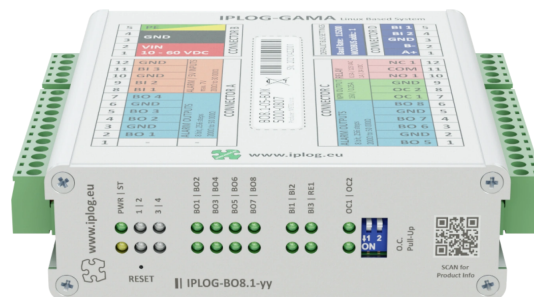


IO modules BOX series

- Modbus RTU IO modules
- Compatible with IPLOG & LAN-RING
- A wide range of digital and analog inputs and outputs
- Highly durable hardware with integrated surge protectors
- Mounting on a flat surface or DIN35
- Operating temperature from -40°C to $+70^{\circ}\text{C}$



The IO modules are Modbus RTU Slave devices and can therefore be easily connected to any Modbus RTU Master device. Typical examples are IPLOG-Gx PLCs and LAN-RING industrial switches. Inputs and outputs can be controlled using Modbus RTU protocols. The industrial design with integrated surge protection for all inputs and outputs guarantees reliable operation even in very demanding conditions. The IO modules are designed for installation on a DIN35 rail or on a flat substrate.

The devices are developed and manufactured in the EU and comply with NDAA requirements.

Available models

Order name	Order code
AI8.1-05-BOX	5000-0207
AI8.1-01-BOX	5000-0201
AI8.1-01G-BOX	5000-0202
AI8.1-17G-BOX	5000-0222
AI4.1-05-BOX	5000-0307
AI4.1-01-BOX	5000-0301
AI4.1-01G-BOX	5000-0302
AI4.1-17G-BOX	5000-0322
BI8.1-05-BOX	5000-0407
BI8.1-01-BOX	5000-0401
BI8.1-01G-BOX	5000-0402
BI8.1-17G-BOX	5000-0422
RE8.1-05-BOX	5000-0507



Order name	Order code
RE8.1-01-BOX	5000-0501
RE8.1-01G-BOX	5000-0502
RE8.1-17G-BOX	5000-0522
AO8.1-05-BOX	5000-0607
AO8.1-01-BOX	5000-0601
AO8.1-01G-BOX	5000-0602
AO8.1-17G-BOX	5000-0622
PP8.1-05-BOX	5000-0707
PP8.1-01-BOX	5000-0701
PP8.1-01G-BOX	5000-0702
PP8.1-17G-BOX	5000-0722
DI8.1-05-BOX	5000-0107
DI8.1-01-BOX	5000-0101
DI8.1-01G-BOX	5000-0102
DI8.1-17G-BOX	5000-0122
BO8.1-05-BOX	5000-0807
BO8.1-01-BOX	5000-0801
BO8.1-01G-BOX	5000-0802
BO8.1-17G-BOX	5000-0822
RE8.2-05-BOX	5000-1007
RE8.2-01-BOX	5000-1001
RE8.2-01G-BOX	5000-1002
RE8.2-17G-BOX	5000-1022
BI8.4-05-BOX	5000-1307
BI8.4-01-BOX	5000-1301
BI8.4-01G-BOX	5000-1302
BI8.4-17G-BOX	5000-1322



Technical parameters

POWER

Input voltage range	10 - 60 VDC
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ENVIRONMENT AND SURGE PROTECTIONS

I/O surge protections	Min. 600 W (10/1000 μ s)
Operating temperature	-40...+70 °C
Storage temperature	-40...+70 °C / Max. 95 % humidity

12-BIT ANALOG CURRENT OR VOLTAGE INPUTS (with galvanic isolation)

Voltage ranges	± 2.5 V, ± 5 V, ± 10 V, 0V to 5V, 0V to 10V
Current ranges	0 to 20mA, 4 to 20mA
Sampling rate	1 kSps (adaptive)

24-BIT RTD INPUTS

Resistive ranges	PT100, PT1000 (3-wires connection)
Sampling rate	1 kSps
Isolation voltage	1.000 VRMS (RTDx / CPU)

SSR OUTPUTS

Output type	MOSFET (SPST contact type)
Voltage / current	75 VAC to 264 VAC, 45 to 65 Hz / Max. 1 A, minimal 20 mA
Breakdown voltage	3.000 Vrms (Input / Output)
Isolation voltage between SSR outputs	1.500 Vrms

24 V DIGITAL INPUTS (with galvanic isolation 2.500 Vrms between inputs and CPU)

Input voltage DC / AC Input current	Log. 0: -30 V to 5 V, Log. 1: +15 V to 30 V 12 mA at 24 VDC
Maximum input voltage	50 V / 1 s

NOC 24 V RELAY OUTPUTS (changeover contact)

Max. load	0.5 A / 120 VAC, 1 A / 24 VDC (resistive load)
Electrical lifetime	3,000,000 operations
Isolation voltage	1.000 Vrms / 1 min. (terminals to electronic or case)

NO 230 V RELAY OUTPUTS (normal open contact)

Max. load	5 A / 250 VAC, 3 A / 30 VDC (resistive load)
Electrical lifetime	100,000 operations at 250 VAC / 5A



NO 230 V RELAY OUTPUTS (normal open contact)

Isolation voltage	2.500 Vrms / 1 min. (terminals to electronic or case)
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NOC 230 V RELAY OUTPUTS (changeover contact)

Max. load	10 A / 250 VAC, peak 15 A, (resistive load)
Electrical lifetime	50.000 operations, minimal value
Isolation voltage	2.500 Vrms / 1 min. (terminals to electronic or case)

ALARM / 5 V DIGITAL INPUTS

Alarm / digital mode usage	PIR / tampers (input voltage max. 7VDC)
Dry contact schematic	Log. 0: open, Log. 1: close to ground
Alarm mode range	From 10 to 30.000 Ω (10-bit resolution)

5 V DIGITAL INPUTS

Input voltage	Max. 7 VDC
Dry contact schematic	Log. 0: open, Log. 1: close to ground

OPEN COLLECTOR NPN TRANSISTORS OUTPUTS

Internal Pull-Up	1,000 Ω , ON/OFF by a DIP switch
Maximum load (sinking sourcing)	16 V / 250 mA 12 V / 1 mA

8-BIT ALARM OUTPUTS

Adjustable range	200 to 50 000 Ω
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PUSH-PULL TRANSISTOR OUTPUTS

Output type	Open collector NPN or PNP, Push-Pull (software selectable)
Maximum load	30 V / 0.25 A
Galvanic isolation	2.500 VRMS (PP x output / CPU)
Shortcut protection	Yes (polyswitch)

230 V DIGITAL INPUTS

Input voltage AC	Log. 0: 0 VAC to 120 VAC, Log. 1: 200 VAC to 250 VAC
Isolation voltage	2.500 Vrms, (IN x / CPU)



Standards and protocols

Standard	Note
MODBUS RTU	Slave

EMC and safety

Standard	Level	Note
EN 61000-6-2		Immunity - industrial environment
IEEE 1613		Environmental and Testing Requirements Electric Power Substations
EN 50130-4 ed. 2		Alarm systems - Part 4: Electromagnetic compatibility
EN 55035		EMC of multimedia devices - immunity requirements
EN 55032		EMC of multimedia devices - emission requirements
EN 61131-2		Programmable control units
EN 62368-1		Safety requirements of Information technology equipment
EN IEC 63000		The Assessment Of Electrical And Electronic Products With Respect To The ROHS



METEL.EU
SECURITY & AUTOMATION

Short Catalog Sheet

Notes

- The manufacturer reserves the right to change technical parameters without prior notice.

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