

- ❖ 8x 10-bit Alarm or 5 V Digital Inputs
- ❖ 1x RS485
- ❖ Operating Range -40°C to $+70^{\circ}\text{C}$
- ❖ 600 W Integrated Surge Protections
- ❖ Mounting on DIN35 Rail
- ❖ Cover Made of Self-Extinguishing Material UL94 V0



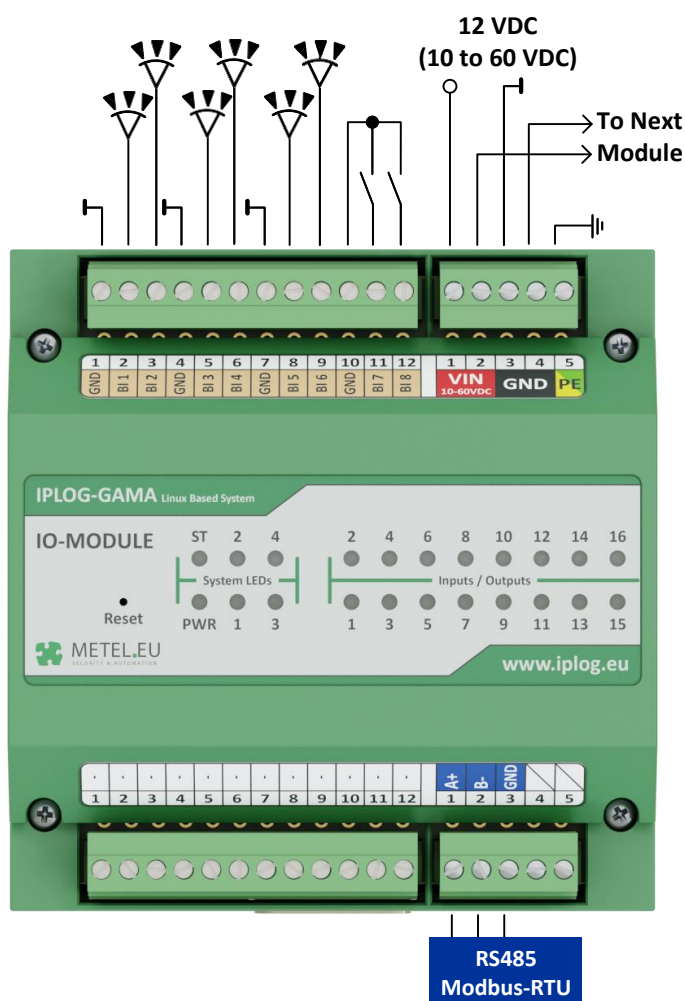
BI8.2E is an industrial IO module of the IPLOG system. The Modbus RTU communication interface allows it to be easily connected to systems from other manufacturers. The module is supplied with a plastic cover for mounting on a DIN35 rail.

PRODUCT NAME	CODE	NOTE
BI8.2E-DIN	6000-1200	1x RS485
Complete information on available IPLOG devices can be found on the websites: https://www.metel.eu and https://www.iplog.eu		

ORDERING

PARAMETER	VALUES	NOTE
Power Supply	12, 24, 48 VDC	10 to 60 VDC
Consumption	Max. 1.5 W	
Surge Protection	600 W	10/1000 μs
Operating Range	-40 to $+70^{\circ}\text{C}$	
Storage Range	-40 to $+70^{\circ}\text{C}$	
Humidity	Max. 95 %	No-condensing
Dimension	120 x 123 x 49,5 mm W x H x D	
Weight	Max. 0.32 kg	
Installation	DIN35	
Device Class	I	EN 61140
Ingress Protection	IP 20	EN 60529
Cover Material	ABS UL94 V0	
Degree of pollution	II	EN 60664-1
Connections	Screw Terminals	
Conduct. cross-section	Max. 2.5 mm ²	

PARAMETER	VALUES	NOTE
Series	32-bit MCU	
Frequency	64 MHz	
Flash	512 kB	
RAM	64 kB	



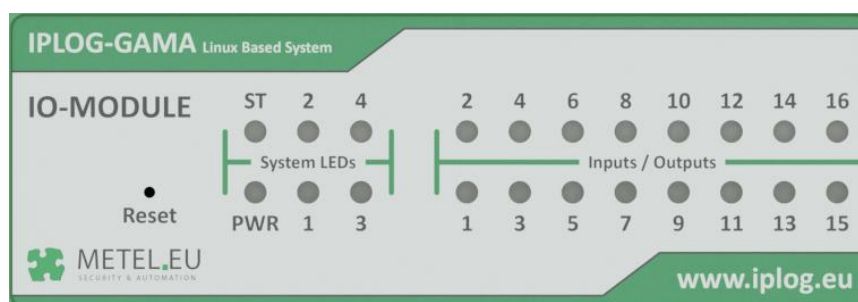
Location and Designation of Connectors and LEDs

NOTE: The order of the terminal numbers in the table below corresponds to the order of the terminal numbers found on the device.

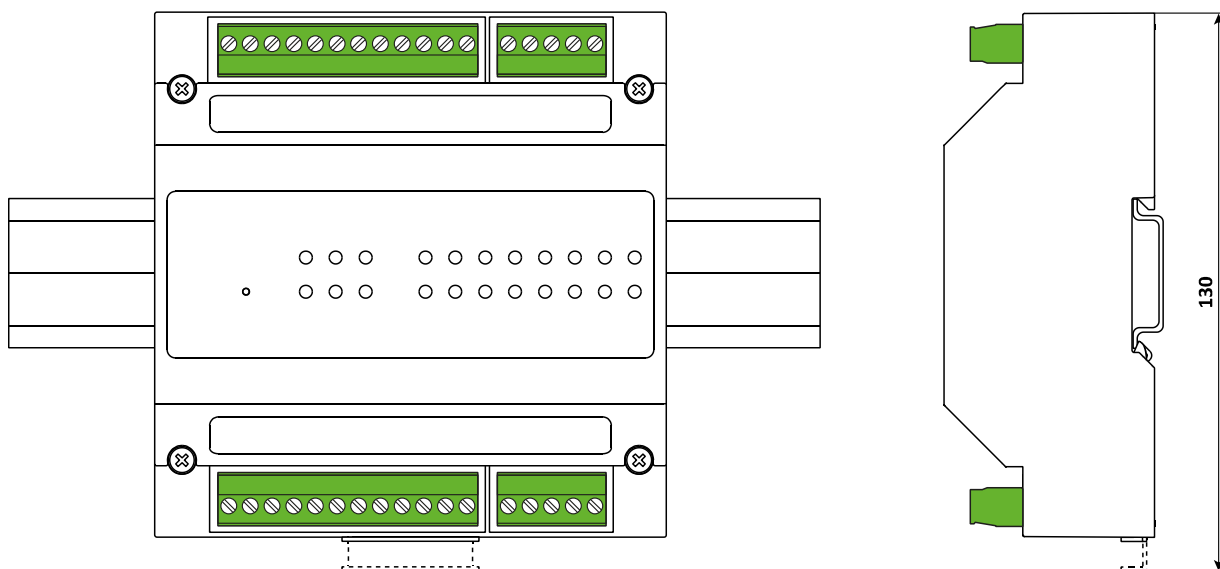
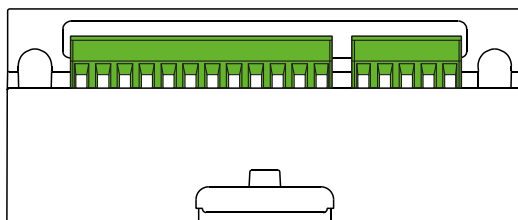
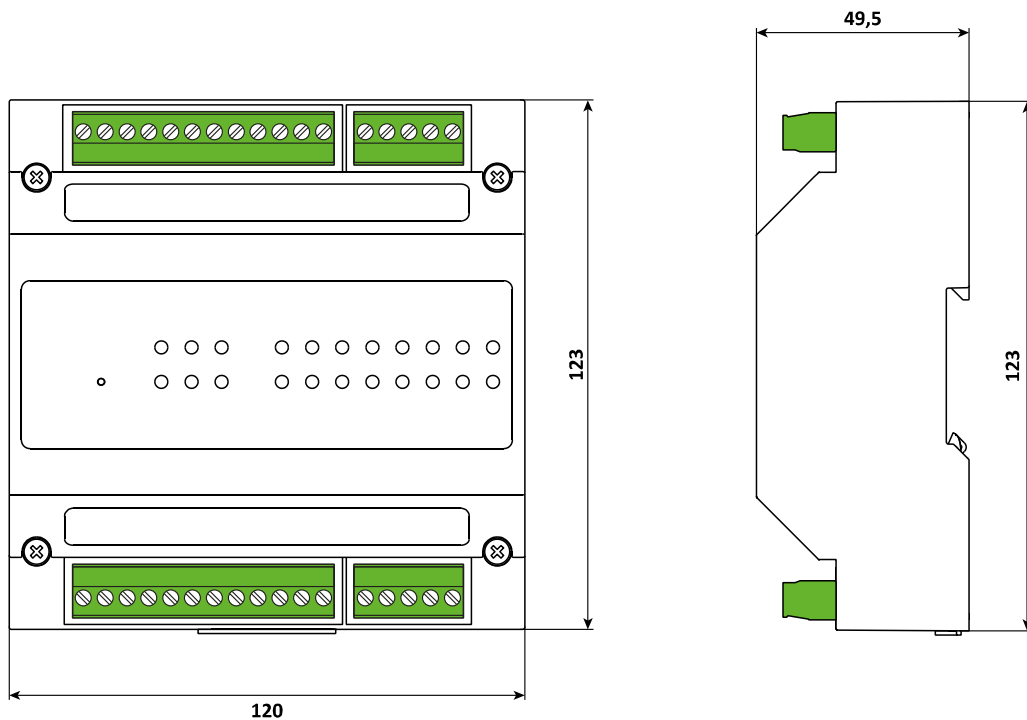
CONNECTOR			Inputs / Outputs LED	
12	BI 8	10-bit Alarm or Digital Input 5 V DC	8	Sabotage Short = Log 1 = Lights
11	BI 7	10-bit Alarm or Digital Input 5 V DC	7	Sabotage Short = Log 1 = Lights
10	GND	Ground		
9	BI 6	10-bit Alarm or Digital Input 5 V DC	6	Sabotage Short = Log 1 = Lights
8	BI 5	10-bit Alarm or Digital Input 5 V DC	5	Sabotage Short = Log 1 = Lights
7	GND	Ground		
6	BI 4	10-bit Alarm or Digital Input 5 V DC	4	Sabotage Short = Log 1 = Lights
5	BI 3	10-bit Alarm or Digital Input 5 V DC	3	Sabotage Short = Log 1 = Lights
4	GND	Ground		
3	BI 2	10-bit Alarm or Digital Input 5 V DC	2	Sabotage Short = Log 1 = Lights
2	BI 1	10-bit Alarm or Digital Input 5 V DC	1	Sabotage Short = Log 1 = Lights
1	GND	Ground		

CONNECTOR			System LEDs	
5	PE	Earthing Terminal		
4	GND	Power Input – Minus Terminals	PWR	Power is Connected, LED Lights Up
3		Terminals are Internally Interconnected		
2	VIN	Power Input – Plus Terminals		
1	10-60 V DC	Terminals are Internally Interconnected		

System LEDs		Inputs / Outputs LED	
1	BUS 1 (Tx = Red / Rx = Green)	9	Not used (planned as IEC programmable)
2	Not used (planned as IEC programmable)	10	Not used (planned as IEC programmable)
3	Not used (planned as IEC programmable)	11	Not used (planned as IEC programmable)
4	Not used (planned as IEC programmable)	12	Not used (planned as IEC programmable)
ST	Not used (planned as IEC programmable)	13	Not used (planned as IEC programmable)
PWR	Power is Connected, LED Lights Up	14	Not used (planned as IEC programmable)
		15	Not used (planned as IEC programmable)
		16	Not used (planned as IEC programmable)



Dimensions and Installation of DIN Version



Default Settings of MODBUS Communication

Device ID: 1 | Speed: 115 200 | Parity: None | Data bits: 8 | Stop bits: 1

Modbus registers

	Subject	Type	R/W	Value	Offset
Device Identification	Product Type	u8[3]	R		1002-04
	Serial Number	u32	R		1005-06
	PCB Version	u32	R		1007-08
	PCB Revision	u16	R		1009
	FW Version Major	u16	R		1010
	FW Version Minor	u16	R		1011
	FW Version - Revision	u32	R		1012-13
	IF#01 Slot State	u16	R	0 = N/A 1 = IF#01 not Inserted 2 = IF#01 Inserted, CRC error 3 = IF#01 Inserted, CRC OK	1021
	IF#01 Product Type	u8[3]	R		1022-24
	IF#01 Serial Number	u32	R		1025-26
Device Control	Reset	u16	RW	55203 = To Reboot	1201
	Bootloader / Application	u16	R	0x00A – Application, 0x00B – Bootloader	1203
	Restart to Bootloader ⁽¹⁾	u16	RW	617 = To Bootloader else = deactivate bootloader	1204
Device Status	Board Power Voltage	u16	R	105 = 10,5V	1311
	Board Temperature	s16	R	-200 = -20,0°C 250 = 25,0°C	1321

⁽¹⁾ To activate the bootloader, it is necessary to write a value of 617 in the registry and restart the device. To reactivate the application, enter any value other than 617 in the appropriate registry and restart the device. If the device is in the bootloader, the LED 1 will flash red.

	Subject	Type	R/W	Value	Offset
BUS 1 Settings	Baudrate	u16	RW	192 = 19 200 bps 1152 = 115 200 bps 9216 = 921 600 bps 10000 = 1 000 000 bps	2110
	Databits	u16	RW	8 = 8b, 9 = 9b	2111
	Parity	u16	RW	78 = None 69 = Even 79 = Odd	2112
	Stopbits	u16	RW	10=1, 20=2, 15=1,5	2113
	MODBUS address	u16	RW	1 - 247	2120

Subject	Channel	Type	R/W	Value	Offset
States of Balanced Inputs	Balanced Input 1	AI#01	u16	R	5001
	Balanced Input 2	AI#02	u16	R	5002
	Balanced Input 3	AI#03	u16	R	5003
	Balanced Input 4	AI#04	u16	R	5004
	Balanced Input 5	AI#05	u16	R	5005
	Balanced Input 6	AI#06	u16	R	5006
	Balanced Input 7	AI#07	u16	R	5007
	Balanced Input 8	AI#08	u16	R	5008

Subject	Channel	Type	R/W	Value	Offset
States of Inputs	Balanced Input 1 _{BIN}	DI#01	bit	R	3001
	Balanced Input 2 _{BIN}	DI#02	bit	R	3002
	Balanced Input 3 _{BIN}	DI#03	bit	R	3003
	Balanced Input 4 _{BIN}	DI#04	bit	R	3004
	Balanced Input 5 _{BIN}	DI#05	bit	R	3005
	Balanced Input 6 _{BIN}	DI#06	bit	R	3006
	Balanced Input 7 _{BIN}	DI#07	bit	R	3007
	Balanced Input 8 _{BIN}	DI#08	bit	R	3008
	Inputs	DI#16 - DI#01	u16	R	0x0000 - 0x0FFF 3001

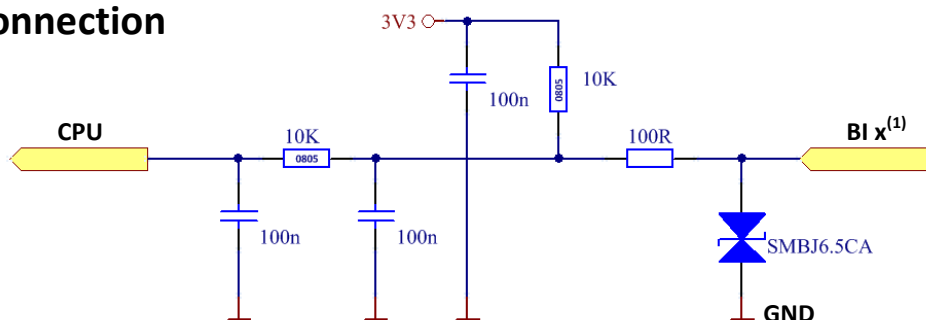
- ❖ In alarm mode there is an input measuring the loop resistance which allows connections of PIR, MW and other alarm sensors. Inputs are therefore capable of distinguishing a normal state, alarm, sabotage, masking, failure, low or high resistance as required by the EN 50131-1 standard.
- ❖ In digital mode there are inputs used as 5 V Digital Dry Inputs.

All inputs are accessible from METEL IEC 61131-3 IDE or directly from Linux scripts and can be configured independently of each other. Logic state of each input is signaled by a relevant LED diode on the front panel. For details please see the table „Location and Designation of Connectors and LEDs “.

Default programmable LEDs settings is as follows:

- ❖ Alarm Mode: LED On => Balanced loop input BI < 7.5 k Ω .
- ❖ Digital Mode: LED On => Input active, input terminal grounded to GND
LED Off => Input not active, input terminal is open and internally Pull-Up to 3V3

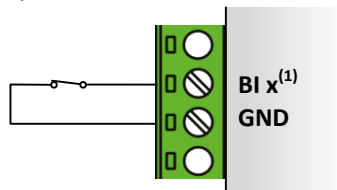
Internal Connection



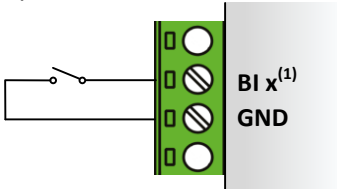
Examples of Connections

Digital Dry Contact Schematic

Input Connected with GND = log. 1.

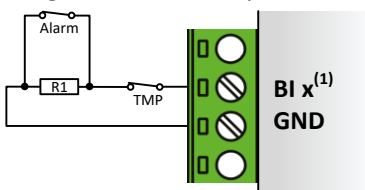


Input Disconnected from GND = log. 0.

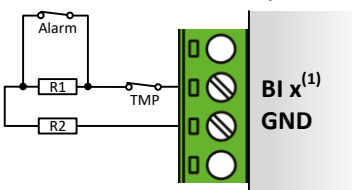


Alarm Contact Schematic

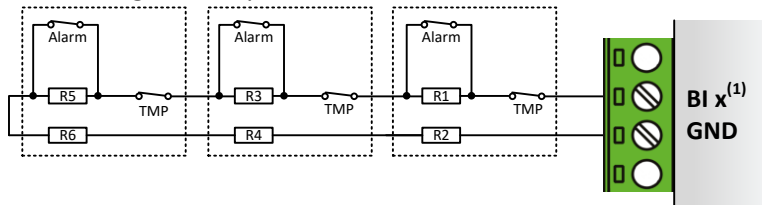
Single Balanced Loop



Double Balanced Loop



Connecting of Multiple Detectors to One Line



Technical Parameters

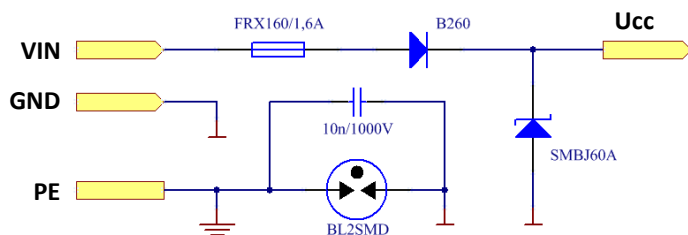
Parameter	Value	Note
Input Voltage	Max. 7 V DC	
Input Current	0.3 mA at 5 V DC	
Surge Protection	600 W	10 / 1000 μ s
Alarm Mode		
Range	From 10 to 30.000 Ω	10-bit resolution
Levels	8	Normal, Alarm, Failure, Masking, Sabot. short/open, Low/High Res.
Digital Mode:		
Dry Contact Schematic	Log. 0: Open	
	Log. 1: Close to Ground	

(1) The letter „x“ replaces the input number.

POWER INPUT

The supply voltage is connected to VIN and GND terminals. The terminals are doubled for easier connection between the modules installed side by side.

Internal Connection of POWER INPUT



The electronic circuits of the IO module are galvanically separated from the PE, which is connected to the GND by a lightning arrester. The PE and GND department enables reliable operation of the system even in applications with differences in ground potentials.

Parameter	Value	Note
Input Voltage Range	10 to 60 VDC	
Surge Protection	600 W	10 / 1000 μ s
Short Circuit Protection	Polyswitch	
Reverse Polarity Protection	Diode	