



991g/03
991g/04
991g/05
991g/06
991g/07

EM3xx

Multi input/output module and conventional line interface

inim



0832-CPD-1940
0832-CPD-1941
0832-CPD-1942
0832-CPD-1943
0832-CPD-1944

The EM3xx are certified and approved in accordance with EN54-17 Short-circuit isolators and EN54-18 – Input/Output devices.

ATTENTION!

Product description

The EMxx module allows you to interface an addressable-analogue control panel with external apparatus and devices by means of its inputs and outputs according to model (refer to table).

In the versions with 4 inputs 2 of them can be configured as conventional line interface powered from loop or from a local power supply.

The 4 outputs, according to model, can be supervised for sounders/flashers control or voltage free contacts for generic applications.



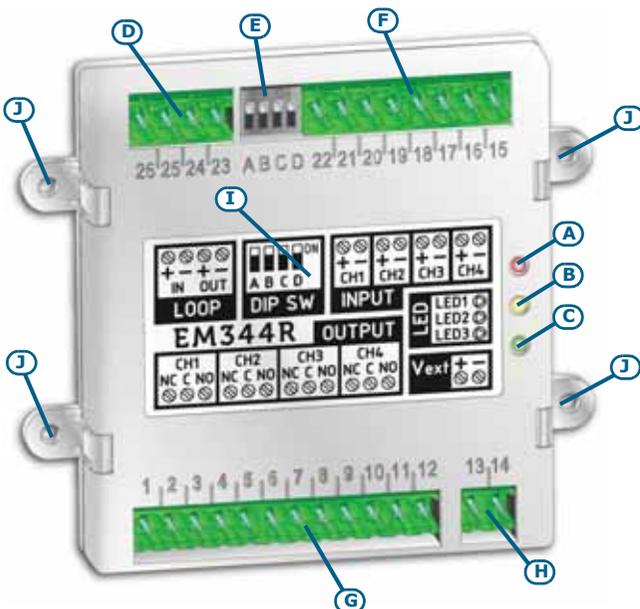
Model	Inputs selectable as conventional zone		Outputs type	
EM344S	4	2	4	supervised
EM344R	4	2	4	voltage free
EM340	4	2	/	/
EM304S	/	/	4	supervised
EM304R	/	/	4	voltage free

The label on the front of the module shows the map of the available terminals.

On the back of the module you will find a label showing the technical specifications and the distinctive serial number which identifies the device.



A	LED 1
B	LED 2
C	LED 3
D	Loop terminals
E	DIP switch
F	Input terminals
G	Output terminals
H	External power input terminals
I	Label/Map of terminals
J	Anchor locations
K	Technical specifications/ serial-number sticker
L	Removable serial-number stickers



Terminal		Description	Terminal		Description
n.	EM3x4R		n.	EM3x4S	
1	Output CH1 NC	Voltage-free contact terminals: allow activation of devices such as electromagnets for fire doors, etc.	1	/	Supervised output terminals: allow activation of one or more devices, such as sounderflashers, etc. A fault condition will be signalled on the control panel in the event of short-circuit or interruption on the connection cable.
2	Output CH1 C		2	Output CH1 +	
3	Output CH1 NO		3	Output CH1 -	
4	Output CH2 NC		4	/	
5	Output CH2 C		5	Output CH2 +	
6	Output CH2 NO		6	Output CH2 -	
7	Output CH3 NC		7	/	
8	Output CH3 C		8	Output CH3 +	
9	Output CH3 NO		9	Output CH3 -	
10	Output CH4 NC		10	/	
11	Output CH4 C		11	Output CH4 +	
12	Output CH4 NO		12	Output CH4 -	

Terminal		Description	Note
n.	EM34x		
22	Input CH1 +	Supervised input terminals: supervise the status of one or more contacts and the subsequent transfer of data (relative to the status of the contact) to the control panel. To be used for the connection of external devices to the control panel, such as beam smoke detectors with relay outputs or other types of devices with one or more output relays.	Resistance in standby: 22k Ohm Resistance in alarm: 2k2 Ohm
21	Input CH1 -		
20	Input CH2 +		
19	Input CH2 -		
18	Input CH3 +	Input terminals, to be used as conventional zones.	For the assignment of the input functions, refer to the following DIP switch table.
17	Input CH3 -		
16	Input CH4 +		
15	Input CH4 -		

Terminal		Description	Note
n.	EM3xx		
13	Vext +	External power input terminals: to be used for the power supply to the devices connected to the supervised output. Fault condition is signalled on the control panel in the event of power failure.	If the supervised output is not used, the loop voltage must be connected to this terminal, in order to avoid fault signals.
14	Vext -		
26	Loop IN +	Terminals for the input connection with the loop.	It is not necessary to respect the input/output configuration of the terminals as the loop IN and OUT terminals are interchangeable. However, for wiring congruence, it is advisable to follow the order indicated in this table.
25	Loop IN -		
24	Loop OUT +	Terminals for the output connection with the loop.	
23	Loop OUT -		

LED	Colour	Function
1	Red	Alarm input
	Yellow	Fault input
2	Yellow	Generic fault or short-circuit isolator on loop open
3	Green	Active outputs
	Yellow	Fault on supervised outputs or power failure on terminals 13 and 14

DIP switch	Position	
	ON	OFF
A	Inputs powered by loop	Inputs powered by external power supply
B	Secondary function of the inputs 3 and 4:	
	Not used	Conventional zone
C	Not used	Input 3 - secondary function
D	Not used	Input 4 - secondary function

Connections

Terminal n.		Input	DIP switch position	EM34x - Supervised input connection
22	CH1 +	any		
21	CH1 -			
20	CH2 +			
19	CH2 -			

Terminal n.		Input	DIP switch position	EM34x - Conventional zone connection
18	CH3 +			
17	CH3 -			
16	CH4 +			
15	CH4 -			

Terminal n.		Output	EM344S - EM304S - Supervised output connection
2	Output CH1 +		
3	Output CH1 -		
5	Output CH2 +		
6	Output CH2 -		
8	Output CH3 +		
9	Output CH3 -		
11	Output CH4 +		
12	Output CH4 -		

EM3xx Technical specifications

Power supply	19-30 Vdc
Current draw in standby status	Max 80 μ A @ 24V
Current draw in alarm status	20 mA @27.6V
Input balancing resistance	22K Ohm
Alarm input resistance	2,2K Ohm
Supervised output EOL resistance	22K Ohm
Relay contact rating	MAX 1A / 30Vdc
Operating temperature	-5°C/+40°C
Humidity (without condensation)	95% RH
Height (with terminal boards)	106 mm
Height (without anchor locations)	99 mm
Width	113 mm
Depth (with terminal boards)	29 mm
Depth (without terminal boards)	19 mm
Weight (with terminal boards)	140 g

Short-circuit isolator Technical specifications

V _{max}	The maximum line voltage	30 Vdc
V _{nom}	The nominal line voltage	24 Vdc
V _{min}	The minimum line voltage	19 Vdc
V _{SO max}	The maximum voltage at which the device isolates (i.e. switches from closed to open)	12.5 Vdc
V _{SO min}	The minimum voltage at which the device isolates (i.e. switches from closed to open)	10 Vdc
V _{SC max}	The maximum voltage at which the device reconnects (i.e. switches from open to closed)	9 Vdc
I _{L max}	The maximum leakage current with the switch open (isolated state)	15 mA
I _{c max}	The maximum rated switching current (e.g. with the switch closed)	600 mA
I _{S max}	The maximum rated continuous current (e.g. under short circuit conditions)	600 mA
Z _{C max}	The maximum series impedance with the switch closed	0.5 mOhm

Installation

The module must be connected to the control panel via a 2 pole twisted-shielded cable. This cable carries both the power supply and the two-way digital communications data. Refer to the connection section for the wiring diagram.

The module has a short-circuit isolator which, in the event of short-circuit between the two poles of the control panel loop cable, is capable of interrupting the negative pole and thus isolating the section involved in the short-circuit. For the isolator specification, please refer to the "ILP Specification" document.

The module should be housed inside an electrical mounting box, as per the diagram, with the following characteristics:

- Minimal internal dimensions: 125 x 125 x 40 mm
- Protection grade IP44 or higher
- Compliant with the established standards and codes relating to the Installation of electrical systems

The two removable serial number stickers should be taken off the module; one should be attached to the box where the device is to be housed, the other to the installation layout.

ATTENTION!

Once all the loop devices have been properly connected, refer to the control panel installation and programming manual for instructions regarding the configuration and addressing procedures.

Testing and maintenance

The functionality of the module should be tested immediately after installation and periodically during maintenance inspections, in accordance with the established standard regulations and codes in force.

Using the EITK-DRV driver

The EITK-DRV driver allows you to change the operating parameters of the devices connected to the loop and also to obtain accurate diagnostic data. It can operate through the USB port of a computer furnished with the relative software programme, or can function autonomously by way of the battery housed inside.

For further information and details regarding use of the EITK-DRV driver, refer to the respective handbook.

Warnings and limitations

The EM3xx module must be used exclusively with control panels that operate on INIM OpenLoop protocol. This product is not suitable for outdoor installation. However, if outdoor installation is necessary, ensure that the device is housed inside a suitable enclosure with the required protection grade.

INIM Electronics reserves the right to change the technical specifications of this product without prior notice.

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