

The AM9 interior sensors are supplied in modern design of ABB, LEGRAND, BTicino, SHNEIDER ELECTRIC, EATON, EFAPEL, GIRA, VIMAR, OBZOR and JUNG company. Communication with the supervisory system passes via the RS485 and the Modbus RTU protocol.

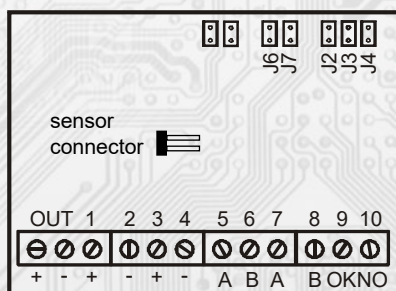
### Technical data

Supply voltage	12 to 30 VDC
Current consumption	max. 20 mA
Accuracy	± 0,5 °C
Time needed for equalization	30 min.
Measuring range	-30 ÷ 40 °C
Ambient temperature	-30 ÷ 70 °C
Relative humidity	< 80 %
Output	Active, max 100mA
Voltage level of OUT	Hi ≈ Ucc - 0,8V, Lo ≈ 0V
Communication	RS485, protocol ModBus RTU, 8bits, 1 stop bit, without parity
Communication speed	1200 ÷ 19200 Bd
Configuration software	REGMET MBSer; freeware; www.regmet.cz
Galvanic separation of PWM output	no
Galvanic separation of RS485	no
Galvanic separation of terminal OKNO	no
Protection type	IP40
Terminals	Screw terminal (wire max. 1mm <sup>2</sup> )

### List of available types:

ABB	Tango, alpha exklusive, Time, Element, Solo, Impuls, Swing, Future linear, Neo
LEGRAND	Galea, Valena, Cariva, Céliane
BTicino	Light, Light Tech, Living, Axolute
SHNEIDER ELECTRIC	Unica Basic, Unica Colors, Unica Top, Unica Quadro, Unica Plus, Merten Artec, Merten Antique, M-Plan, M-Smart, M-Star
EATON (Moeller Niko)	Original, Intense, Pure
EFAPEL	Logus90
GIRA	Systém 55, E22
VIMAR	Plana, Idea, Eikon
OBZOR	Elegant, Variant, Decente
JUNG	A500, AS 500, CD500, LS 990
	FD

### Arrangement of jumpers and connectors



J2... definition of idle status (conductor A)  
 J3... definition of idle status (conductor B)  
 J4... termination resistor 120R  
 J6... jumper "service"

Terminal: 1,3 - Power source positive terminal  
 2,4 - Power source ground  
 OUT - Output of switching transistor  
 OKNO (WINDOW) – input of window contact

Terminal  
 A, B RS485 communication line  
 + Power source positive terminal  
 - Power source ground

J7.... jumper (setting a fixed address 255 and setup communication speed of 19200 baud)

Positive terminal of supply (1,3) and positive terminal (OUT) are galvanically connected.  
 Negative terminal of supply (2,4) and terminal OKNO (10) are galvanically connected.

### Examples of embodiments AM9



Time



Solo



Tango



Gira



Unica



BTicino light

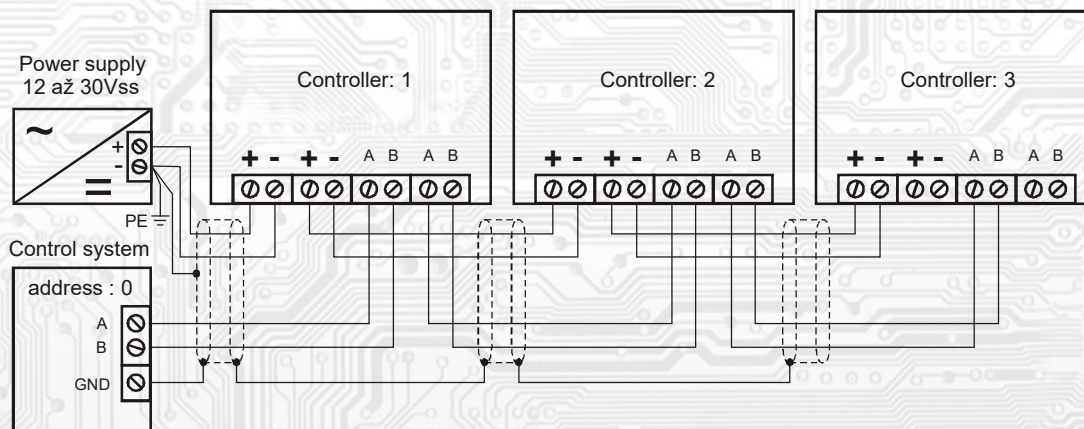


Valena life



Logus90

### Example of wiring the controllers in the system



Series AM9 sensors have been designed for installation into boxes under wall stucco. Wiring is done on the terminal board using wires of 1 square mm. The A and B signal terminals on the controller are wired to the corresponding terminals on the control system. Jumpers J2 to J4 are used as defined by the rules of communication on RS485 lines. To supply power to the controllers, one source of 12 V= to 30 V= may be used, while the voltage is connected to the controller terminals marked + and -. It is recommended to wire the controllers with suitable multi-conductor shielded cables for data signals as well as power supply. The shield must be interconnected between the specific sections and then only once to the lowest voltage level, terminal PE.

### Properties of the communication protocol

Protocol Modbus RTU with adjustable Baud rate 1200 - 57600 Bd, 8 bits, no parity, 1 stop bit, line RS485, half-duplex operation

### Description of data registers

To read these registers use command no. 03 "register reading" (0x03 Read Holding Registers).

#### Temperature measurement:

- is conducted over a resistive sensor Pt1000. The sensor is built into the metal case and connected to the circuit board by means of a loose lead and connectors. The measured temperature is evaluated electronically and the values are transmitted to the control system in as a 16 - bit signed integer multiplied by a constant 10:

**Register 0 x0005 \*\* (measurement temperature): 0xFE0C; 65036dek (-50°C) 0x07D0; 2000dek (200°C)**

In case of fault of the analogue input (short circuit or interruption of the temperature probe), the sensors transmits the value 0x7FFF = 32767dek.

#### Description of conguration registers.

EXTENDED REGISTERS can only be modified if the J6 jumper (enabling writing the configuration values) and J7 jumper (setting the fixed sensor address to 255 and setting the baudrate to 19 200 Bd - these network variables are reserved for configuration only and, therefore, if the required sensor address of 255 is set, the sensor modifies to 254 automatically) are inserted. In case only the J7 jumper is inserted, it is possible to use a fixed address and baudrate without the risk of overwriting the configuration parameters. The configuration is carried out by command 16 (multiple register preset 0x10). The changes are written and configuration is finished by extracting the J6 and J7 jumpers. No reset is necessary for proper function.

**X Reg = 8 bytů, ie 4 registers MODBUS**

X Reg	range of adresses X Reg **	
	[hex]	[dek]
X Reg 0	0x2001 ÷ 0x2004	8193 ÷ 8196
X Reg 1	0x2005 ÷ 0x2008	8197 ÷ 8200
X Reg 2	0x2009 ÷ 0x200C	8201 ÷ 8204

X Reg	volume X Reg							
	Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
X Reg 0	-	-	ZD_TEXT/0	ZD_TEXT/1	ZD_TEXT/2	ZD_TEXT/3	ZD_TEXT/4	ZD_TEXT/5
X Reg 1	ZD_TEXT/6	ZD_TEXT/7	ZD_TEXT/8	ZD_TEXT/9	-	ZD_INT	ZD_OFF/Hi	ZD_OFF/Lo
X Reg 2	-	-	SK_ADR	SK_SPD	-	-	-	-

