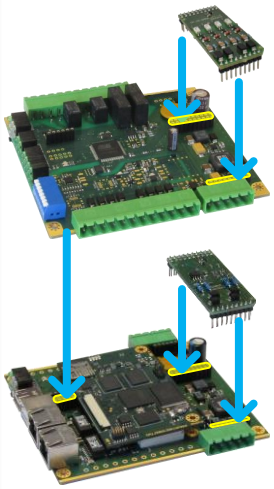
IEC 61131-3	METEL supplies IEC 61131-3 IDE for PLC IPLOG free of charge for the design of control programs in standard IEC languages.
Modbus	The IPLOG system supports Modbus RTU and TCP protocols, allowing easy connection of third-party devices.
Linux OS	The PLC runs on a highly secure and stable Open source OS Linux. Users can extend the default toolkit with other tools available online for free.
4G LTE	Thanks to the support of 2G, 3G and 4G-LTE networks, the IPLOG system has gained in applications for data collection from sensors, IP CCTV systems and other security systems.
OPENVPN IPSec	Securely encrypted connections to remote IPLOG systems are provided by OpenVPN tools and IPSec IP security extensions.
SHELL https://www SNMPv3	IPLOG supports modern SSH, HTTPS, SNMPv3 protocols guaranteeing secure access to the device.
Wiegand	The Wiegand interface allows IPLOG to act as a virtual reader connecting the ACS system with other technologies.
MADE IN EUROPEAN UNION	The development and production of the IPLOG system is 100% in the Czech Republic, a EU member state. To ensure the maximum security of our products, we use CPUs and the modules contain CPUs only from manufacturers from countries that adhere to democratic principles and values.
MySQL	In the MySQL database, IPLOG stores the measured data for later visualization in the Grafana plugin, further use by the IEC driver, Bash scripts and other tools.
Grafana	The Grafana plugin allows users to visualize data stored in a MySQL database in common web browsers. You can choose from graphs, gauge, texts, tables and other ways.
iOS Android	In the event people would like to have their system accessible from their mobile phone. We have therefore developed the IPLOG application, which can be freely downloaded from the App Store and Google Play. The application can monitor and control your systems.
Onvif Client	PLC IPLOG customers often use when integrating IP CCTV systems with perimeter and other systems. They use the Onvif client plugin to receive Onvif events from IP camera analysts and to set PTZ camera presets.
Dali	The IPLOG system supports an up to date way of controlling lights with the Dali protocol. The lighting can be controlled by a program in the PLC or, for example, from the KNX system (Gateway function).
M-Bus	The IPLOG system includes an M-Bus interface for reading water meters, gas meters, electricity meters and other devices.
MEMBER KNX	IPLOG as a KNX gateway helps to connect KNX systems with Dali, Modbus, LoRaWAN with other systems.
	The IPLOG system also includes a LoRaWAN interface for data collection in the free 868 MHz band.

Modules series BOX MOTH, IO a IF



SERIES BOX

PLC IPLOG

IO Modules

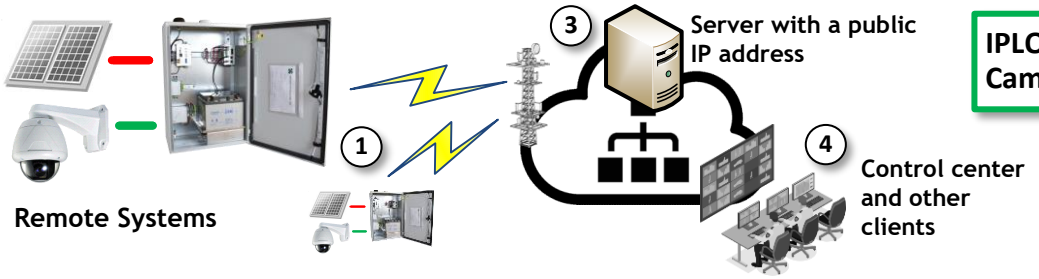
SERIES DIN

IPLOG units of the IPLOG-G3 series are an ideal solution for 24/7 operation in systems using 2G / 3G / 4G-LTE networks connection. The low power consumption also allows use in systems powered by solar energy and other alternative energy sources. In the event of extremely unfavorable conditions and the voltage in the system drops below a critical value (discharged battery), the PLC automatically switches to sleep mode and resumes operation after the voltage rises to a safe level.

- **Encrypted Data Transmission**
  One solution for securely connecting remote clients is OpenVPN with a public IP address only on the VPN server between the endpoints. The second option is an IPSec IP security extension with endpoints that have public IP addresses assigned to them and do not need a VPN server between them.
- **Stable Open Source Software Linux**
  This is a free operating operating system which is extremely stable. The user has free access to scripting languages, databases and other freely available tools. This gives him great freedom in designing their own applications and programs.
- **Complex Delivery**
  The delivery may include outdoor cabinets equipped with MPPT chargers, PoE injectors, battery holders and other necessary equipment.
- **Automation of Remote Systems**
  Typical examples are systems for securing remote locations, data collection from meteorological stations, control of water pumping from wells, control of photovoltaic systems, etc. All functionality is programmed in the software with a graphical interface with hundreds of supported functions.

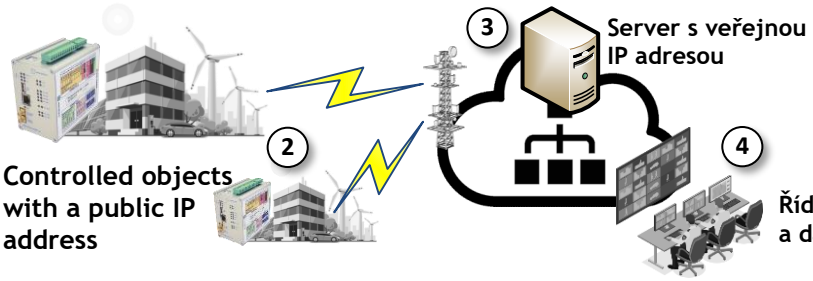
4G LTE | OPENVPN | IPSec | MySQL | Grafana | iOS Android | IEC

Typical System Topology with OpenVPN Clients



IPLOG in OFF-GRID Camera System

Typical System Topology with IPSec Clients



IPLOG in the Building Automation System

Recommended Type of Devices

POSITION	ORDERING NAME	NOTE
1	OH6425-OG1-LTE-POE IPLOG-G3-..... uSD, 16GB, SLC Card	Outdoor cabinets with charger and battery max. 60Ah PLC with 2G/3G/4G-LTE interface, IO's and serial interfaces of choice MicroSD card for logging applications
2	IPLOG-G3-xx	IPLOG with LTE interface and required outputs
3	VPN Server	Typicky virtuální server s OS Linux a softwarem OpenVPN
4	Application Grafana iOS / Android app IPLOG C4, EQU, SBI	Open source web application for IPLOG Freely downloadable application from the App Store and Google Play Visualization softwares using SNMP protocol

The flexibility of IPLOG PLC is often used in access systems designed exactly for the given object. Flexibility means especially an open OS with support for expanding opkg packages and modular hardware.

Wiegand

MySQL

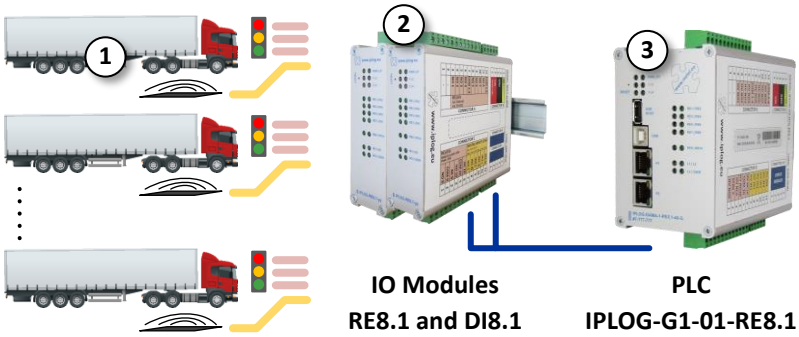
iOS
Android

IEC

❖ Traffic Control

Because PLC IPLOGs are not limited to simple automatic actions, even relatively complex assignments can be solved with them. A practical example is the control of the passage through the cargo gate. Trucks arrive at the gatehouse from five different directions. Each direction is controlled by a traffic light that allows / forbids the passage. The presence of trucks at the sites is verified using induction loops. According to the IPLOG assignment, it ensures that the trucks pass through the gatehouse gradually and in the specified order.

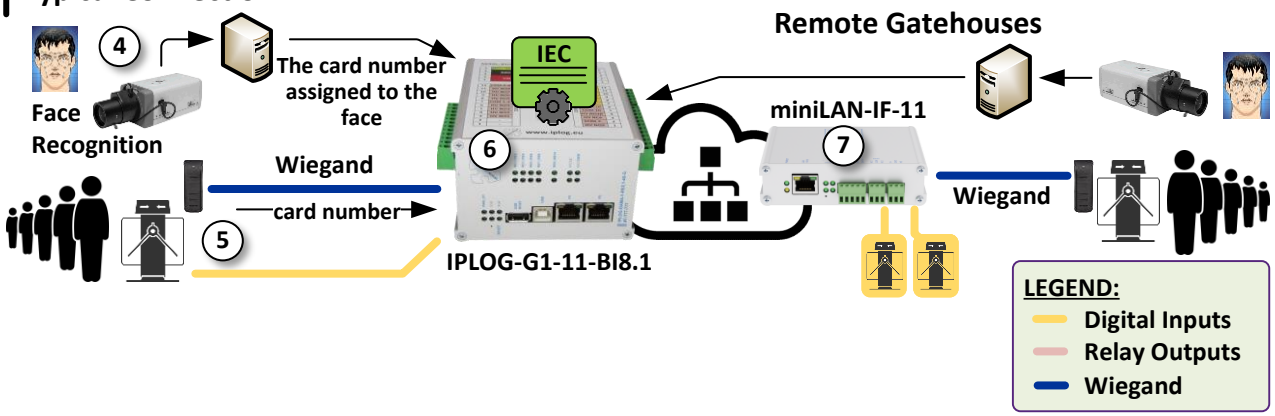
Typical Connection



❖ Prevent Unauthorized Access to the Workplace

In large production and storage areas with high turnover, there may be situations where employees change access cards and thus get to workplaces for which they do not have the appropriate training. A conventional card reader-only access system will not detect this problem. A customer employing more than 30,000 workers in their factories has solved this problem by extending the existing access system to biometrics. Each employee at the entrance first attaches the card to the reader and then his face is scanned by the SAFR analytical software. He has card numbers assigned to all faces. IPLOG compares card numbers received from Wiegand readers and SAFR sw. If the numbers do not match, the IPLOG generates an event directly into the SAFR software.

Typical Connection



Recommended Type of Devices

POSITION	ORDERING NAME	NOTE
1	Induction Loop and Traffic Light	Truck station equipment
2	IO Modules RE8.1 and DI8.1	IO modules with I/O for connecting induction loops and traffic lights
3	IPLOG-G1-01-RE8.1	PLC series G1 with relay outputs and Modbus RTU bus
4	SAFR	Analytical software for face recognition
5	Wiegand Readers	Any Wiegand readers
6	IPLOG-G1-11-RE8.1	PLC G1 series with relay outputs, Wiegand bus and digital inputs
7	miniLAN-IF	LAN IO module with Wiegand interface

IPLOG-GAMA units are basically miniature servers with Linux OS. When creating and running custom Bash scripts, the user has access to all ports, inputs and outputs of the device and a number of supported protocols. Scripts can be run separately or as part of IEC 61131-3 programs.

Linux OS

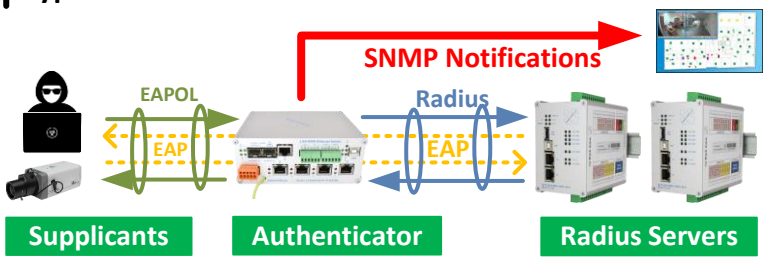
OPENVPN

MySQL

Radius Server

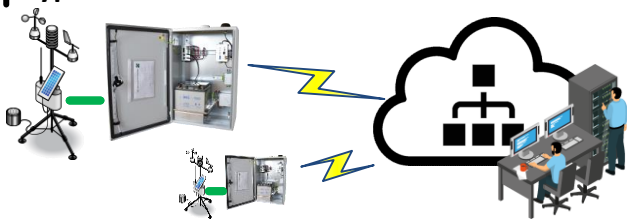
Grafana

Typical Connection in the Radius Server Role



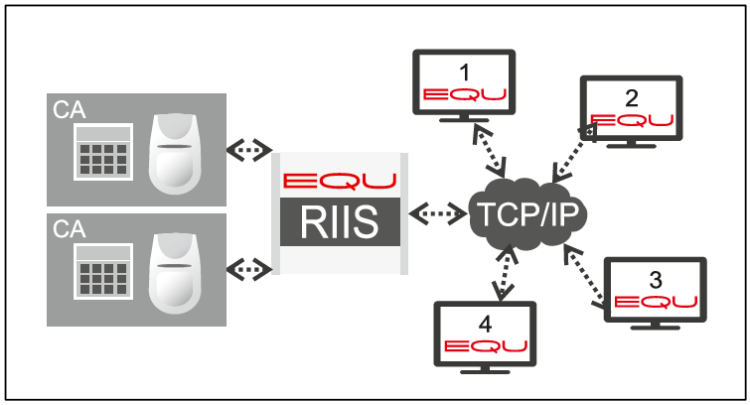
The IPLOG firmware can be expanded free of charge with the Radius server application, which blocks access to unauthorized devices to the network.

Typical Connection in the Role of a VPN Client with a Local Database



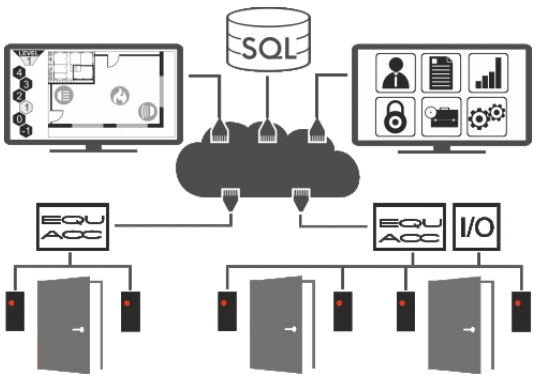
Communication can be secured using OpenVPN or IPSec. We recommend using the MySQL and Grafana packages in data collection systems.

Typical Connection in the Role of RIIS Integration Server



To ensure the transfer of information between the GALAXY I&HAS system and the IFTER EQU visualization software, the RIIS "Remote Independent Integration System" application is used, which encrypts two-way communication. In addition to sending events and statuses from the Galaxy system to the IFTER-EQU visualization, the visualization software or its operator can send control commands back to the Galaxy system.

Typical Connection in the Role of CAP Unit with "Global Anti-passback" Function



IFTER has developed an application for IPLOG that implements the "Global Anti-passback" function, which collects information from readers and door controllers installed at an entrance or the entrances of buildings. Based on this information, the program has a complete overview of people inside and outside the building. In the event of an attempt to misuse the identification element (chip or card), for example repeated entry without output, entry will be therefore be prohibited. Inputs must always be followed by an output and only then another input will be allowed.

IPLOGs are also used as an extension of photovoltaic systems. They optimize their operation and, in addition, enable their remote monitoring and control in accordance with the connection conditions of the distribution system owner.

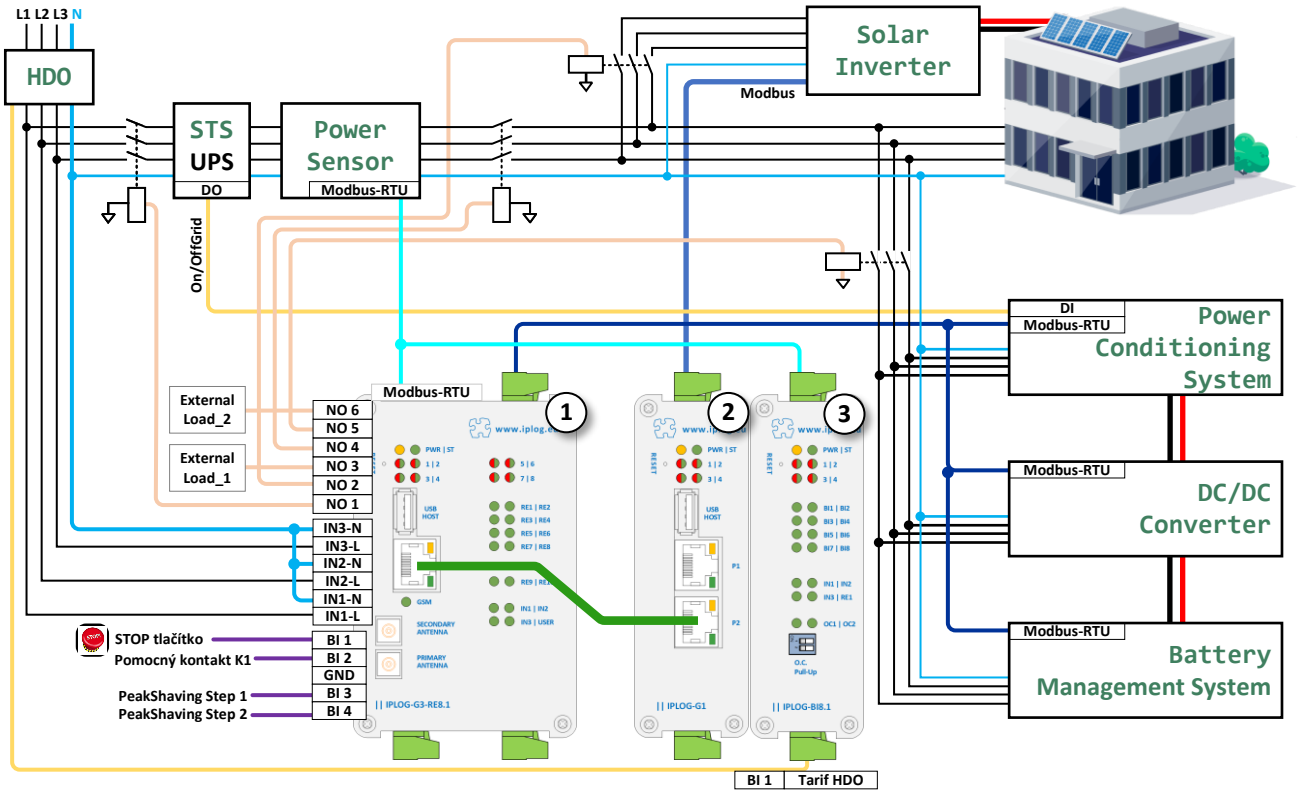
❖ PLC functions resulting from the conditions of the distribution system operator

The PLC function differs depending on the size of the PV plant and the distribution system operator. For small PV plants, a 0/100% two-stage remote control is usually sufficient. While for large PV plants from 100 kW, the PLC must also ensure the transmission of a number of operating data to the distribution system operator's control room and the feedback control of the PV plant from the control room.

❖ Other important PLC functions

- **The VPN client** provides secure communication with the cloud storage and remote management.
- The **IPLOG reads from the electricity meter the current values** of the consumed / supplied power from / to the distribution network. **It adjusts the inverter's output** so that there are no overflows into the distribution system.
- IPLOG **maximizes the energy** consumption produced in the local PV plant. It stores the excess in the battery storage and automatically switches external loads when the batteries are sufficiently charged.
- For large electricity consumers, IPLOG monitors the **so-called quarter-hour maximum**. In case of non-compliance with the contractually given range, the customer pays a contractual penalty. Therefore, the IPLOG initiates inverters in the event of an imminent exceedance, which produces the missing power from the battery storage. Otherwise, when the consumption is too low, it switches on, for example, charging the storage heaters, etc.
- It stores the measured data in a **local MySQL** database and at the same time forwards it to the **cloud storage**. Customers have access to current and historical data in the Grafana application, web cloud interface and mobile iOS / Android clients.

Typical Connection



Recommended Type of Devices

POSITION	ORDERING NAME	NOTE
1	IPLOG-G3-01G-RE8.1-12	PLC with LTE, relay, 230V inputs, 2x Modbus-RTU (RS485) and 4x BI inputs
1	uSD, 16GB, SLC Card	MicroSD card for applications with logging
2	IPLOG-G1-01G	PLC with 2x LAN and 2x Modbus-RTU interface (RS485)
3	BI8.1-05	Modbus-RTU IO module with alarm/digital inputs

Thanks to the implementation of the Modbus protocol, IPLOG PLCs are able to cooperate with a wide range of Modbus compatible devices, regardless of the manufacturer. Among them are many input / output modules and sensors for measuring physical quantities. One typical example of the use of the Modbus protocol are METEL detection cables and sensors for water leakage detection. The open architecture of the Linux operating system in the IPLOG PLC is the base of a simple and efficient system for detecting water leaks in server rooms, warehouses, archives and similar types of objects.

- **Collection of Measured Data**
  The measured data are securely stored in a MySQL database running directly on the PLC. It is available as a free package installed directly in the PLC memory, preconfigured for for easy usage.
- **Visualization of Actual and Historical Data**
  The open source Grafana application installed directly in the IPLOG PLC intuitively presents the current state of the sensors as well as previous measurement results stored in the database.
- **Complex Delivery**
  The delivery may include outdoor cabinets equipped with backup power supplies, battery holders, PLC IPLOG and sensors.
- **Automatic Response to a Detected Threat**
  PLC IPLOG enables the implementation of almost any system response to a detected threat. Everything is configurable in the METEL IDE graphical interface with hundreds of supported functions and IEC 61131-3 languages FBD, LD, ST and IL.

Modbus

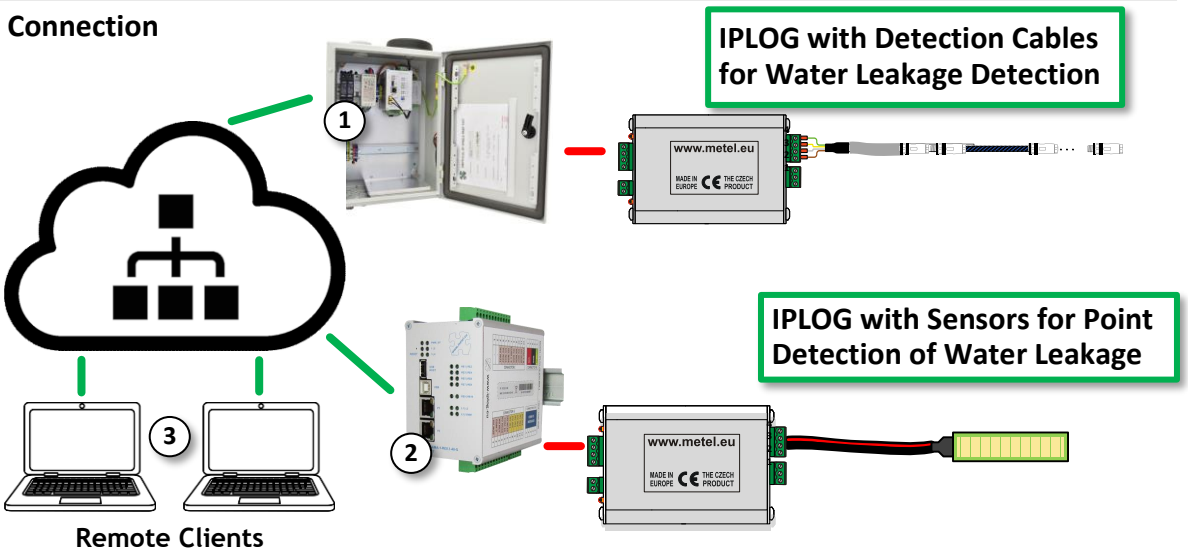
MySQL

Grafana

iOS
Android

IEC

Typical Connection



Recommended Type of Devices

POSITION	ORDERING NAME	NOTE
1	OH4320 - C4.A12.PB3-LTE IPLOG-G3-05... IPSEN-H2O-MOD MSC-750	Cabinet with back-up power supply, antenna and shelf for battery PLC with LTE, Modbus interface and inputs / outputs of choice Evaluation unit with relay output Detection cable length 7,5 m
1	uSD, 16GB, SLC Card	MicroSD card for applications with logging
2	IPLOG-G1-05... IPSEN-H2O-MOD H2O-PCB-78H	PLC with Modbus interface and inputs / outputs of your choice Evaluation unit with relay output Point water leak detectors
2	uSD, 16GB, SLC Card	MicroSD card for applications with logging
3	Application Grafana iOS / Android app IPLOG C4, EQU, SBI	Open source web application for IPLOG Freely downloadable application from the App Store and Google Play Visualization softwares using SNMP protocol

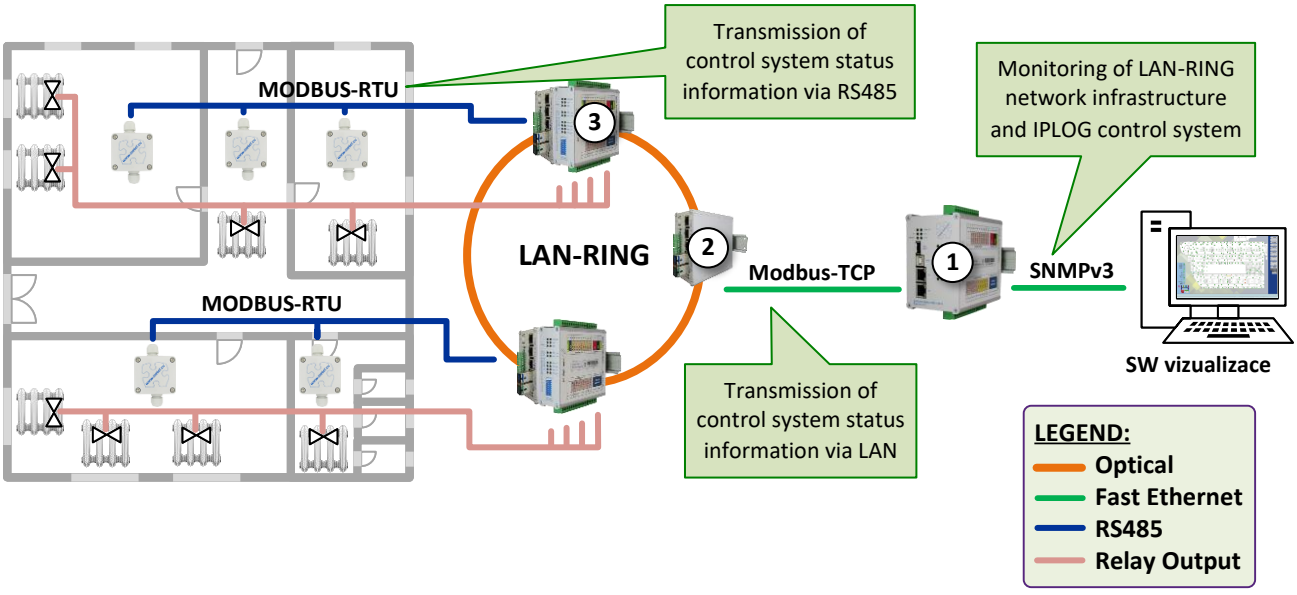
All IPLOG PLCs, separate METEL IO modules and industrial LAN-RING switches of the F and G series support Modbus RTU, Modbus TCP, SNMPv2c and SNMPv3 protocols for:

- reporting the status of FE, GE, FO ports, status of inputs, outputs and power supply
- monitoring of internal operating states such as operating temperature, optical status, IEE802.1X authentication status, etc..
- control of outputs on PLC, IO modules and LAN-RING switches

Modbus and SNMP protocols are very well standardized. Therefore, they guarantee reliable communication between devices from different manufacturers.

- **Collection of Measured Data**
  The measured data are securely stored in a MySQL database running directly on the PLC. It is available as a free package installed directly in the PLC memory, preconfigured for ease of use.
- **Visualization of Actual and Historical Data**
  In the IPLOG system, you can choose from several options for visualizing operational data.
  Grafana - The easiest way is the Open source Grafana application installed directly in the IPLOG PLC. It is a flexible solution for the presentation of current and former values stored in the database in the form of graphs, tables, taxa, gauge symbols and other graphic elements.
  Android and iOS Applications - It provides a quick overview of the current state of the system, including the ability to remotely control the system. In the server part of the application, which is installed on the PLC, the system administrator can set different permissions for each user.
  Visualization Software - This method of visualization is the most common, which is especially true in connection with the IFTER-EQU software, which supports both Modbus and SNMP protocols. In addition, it provides tools for integration with other systems.
- **Autonomous Control**
  Local systems with PLC IPLOG can be completely dependent on commands from the central visualization software, but they can operate partially or even completely independently. Depending on the settings of the IEC control program.

Typical use of Modbus and SNMP Protocols in the System



Recommended Type of Devices

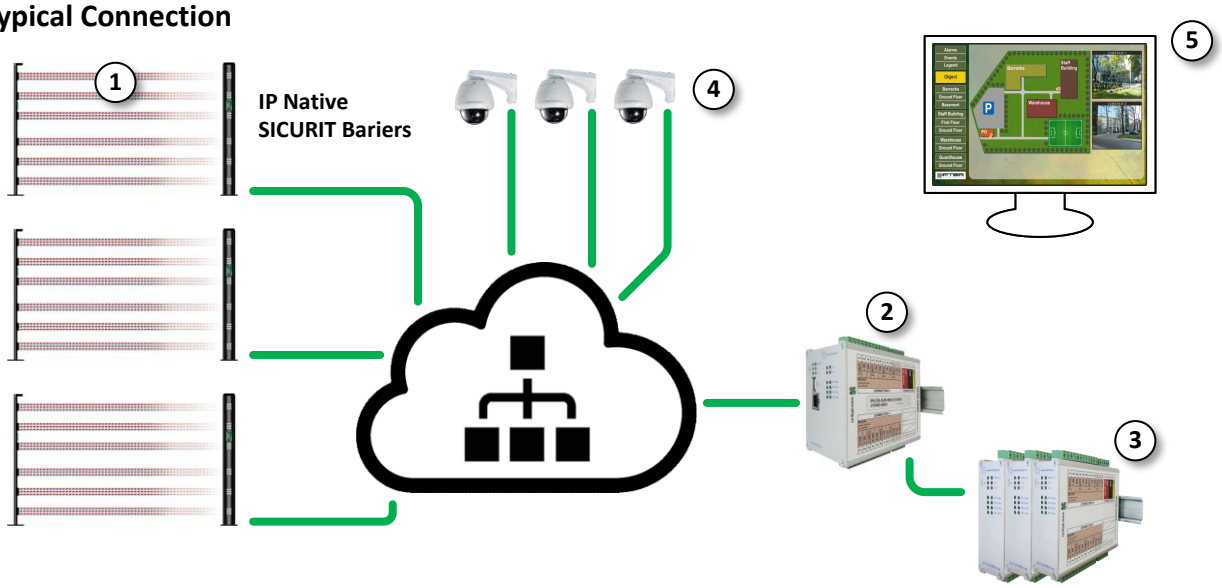
POSITION	ORDERING NAME	NOTE
1	IPLOG-Gx...	All IPLOG models support Modbus and SNMP protocols
1	uSD, 16GB, SLC Card	MicroSD card for applications with logging
2	Manageable Switches	All managed switches LAN-RING series F and G support protocols Modbus and SNMP
3	IO Modules METEL	All METEL IO modules support Modbus protocol

Increased pressure to minimize risks and reliability of security systems leads to interconnection with other systems and maximum process automation. This is also the main purpose of using IPLOGs in these systems. There are many examples of security system automation. We believe that the most successful examples of applications include objects where IPLOGs are used as a direct part of the perimeter system ABSOLUTE PRO from the Italian manufacturer Sicurit. It was developed to protect buildings with a high degree of risk, and IPLOGs help meet the special requirements of investors. Below is a selection of some typical examples from practice:

- **Binding to IP CCTV System**
  When a guarded zone is breached, IPLOG automatically rotates the PTZ cameras to capture these breached zones. In addition, the ONVIF client in the IPLOG PLC supports the control of the relay outputs of the cameras, to which powerful IR reflectors are usually connected to ensure a better images in night mode, warning lights to deter intruders and other devices.
- **Binding to Visualization Software**
  IPLOG transmits all alarms and possibly other operating states of the system to the visualization software using the encrypted SNMPv3 protocol.
- **Binding to the Lighting of the Object**
  Control algorithms set directly in the IPLOG PLC automatically switch on the lighting of disturbed zones. In parallel with this automation, the lights can be manually controlled by the security guard of the building or other designated personnel.

The development of the optimal solution was facilitated by the fact that ABSOLUTE PRO and PLC IPLOG barriers support the open Modbus TCP protocol. So we could focus directly on hardware development with the optimal combination of input and output interfaces. The result are the IPLOG-G2E-RE8.2E model with one LAN interface and eight 24V relays. This custom model has met the vast majority of applications. In applications requiring a higher number of outputs, we recommend using IPLOG-G2E-05-RE8.2E with Modbus-RTU interface for connecting additional IO modules.

Typical Connection



Recommended Type of Devices

POSITION	ORDERING NAME	NOTE
1	ABSOLUTE PRO	See the current offer at www.sicurit.it
2	IPLOG-G2E-RE82.E-BOX IPLOG-G2E-05-RE82.E-BOX	PLC with 1x LAN interface and 8x switching relays PLC with 1x LAN interface, 8x switching relays and Modbus RTU interface for connecting IO modules
3	RE8.2-05	METEL IO module with Modbus RTU interface, 2x DI / alarm input and 8x switching relays. If required, up to 30 METEL IO modules of any type can be connected.
4	IP Cameras	Any PTZ cameras supporting Onvif S or T profile
5	IFTER EQU	Visualization software supporting SNMPv3 and import of MIB files.

IPLOG with the IF-10 module is a multifunctional KNX Gateway with above-standard PLC functions. Typical examples of these applications are:
- ❖ **status information transfer between KNX and Modbus systems**
- ❖ **control Dali lighting from the KNX system**
- ❖ **integration of KNX systems with IP CCTV**

All applications work on the same principle. The basis is the transfer of values via Modbus registers PLC IPLOG, or their use in the IEC program.

❖ **Status Information Transfer between KNX and Modbus Systems**

IPLOG is a two-way gateway that connects any device communicating via Modbus RTU or TCP with any KNX system.

❖ **Dali control from KNX system**

IPLOG is used in buildings equipped not only with KNX automation but also digitally controlled Dali lighting. IPLOG can receive stimuli for lighting control from multiple sources. From the KNX system or, for example, from the IEC program running on a PLC.

❖ **Integration of KNX Systems with IP CCTV**

IPLOG PLCs facilitate the connection of building automation systems with security systems. Using the Onvif protocol, IPLOGs can obtain information directly from IP cameras on the license plates of arriving cars, evaluate the movement of people indoors, warn of dangerously hot objects in the technical parts of buildings, etc.

MEMBER KNX

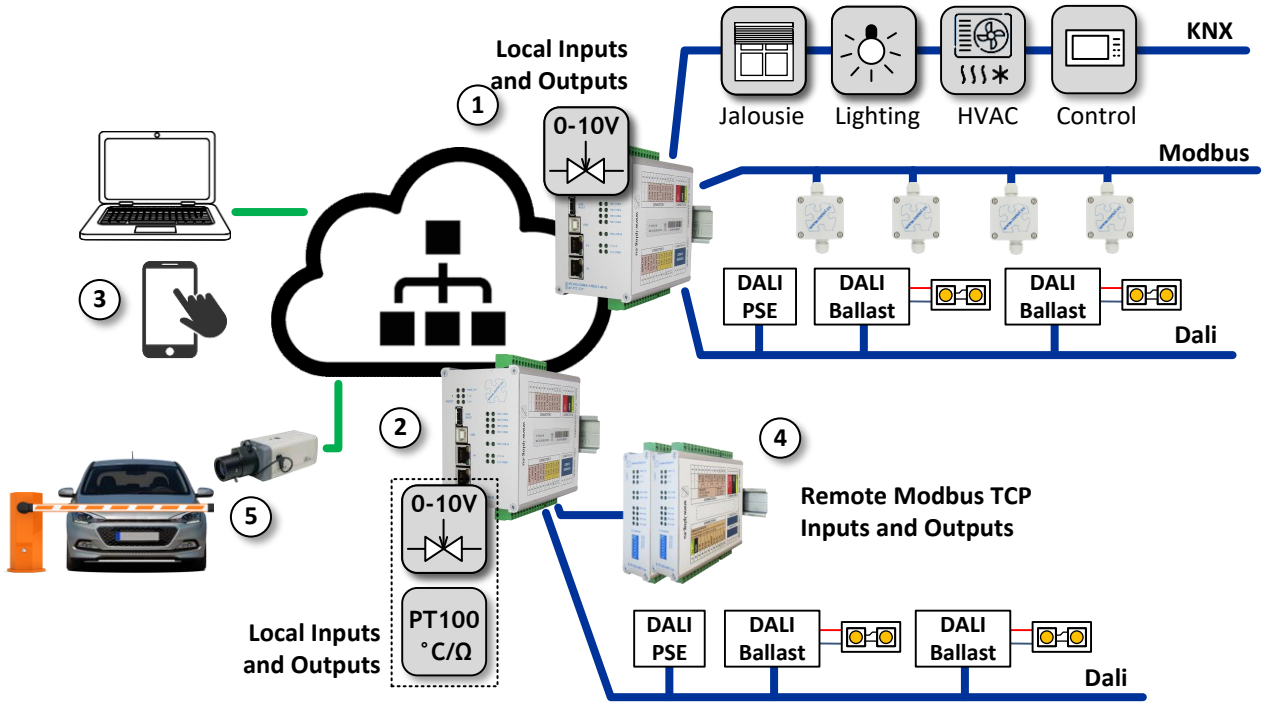
Modbus

Dali

IEC

iOS
Android

Typical Connection



Recommended Type of Devices

POSITION	ORDERING NAME	NOTE
1	IPLOG-Gx-04G-xx-10	PLC with KNX, Modbus, Dali interfaces and inputs / outputs of your choice
2	IPLOG-Gx-04G...	PLC with Dali, Modbus interfaces and inputs / outputs of your choice
3	Visualization Tools: iOS / Android app IPLOG C4, EQU, SBI	 Freely downloadable application from the App Store and Google Play Visualization softwares using SNMP protocol
4	Modbus IO Modules	See the current offer at www.metel.eu
5	IP CCTV Camera	The camera adds to the PLC license plates of incoming vehicles and other events available in Onvif protocol

LoRaWAN is a modern wireless IoT solution. It works in the free 868MHz band and allows users to build the entire system from endpoints, through gateways to application servers. IPLOG PLC with LoRaWAN interface and a wide range of IO and IF modules it is a widely scalable and adaptable solution for various applications. In addition, the endpoint can run its own control program written in the IEC61131-3 programming languages independently and operate completely independently.

LoRaWAN

MySQL

Grafana

iOS
Android

IEC

❖ **Wireless & Long Range Encrypted Network**

The key advantages of LoRaWAN technology are two-way communication and long range communication, which is usually between 2-5 km in urban and 15 km in suburban areas. All LoRaWAN devices encrypt the transmitted data using the AES algorithm with a 128-bit key.

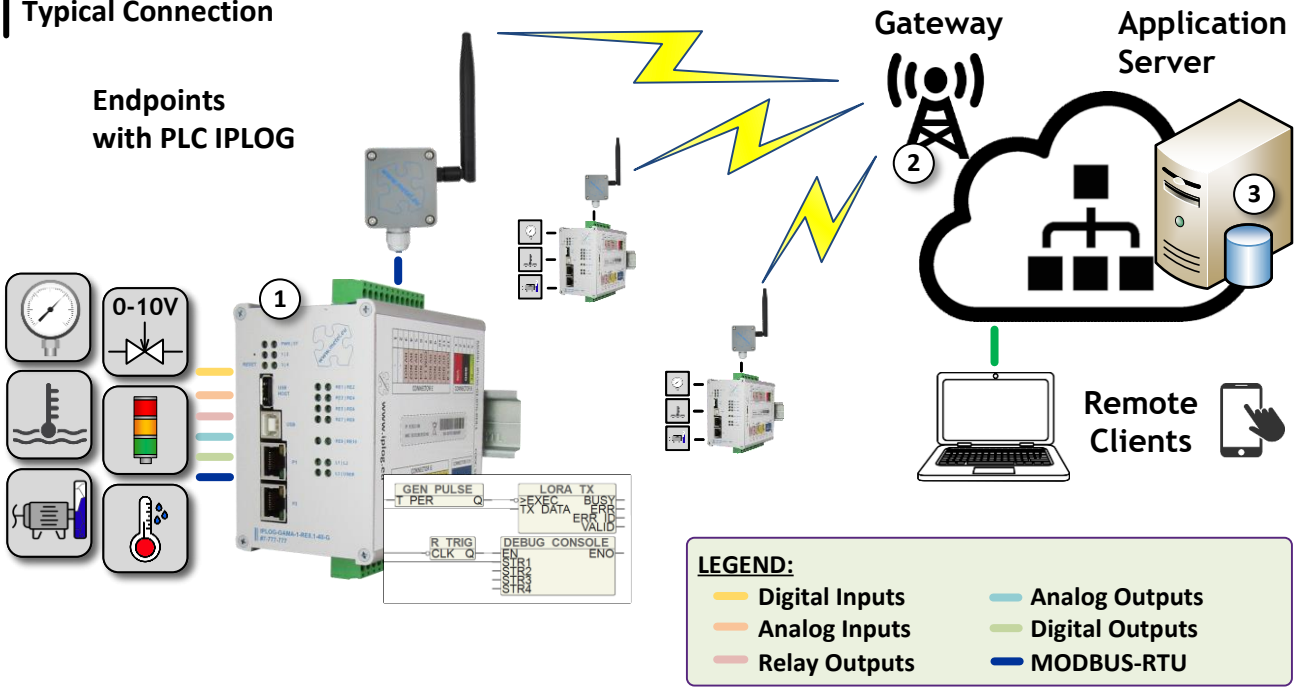
❖ **Endpoints Based on PLC**

LoRaWAN devices have a „duty cycle“ of 1%, which does not allow real-time communication and especially real-time remote control. Our endpoints based on modular PLCs IPLOG-GAMA largely eliminate this shortcoming. The PLC runs the control program independently of the central server and transmits only the data required for visualization, logging and operator feedback via the LoRaWAN network. Typical examples of these applications are alarm systems for monitoring remote areas, data collection from meteorological stations, control of water pumping from wells, etc.

❖ **Complex Delivery**

The delivery may include outdoor cabinets equipped with MPPT chargers, PoE injectors, battery holders and other necessary equipment.

Typical Connection



Recommended Type of Devices

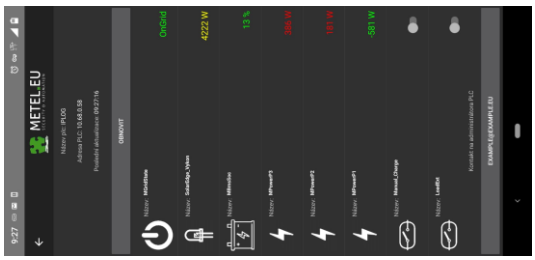
POSITION	ORDERING NAME	NOTE
1	IPLOG-Gx-18G.... LORA-EP1	Any version of PLC series G1-G4 with IF module IF-18G Wireless module including +3dB antenna and 3m connecting cable
1	uSD, 16GB, SLC Card	MicroSD card for applications with logging
2	WIFX LORIX One Gateway	Professional outdoor gateway LoRaWAN™ ultra in an ultra-compact design, designed and assembled in Switzerland by Wifx
3	Application Server	Virtual server with Grafana and MySQL applications

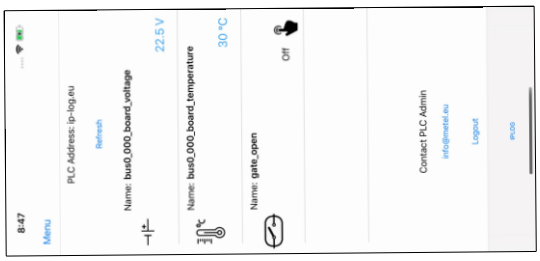
Graphical visualization of system information is a basic prerequisite for monitoring large objects. The system operator provides up-to-date information on the status of monitored technologies in a comprehensible form. User comfort therefore significantly reduces the demands on operator knowledge and the risk of errors.

iOS Android | Grafana | MySQL | Modbus SNMPv3

❖ iOS & Android Application IPLOG

The application displays the values read by SNMP and Modbus protocols from the LAN-RING and IPLOG system. It also allows you to control the systems. Part of the server part of the mobile application installed on the IPLOG PLC is a configuration interface for setting access and user rights. Each user of the mobile application may have different permissions depending on their job position and assigned tasks.



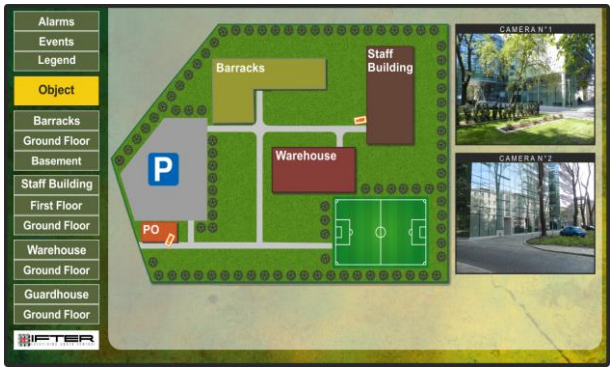


❖ GRAFANA Application

One of the applications for IPLOG is Grafana. It visualizes data stored in a local (IPLOG) or remote (server) MySQL database through graphs, tables, texts, gauge symbols and other graphical elements.

❖ Visualization Software

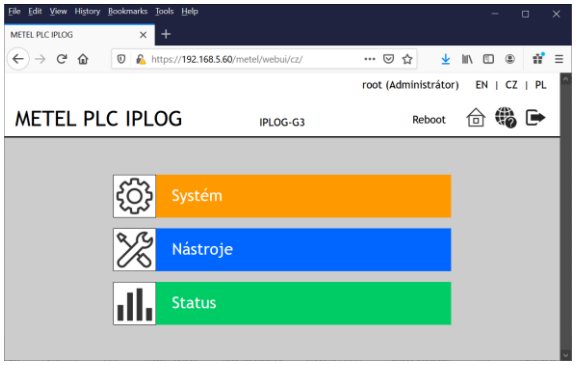
IFTER EQU software is a comprehensive information system for visualization, integration and management of security systems and building automation systems, including their control from control centers. The software is compatible with a wide range of access control systems, camera systems, alarm systems, fire alarm systems or building automation. It contains tools for setting links between systems. A typical example is an automatic display of video from a camera in a room where an alarm has occurred. In addition to systems using its own communication protocol, which must be integrated into the software, it also supports the general SNMP and Modbus protocols. Thanks to these, any device with this protocol can be added to the system. There is no need to create special drivers. All METEL devices support SNMP and MODBUS protocol and are therefore 100% compatible with IFTER-EQU.



Softwares

IPLOGs are used in practice in a wide variety of applications, which brings different requirements for setup methods. We have therefore developed more tools focused on different types of applications and customer needs.

Web Interface



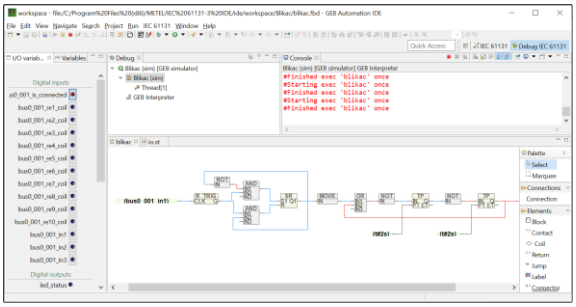
The modern web interface supports all common browsers. It is divided into 3 basic parts: System, Tools and Status.

System - the menu for setting network parameters, setting users and their rights, uploading Https certificates, PLC upgrade, addressing IO modules and setting GSM parameters.

Tools - this displays a list of installed OPKG packages and menus for their configuration. The OpenVPN and IEC packages are installed by default 61131-3. Additional packages are available for free in the OPKG repository.

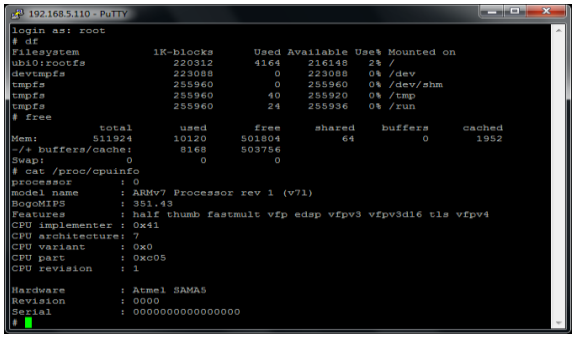
Status - provides detailed information on the status of the Linux system, available IEC 61131-3 variables and GSM connectivity.

IEC 61131-3 IDE for PLC Programmers



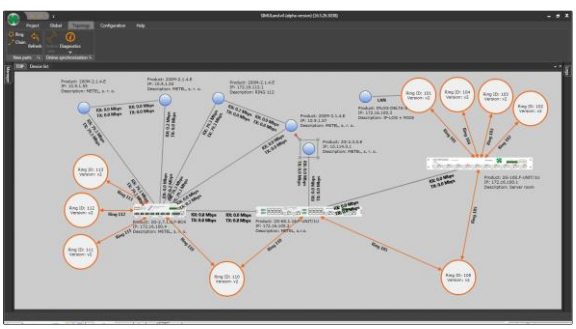
METEL IEC 61131-3 IDE is a program for creating control programs executable on PLC IPLOG and everything related to it. It supports 4 languages described in the **IEC-61131-3** standard: Ladder diagram (LD), Function block diagram (FBD), Structured text (ST) and Instruction list (IL). You can test the written program directly in the IDE with or without a PLC, after debugging the program, generate a binary code and upload it to the PLC. Communication with the PLC, including the upload of the binary code, is protected by the SSH protocol.

SSH Console for IT Experts



The IPLOG PLC runs the Linux OS, which gives users greater freedom to create their own applications in IEC IDE, Bash, C, etc. A 90MB partition is set aside for them in the internal FLASH memory. On the other 3 partitions there are 2 independent images for firmware and 1 recovery image. IPLOG always boots from a partition with a newer image. In the event of its damage, it boots from an older image and in the event of its damage, it boots from recovery, enabling recovery of the image by firmware upgrade.

SIMULand.v4 GUI for Easy Setup



SIMULand.v4 software is a very useful tool especially when configuring large LAN-RING systems. In addition, it allows:

- ❖ search for available PLC IPLOGs in the LAN
- ❖ their representation in the topology (developed)
- ❖ setting basic network parameters

Hardware

The IPLOG-GAMA PLC excels in its modular design, which is easily adaptable to various applications. By combining the available MOTHERBOARD, IO and IF modules, you can assemble hundreds of different variants of PLC and IO modules. To quickly select a suitable variant, we recommend using the online configurator available at: **https://www.metel.eu/en/iplog-configurator**

IF Module on IO Module

Extends IPLOG with up to 4 inputs / outputs or a KNX serial interface (IF-10G). All inputs and outputs are accessible via SNMPv3 and Modbus-TCP protocol.

IO Module

Extends IPLOG with inputs and outputs. The same modules are used together with the IF-05 module as separate IO modules on the Modbus RTU bus. All inputs and outputs are available SNMPv3 and Modbus-TCP and RTU protocols.

IF on MOTHERBOARD

Extends IPLOG with up to 4 inputs / outputs or serial interface (s). All inputs and outputs are accessible via SNMPv3 and Modbus-TCP protocol.

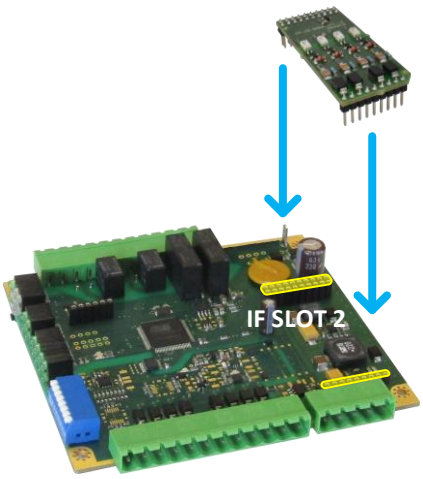
MOTHERBOARD

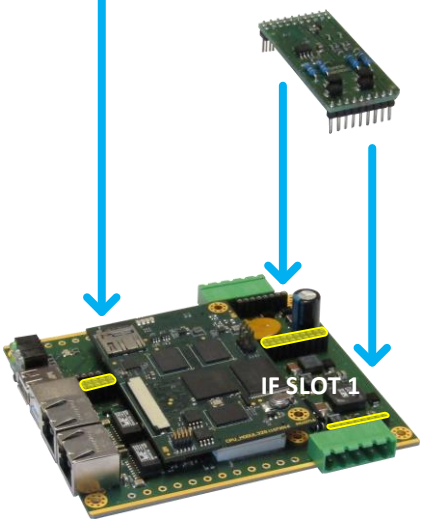
It contains the main CPU module with Linux OS, power input, USB A and B and IF Slot 1 for IF modules. Furthermore, depending on the type, it contains GSM and LAN ports. When the NTP server is unavailable, the RTC time is provided by the battery circuit.

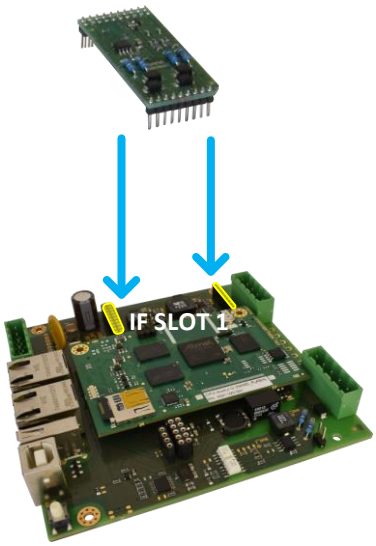
Final Product

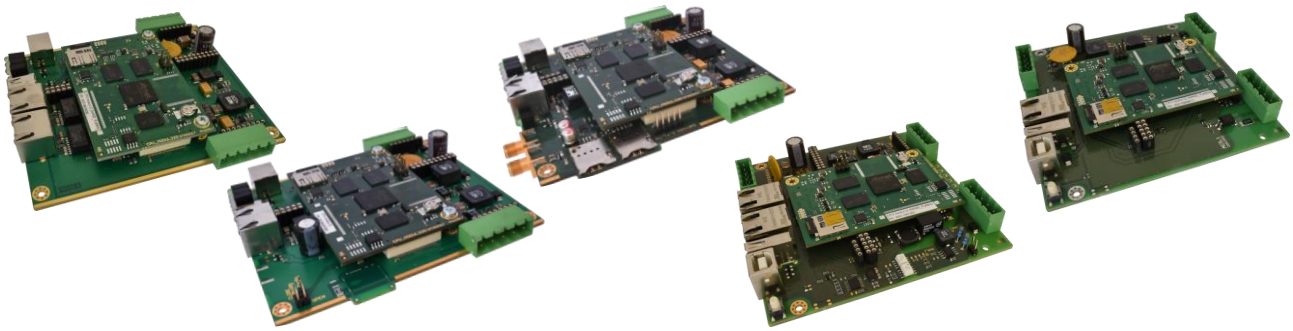
We supply PLCs assembled and tested in covers:

- from aluminum profile (BOX) including holders for installation on DIN35 rail or flat surface,
- made of self-extinguishing plastic ABS UL94-V0 including holder for installation on DIN35 rail









IPLOG-G1 **IPLOG-G2E** **IPLOG-G3** **IPLOG-G4** **IPLOG-G5**

Motherboards provide PLC connectivity via LAN and GSM / GPRS interfaces. In addition, the motherboard includes a CPU module, an RTC circuit with a battery, an IF SLOT1 interface for connecting an IF module and an IO SLOT for connecting an IO module. See the following table for a complete list of available interfaces:

INTERFACE	IPLOG-G1	IPLOG-G2E	IPLOG-G3	IPLOG-G4	IPLOG-G5	SURGE PROTECTION	NOTE
Power Input	1	1	1	1	1	600 W (10/1000 µs)	
CPU Module Interface	1	1	1	1	1	-	
Ethernet 10/100BASE-T	2	1	1	2	1	150 A (10/1000 µs)	IEC 61000-4-5
Cellular Network	0	0	1 (LTE)	0	0	-	G3: 2x SIM
USB-A, Max. 500mA	1	1	1	1	1	±15 kV	IEC 61000-4-2
USB-B	1	1	1	1	1	Local Programming Console	
IF SLOT 1	1	1	1	1	0	-	
IO SLOT	1	1	1	0	0	-	

Power Supply Input

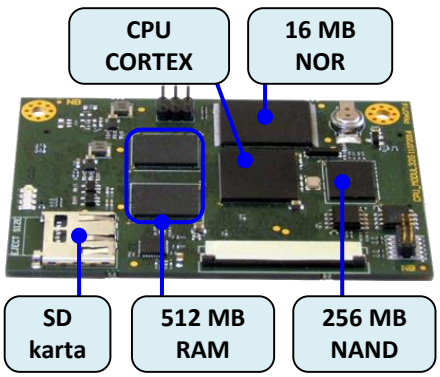
PARAMETER	VALUE	NOTE
Quantity	1	Twin Screw Terminals
Input Voltage	10 to 60 VDC	Without Models Below
	20 to 60 VDC	Models with AI and AO
	40 to 60 VDC	Models with MBUS
Power Consumption	G1, G2E, G4, G5: 3W	
	G3: 6W*	
*The reported values are an average among other brands.		

The modern design of the switching supplies allows for the powering of IPLOG units in a wide range of input voltages. IPLOGs can be powered directly from batteries because power supplies are automatically disabled when the input voltage is below 10V.

CPU Module

The CPU module interface is compatible with CPU modules of version G and its newer versions. The modules are based on an ARM CORTEX A5 microprocessor with 256 MB FLASH memory space and 512 MB RAM. The processor is running an embedded Linux operating system. The module has a range of operating temperatures from -40 °C to +70 °C.

PARAMETER	VALUE
Operating Temperatures	-40 to +70 °C
Processor	ARM Cortex-A5 Processor with ARMv7-A Thumb-2 Instruction Set
Frequency CPU	536 MHz
Linux Version	4.4.26-linux4sam_5.5
RAM	512 MiB
NAND	256 MiB (SLC, Micron)



📖 **MOTHERBOARDs are supplied exclusively with a mounted CPU module.**

Power Supply Input

PARAMETER	VALUE	NOTE
Quantity	1	Twin Screw Terminals
Input Voltage	10 to 60 VDC	Without Models Below
	20 to 60 VDC	Models with AI and AO
	40 to 60 VDC	Models with MBUS
Power Consumption	G1/G2E/G3/G4/G5	
	3W/3W/6W*/3W/3W	
*The reported values are an average among other brands.		

The modern design of the switching supplies allows for the powering of IPLOG units in a wide range of input voltages. IPLOGs can be powered directly from batteries because power supplies are automatically disabled when the input voltage is below 10V.

Ethernet Ports

PARAMETER	VALUES	NOTE
Quantity	2 / 1	G1 / G2(E), G3
Connectors	Shielded RJ45	
Data Speed	10/100BaseT	MDI-MDIX
Auto-Negotiation	Yes	
Protocols	VLAN, QoS, RSTP, IGMP	

IPLOG-G1 and G4 series G1 and G4 include 2 ports ethernet .
IPLOG-G2E, G3 and G5 series include 1 ethernet suitable for communication with locally connected peripheries over LAN.

GSM/GPRS Port

PARAMETER	VALUES	NOTE
Quantity	0 / 1	G1, G2E / G2, G3
Connectors	SMA	
Freq. Bands 2G	900 / 1800 MHz	
Freq. Bands 3G	900 / 2100 MHz	
Freq. Bands 4G-LTE	800 / 1800 / 2600 MHz	
Data Connectivity	GPRS, EDGE, UMTS, HSDPA	
SIM Slot	microSIM	

IPLOG-G3 series are equipped with a GSM module for wireless communication. It can be used for:

- ❖ Data collection from distant objects
- ❖ Sending system status via SMS
- ❖ Receiving SMS for remote controlled objects
- ❖ Remote system control throught openVPN
- ❖ Firmware upgrades

USB Ports

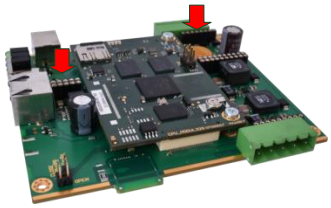
PARAMETER	USB-A	USB-B
Standard	USB 2.0	USB 2.0
IPLOG Mode	USB host	USB device
Function	External storage	Local management
Protection	Transil	Transil
Output Current	Max. 500 mA	-

The basic use of the USB ports are the following:
Connection of Remote Mass Storage – IPLOG can in the USB host mode use external USB mass storage as additional memory for storing or reading data.
Local Management – for security purposes remote management can be prohibited. In such situations the local USB console can be used.

Interface IF SLOT 1

Any type of IF module listed on the following pages can be installed in this interface. The modules can only be fitted / removed when the MOTHERBOARD is disconnected from the power supply. After connecting the input power supply, the IF module is automatically detected after the upgrade. Communication channels and inputs / outputs are accessible in the configuration software.

Interface IO SLOT



Any type of IO module with another IF module can be installed in this interface. The available IO modules are described on the following pages. The modules can only be fitted / removed when the MOTHERBOARD is disconnected from the power supply. After connecting the input power supply, a new IO module is automatically detected after the upgrade and its inputs / outputs are accessible in the configuration software.

- ❖ 2x LAN 10/100 Base-Tx
- ❖ 1x IF slot for connecting an IF module
- ❖ 1x IO slot for connecting an IO module
- ❖ Operating Temperature –40 °C to + 70 °C
- ❖ 600 W integrované přepěťové ochrany
- ❖ ARM Cortex-A5 with Linux OS, RTC, SD slot
- ❖ Web, SSH, IEC 61131-3 IL, ST, LD, FBD

When ordering, it is necessary to indicate the correct name of the device, using the following guidelines:

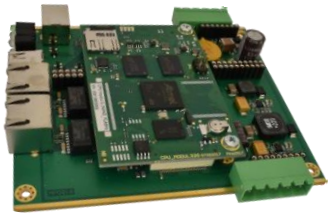
❖ IPLOG's marking depends on the MOTHERBOARD, IO module and IF modules used.

❖ All IO modules (PCB) can be used as IPLOGs subboards or as standalone modules (BOX) connected via the RS485 bus (Modbus-RTU).

❖ The control units are designed in such a way that the IO or IF modules can be changed at any time. A new module is then automatically detected and available for use.

🕮 **We recommend using the online configurator available at www.iplog.eu to select a suitable modification.**

Motherboard IPLOG-G1



IPLOG-G1... without IO Module

IPLOG-G1... with IO Module

Available Modifications IPLOG-G1...-BOX

PRODUCT NAME	CODE	LAN	GSM	IF SLOT 1	IF SLOT 2	DI 5V	DI 24V	DI 230V	AI - U/I	AI - U	AI - RTD	BI (alarm) / DI	RE - NO-230V	RE - NOC	RE - NOC-230V	AO	BO	DO (SSR)	OC NPN	PUSH / PULL
IPLOG-G1-xx-BOX	55xx-0000	2	-	xx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IPLOG-G1-xx-DI8.1-yy-BOX	55xx-01yy	2	-	xx	yy	-	8	-	-	-	-	-	4	-	-	-	-	-	-	2
IPLOG-G1-xx-AI8.1-yy-BOX	55xx-02yy	2	-	xx	yy	-	-	-	8	-	-	-	2	2	-	-	-	-	-	-
IPLOG-G1-xx-AI4.1-yy-BOX	55xx-03yy	2	-	xx	yy	-	4	-	-	-	4	-	-	-	-	-	-	4	-	-
IPLOG-G1-xx-BI8.1-yy-BOX	55xx-04yy	2	-	xx	yy	3	-	-	-	-	-	8	-	1	-	-	-	-	2	-
IPLOG-G1-xx-RE8.1-yy-BOX	55xx-05yy	2	-	xx	yy	-	-	3	-	-	-	-	8	-	2	-	-	-	-	-
IPLOG-G1-xx-AO8.1-yy-BOX	55xx-06yy	2	-	xx	yy	-	4	-	-	4	-	-	-	-	-	8	-	-	-	-
IPLOG-G1-xx-PP8.1-yy-BOX	55xx-07yy	2	-	xx	yy	-	4	-	-	-	-	3	-	1	-	-	-	-	-	8
IPLOG-G1-xx-BO8.1-yy-BOX	55xx-08yy	2	-	xx	yy	-	-	-	-	-	-	3	-	1	-	-	8	-	2	-
IPLOG-G1-xx-RE8.2E-BOX	55xx-0900	2	-	xx	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-
IPLOG-G1-xx-RE8.2-yy-BOX	55xx-10yy	2	-	xx	yy	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-
IPLOG-G1-xx-BI8.4-yy-BOX	55xx-13yy	2	-	xx	yy	-	-	-	-	-	-	8	-	4	-	-	-	-	-	-

The symbols used "xx" and "yy" replace the assembled version of the IF modules. If the IF module is not used, the code is 00.

- ❖ 1x LAN 10/100 Base-Tx
- ❖ 1x IF slot for connecting an IF module
- ❖ 1x IO slot for connecting an IO module
- ❖ Operating Temperature –40 °C to + 70 °C
- ❖ 600 W integrované přepěťové ochrany
- ❖ ARM Cortex-A5 with Linux OS, RTC, SD slot
- ❖ Web, SSH, IEC 61131-3 IL, ST, LD, FBD

When ordering, it is necessary to indicate the correct name of the device, using the following guidelines:

❖ IPLOG's marking depends on the MOTHERBOARD, IO module and IF modules used.

❖ All IO modules (PCB) can be used as IPLOGs subboards or as standalone modules (BOX) connected via the RS485 bus (Modbus-RTU).

❖ The control units are designed in such a way that the IO or IF modules can be changed at any time. A new module is then automatically detected and available for use.

🕮 **We recommend using the online configurator available at www.iplog.eu to select a suitable modification.**

Motherboard IPLOG-G2E

IPLOG-G2E... without IO Module

IPLOG-G2E... with IO Module

Available Modifications IPLOG-G2E...-BOX

PRODUCT NAME	CODE	LAN	GSM	IF SLOT 1	IF SLOT 2	DI 5V	DI 24V	DI 230V	AI - U/I	AI - U	AI - RTD	BI (alarm) / DI	RE - NO-230V	RE - NOC	RE - NOC-230V	AO	BO	DO (SSR)	OC NPN	PUSH / PULL
IPLOG-G2E-xx-BOX	54xx-0000	1	-	xx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IPLOG-G2E-xx-DI8.1-yy-BOX	54xx-01yy	1	-	xx	yy	-	8	-	-	-	-	-	4	-	-	-	-	-	-	2
IPLOG-G2E-xx-AI8.1-yy-BOX	54xx-02yy	1	-	xx	yy	-	-	-	8	-	-	-	2	2	-	-	-	-	-	-
IPLOG-G2E-xx-AI4.1-yy-BOX	54xx-03yy	1	-	xx	yy	-	4	-	-	-	4	-	-	-	-	-	-	4	-	-
IPLOG-G2E-xx-BI8.1-yy-BOX	54xx-04yy	1	-	xx	yy	3	-	-	-	-	-	8	-	1	-	-	-	-	2	-
IPLOG-G2E-xx-RE8.1-yy-BOX	54xx-05yy	1	-	xx	yy	-	-	3	-	-	-	-	8	-	2	-	-	-	-	-
IPLOG-G2E-xx-AO8.1-yy-BOX	54xx-06yy	1	-	xx	yy	-	4	-	-	4	-	-	-	-	-	8	-	-	-	-
IPLOG-G2E-xx-PP8.1-yy-BOX	54xx-07yy	1	-	xx	yy	-	4	-	-	-	-	3	-	1	-	-	-	-	-	8
IPLOG-G2E-xx-BO8.1-yy-BOX	54xx-08yy	1	-	xx	yy	-	-	-	-	-	-	3	-	1	-	-	8	-	2	-
IPLOG-G2E-xx-RE8.2E-BOX	54xx-0900	1	-	xx	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-
IPLOG-G2E-xx-RE8.2-yy-BOX	54xx-10yy	1	-	xx	yy	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-
IPLOG-G2E-xx-BI8.4-yy-BOX	54xx-13yy	1	-	xx	yy	-	-	-	-	-	-	8	-	4	-	-	-	-	-	-

The symbols used "xx" and "yy" replace the assembled version of the IF modules. If the IF module is not used, the code is 00.

- ❖ 1x LAN 10/100 Base-Tx
- ❖ 2G, 3G, 4G-LTE Cat4
- ❖ 1x IF slot for connecting an IF module
- ❖ 1x IO slot for connecting an IO module
- ❖ Operating Temperature –40 °C to + 70 °C
- ❖ 600 W integrované přepěťové ochrany
- ❖ ARM Cortex-A5 with Linux OS, RTC, SD slot
- ❖ Web, SSH, IEC 61131-3 IL, ST, LD, FBD

When ordering, it is necessary to indicate the correct name of the device, using the following guidelines:

❖ IPLOG's marking depends on the MOTHERBOARD, IO module and IF modules used.

❖ All IO modules (PCB) can be used as IPLOGs subboards or as standalone modules (BOX) connected via the RS485 bus (Modbus-RTU).

❖ The control units are designed in such a way that the IO or IF modules can be changed at any time. A new module is then automatically detected and available for use.

🕮 **We recommend using the online configurator available at www.iplog.eu to select a suitable modification.**

Motherboard IPLOG-3

IPLOG-G3... without IO Module

IPLOG-G3... with IO Module

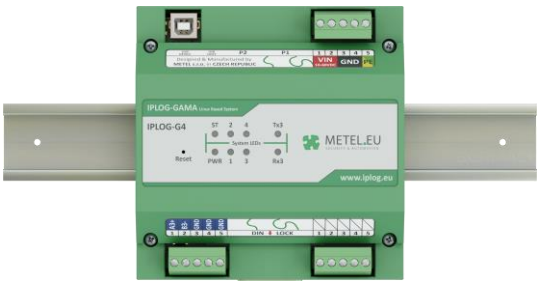
Available Modifications IPLOG-G3...-BOX

PRODUCT NAME	CODE	LAN	GSM	IF SLOT 1	IF SLOT 2	DI 5V	DI 24V	DI 230V	AI - U/I	AI - U	AI - RTD	BI (alarm) / DI	RE - NO-230V	RE - NOC	RE - NOC-230V	AO	BO	DO (SSR)	OC NPN	PUSH / PULL
IPLOG-G3-xx-BOX	57xx-0000	1	1	xx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IPLOG-G3-xx-DI8.1-yy-BOX	57xx-01yy	1	1	xx	yy	-	8	-	-	-	-	-	4	-	-	-	-	-	-	2
IPLOG-G3-xx-AI8.1-yy-BOX	57xx-02yy	1	1	xx	yy	-	-	-	8	-	-	-	2	2	-	-	-	-	-	-
IPLOG-G3-xx-AI4.1-yy-BOX	57xx-03yy	1	1	xx	yy	-	4	-	-	-	4	-	-	-	-	-	-	4	-	-
IPLOG-G3-xx-BI8.1-yy-BOX	57xx-04yy	1	1	xx	yy	3	-	-	-	-	-	8	-	1	-	-	-	-	2	-
IPLOG-G3-xx-RE8.1-yy-BOX	57xx-05yy	1	1	xx	yy	-	-	3	-	-	-	-	8	-	2	-	-	-	-	-
IPLOG-G3-xx-AO8.1-yy-BOX	57xx-06yy	1	1	xx	yy	-	4	-	-	4	-	-	-	-	-	8	-	-	-	-
IPLOG-G3-xx-PP8.1-yy-BOX	57xx-07yy	1	1	xx	yy	-	4	-	-	-	-	3	-	1	-	-	-	-	-	8
IPLOG-G3-xx-BO8.1-yy-BOX	57xx-08yy	1	1	xx	yy	-	-	-	-	-	-	3	-	1	-	-	8	-	2	-
IPLOG-G3-xx-RE8.2E-BOX	57xx-0900	1	1	xx	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-
IPLOG-G3-xx-RE8.2-yy-BOX	57xx-10yy	1	1	xx	yy	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-
IPLOG-G3-xx-BI8.4-yy-BOX	57xx-13yy	1	1	xx	yy	-	-	-	-	-	-	8	-	4	-	-	-	-	-	-

The symbols used "xx" and "yy" replace the assembled version of the IF modules. If the IF module is not used, the code is 00.

- ❖ 2x LAN 10/100 Base-Tx
- ❖ 1x USB-A a USB-B
- ❖ 1x RS485 with Modbus RTU / Bacnet
- ❖ 1x IF slot for connecting an IF module
- ❖ Operating Temperature –40 °C to + 70 °C
- ❖ 600 W integrované přepěťové ochrany
- ❖ ARM Cortex-A5 with Linux OS, RTC, SD slot
- ❖ Web, SSH, IEC 61131-3 IL, ST, LD, FBD

IPLOG-G4-...-DIN



MOTHERBOARD IPLOG-G4 is compatible with most IF modules. The G4 series is encapsulated in UL94-V0 self-extinguishing enclosures. The PLC designation depends on the IF module used, which is inserted into the PLC IPLOG during production. The flexible design allows the customer to later exchange the IF module for another type.

🕮 **The offer of individual modules is continuously expanded. We therefore recommend using the online configurator available at www.iplog.eu to select them.**

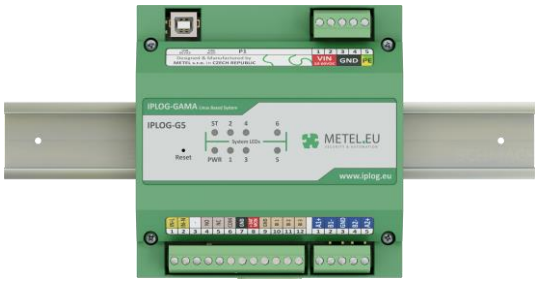
Available Modifications IPLOG-G4...-DIN

PRODUCT NAME	CODE	ON BOARD			ON IF MODULE IN IF SLOT 1													
		LAN	GSM	RS485	RS485	RS232	DALI	AUDIO I/O	M-BUS	KNX	Wiegand	LoRA EP	1-Wire	BI / 5V DI	OC	RE - NOC	RS232(2)	DI 24V ISO
IPLOG-G4-DIN	6800-0000	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IPLOG-G4-01(G)-DIN	6801(2)-0000	1	1	1	2(1)	-	-	-	-	-	-	-	-	-	-	-	-	-
IPLOG-G4-02(G)-DIN	6803(4)-0000	1	1	1	-	2(1)	-	-	-	-	-	-	-	-	-	-	-	-
IPLOG-G4-04G-DIN	6806-0000	1	1	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
IPLOG-G4-05-DIN	6807-0000	1	1	1	1	-	-	-	-	-	-	-	-	2	-	-	-	-
IPLOG-G4-06-DIN	6808-0000	1	1	1	1	-	-	1/1	-	-	-	-	-	-	-	-	-	-
IPLOG-G4-07G-DIN	6809-0000	1	1	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-
IPLOG-G4-09-DIN	6811-0000	1	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-
IPLOG-G4-11-DIN	6811-0000	1	1	1	-	-	-	-	-	-	1	-	-	2	-	-	-	-
IPLOG-G4-12-DIN	6814-0000	1	1	1	-	-	-	-	-	-	-	-	-	4	-	-	-	-
IPLOG-G4-13(G)-DIN	6815(6)-0000	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	1(1)	-
IPLOG-G4-14G-DIN	6817-0000	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	4
IPLOG-G4-15(G)-DIN	6818(9)-0000	1	1	1	-	-	-	-	-	-	-	-	-	-	4(1)	-	-	-
IPLOG-G4-21-DIN	6825-0000	1	1	1	-	-	-	-	-	-	-	-	-	2	-	1	-	-
IPLOG-G4-22G-DIN	6826-0000	1	1	1	-	-	-	-	-	-	-	-	-	-	-	1	-	2

(1)With galvanic isolation in the IPLOG-G4-xxG variant | (2)Tx, Rx, CTS, RTS

- ❖ 1x LAN 10/100 Base-Tx
- ❖ 1x USB-A a USB-B
- ❖ 2x RS485 with Modbus RTU / Bacnet
- ❖ 1x Digital Input 230 VAC
- ❖ 1x Analog Input 0-60VDC
- ❖ 3x 10-bit Alarm/Digital 5V Input
- ❖ 1x NOC 24V Relay Output
- ❖ Operating Temperature –40 °C to + 70 °C
- ❖ 600 W integrované přepěťové ochrany
- ❖ ARM Cortex-A5 with Linux OS, RTC, SD slot
- ❖ Web, SSH, IEC 61131-3 IL, ST, LD, FBD

IPLOG-G5-DIN



PRODUCT NAME	CODE	NOTE
IPLOG-G5-DIN	6900-0000	10-60VDC
The DIN35 holder is included in the package.		

MOTHERBOARD IPLOG-G5-DIN is designed to allow connection of Modbus-RTU and Bacnet compatible devices to 2 independent buses. The G5 series is encapsulated in UL94-V0 self-extinguishing enclosures.

🕮 **The offer of individual modules is continuously expanded. We therefore recommend using the online configurator available at www.iplog.eu to select them.**

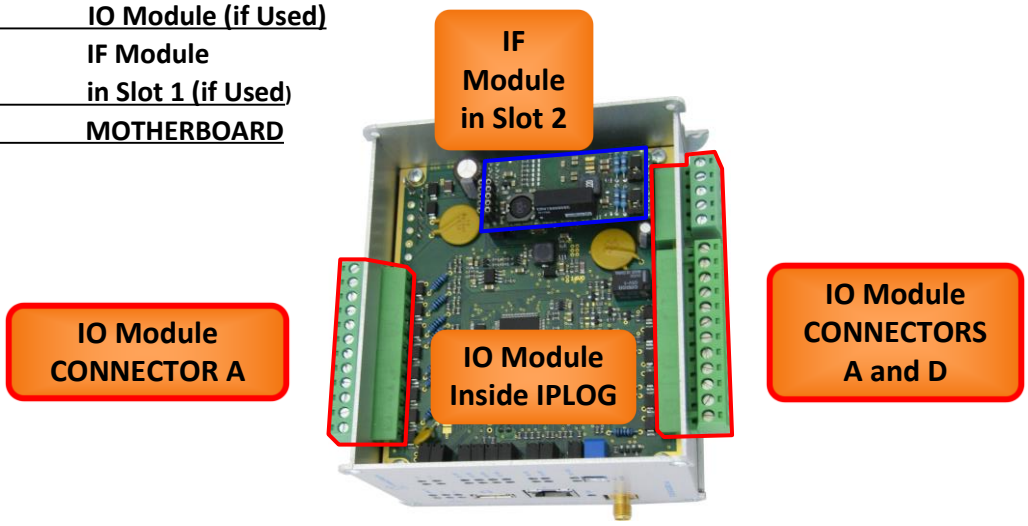
The PCB versions of the IO modules listed in the table below can be mounted on MOTHERBOARDS directly in the PLC or used as separate IO modules (BOX, DIN versions) connected via the RS485 bus (Modbus-RTU) to the IPLOG PLC. All modules have an operating temperature range from −40 to + 70°C..

IPLOG Marking

IPLOG-G3-01G-DI8.1-12-BOX
- BOX or PCB Version
- IF Module in Slot 2 (if Used)
- IO Module (if Used)
- IF Module in Slot 1 (if Used)
- MOTHERBOARD

Standalone IO Modules Marking

DI8.1-01G-BOX
- BOX or PCB Version
- IF Module (if Used)
- IO Modue



📖 **We recommend using the online configurator available at www.iplog.eu to select a suitable modification.**

Available IO Modules	DI8.1	AI8.1	AI4.1	BI8.1	RE8.1	AO8.1	PP8.1	BO8.1	RE8.2	RE8.2E	BI8.2E	BI8.4	BI8.4E	RE8.3E
On the motherboard PLC of the BOX series	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	✗
In the BOX series IO module	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✓	✗	✗
In the DIN series IO module	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	✓	✓
IF slot[1]	1	1	1	1	1	1	1	1	1	0	0	1	0	0
MODBUS RTU interface on board	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Digital 5VDC Inputs	-	-	-	3	-	-	-	-	-	-	-	-	-	-
Digital 24VDC Inputs (GO)	8	-	4	-	-	4	4	-	-	-	-	-	-	-
Digital 230VAC Inputs(GO)	-	-	-	-	3	-	-	-	-	-	-	-	-	-
Analog 12-bit U/I Inputs (GO)	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Analog 12-bit U Inputs (GO)	-	-	-	-	-	4	-	-	-	-	-	-	-	-
Analog 2-3 Wired RTD Inputs (GO)	-	-	4	-	-	-	-	-	-	-	-	-	-	-
10-bit Alarm / Digital 5VDC Inputs	-	-	-	8	-	-	3	3	-	-	8	8	8	-
Relay Outputs TYPE 1 - NO 230 V (GO)	4	2	-	-	8	-	-	-	-	-	-	-	-	-
Relay Outputs TYPE 2 - NOC 24 V (GO)	-	2	-	1	-	-	1	1	8	8	-	4	4	8
Relay Outputs TYPE 3 - NOC 230 V (GO)	-	-	-	-	2	-	-	-	-	-	-	-	-	-
Analog Outputs 12-bit (GO)	-	-	-	-	-	8	-	-	-	-	-	-	-	-
Analog / Alarm 8-bit Outputs	-	-	-	-	-	-	-	8	-	-	-	-	-	-
Digital SSR Outputs (GO)	-	-	4	-	-	-	-	-	-	-	-	-	-	-
Digital OutputsOC - NPN	-	-	-	2	-	-	-	2	-	-	-	-	-	-
Digital Outputs OC - PUSH-PULL[2] (GO)	2	-	-	-	-	-	8	-	-	-	-	-	-	-

[1]see IF Modules Specification | [2]Programmable as NPN or PNP | GO = with galvanic separation

IF modules are used in the modular PLC system IPLOG-GAMA and its IO modules in the following cases:

- ❖ **The PLC communicates with third party devices**
- ❖ **PLC communicates with IO modules via Modbus RTU**
- ❖ **PLC expands inputs and outputs**
- ❖ **The IO module communicates via Modbus RTU**
- ❖ **The IO module expands the inputs and outputs**

When ordering, we recommend using the online configurator available at www.iplog.eu. The configurator automatically offers only compatible IF, IO and motherboard modules.

IF modules in the IPLOG GAMA PLC are always inserted into the IF slots. In PLC we distinguish:
IF Slot 1 on the motherboard,
IF Slot 2 on the IO board, if used.

❖ All IF modules are designed to work in **IF Slot 1** on any motherboard. Only IF modules without serial interfaces can be used in the **IF Slot 2** PLC.

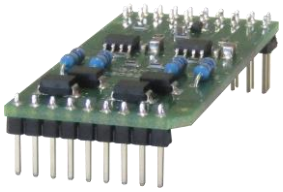
❖ In the the event of the use of a separate IO module, which is connected to PLC IPLOG-GAMA or LAN-RING switch via serial bus, use IF modules with RS485 Modbus RTU interface.

🕮 **IPLOG GAMA PLCs, LAN-RING industrial switches and miniLAN converters communicate with external IO modules and METEL sensors via RS485 Modbus RTU bus.**

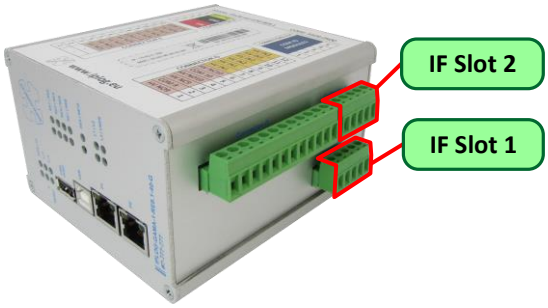
Modbus-RTU bus Length	
PLC IPLOG-GAMA	**PLC IPLOG-GAMA Switch LAN-RING miniLAN-485 and 4B2**
< 100m	**< 1000m**
115,2 kbps	**19,2 kbps**

🕮 **Default settings of Modbus RTU bus of IO modules and sensors:**
Device ID: 1 | Baudrate: 115 200 | Parity: None
Data bits: 8 | Stop bits: 1

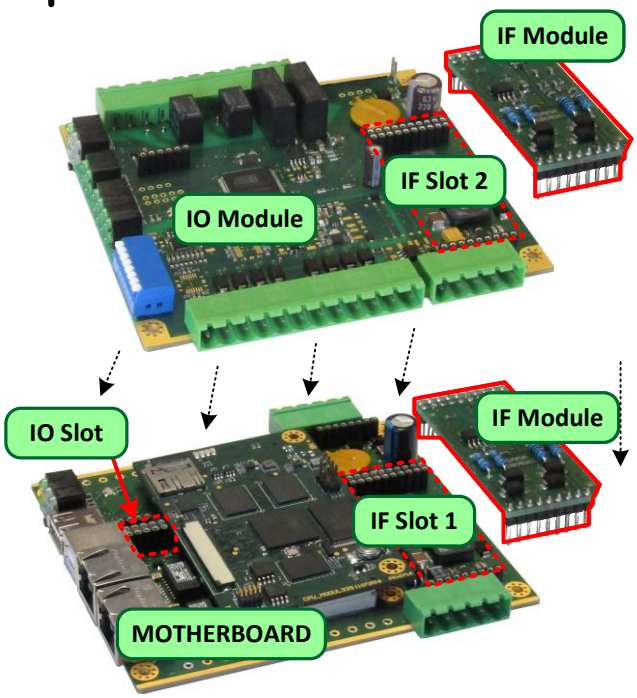
Standalone IF Module



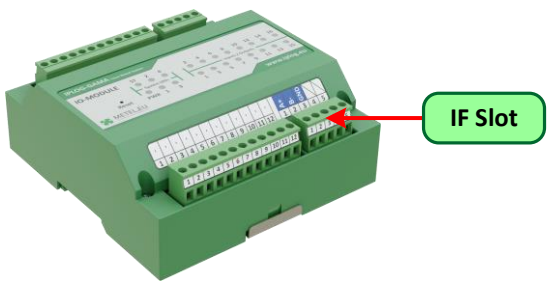
Location of IF Slots on the PLC



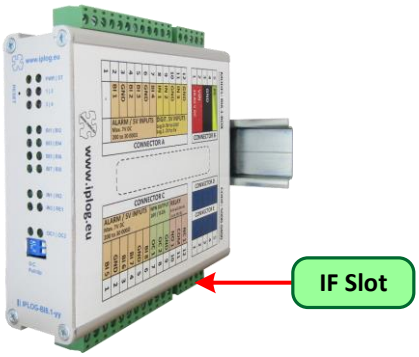
Internal Layout of PLC IPLOG



IF slot na samostatném IO modulu DIN



IF slot on a Standalone IO Module



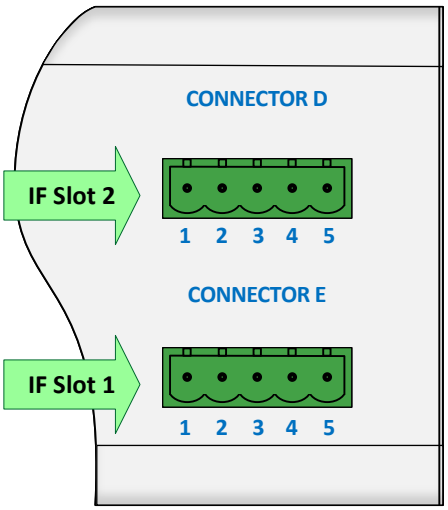
Overview of IF modules available as of March 1, 2022

NAME	DESCRIPTION	PINS					COMPATIBILITY		
							IPLOG		IO
		1	2	3	4	5	IF Slot 1	IF Slot 2	Module
IF-01	2x RS485	A1+	B1-	GND	B2-	A2+	YES		YES
IF-01G		A1+	B1-	ISO-GND	B2-	A2+	YES		YES
IF-02	2x RS232	Rx1	Tx1	GND	Rx2	Tx2	YES		
IF-02G		Rx1	Tx1	ISO-GND	Rx2	Tx2	YES		
IF-04G	RS485 ISO, DALI	A+	B-	ISO-GND	-D BUS	+D BUS	YES		
IF-05	RS485, 2x INPUTS(1), (2)	A+	B-	GND	BI 2	BI 1	YES		YES
IF-06	AUDIO	LINE OUT R	LINE OUT L	GND	LINE IN R	LINE IN L	YES		
IF-07G	RS485 ISO, 1-Wire	A+	B-	ISO-GND	1-Wire	ISO-5V	YES		
IF-11	Wiegand, 2x INPUTS(1)	DATA-0	DATA-1	GND	BI 2	BI 1	YES		
IF-12	4x INPUTS(1)	BI 4	BI 3	GND	BI 2	BI 1	YES	YES	
IF-15	4x OC (NPN) OUTPUTS	OC 4	OC 3	GND	OC 2	OC 1	YES	YES	
IF-15G		ISO OC 4	ISO OC 3	ISO-GND	ISO OC 2	ISO OC 1	YES	YES	
IF-17G	1x RS485, 1x RS232	A+	B-	ISO-GND	Rx	Tx	YES		YES
IF-18G	1x LORA-EP1, 1x RS485	A+	B-	ISO-GND	Tx/Rx	VCC	YES		
IF-21	2x INPUTS(1), 1x RELAY	COM	NO	GND	BI2	BI1	YES	YES	
IF-22G	2x INPUTS(3), 1x RELAY	COM	NO	ISO-GND	DI2	DI1	YES	YES	

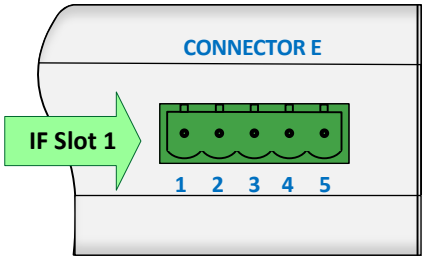
(1) Alarm / 5V Digital Inputs.
(2) It does not apply to a combination with the BI-8.1 and BI-8.4 module, where they only work as digital.
(3) Digital 24 V inputs.
ISO = Isolated (galvanic separation)

📖 **For the current list and selection of a suitable modification, we recommend using the online configurator available at www.iplog.eu.**

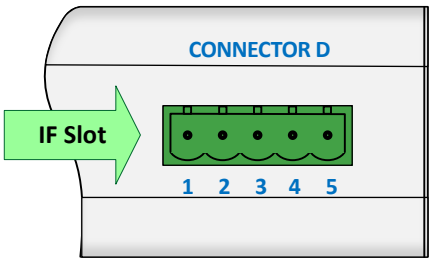
Motherboard with IO Module



Motherboard

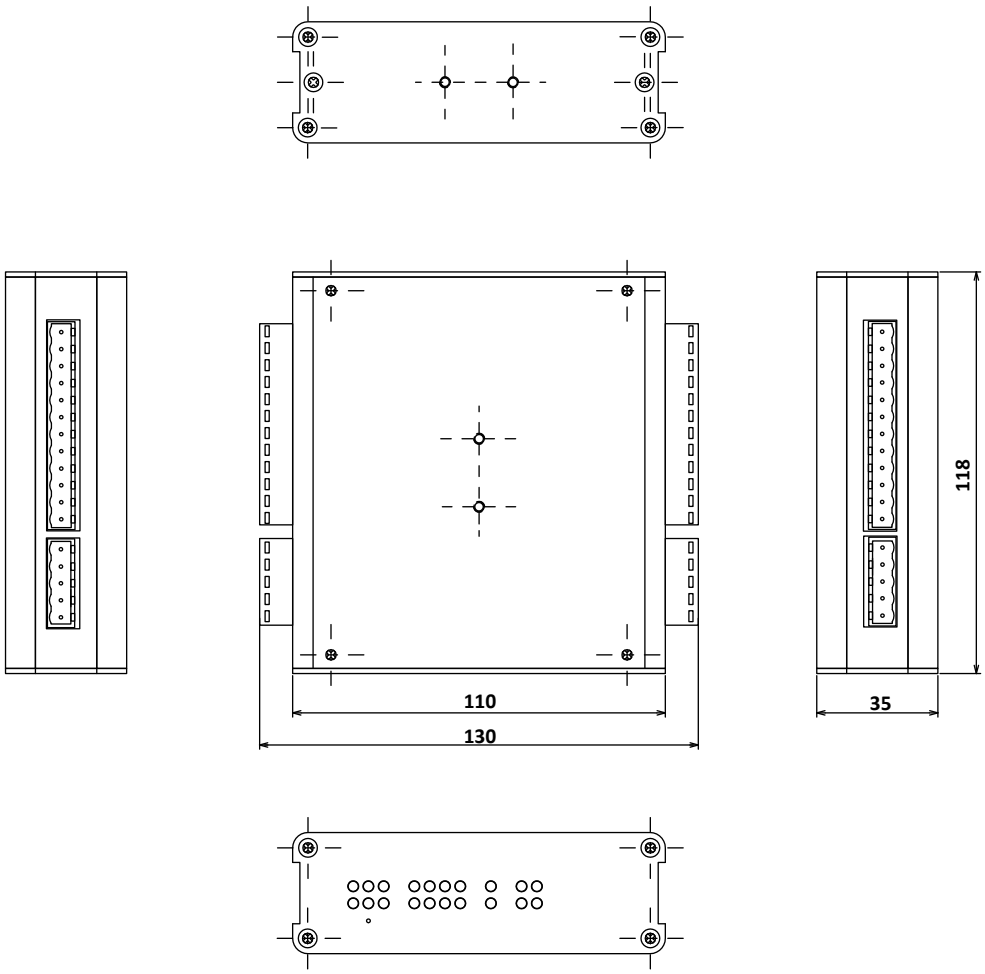


IO Module



Dimensions **PLC IPLOG BOX without IO Module**
Standalone IO Module BOX

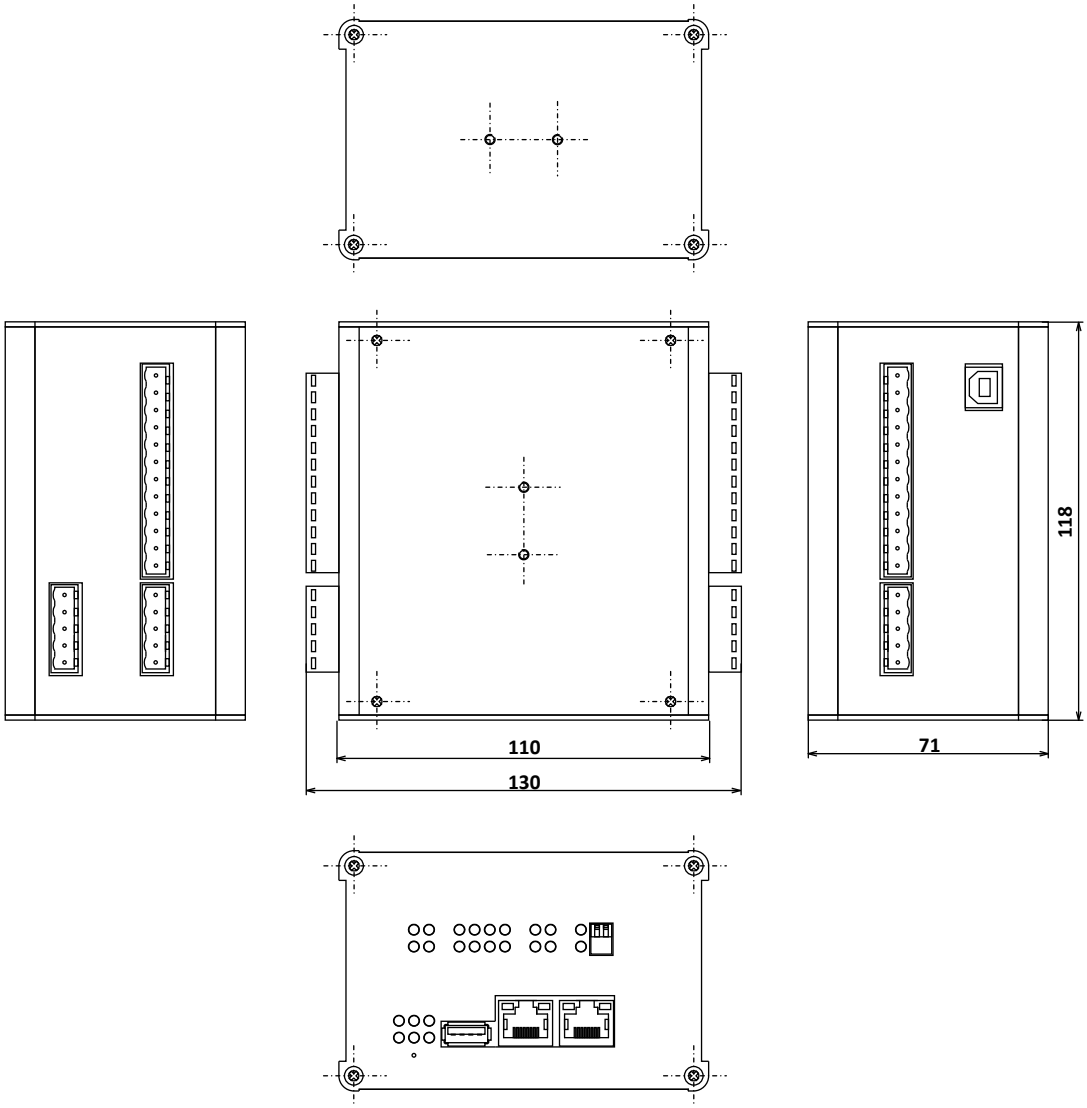
PLC IPLOG without IO modules located directly on the MOTHERBOARD and separate IO modules are supplied in an unified aluminum profile. The delivery includes holders for mounting on DIN35 and a flat surface.



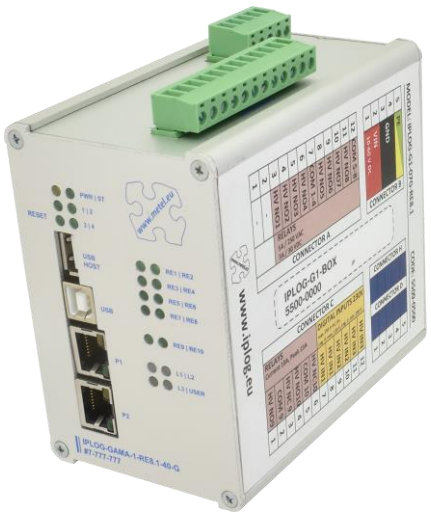
Examples of IPLOG PLC BOX Appearance without IO Module and Standalone IO Modules BOX

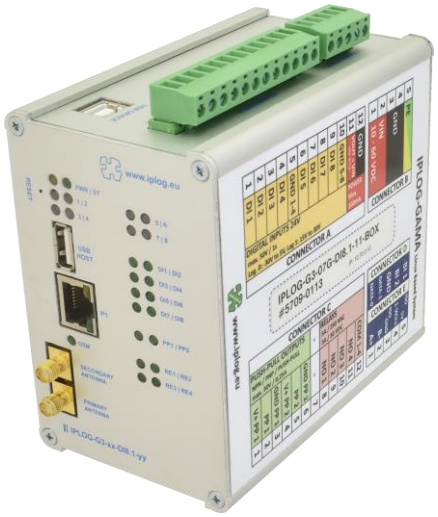
Dimensions of IPLOG PLC BOX with IO Module

We supply PLC IPLOG with IO modules located directly on the MOTHERBOARD in an unified aluminum profile. The delivery includes holders for mounting on DIN35 and a flat surface.



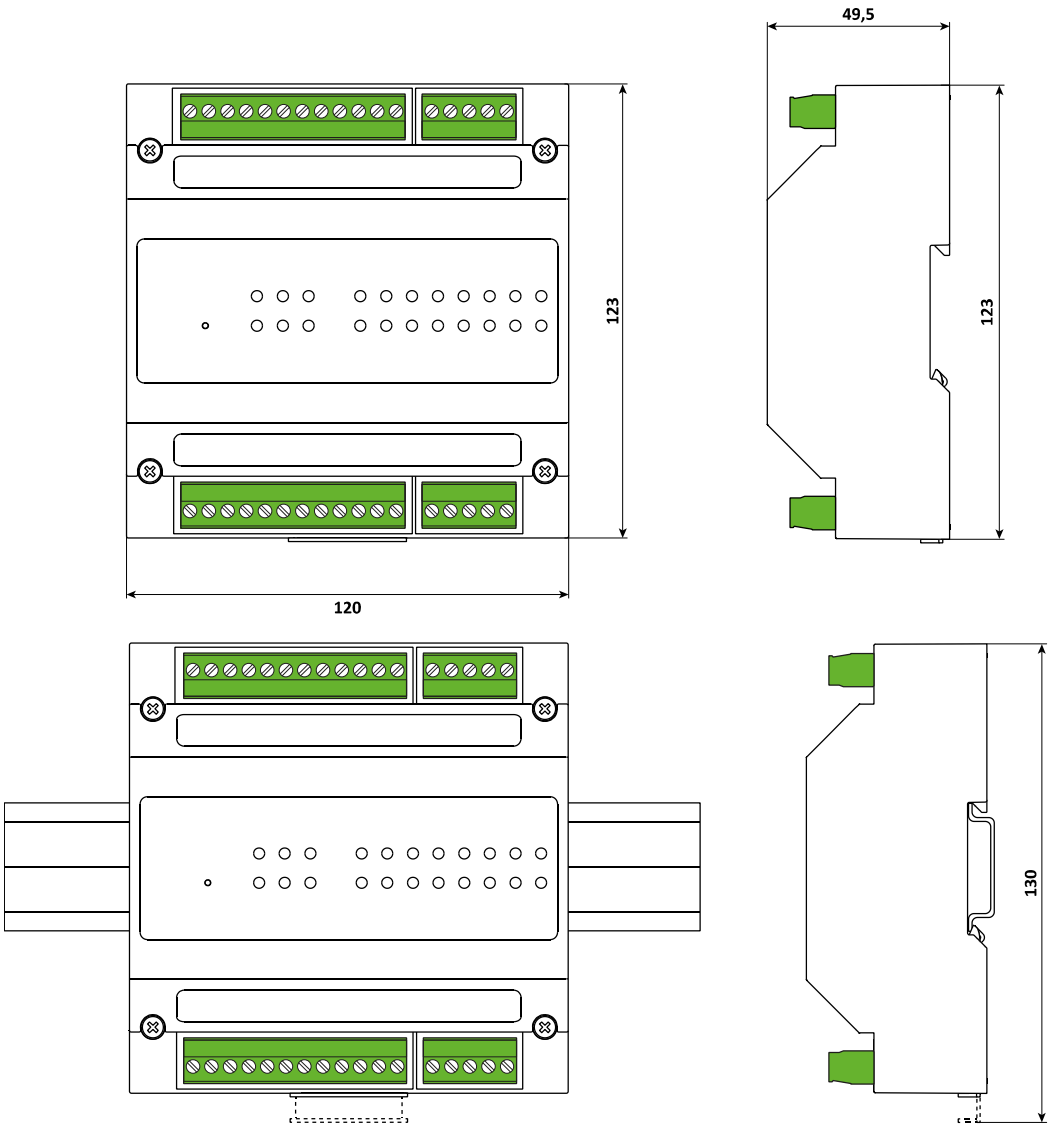
Examples of IPLOG PLC BOX with an IO Module Located Directly on the MOTHERBOARD



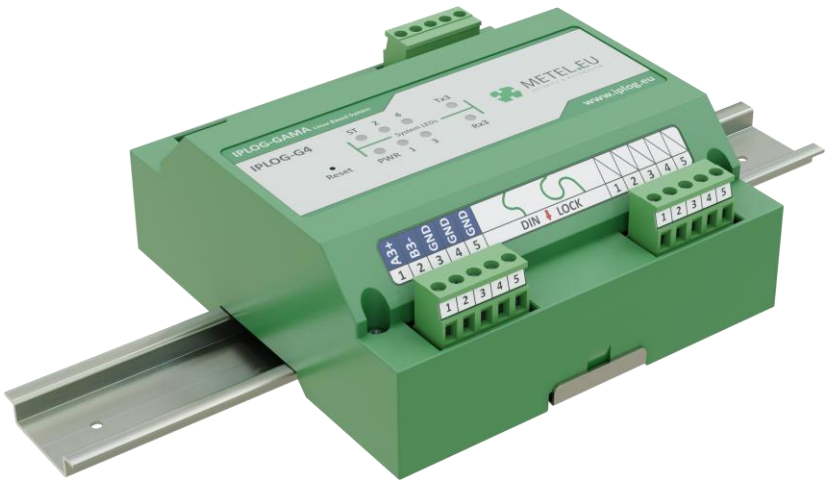


Dimensions of IPLOG PLC DIN and IO module DIN

We supply PLC IPLOG DIN and IO modules DIN in plastic self-extinguishing profiles. The delivery includes holder for mounting on DIN35.



Examples of IPLOG PLC DIN



- 8x 12-bit Analog U/I Inputs
- 2x NOC 24V Relay Outputs
- 2x NO 230V Relay Outputs
- 1x Slot for IF Module
- Operating Range –40°C to +70°C
- 600 W Integrated Surge Protections

PCB DIN BOX

DEVICE

PARAMETER	VALUES	NOTE
Power Supply	24 VDC	20 to 60 VDC
Operating Range	–40 to +70 °C	
Humidity	Max. 95 %	No-condensing
Dimension BOX	35 x 110 x 119 mm	W x H x D
Dimension DIN	120 x 123 x 49,5 mm	W x H x D
Weight	Max. 0.38 kg	
Surge Protection	600 W	10/1000 µs
Installation	DIN35 or Flat Surface	

ANALOG INPUTS

PARAMETER	VALUES	NOTE
Voltage Ranges	±2.5V, ±5V, ±10V	
	0V to 5V, 0V to 10V	
Current Ranges	0 to 20mA, 4 to 20mA	
Sampling Rate	1 kSps	Adaptive
Resolution	12-bit	
Galvanic Isolation	Yes	
Surge Protection	600 W	10/1000 µs

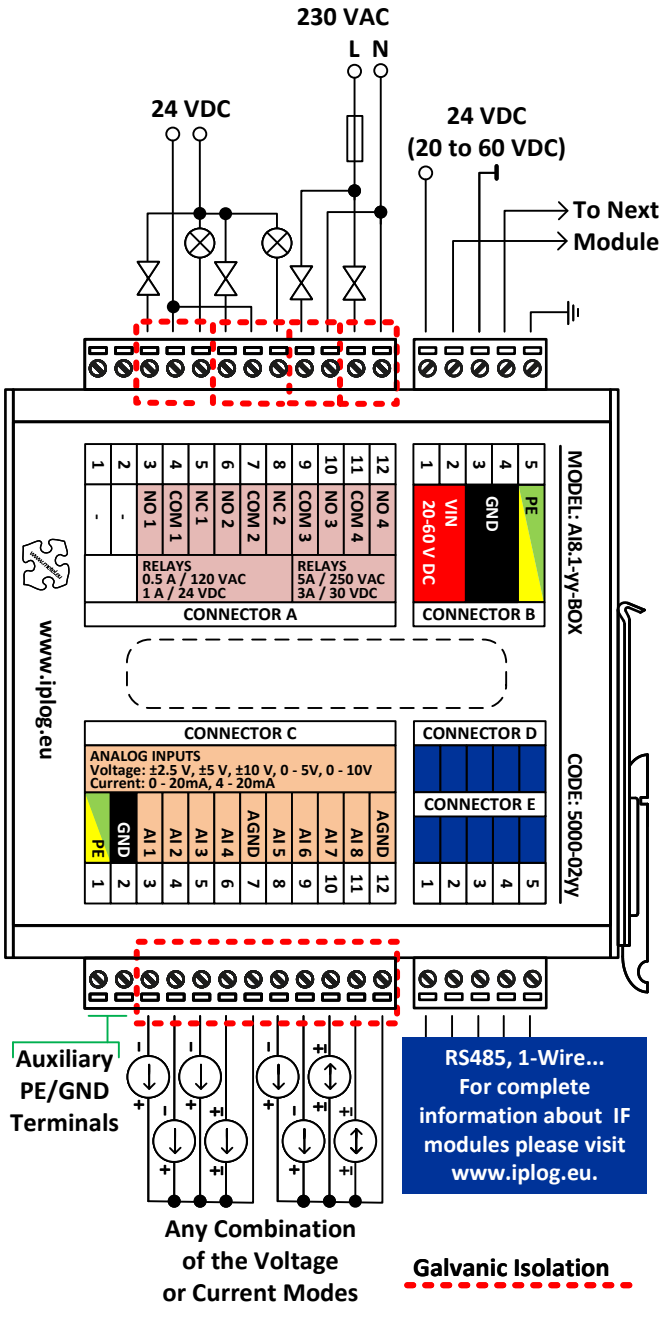
RELAYS

PARAMETER	VALUE	NOTE
SWITCHING HV RELAYS		Type 1
Contact Type	NO	Normal open
Max. Load	5 A / 250 VAC	Resistive load
	3 A / 30 VDC	Resistive load
Lifetime	100,000 Operations	
CHANGEOVER RELAYS		Type 2
Max. Load	0.5 A at 120 VAC	Resistive load
	1 A at 24 VDC	Resistive load
Lifetime	3,000,000 Operations	

📖 **Detailed technical information can be found in the datasheets.**

ORDERING

PRODUCT NAME	CODE	NOTE
AI8.1-PCB	0000-0200	PCB Module
AI8.1-05-DIN	6000-0207	Modbus + 2x DI 5V/alarm
AI8.1-05-BOX	5000-0207	Modbus + 2x DI 5V/alarm
For a Full Range of Interfaces Please Visit www.iplog.eu.		



- 4x 24-bit Analog RTD Inputs
- 4x SSR Outputs
- 4x 24 V Digital Inputs
- 1x Slot for IF Module
- Operating Range –40°C to +70°C
- 600 W Integrated Surge Protections


PCB


DIN


BOX

DEVICE

PARAMETER	VALUES	NOTE
Power Supply	24 VDC	10 to 60 VDC
Operating Range	–40 to +70 °C	
Humidity	Max. 95 %	No-condensing
Dimension BOX	35 x 110 x 119 mm	W x H x D
Dimension DIN	120 x 123 x 49,5 mm	W x H x D
Weight	Max. 0.38 kg	
Surge Protection	600 W	10/1000 µs
Installation	DIN35 or Flat Surface	

ORDERING

PRODUCT NAME	CODE	NOTE
AI4.1-PCB	0000-0300	PCB Module
AI4.1-05-DIN	6000-0307	Modbus + 2x DI 5V/alarm
AI4.1-05-BOX	5000-0307	Modbus + 2x DI 5V/alarm
For a Full Range of Interfaces Please Visit www.iplog.eu.		

ANALOG INPUTS

PARAMETER	VALUES	NOTE
Input Resistance	> 50 kΩ	
Resistive Ranges	PT100, PT500, PT1000	
Modes	3-wire, 2-wire	
Sampling Rate	1 kSps	Selectable
Resolution	24-bit	
Galvanic Isolation	Yes	
Surge Protection	600 W	10/1000 µs

DIGITAL INPUTS 24 V

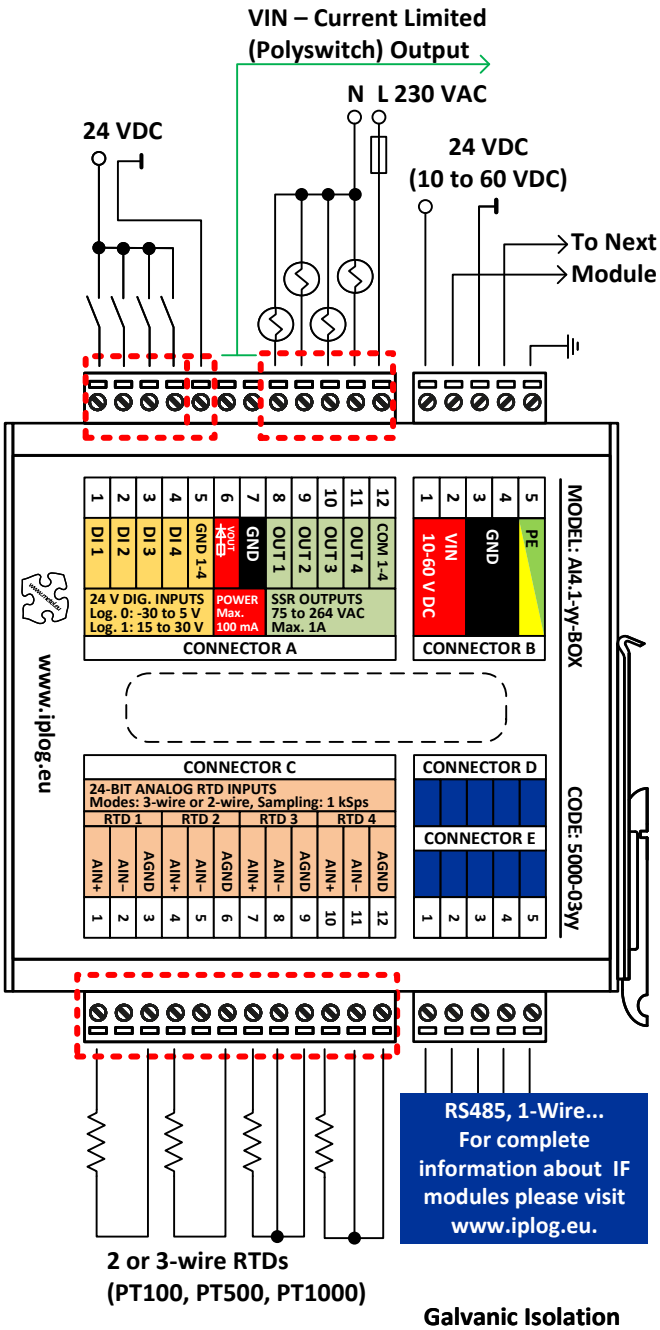
PARAMETER	VALUE	NOTE
Input Voltage DC - AC	Log. 0: –30 V to 5 V	
	Log. 1: 15 V to 30 V	Max. 50 V / 1s
Input Current	12 mA at 24 VDC	
Switching Frequency	Max. 20 kHz	
Galvanic Isolation	Yes	1500 Vrms
Surge Protection	600 W	10 / 1000 µs

SSR OUTPUTS

PARAMETER	VALUE	NOTE
Output Type	MOSFET	
Load Voltage Rating	75 VAC to 264 VAC	45 to 65 Hz
Load Current Rating	1 A	
Contact Form	SPST (1 Form A)	
Insulation Resistance	Min.10^9 Ω	input / output
Breakdown Voltage	3,000 Vrms	input / output

POWER

PARAMETER	VALUE	NOTE
Output Current	Max. 100 mA	
Protection	Diode + Polyswitch	
Output Voltage	VOUT = VIN	



📖 Detailed technical information can be found in the datasheets.

- 8x 5V Digital Inputs or 10-bit Alarm Inputs
- 3x Digital 5V Inputs
- 1x NOC 24V Relay Output
- 2x Open Collector NPN Outputs
- 1x Slot for IF Module
- Operating Range –40°C to +70°C
- 600 W Integrated Surge Protections


PCB


DIN


BOX

DEVICE	PARAMETER	VALUES	NOTE
	Power Supply	12 VDC	10 to 60 VDC
	Operating Range	–40 to +70 °C	
	Humidity	Max. 95 %	No-condensing
	Dimension BOX	35 x 110 x 119 mm	W x H x D
	Dimension DIN	120 x 123 x 49,5 mm	W x H x D
	Weight	Max. 0.38 kg	
	Surge Protection	600 W	10/1000 µs
	Installation	DIN35 or Flat Surface	

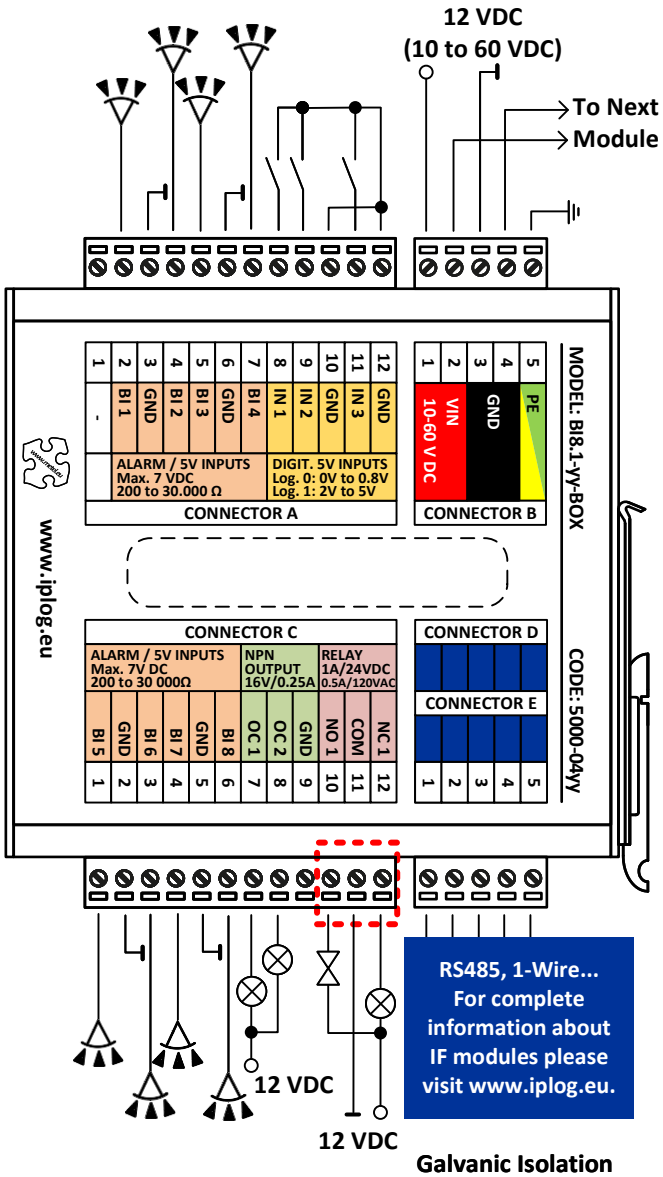
ORDERING	PRODUCT NAME	CODE	NOTE
	BI8.1-PCB	0000-0400	PCB Module
	BI8.1-05-DIN	6000-0407	Modbus + 2x DI 5V
	BI8.1-05-BOX	5000-0407	Modbus + 2x DI 5V
	For a Full Range of Interfaces Please Visit www.iplog.eu.		

ALARM / INPUTS 5V	PARAMETER	VALUE	NOTE
	Digital Mode	Log.0: Open	Inter. Pull Up
		Log.1: Close to Ground	
	Analog Mode	200 to 30,000 Ω	8 ranges
	Galvanic Separation	No	
	Input Voltage	Max. 7 VDC	
	Surge Protection	600 W	10 / 1000 µs

DIG. INPUTS 5 V	PARAMETER	VALUE	NOTE
	Digital Mode	Log.0: Open	Inter. Pull Up
		Log.1: Close to Ground	
	Galvanic Isolation	No	
	Input Voltage	Max. 7 VDC	
	Surge Protection	600 W	10 / 1000 µs

NPN OUTPUTS	PARAMETER	VALUE	NOTE
	Output Type	NPN	Open Collector
	Load: Sinking	16V / 0.25 A	
	Sourcing	12V / 1 mA	PULL-UP 1,2kΩ
	Galvanic Isolation	No	
	Surge Protection	600 W	10 / 1000 µs

RELAY	PARAMETER	VALUE	NOTE
	CHANGEOVER RELAYS		Type 2
	Max. Load	0.5 A at 120 VAC	Resistive load
		1 A at 24 VDC	Resistive load
	Lifetime	3,000,000 Operations	



📖 Detailed technical information can be found in the datasheets.

- 8x NO 230V Relays
- 3x Optically Separated 230V Inputs
- 2x NOC 230V Relays
- 1x Slot for IF Module
- Operating Range –40°C to +70°C
- 600 W Integrated Surge Protections


PCB


DIN


BOX

DEVICE

PARAMETER	VALUES	NOTE
Power Supply	24 VDC	10 to 60 VDC
Operating Range	–40 to +70 °C	
Humidity	Max. 95 %	No-condensing
Dimension BOX	35 x 110 x 119 mm	W x H x D
Dimension DIN	120 x 123 x 49,5 mm	W x H x D
Weight	Max. 0.38 kg	
Surge Protection	600 W	10/1000 µs
Installation	DIN35 or Flat Surface	

RELAYS

PARAMETER	VALUES	NOTES
SWITCHING HV RELAYS		Type 1
Max. Load	5 A / 250 VAC	Resistive load
	3 A / 30 VDC	Resistive load
Lifetime	100,000 Operations	
CHANGEOVER HV RELAYS		Type 3
Rated Current	10 A	Peak 15 A
Rated Load AC1	Max. 2500 VA	
Rated Load AC15	Max. 500 VA	230 V AC
1-phase Motor rating	Max. 0.37 kW (NO)	230 V AC
DC1 Breaking capacity	Max. 10/0.3/0.12 A	30/110/220 V

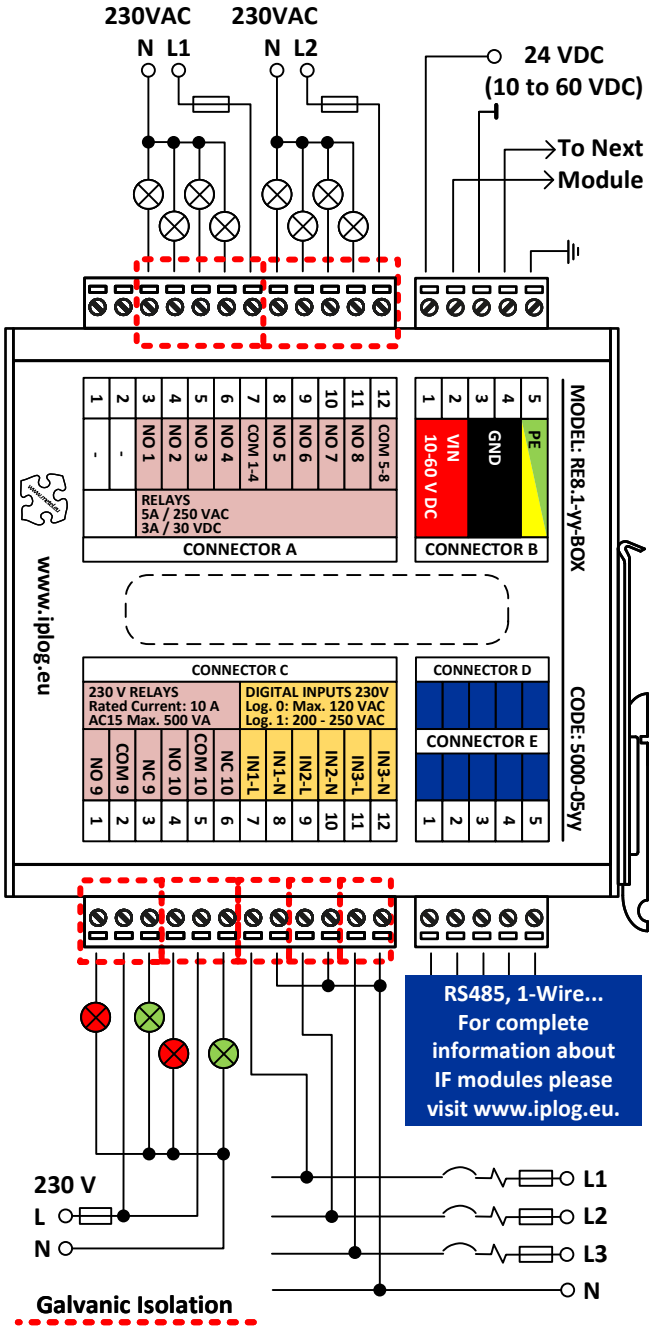
DIGITAL INPUTS 230 V

PARAMETER	VALUE	NOTE
Input Voltage	Log. 0: max. 120 V AC	
	Log. 1: min. 200 V AC	
Max. Input Voltage	Max. 250 V AC	
Input Current	Typ. 1 mA at log. 1	
Galvanic Isolation	Yes	1500 Vrms

📖 **Detailed technical information can be found in the datasheets.**

ORDERING

PRODUCT NAME	CODE	NOTE
RE8.1-PCB	0000-0500	PCB Module
RE8.1-05-DIN	6000-0507	Modbus + 2x DI 5V/alarm
RE8.1-05-BOX	5000-0507	Modbus + 2x DI 5V/alarm
For a Full Range of Interfaces Please Visit www.iplog.eu.		



- 8x 12-bit Analog Outputs
- 4x 12-bit Analog U Inputs
- 4x Digital 24V Inputs
- 1x Slot for IF Module
- Operating Range –40°C to +70°C
- 600 W Integrated Surge Protections


PCB


DIN


BOX

DEVICE

PARAMETER	VALUES	NOTE
Power Supply	24 VDC	20 to 60 VDC
Operating Range	–40 to +70 °C	
Humidity	Max. 95 %	No-condensing
Dimension BOX	35 x 110 x 119 mm	W x H x D
Dimension DIN	120 x 123 x 49,5 mm	W x H x D
Weight	Max. 0.38 kg	
Surge Protection	600 W	10/1000 µs
Installation	DIN35 or Flat Surface	

ANALOG OUTPUTS

PARAMETER	VALUES	NOTE
Voltage Ranges	± 10V	
Output current	Max. 10 mA	
Sampling Rate	1 kSps	
Resolution	12-bit	
Galvanic Isolation	Yes	
Surge Protection	600 W	10/1000 µs

ANALOG INPUTS

PARAMETER	VALUES	NOTE
Voltage Ranges	±2.5V, ±5V, ±10V	
	0V to 5V, 0V to 10V	
Sampling Rate	1 kSps	Adaptive
Resolution	12-bit	
Galvanic Isolation	Yes	
Surge Protection	600 W	10/1000 µs

DIGITAL INPUTS 24 V

PARAMETER	VALUE	NOTE
Input Voltage DC - AC	Log. 0: –30 V to 5 V	
	Log. 1: 15 V to 30 V	Max. 50 V / 1s
Input Current	12 mA at 24 VDC	
Switching Frequency	Max. 20 kHz	
Galvanic Isolation	Yes	1500 Vrms
Surge Protection	600 W	10 / 1000 µs

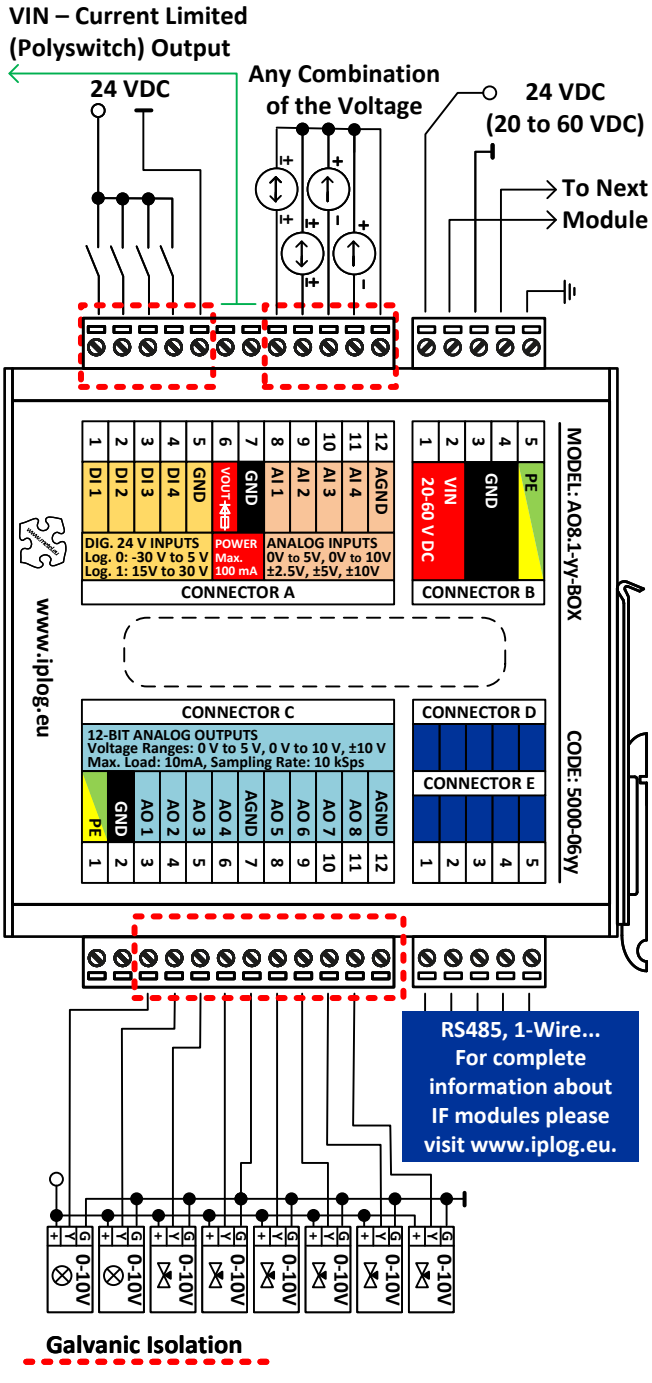
POWER

PARAMETER	VALUE	NOTE
Output Current	Max. 100 mA	
Protection	Diode + Polyswitch	
Output Voltage	VOUT = VIN	

📖 Detailed technical information can be found in the datasheets.

ORDERING

PRODUCT NAME	CODE	NOTE
AO8.1-PCB	0000-0600	PCB Module
AO8.1-05-DIN	6000-0607	Modbus + 2x DI 5V/alarm
AO8.1-05-BOX	5000-0607	Modbus + 2x DI 5V/alarm
For a Full Range of Interfaces Please Visit www.iplog.eu.		



- 8x PUSH-PULL Transistor Outputs
- 4x 24 V Digital Inputs
- 3x 5V Digital Inputs or 10-bit Alarm Inputs
- 1x NOC 24V Relay Output
- 1x Slot for IF Module
- Operating Range –40°C to +70°C
- 600 W Integrated Surge Protections


PCB


DIN


BOX

DEVICE

PARAMETER	VALUES	NOTE
Power Supply	24 VDC	10 to 60 VDC
Operating Range	–40 to +70 °C	
Humidity	Max. 95 %	No-condensing
Dimension BOX	35 x 110 x 119 mm	W x H x D
Dimension DIN	120 x 123 x 49,5 mm	W x H x D
Weight	Max. 0.38 kg	
Surge Protection	600 W	10/1000 µs
Installation	DIN35 or Flat Surface	

ORDERING

PRODUCT NAME	CODE	NOTE
PP8.1-PCB	0000-0700	PCB Module
PP8.1-05-DIN	6000-0707	Modbus + 2x DI 5V/alarm
PP8.1-05-BOX	5000-0707	Modbus + 2x DI 5V/alarm
For a Full Range of Interfaces Please Visit www.iplog.eu.		

PUSH-PULL OUTPUTS

PARAMETERS	VALUES	NOTES
Output Type	NPN / PNP / PUSH-PULL	
	Software Selectable	
Galvanic Isolation	Yes	
Shortcut Protection	Yes - Polyswitch	
Maximum Load	30 V / 0,25 A	
Switching Frequency	Max. 10 kHz	
Surge Protection	600 W	10 / 1000 µs

DIGITAL INPUTS 24 V

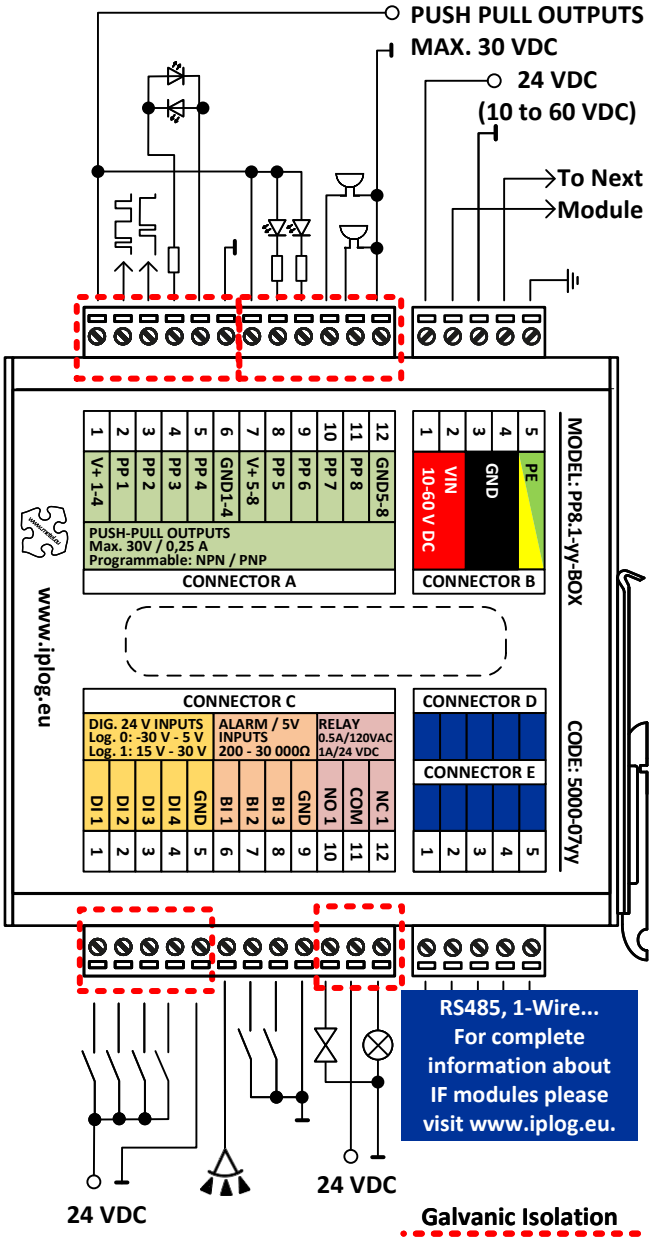
PARAMETER	VALUE	NOTE
Input Voltage DC - AC	Log. 0: –30 V to 5 V	
	Log. 1: 15 V to 30 V	Max. 50 V / 1s
Input Current	12 mA at 24 VDC	
Switching Frequency	Max. 20 kHz	
Galvanic Isolation	Yes	1500 Vrms
Surge Protection	600 W	10 / 1000 µs

ALARM / 5V INPUTS

PARAMETERS	VALUES	NOTES
Digital Mode	Log.0: Open	Inter. Pull Up
	Log.1: Close to Ground	
Analog (Alarm) Mode	200 to 30,000 Ω	8 ranges
Galvanic Isolation	No	
Input Voltage	Max. 7 VDC	
Surge Protection	600 W	10 / 1000 µs

RELAY

PARAMETERS	VALUES	NOTES
CHANGEOVER RELAYS		Type 2
Max. Load	0.5 A at 120 VAC	Resistive load
	1 A at 24 VDC	Resistive load
Lifetime	3,000,000 Operations	



🕮 Detailed technical information can be found in the datasheets.

- 8x 24 V Digital Inputs
- 4x NO 230V Relay Outputs
- 2x PUSH-PULL Transistor Outputs
- 1x Slot for IF Module
- Operating Range –40°C to +70°C
- 600 W Integrated Surge Protections


PCB


DIN


BOX

DEVICE

PARAMETER	VALUES	NOTE
Power Supply	24 VDC	10 to 60 VDC
Operating Range	–40 to +70 °C	
Humidity	Max. 95 %	No-condensing
Dimension BOX	35 x 110 x 119 mm	W x H x D
Dimension DIN	120 x 123 x 49,5 mm	W x H x D
Weight	Max. 0.38 kg	
Surge Protection	600 W	10/1000 µs
Installation	DIN35 or Flat Surface	

ORDERING

PRODUCT NAME	CODE	NOTE
DI8.1-PCB	0000-0100	PCB Module
DI8.1-05-DIN	6000-0107	Modbus + 2x DI 5V/alarm
DI8.1-05-BOX	5000-0107	Modbus + 2x DI 5V/alarm
For a Full Range of Interfaces Please Visit www.iplog.eu.		

DIGITAL INPUTS 24 V

PARAMETER	VALUE	NOTE
Input Voltage DC - AC	Log. 0: –30 V to 5 V	
	Log. 1: 15 V to 30 V	Max. 50 V / 1s
Input Current	12 mA at 24 VDC	
Switching Frequency	Max. 20 kHz	
Galvanic Isolation	Yes	1500 Vrms
Surge Protection	600 W	10 / 1000 µs

PUSH-PULL OUTPUTS

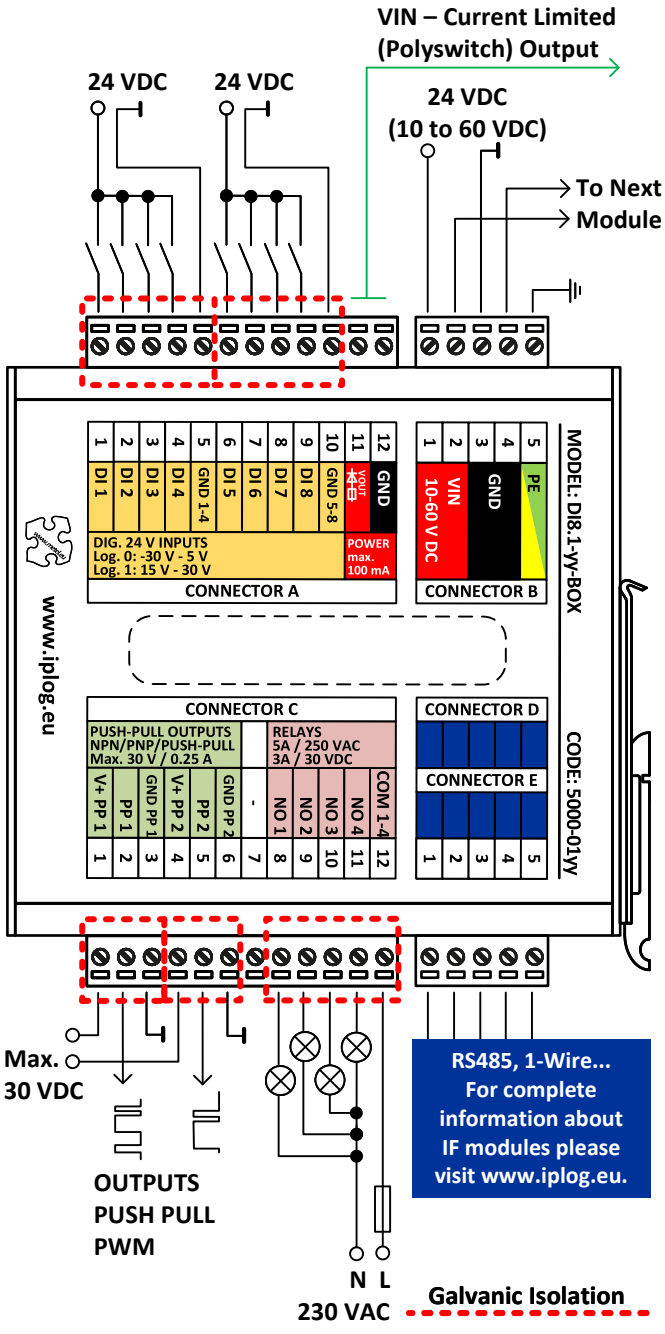
PARAMETERS	VALUES	NOTES
Output Type	NPN / PNP / PUSH-PULL	
	Software Selectable	
Galvanic Isolation	Yes	
Shortcut Protection	Yes - Polyswitch	
Maximum Load	30 V / 0,25 A	
Switching Frequency	Max. 10 kHz	
Surge Protection	600 W	10 / 1000 µs

RELAYS

PARAMETERS	VALUES	NOTES
SWITCHING HV RELAYS		Type 1
Contact Type	NO	Normal open
Max. Load	5 A / 250 VAC	Resistive load
	3 A / 30 VDC	Resistive load
Lifetime	100,000 Operations	

POWER

PARAMETER	VALUE	NOTE
Output Current	Max. 100 mA	
Protection	Diode + Polyswitch	
Output Voltage	VOUT = VIN	



📖 Detailed technical information can be found in the datasheets.

- 8x Alarm 8-bit Outputs
- 3x 8-bit Alarms / Digital 5V Inputs
- 2x Open Collector NPN Outputs
- 1x NOC 24V Relay Output
- 1x Slot for IF Module
- Operating Range –40°C to +70°C
- 600 W Integrated Surge Protections


PCB


DIN


BOX

DEVICE	PARAMETER	VALUES	NOTE
	Power Supply	12 VDC	10 to 60 VDC
	Operating Range	–40 to +70 °C	
	Humidity	Max. 95 %	No-condensing
	Dimension BOX	35 x 110 x 119 mm	W x H x D
	Dimension DIN	120 x 123 x 49,5 mm	W x H x D
	Weight	Max. 0.38 kg	
	Surge Protection	600 W	10/1000 µs
	Installation	DIN35 or Flat Surface	

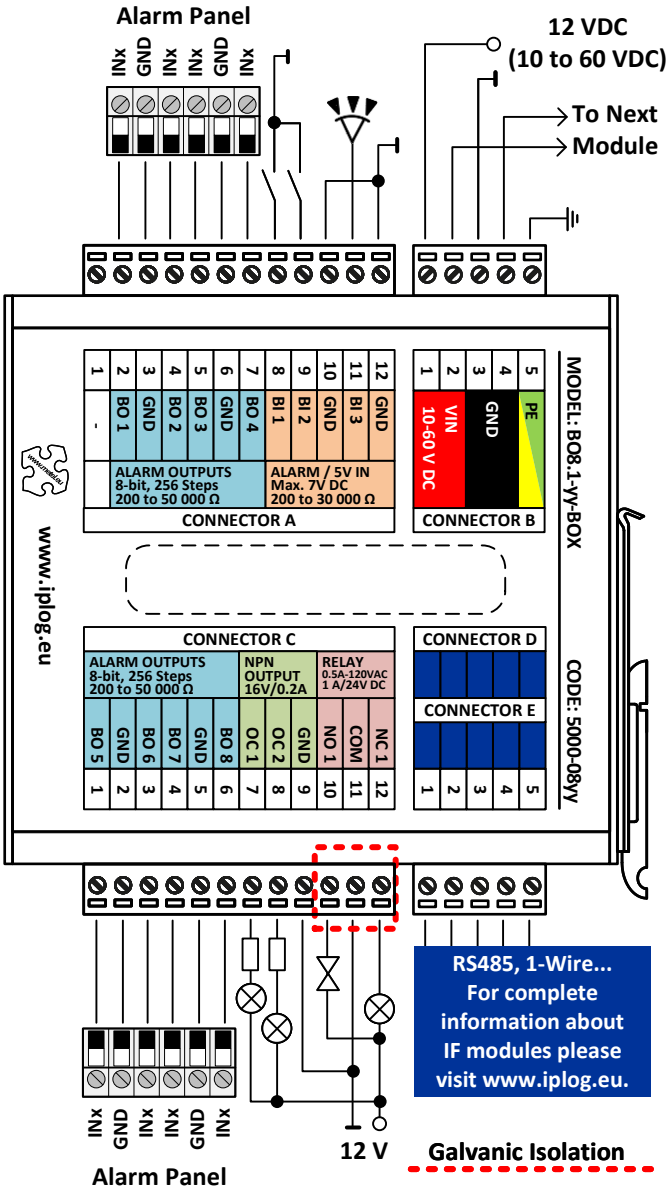
ORDERING	PRODUCT NAME	CODE	NOTE
	BO8.1-PCB	0000-0800	PCB Module
	BO8.1-05-DIN	6000-0807	Modbus + 2x DI 5V/alarm
	BO8.1-05-BOX	5000-0807	Modbus + 2x DI 5V/alarm
	For a Full Range of Interfaces Please Visit www.iplog.eu.		

ALARM OUTPUTS	PARAMETERS	VALUES	NOTES
	Output Type	8 bit	256 Steps
	Resistive Range	200 to 50,000 Ω	
	Accuracy	± 20 %	
	Temp. Dependence	50 ppm	
	Galvanic Isolation	No	
	Surge Protection	600 W	10 / 1000 µs

ALARM / 5V INPUTS	PARAMETERS	VALUES	NOTES
	Digital Mode	Log.0: Open	Inter. Pull Up
		Log.1: Close to Ground	
	Analog (Alarm) Mode	200 to 30,000 Ω	8 Ranges
	Galvanic Isolation	No	
	Input Voltage	Max. 7 VDC	
	Surge Protection	600 W	10 / 1000 µs

NPN OUTPUTS	PARAMETER	VALUE	NOTE
	Output Type	NPN	Open Collector
	Load: Sinking	16 V / 0.25 A	
	Sourcing	12 V / 1 mA	PULL-UP 1,2 kΩ
	Galvanic Isolation	No	
	Surge Protection	600 W	10 / 1000 µs

RELAY	PARAMETERS	VALUES	NOTES
	CHANGEOVER RELAYS		Type 2
	Max. Load	0.5 A at 120 VAC	Resistive load
		1 A at 24 VDC	Resistive load
	Lifetime	3,000,000 Operations	



🕮 Detailed technical information can be found in the datasheets.

- 8x NOC 24 V Relay Outputs
- 1x Slot for IF Module(1)
- Operating Range –40°C to +70°C
- 600 W Integrated Surge Protections

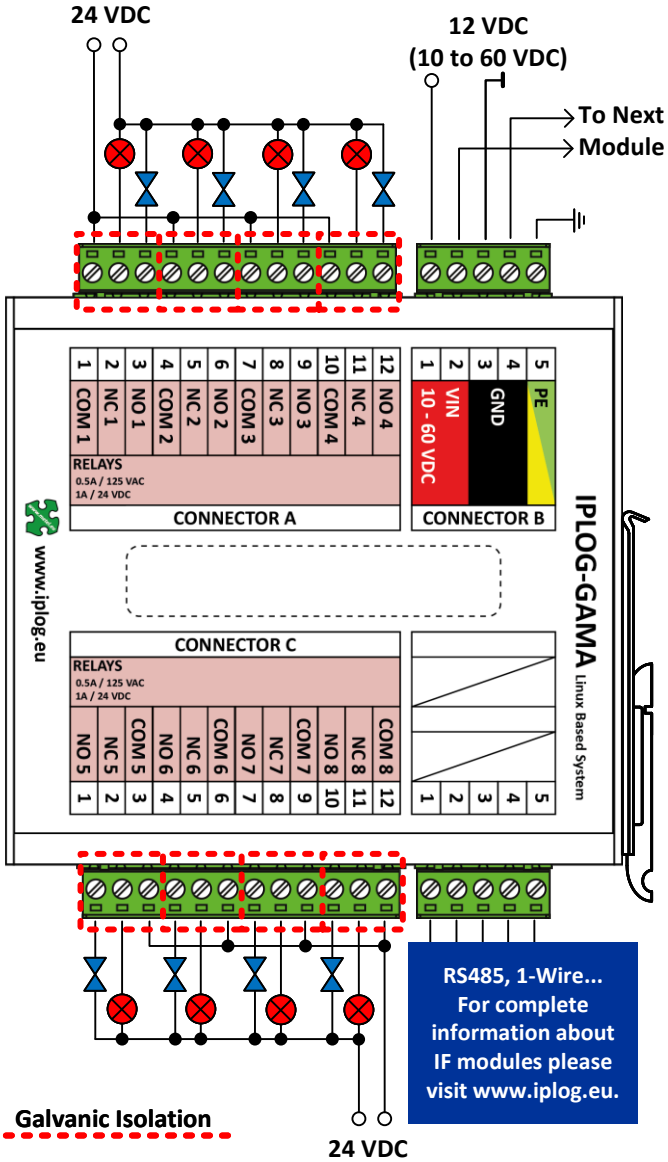
PCB

BOX

DEVICE	PARAMETER	VALUES	NOTE
	Power Supply	12 VDC	10 to 60 VDC
	Operating Range	–40 to +70 °C	
	Humidity	Max. 95 %	No-condensing
	Dimension	35 x 110 x 119 mm	W x H x D
	Weight	Max. 0.38 kg	
	Surge Protection	600 W	10/1000 µs
	Installation	DIN35 or Flat Surface	

ORDERING	PRODUCT NAME	CODE	NOTE
	RE8.2-PCB	0000-1000	PCB Module
	RE8.2E-PCB(2)	0000-0900	PCB Module
	RE8.2-05-BOX	5000-1007	Modbus + 2x DI 5V/alarm
	For a Full Range of Interfaces Please Visit www.iplog.eu.		

RELAY	PARAMETERS	VALUES	NOTES
	CHANGEOVER RELAYS		Type 2
	Max. Load	0.5 A at 120 VAC	Resistive load
		1 A at 24 VDC	Resistive load
	Lifetime	3,000,000 Operations	



📖 Detailed technical information can be found in the datasheets.

(1) Does not apply to the RE-8.2E module.
(2) RE8.2E module is not possible to use as a standalone module. Module is designed only for installation on motherboard IPLOG-G1, G2, G2E and G3.

- 8x NOC 24 V Relay Outputs
- 1x RS485
- Operating Range –40°C to +70°C
- 600 W Integrated Surge Protections
- Mounting on DIN35 Rail
- Cover Made of Self-Extinguishing Material UL94 V0

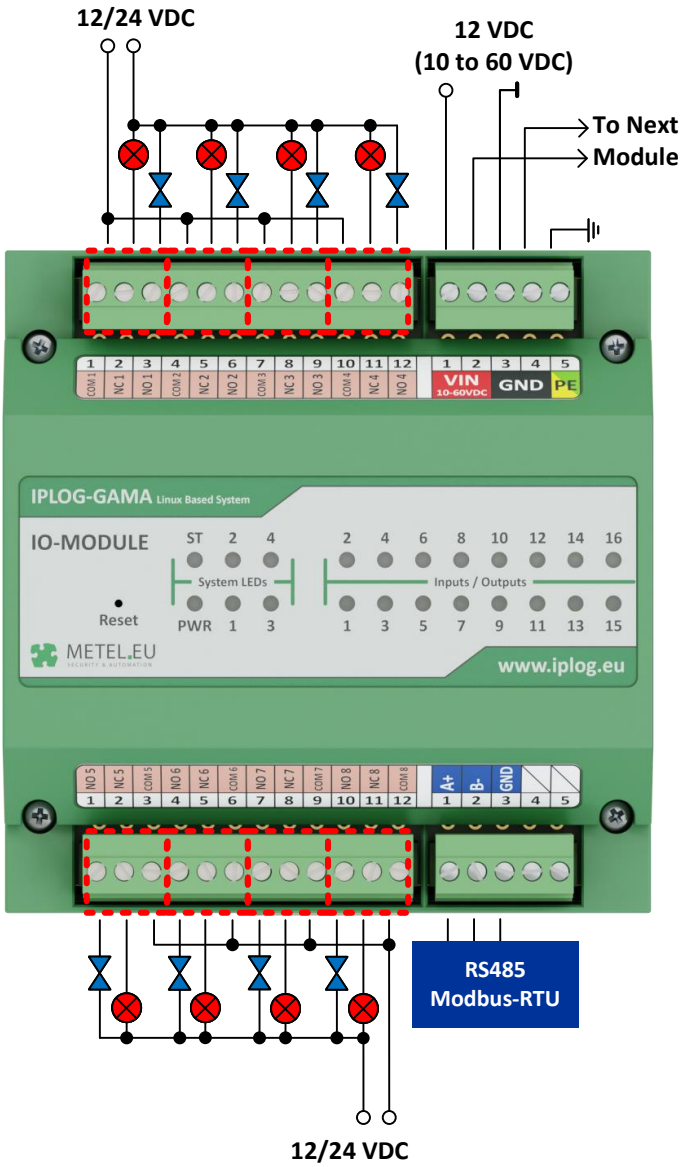
RE8.3E is an industrial IO module of the IPLOG system. The Modbus RTU communication interface allows it to be easily connected to systems from other manufacturers. The module is supplied with a plastic cover for mounting on a DIN35 rail.

ORDERING	PRODUCT NAME	CODE	NOTE
	RE8.3E-DIN	6000-1100	1x RS485
	Complete information about available IPLOG devices can be found on the websites: https://www.metel.eu and https://www.iplog.eu		

DEVICE	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 °C	
	Storage Range	–40 to +70 °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 mm²	

RELAY	PARAMETERS	VALUES	NOTES
	CHANGEOVER RELAYS		Type 2
	Max. Load	0.5 A at 120 VAC	Resistive load
		1 A at 24 VDC	Resistive load
	Lifetime	3,000,000 Operations	

RS485	PARAMETERS	VALUES	NOTES
	Speed	Max. 115,2 kbps	
	Protocol	Modbus RTU	
	Surge Protection	600 W	10/1000 µs



📖 **Detailed technical information can be found in the datasheets.**

Galvanic Isolation

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

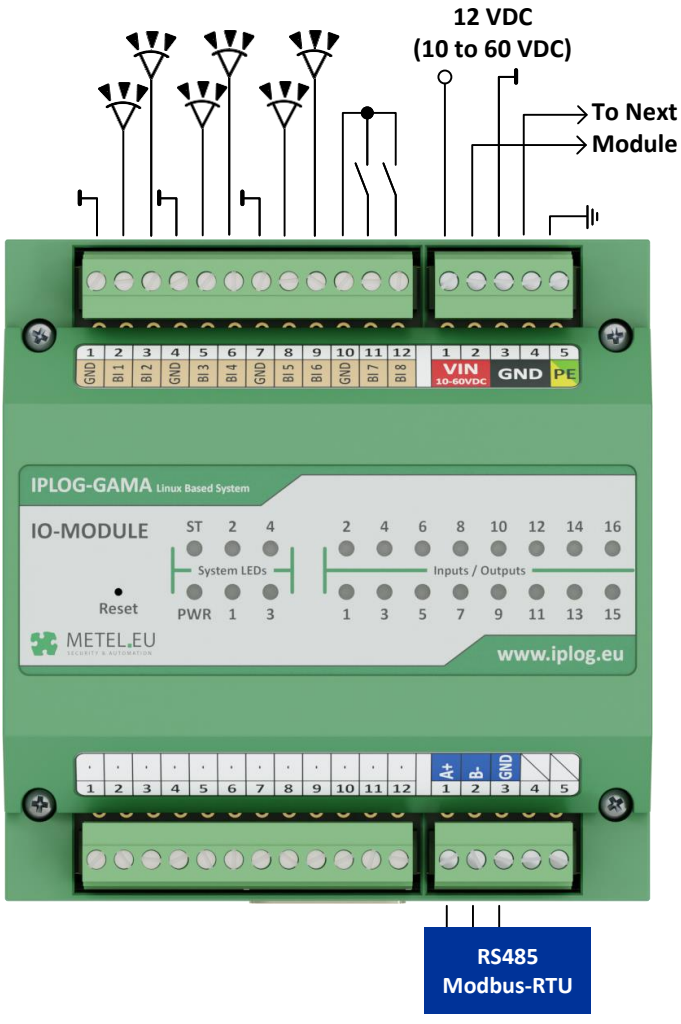
BI8.2E is an industrial IO module of the IPLOG system. The Modbus RTU communication interface allows it to be easily connected to systems from other manufacturers. The module is supplied with a plastic cover for mounting on a DIN35 rail.

ORDERING

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		

DEVICE

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 °C	
Storage Range	–40 to +70 °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 mm²	



ALARM / INPUTS 5V

PARAMETER	VALUE	NOTE
Digital Mode	Log.0: Open	Inter. Pull Up
	Log.1: Close to Ground	
Analog Mode	200 to 30,000 Ω	8 ranges
Galvanic Separation	No	
Input Voltage	Max. 7 VDC	
Surge Protection	600 W	10 / 1000 µs

RS485

PARAMETERS	VALUES	NOTES
Speed	Max. 115,2 kbps	
Protocol	Modbus RTU	
Surge Protection	600 W	10/1000 µs

🕮 **Detailed technical information can be found in the datasheets.**

- 8x 10-bit Alarm or 5 V Digital Inputs
- 4x NOC 24 V Relay Outputs
- 1x Slot for IF Module
- Operating Range –40°C to +70°C
- 600 W Integrated Surge Protections

PCB

BOX

BI8.4 is an industrial module which can be easily adapted for a wide range of tasks. It can be used as IPLOG-Gx submodule or as standalone addressable module at MODBUS RTU bus.

ORDERING

PRODUCT NAME	CODE	NOTE
BI8.4-PCB	0000-1300	PCB Module
BI8.4-05-BOX	5000-1307	Modbus + 2x DI 5V
For a Full Range of Interfaces Please Visit www.iplog.eu.		

DEVICE

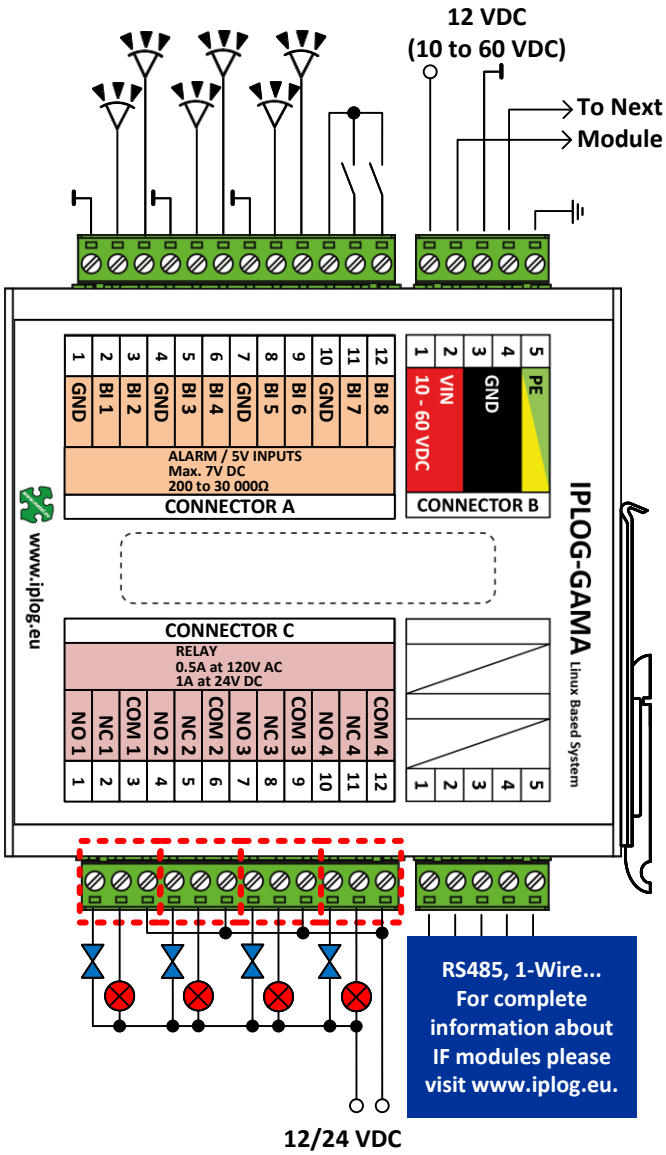
PARAMETER	VALUES	NOTE
Power Supply	12 VDC	10 to 60 VDC
Operating Range	–40 to +70 °C	
Humidity	Max. 95 %	No-condensing
Dimension	35 x 110 x 119 mm	W x H x D
Weight	Max. 0.38 kg	
Surge Protection	600 W	10/1000 µs
Installation	DIN35 or Flat Surface	

ALARM / INPUTS 5V

PARAMETER	VALUE	NOTE
Digital Mode	Log.0: Open	Inter. Pull Up
	Log.1: Close to Ground	
Analog Mode	200 to 30,000 Ω	8 ranges
Galvanic Separation	No	
Input Voltage	Max. 7 VDC	
Surge Protection	600 W	10 / 1000 µs

RELAY

PARAMETERS	VALUES	NOTES
CHANGEOVER RELAYS		Type 2
Max. Load	0.5 A at 120 VAC	Resistive load
	1 A at 24 VDC	Resistive load
Lifetime	3,000,000 Operations	



Detailed technical information can be found in the datasheets.

Revision: 201803 – Default
201808 – Added modules G2E, RE8.2(E) and IF modules
201902 – Changes in IF on IO modules
202010 – Added examples of using IPLOG + new IF modules
202011 – Added dimensions
202202 – Updated list MB, IO, IF modules availability

- 8x 10-bit Alarm or 5 V Digital Inputs
- 4x NOC 24 V Relay Outputs
- 1x RS485
- Operating Range –40°C to +70°C
- 600 W Integrated Surge Protections
- Mounting on DIN35 Rail
- Cover Made of Self-Extinguishing Material UL94 V0

BI8.4E 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.

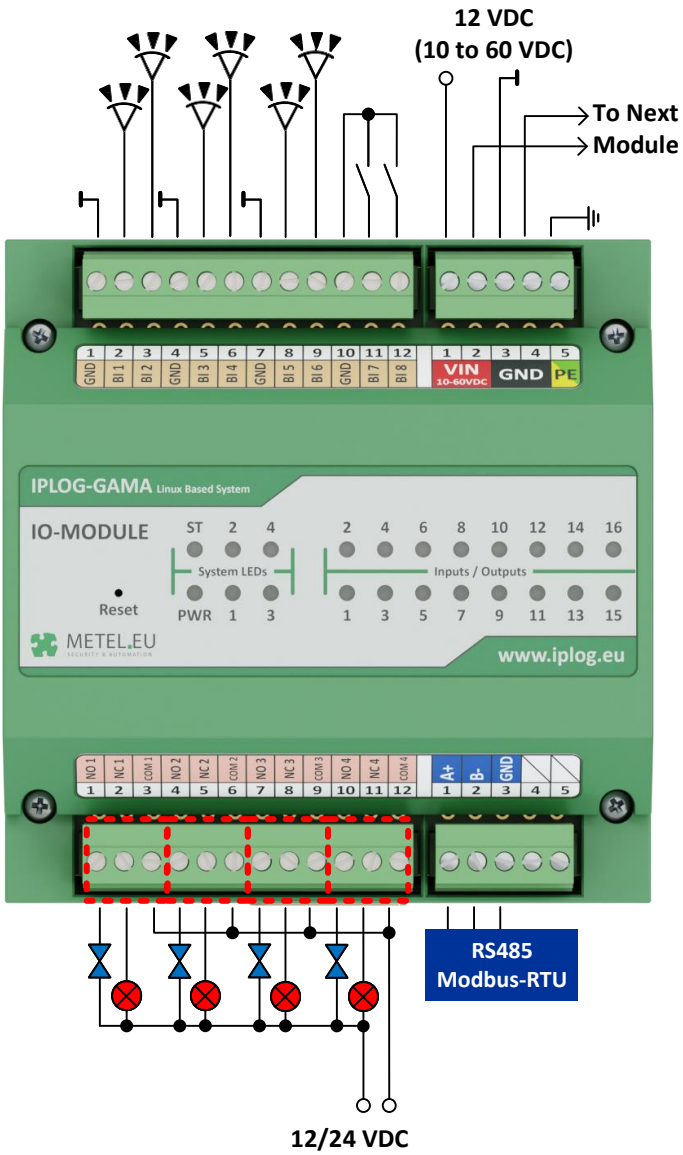
ORDERING	PRODUCT NAME	CODE	NOTE
	BI8.4E-DIN	6000-1400	1x RS485
	Complete information on available IPLOG devices can be found on the websites: https://www.metel.eu and https://www.iplog.eu		

DEVICE	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 °C	
	Storage Range	–40 to +70 °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 mm²	

ALARM / INPUTS 5V	PARAMETER	VALUE	NOTE
	Digital Mode	Log.0: Open	Inter. Pull Up
		Log.1: Close to Ground	
	Analog Mode	200 to 30,000 Ω	8 ranges
	Galvanic Separation	No	
	Input Voltage	Max. 7 VDC	
	Surge Protection	600 W	10 / 1000 µs

RELAY	PARAMETERS	VALUES	NOTES
	CHANGEOVER RELAYS		Type 2
	Max. Load	0.5 A at 120 VAC	Resistive load
		1 A at 24 VDC	Resistive load
	Lifetime	3,000,000 Operations	

RS485	PARAMETERS	VALUES	NOTES
	Speed	Max. 115,2 kbps	
	Protocol	Modbus RTU	
	Surge Protection	600 W	10/1000 µs



📖 Detailed technical information can be found in the datasheets.