

- ❖ Compatible with MODBUS-RTU RS485
- ❖ Autonomous Relay Function
- ❖ 1x Programmable Relay
- ❖ 1x Input for Connection for Sensing Cable / Sensors
- ❖ 1x Output +5VDC / 300mA
- ❖ 1x Supply Input 10-30VAC, 10-60VDC
- ❖ Operating Range -40°C to +70°C
- ❖ Operating Range of Components -40°C to +85°C

Evaluation Unit



Detection Sensor



Sensing Cable (max. 75m)



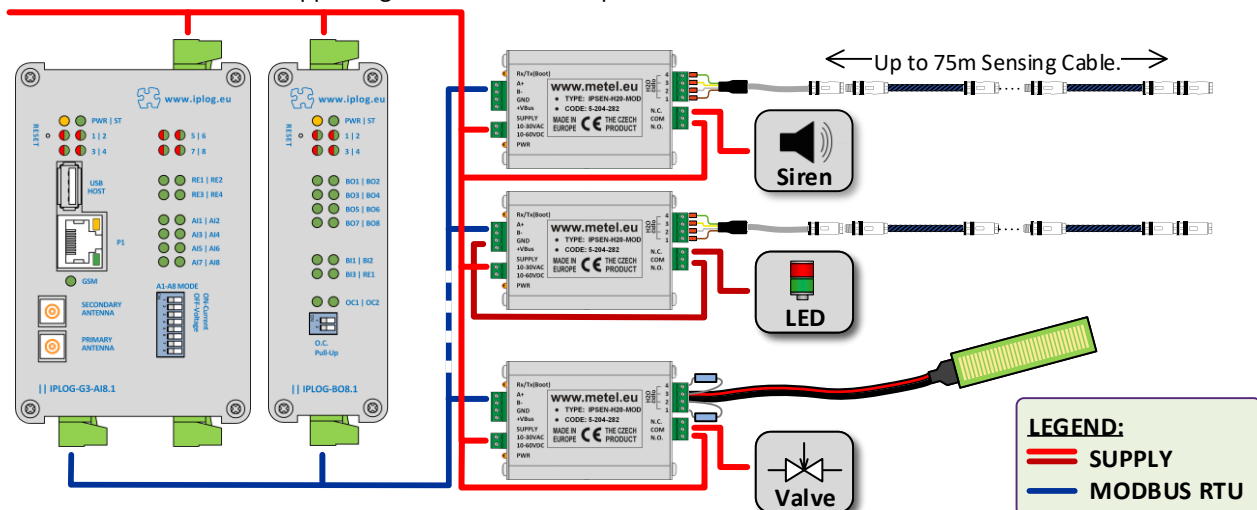
PRODUCT NAME	CODE	NOTE
IPSEN-H2O-MOD	5-204-282	10-60VDC/10-30VAC
Accessories		
MSC-750	5-204-283	Sensing Cable 7,5m
H2O-KIT	5-204-281	Resistor + Connection Cable
H2O-PCB-78H	5-204-284	Detection Sensor
Holder for Mounting to DIN35 and Flat Surface is Included.		

Technical Parameters

Parameter	Value	Unit	Note	
MODBUS-RTU (RS485)	Count	1	Max. 30x on the Bus	
	Speed	Max. 115.2	kbps	
	Overvoltage Protection	30	A	8/20us
Relay Output	Type of contact	1x Change-over		
	Max. Load	62.5VA (30W) / 1A / 60V	Resistive Load	
Power Supply	Input	10 – 60 / 10 – 30	VDC/VAC	
	Power Consumption	Max. 0.5	W	
	Output	5	VDC	Max. 300mA
Environment	Operational Range	-40...+70	°C	Temperature of Environment
Mechanical	Weight	0.11	kg	
Certification	Standard CE			
The producer retains the right to change any technical parameters without previous written or published notification.				

Typical Connection with PLC-IPLOG-GAMA and Visualization

H2O detectors are connected to control units via RS485 with MODBUS-RTU protocol. Up to 30 H2O detectors, IO modules and other sensors supporting the MODBUS-RTU protocol can be connected to it.



Autonomous Relay Function

H2O detectors can be operated autonomously without the need to connect to IPLOG-GAMA control unit. For autonomous operation, it is necessary to set the modbus registers according to the required function, in which the relay output is to be activated. The registers can be set via the IPLOG control unit, Metel Switch or any RS485-USB converter.

Description of H2O states

The leakage value is given in %. For the function of the autonomous relay, states are introduced in the FW.

Dry: A condition where the measured value of leakage is in the range of 0 - 10%.

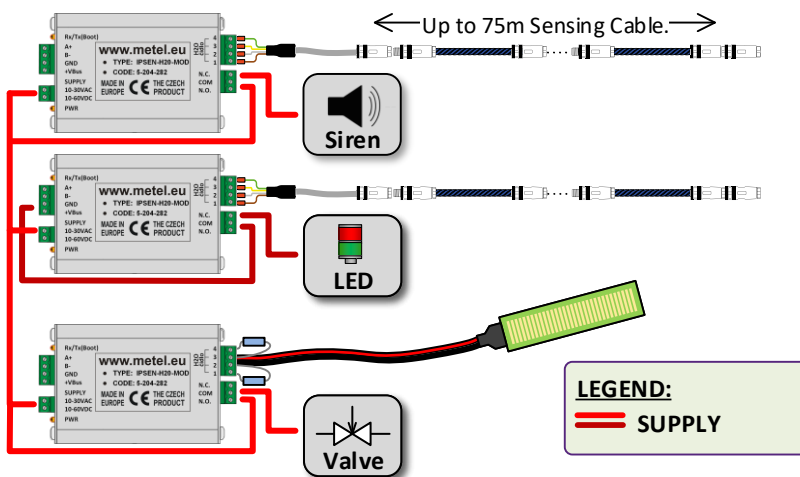
Moist: A condition where the measured value of leakage is in the range of 11 - 90%.

Wet: A condition where the measurement of the leakage value is in the range of 91 - 100%.

Detection cable fault: Detection cable or detection sensor is not connected or is damaged.

Changing status: The status is being changed.

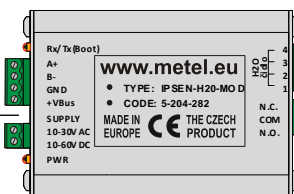
For each of these states or their combination, a relay output can be activated automatically.



Connection with Sensing Cables MSC-750

Connect the RS485 communication bus with the MODBUS-RTU protocol to terminals A+ and B-. +Vbus terminal is 5VDC / 300mA output for powering accessories.

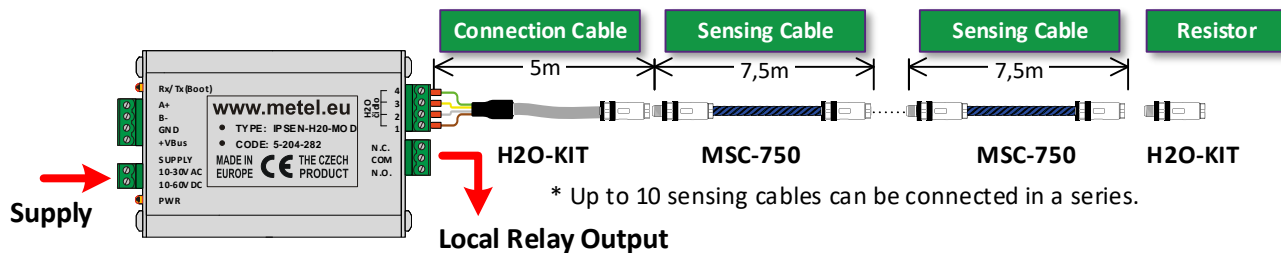
Connect an external 10-30VAC or 10-60VDC power supply to this terminal block.



Terminals for connecting of water sensing cable.

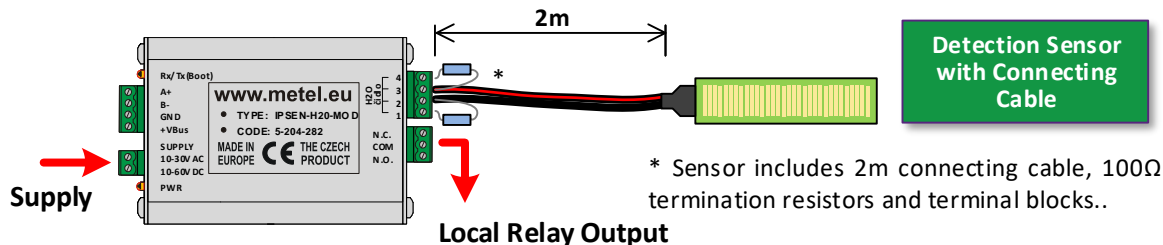
- 1 - BROWN 3 - YELLOW
- 2 - WHITE 4 - GREEN

Relay output controlled by MODBUS-RTU protocol from PLC IPLOG-GAMA



* Up to 10 sensing cables can be connected in a series.

Connection with Detection Sensor H2O-PCB-78H



* Sensor includes 2m connecting cable, 100Ω termination resistors and terminal blocks..

Default Settings of Communication

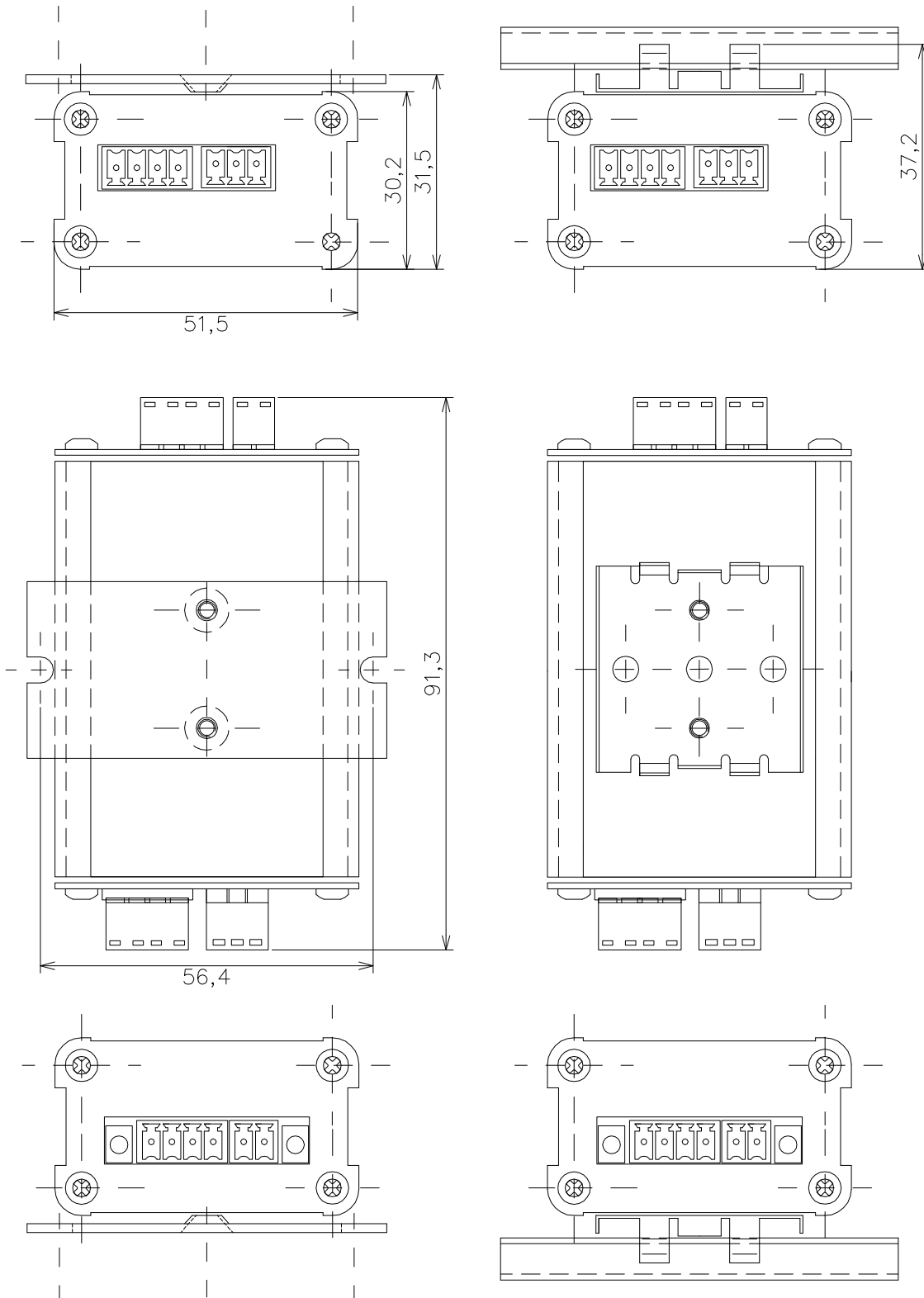
Device ID: 1 | Baudrate: 115 200 | Parity: None | Data bits: 8 | Stop bit: 1

Modbus registry

	Subject	Type	R/W	Value	Offset	
Device	FW Version Major	u16	R		1010	
	FW Version Minor	u16	R		1011	
	FW Version - Revision	u32	R		1012-13	
	Restart	u16	RW	55203 = Reboot	1201	
	Board Voltage	u16	R	105 = 10,5V	1311	
Bus Settings	Baudrate	u16	RW	192 = 19.2 kbps 1152 = 115.2 kbps	2110	
	Databits	u16	RW	8 = 8b, 9 = 9b	2111	
	Parity	u16	RW	78 = None 69 = Even 79 = Odd	2112	
	Stopbits	u16	RW	10=1, 20=2, 15=1,5	2113	
	MODBUS Address	u16	RW	1 - 247	2120	
	Subject	Channel	Type	R/W	Value	Offset
Measurement and States	Flood Measurement	AI#01	u16	R	0 = 0%, 100 = 100%	5001
	Dry	DI#01	bit	R	1 = Dry	3001
	Moist	DI#02	bit	R	1 = Moist	3002
	Wet	DI#03	bit	R	1 = Wet	3003
	Cable Fault	DI#04	bit	R	1 = Fault Cable	3004
	Change	DI#05	bit	R	1 = Change	3005
	Need Calibration	DI#06	bit	R	1 = Need Calibration	3006
	Calibration	DI#07	bit	R	1 = Calibration	3007
Relay Out	Relay Output 1	DO#01	bit	RW	0 = OFF, 1 = ON	4001
Output Relay	Output Relay Function		u16	RW	1 = State 10 = Autonomous	4201
Output Mode	Autonomous Mode Status		u16	RW	0 = Inactive 1 = Active	4301
Pattern Activating Autonomous Relay Output	Dry		u16	RW	1 = Dry	4401
	Moist		u16	RW	2 = Moist	
	Wet		u16	RW	4 = Wet	
	Detection Cable Fault		u16	RW	8 = Cable Fault	
	Changing State		u16	RW	16 = Changing	

📖 For the automatic function of the relay, it is necessary to write a value of 10 to register 4201. Then write the value 1 to the register 4301 which will enable the function at which the relay is to be activated. At the same time these function "blocks" write values into register 4201. The values in the register 4401 can be combined by the sum. For example, if you require the relay to close when wet (4) or when the cable (8) fails, the value 12 is written to the register.

Dimensions IPSEN-H2O-MOD



- REV: 201406 – Start of Production
- 201608 – Added H2O-PCB-78H Detection Sensor
- 201906 – Modbus Modification
- 201912 – Added Technical Parameter of Sensing Cable
- 202007 – Autonomous Relay Function

Technical Parameter of Sensing Cable

	Parameter	Value	Unit	Note
Product Features	Diameter	6.0	mm	Nominal
	Continuity and Signal Wires	2*26	AWG	With Insulation of Fluoropolymer
	Sensing Wires	2*30	AWG	With Jacket of Conductive Fluoropolymer
	Carrier	Fluoropolymer		
	Cable Weight 15m length	1	kg	
	Cable Color	High-Visibility Blue		
Durability	Cable Breaking Strength	72/32	kg	Without/with Connectors
	Cut-through Force	>>22kg with 0.13mm in Blade; Cross Head Speed 0.2in/min		
	Abrasion Resistance	>65 Cycles per UL719		
	Max. Contin. Operating Temp.	70	°C	
Performance Data	Leak Size to Alarm(Tap Water)	50mm max. at Any Point along Sensing Cable, up to 75 ft max. System Length		
	Drying Time	Cable Dries and Resets Within 15 Seconds from removal of Standing Water		
	Standard Cleaning Method	Wipe with Clean Damp Cloth		
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