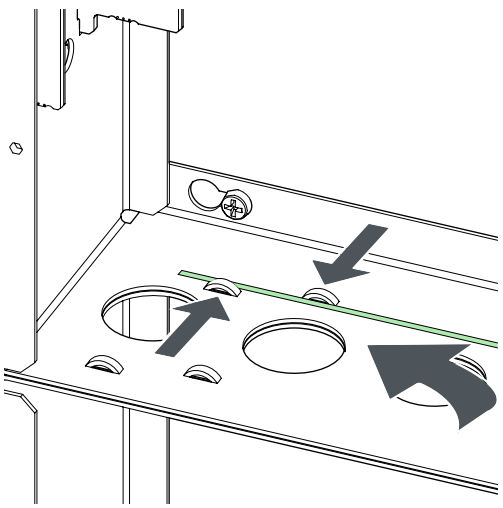
If you install an expansion board, the following notice applies:

NOTICE

MISALIGNMENT

Make sure that the expansion board slides in between the flanges.

Failure to follow these instructions can result in equipment damage.



MCO Sense Multi Logic Control Unit

The MCO Sense Multi Logic Control Unit controls functions in the Esmi Sense fire detection system. The Multi Logic Control Unit communicates with the FDP Fire Detection Panel via the INFO serial communication line.

The logical functions of the Multi Logic Control Unit are configured with the MCO configuration tool. The Multi Logic Control Unit can control addressable outputs, control panel outputs as well as OC100R and OC100L outputs. Multi Logic Control Units are compatible with Esmi Sense FDP Fire Detection Panels and FX3Net systems.

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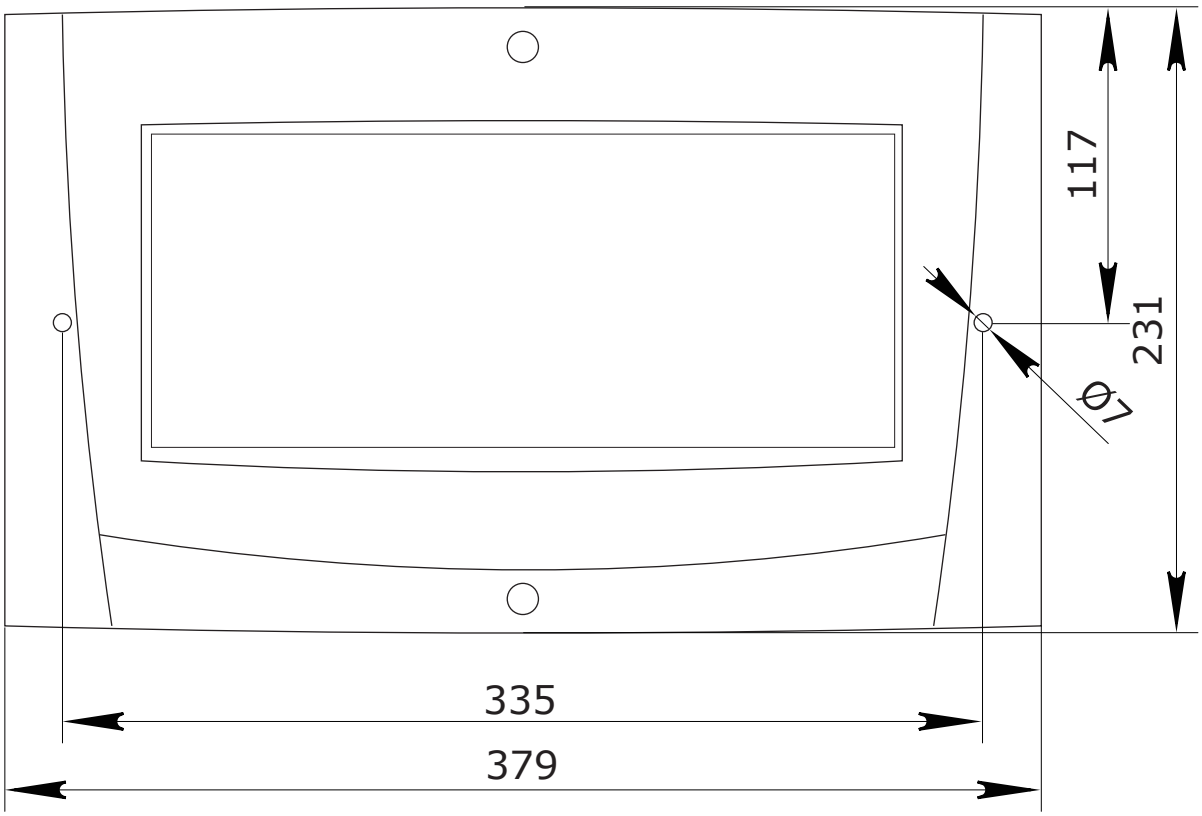
Mechanical Installation



Multi Logic Control Unit mechanical installation

Technical Information

Multi Logic Control Unit Technical Data

Part number	FFS00703854
Dimensions (W × H × D)	379 × 231 × 54 mm
Weight	2.1 kg
Color	White
Operating temperature	+5 °C to +40 °C
Maximum relative humidity	95%
Operating voltage	19–30 VDC
Standby current	50 mA
Serial communication ports	In: RS-485 or RS-232 Out: RS-485

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IP rating	IP30

Part Numbers

Product	Part number	Description
MCO	FFS00703854	Panel version wall mounted
MCOX-OB	FFS00703835	PCB version installed in expansion slot in fire detection panel
OC-100L	FFS00703843	Open collector output for 100 LEDs
OC-100R	FFS00703844	Open collector output for 100 relays
COL-10	FFS00703846	10 LED cable
CCLO	FFS00703845	Connection cable for 10 LED output, 3 m
RB20	FFS00703847	Relay board of 20 relays

Electrical Connections

NOTICE

NON-COMPLIANCE

For compliance with EN 54-2, connect both power supply inputs if the board is located in a stand-alone cabinet.

Failure to follow these instructions can result in negative business impact and/or legal action.

If the expansion board is installed in the fire detection panel, power is supplied to the board via the backbone.

IMPORTANT: Use either the isolated RS-232 output or the isolated RS-485 output.

You cannot use both the isolated RS-232 and the isolated RS-485 outputs at the same time.

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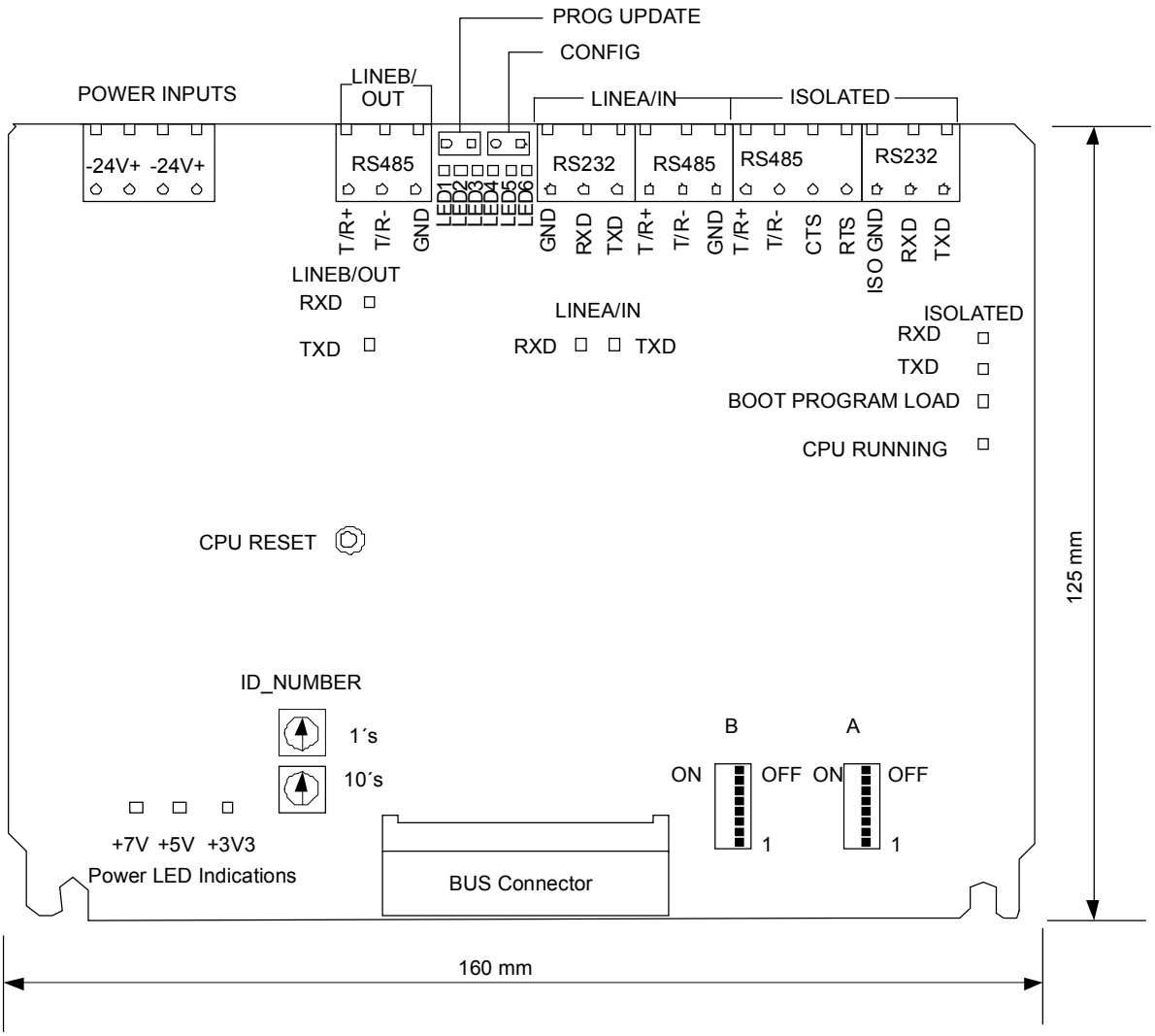

Electrical connections

Settings and LED Indications

A Dip Switch

A1	OFF ON	N/A
A2	OFF ON	N/A
A3	OFF ON	FDP Fire Detection Panel connection ESA/MESA panel connection (message set F or older)

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A4	OFF ON	Not in use
A5	OFF ON	Not in use
A6	OFF ON	Not in use
A7	OFF ON	Not in use
A8	OFF ON	Normal state Acknowledge to erase configuration memory

B Dip Switch

B1	OFF ON	EXT isolated line faults monitored EXT isolated line faults not monitored
B2	OFF ON	EXT isolated line not in use EXT isolated line in use
B3	OFF ON	OUT B port not in use OUT B port in use
B4	OFF ON	EXT isolated port baud rate. See table below.
B5	OFF ON	EXT isolated port baud rate. See table below.
B6	OFF ON	IN A port baud rate 1200 IN A port baud rate 9600
B7	OFF ON	IN B port baud rate 1200 IN B port baud rate 9600
B8	OFF ON	To be OFF! Only for service purposes.

EXT Isolated Port Baud Rate

B4	**B5**	**EXT port baud rate**
OFF	OFF	1200
ON	OFF	2400
OFF	ON	4800

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B4	B5	EXT port baud rate
ON	ON	9600

LED Indications in Normal Use

LED 1	Continuous	Faults in configuration file
	Flashing (1 s)	Configuration state
	Flashing rapidly (100 ms)	Waiting for the acknowledge of the erasure of the configuration memory
LED 2	Continuous	MCO logical error
	Flashing (1 s)	MCO logic ok
	Flashing slowly (4 s)	MCO installed but not configured
LED 3	Continuous	Power supply input 1 or 2 fault
	Flashing	N/A
LED 4	Continuous	IN A line fault
	Flashing	IN A HW fault
LED 5	Continuous	OUT B line fault
	Flashing	OUT B HW fault
LED 6	Continuous	EXT isolated line fault
	Flashing	EXT isolated HW fault

NOTE: In system fault all LED indications are continuously lit.

LED Indications in Start-up Condition (10 seconds)

LED 1	Continuous	Display HW installed
	OFF	Display HW not installed
LED 2	Continuous	Isolated port installed
	OFF	Isolated port not installed
LED 3	Continuous	N/A
	OFF	
LED 4	Continuous	LED board connector installed
	OFF	LED board connector not installed
LED 5	Continuous	N/A
	OFF	
LED 6	Continuous	MCO HW installed
	OFF	MCO HW not installed

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Jumpers for Service Purposes

Jumper	Connected	Removed
Program update	Program update	Normal use
Configuration	Configuration state	Normal use

Configuration

NOTICE

SHORT CIRCUIT

Disconnect the connection to the fire detection panel or the previous INFO device during configuration.

Failure to follow these instructions can result in equipment damage.

The configuration is done with the MCO configuration tool via the incoming RS-232 serial port. During the configuration of the Multi Logic Control Unit the communication line to the FDP Fire Detection Panel (RS-485) must be disconnected.

INFO protocol must be configured/enabled on the used port on the fire detection panel (RS-485 or RS-232).

Configuration Memory Erasure

The configuration memory can be reset to the factory defaults by the following:

To Erase the Configuration Memory

①

Disconnect power from the unit (power inputs PI1 and PI2).

To Erase the Configuration Memory

②

Connect the CONFIG jumper.

③

Turn panel ID number switches to E and F (E = 10's, F=1's).

④

Reconnect the power.

⑤

Follow the LED number 1:

- When the LED is flashing rapidly, set dip switch A8 to ON.
- LED1 OFF: reset in progress.
- LED ON continuously lit: reset complete.

⑥

Disconnect power, set ID switches back to "0" and remove the CONFIG jumper.

⑦

Reconnect the power.

⑧

Unit is starting without configuration data.

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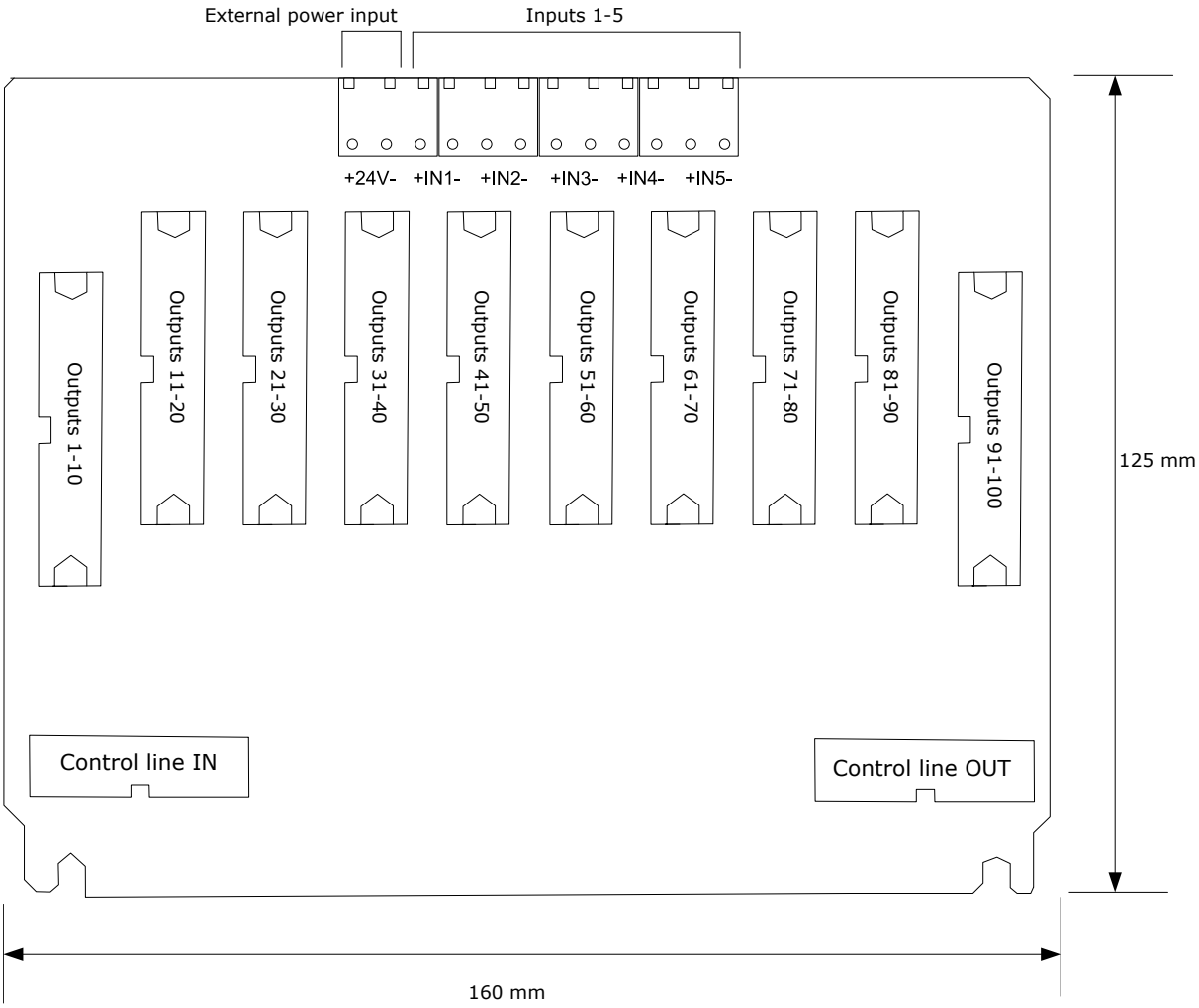
Electrical Connections of OC-100L and OC-100R



Electrical connections of OC-100L and OC-100R

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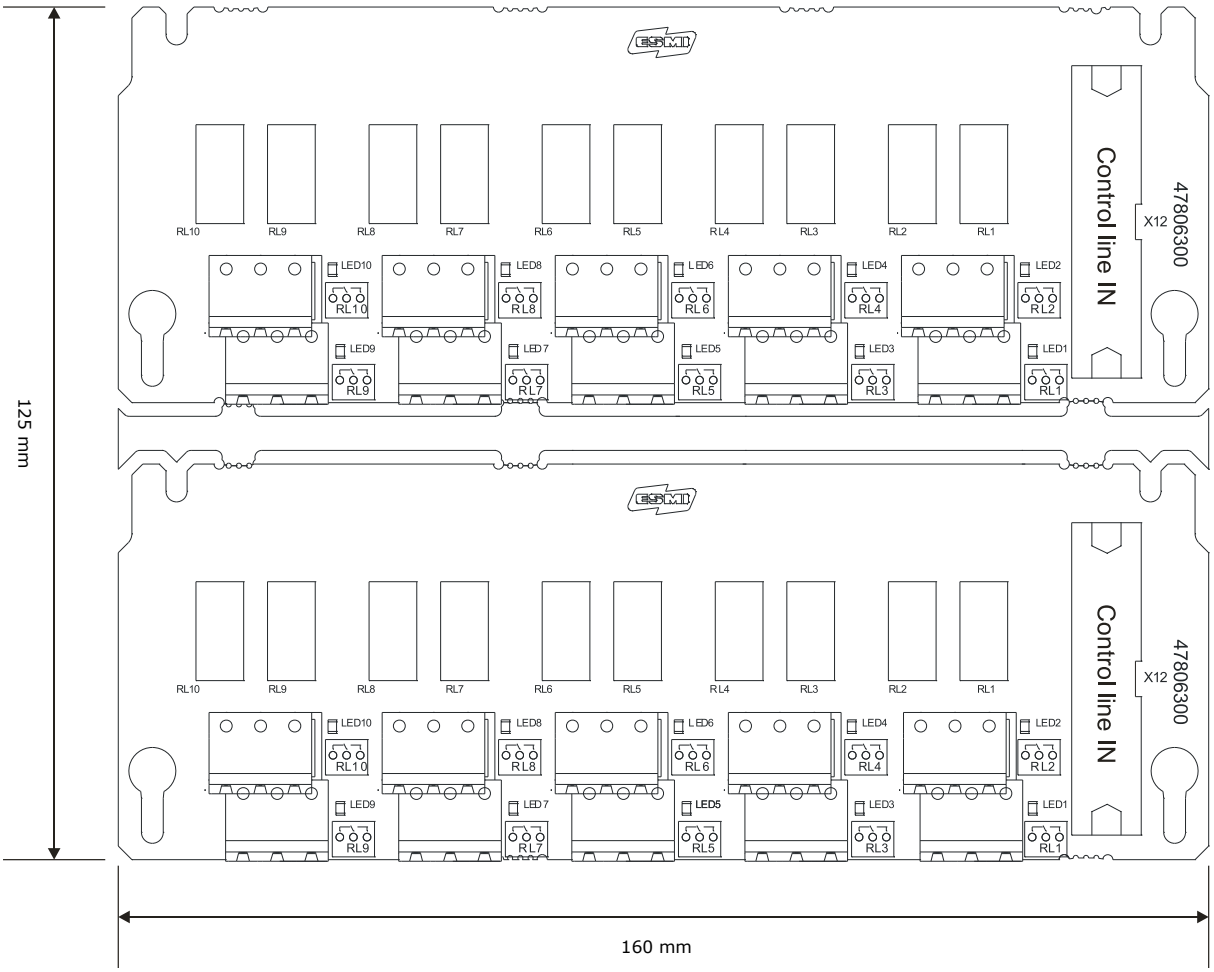
Electrical Connections RB-20



Electrical connections RB-20

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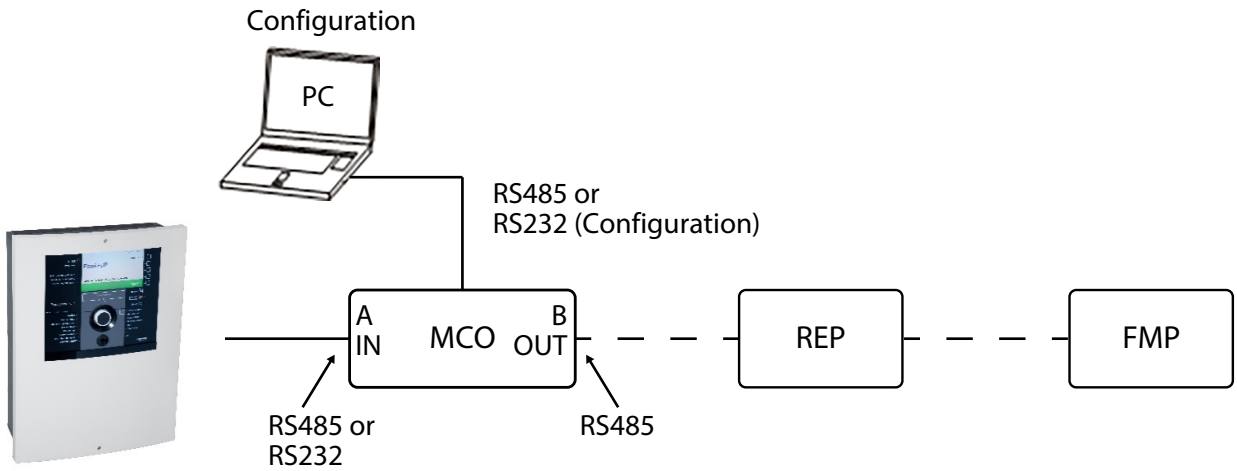
System Principle



System principle

NOTE: Only one MCO unit can be connected to the FDP fire detection system.

NOTE: The maximum number of MCO, MCOX-OB, FMP, DAP, REP, REPX-OB, ZLPX and ZLPX-IC units connected to one FDP panel is 16.

NOTE: The RS-232 setting is used for configuration.

NOTE: Only one of the RS-232 and RS-485 IN ports must be connected at a time.

NOTE: The INFO line in the MCO (MCOX-OB) unit must be disconnected during the MCO (MCOX-OB) configuration.

NOTE: The maximum RS-485 cable length between two devices is 1,000 m.

NOTE: The maximum RS-232 cable length is 10 m.

NOTE: The dimensioning of power supply cables must be calculated according to requirements. An extra power supply unit must be used as needed.

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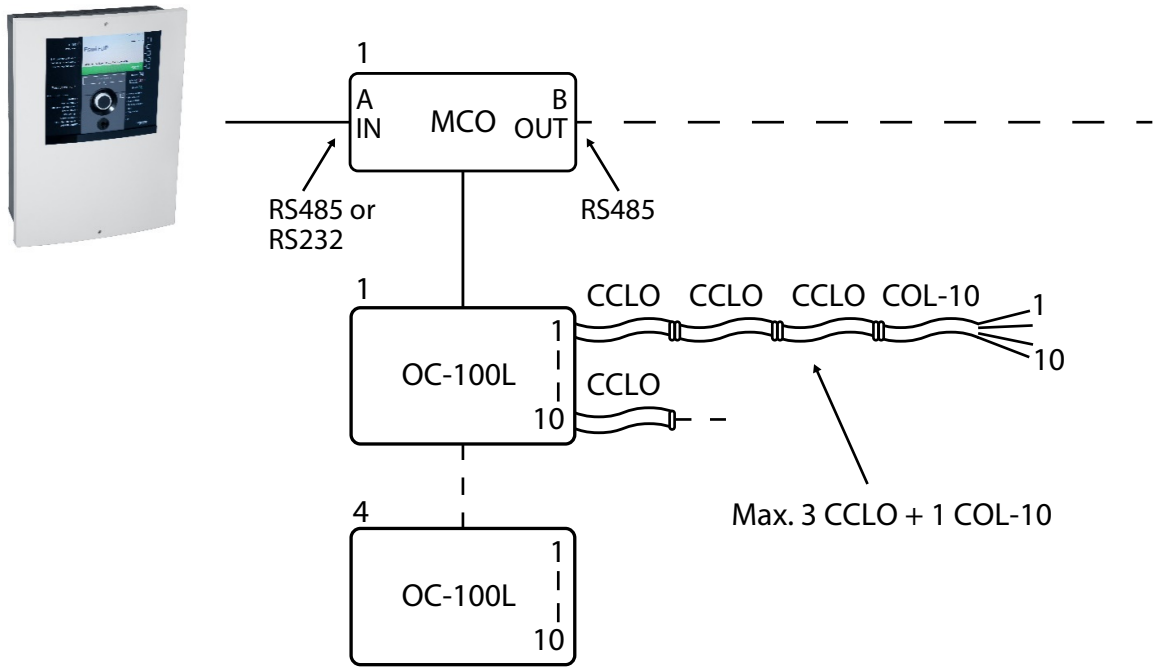
System Example: Open Collector LED Outputs



System example: open collector LED outputs

NOTE: Only one MCO unit can be connected to the FDP fire detection system.

NOTE: The maximum number of MCO, MCOX-OB, FMP2, DAP, REP, REPX-OB, ZLPX and ZLPX-IC units connected to one FDP Fire Detection Panel is 16.

NOTE: The RS-232 setting is used for configuration.

NOTE: The INFO line in the MCO panel must be disconnected during the MCO configuration.

NOTE: The maximum RS-485 cable length between two devices is 1,000 m.

NOTE: The maximum RS-232 cable length is 10 m.

NOTE: The dimensioning of power supply cables must be calculated according to requirements. An extra power supply unit must be used as needed.

NOTE: If the current taken from the IC board exceeds 1 A, then an external power supply input (OC-100L and OC-100R) must be used. OC-100L 6.2 mA/active output, OC-100R 7.5 mA/active output.

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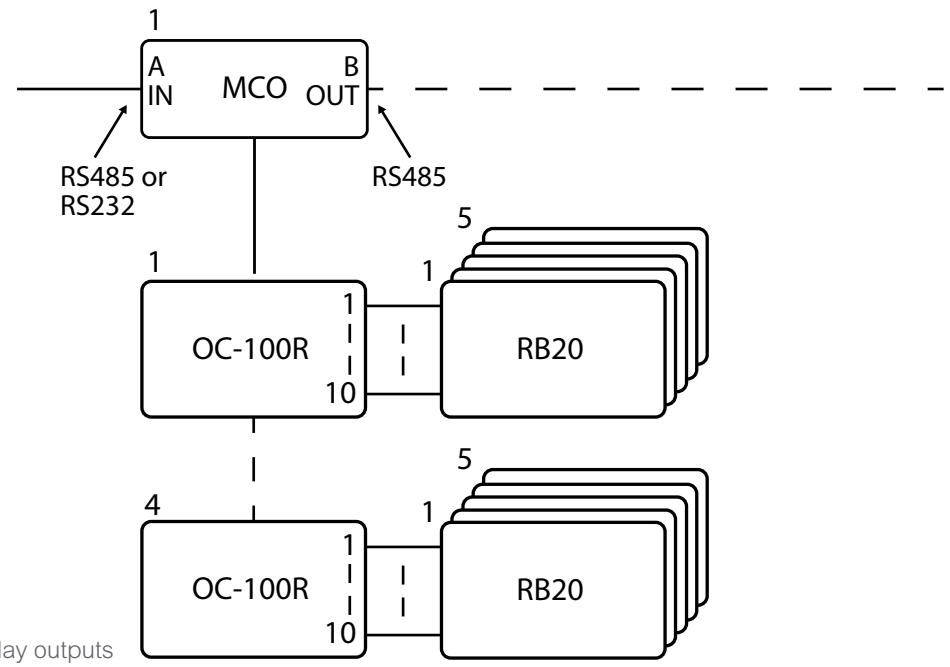
System Example: Relay Outputs



System example: relay outputs

NOTE: Only one MCO unit can be connected to the FDP fire detection system.

NOTE: The maximum number of MCO, MCOX-OB, FMP, DAP, REP, REPX-OB, ZLPX and ZLPX-IC units connected to one FDP panel is 16.

NOTE: The RS-232 setting is used for configuration.

NOTE: The INFO line in the MCO panel must be disconnected during the MCO configuration.

NOTE: The maximum RS-485 cable length between two devices is 1,000 m.

NOTE: The maximum RS-232 cable length is 10 m.

NOTE: The dimensioning of power supply cables must be calculated according to requirements. An extra power supply unit must be used as needed.

NOTE: If the current taken from the IC board exceeds 1 A, then an external power supply input (OC-100L and OC-100R) must be used. OC-100L 6.2 mA/active output, OC-100R 7.5 mA/active output.

Company Information

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