MINI series I/O

The product group of I/O modules MINI series has been designed to complement the I/O modules of the MIX series.
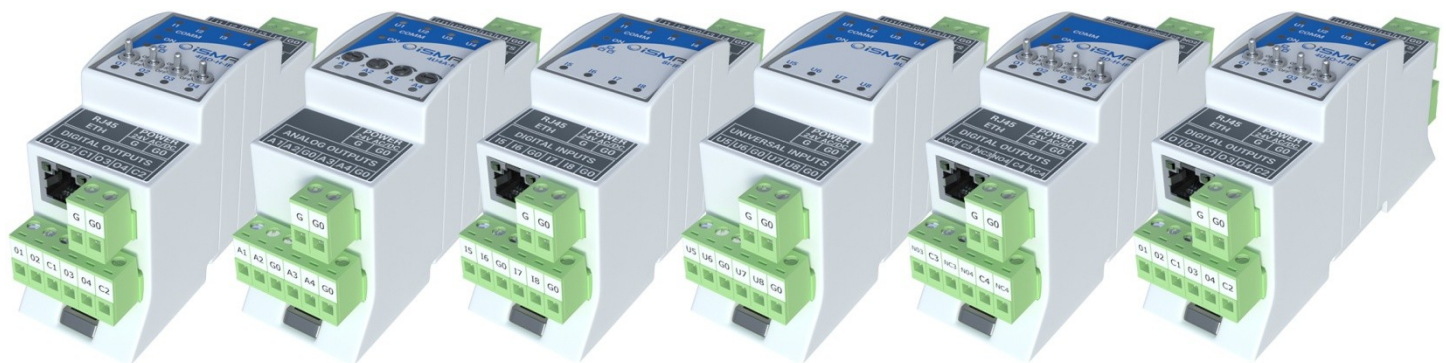
Unlike the MIX series, the MINI line is dedicated to all the applications where hand operating switches are required. Also, the MINI line products' light-controlling algorithm makes them applicable as lighting controllers.

Very much like in case of the MIX modules, the modules are factory-equipped with the two most popular open communication protocols: Modbus (ASCII, RTU, TCP/IP) and BACnet (MSTP, IP), which are selected using DIP switches. There are two versions of the modules, namely: modules with interface RS485, and modules with interfaces 1x Ethernet and RS485. Devices with interfaces 1x Ethernet and RS485 have the added functionality of " Modbus Gateway TCP/IP to Modbus ASCII/RTU", enabling you to connect additional modules / devices that communicate via Modbus RS485. One major advantage of supporting our modules with open communication standards is the versatility to install them in both new and completed installations, as part of an existing BMS.

To even further increase the versatility, all relay modules allow direct control of any system components supplied with 230 VAC (max. 3A or 8A). As it does not require the use of additional relays, it thereby leads to considerable savings. Addressing the modules is via rotary switches, which facilitates and accelerates the process of commissioning the system. Built-in mini USB allows for initial configuration of the unit without power supply.

Key Features

- 12 different types
- Small dimension
- Manual override switches
- Build in 3 light control modes
- All digital inputs work as fast counters up to 100 Hz
- Universal inputs have 16-bit resolution which increase the accuracy of measurement
- Wide range of supported temperature sensors (NTC, PT1000 etc.)
- Automatic detection of the signal type in the case of universal inputs
- Digital outputs 230 VAC max. 3A or 8A allow direct control without additional relays
- Analog output with max. 20mA load allow direct control of relays (12 VDC) or SSR with PWM support
- LEDs indicate the status of inputs and outputs
- Supports open standards: BACnet and Modbus
- Built in Modbus Gateway TCP/IP to RS485
- 1 x Fast Ethernet

| 4I4O-H-IP | 4U4A-H | 8I-IP | 8U | 4O-H-IP | 4U4O-H-IP |

MINI series I/O

Specification

Universal Inputs (UI)

All universal inputs have 16-bit resolution which support the following types of inputs:

- Temperature input support the following types of sensors: 10K3A1, 10K4A1, Carel 10K, 20K6A1, 2.2K3A1, 3K3A1, 30K6A1, SIE1, TAC1, SAT1, Pt1000, Ni1000

  For sensor Pt1000 and Ni1000 use only 16bit resolution

- Voltage input 0-10VDC: input resistance 100kΩ accuracy ±0,1% measurement resolution 3mV@12bit and 1mV@16bit
- Current input 0-20mA (external resistor 499Ω required)
- Resistive input 0-1000kΩ: measurement resolution for 20kΩ load 20Ω@12bit and 1Ω@16bit
- Dry contact input

Digital Inputs (DI)

- Dry contact inputs
- Fast pulse counter up to 100Hz

Analog Outputs (AO)

All analog outputs are equipped with 12-bit ADC provides 10 mV resolution and accuracy less than ±0,5%. They support the following output types:

- Output 0-10V DC maximum load up to 20mA
- PWM: 0,01Hz, 0,1Hz, 1Hz, 10Hz, 100Hz

Digital Outputs (DO)

- Relay output (NO) max. 3A, 250V AC / 30 VDC
- Relay output (NC/NO) max. 8A, 250V AC / 30 VDC

Platform

- ARM Cortex-M3

Communication

- Interface RS485 half duplex,
- 1 x Fast Ethernet- only version IP
- Up to 99 devices on the bus
- Protocols: Modbus or BACnet
- Baud rate: 2400 to 115200 bps

Power supply

- 24V AC/DC

Housing

- Dimension: 35x110x62 mm
- Construction: plastic, self-extinguishing (PC/ABS)
- DIN rail mounting DIN (DIN EN 50022 norm)
- Cooling: internal air circulation

Environment

- Operating temperature: -10°C to 50°C
- Storage temperature: -40°C to 85°C
- Relative humidity: 5% to 95%, no condensation
- Ingress Protection Rating: IP40 – for indoor installation

	UI	DI	AO	DO	Modbus RS485	Modbus TCP/IP	Bacnet MSTP	Bacnet IP
4I4O-H		4		4	✓		✓	
4I4O-H-IP		4		4	✓	✓		✓
4O-H				4 (NC/NO-8A)	✓		✓	
4O-H-IP				4 (NC/NO-8A)	✓	✓		✓
4U4A-H	4		4		✓		✓	
4U4A-H-IP	4		4		✓	✓		✓
4U4O-H	4			4	✓		✓	
4U4O-H-IP	4			4	✓	✓		✓
8I		8			✓		✓	
8I-IP		8			✓	✓		✓
8U	8				✓		✓	
8U-IP	8				✓	✓		✓
	✓Voltage ✓Current ✓Resistive ✓Dry contact	✓Dry contact ✓Fast pulse counter up to 100Hz	✓Voltage ✓PWM ✓Max. load up to 20 mA	✓Relay (NO) 3A 250VAC ✓Relay (NC/NO) 8A 250VAC	✓RTU ✓ASCII	✓Modbus Gateway IP/RS485	✓Master ✓Slave	