

EVOSER devices series warranty

Customer's name:	
Address:	
Phone No.:	
Dealer's name:	
Address:	
Phone No.:	
Guarantee period	12 months from date of purchase
Date of purchase	

Provisions for Free Repair

1. If the unit does not work properly despite the fact that the customer used it properly and in line with the User's Manual, the unit shall be repaired free of charge through the distributor from which the unit was purchased.
2. If the customer requests free repair because of trouble within the warranty period, bring or send the unit along with the warranty to the distributor.
3. Free repair is not available in the following cases even though it is within the warranty period:
 - a: Trouble or damage was caused by careless operation, natural disaster, fire, public pollution, or use of a power source other than specified.
 - b: If repair, adjustment, disassembly or modification of the unit has been carried out by a person other than a Italcoppie Sensori authorized engineer.
 - c: Trouble or damage was caused by transportation, movement or dropping of the unit after purchase.
 - d: Failure to submit the Warranty or failure to fill in all items required in the Warranty.
4. The Warranty cannot be reissued. This Warranty only promises customers free repair within the period and conditions clarified in this Warranty. Therefore, the customer's legal rights will not be limited by this Warranty. For further information on repair and other service questions after the termination of the warranty period, contact your distributor.



EVOSER-U

INTRODUCTORY MANUAL

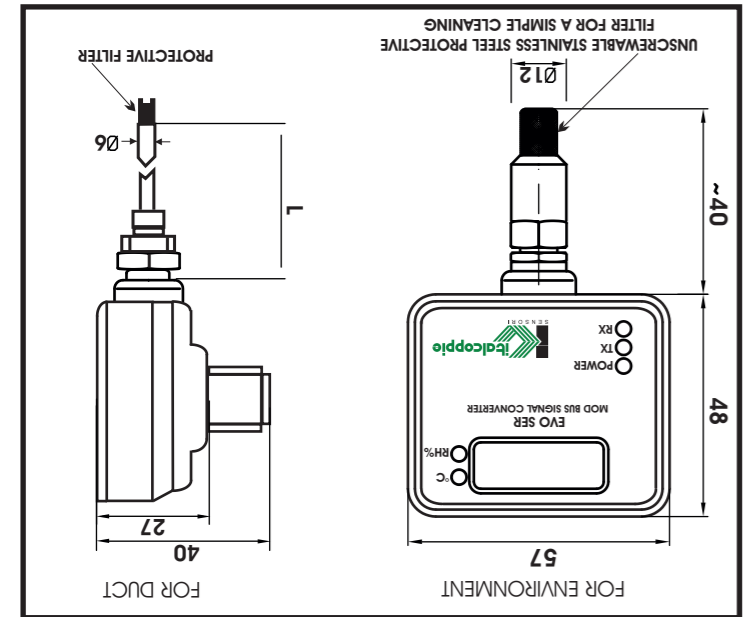
DIGITAL TEMPERATURE AND HUMIDITY SENSOR WITH SERIAL INTERFACE RTU MODBUS PROTOCOL



July '14 Rev.1
Cod. IMB134

Body:	Thermoplastic material color gray
Dimensions:	57x48x40 mm (only body)
Filter dimensions:	Diameter 12 mm (environment model) Diameter 6mm (duct model)
Installation:	Through the appropriate wall mounting bracket (AMEC 192)
Degree of protection:	IP65 and IP67 in accordance to IEC60529
Connectors:	N° 2 M12-5 pole male connector in accordance to IEC 751
Environments conditions:	-20 ÷ 65°C (0 ÷ 100% relative humidity) EMC: in accordance to EN61326
Power supply:	12 ÷ 30Vdc (polarity protected)
Consumption:	0,25W without display, 0,5W with display
Sensor:	Digital sensor model SENSIRION STH75
Range:	Temperature: -40,0 ÷ 120,0°C Relative humidity: 0 ÷ 100%
Accuracy:	See graph «uncertainty total on the meas»
Output:	RS485 serial interface (not isolated) Communication protocol: Modbus RTU (max. baud rate 38,400bps) Max. connection distance: 1,200 m. (*) Max. number of devices on the network: 32 (*) The max distance is in accordance to power supply and type of cable used to connect the devices.
Display:	4 digits with 7 red segments + °C indicator led
Led indicators:	Green: Power on (Power) Red: Serial transmission active (Tx) Red: Serial reception active (Rx)

Italcoppie sensori
Via A. Tonani, 10
26030 Malagino (CR) ITALY
Tel: +39 0372-441220
http://www.italcoppie.it



Mechanical dimensions

Technical data

Information

- In order to properly use this product, please carefully read this manual before using the device.
- All the relative rights to this user manual are property of Italcoppie sensori. It is forbidden the duplication and/or modification, partial or total, of this manual without the authorization of Italcoppie sensori.
- Italcoppie sensori is not responsible for any malfunction or trouble caused by the use of this product or by any problem caused by the use of measurement results of our unit. Please be fully aware of this before using our product.
- Italcoppie sensori accepts no responsibility for any damage or loss of income caused by the use of our product
- This product has been designed for private or industrial use only. It is not for use in situations where strict safety precautions are necessary such as in connection with medical equipment, whether directly or indirectly.

- The figures and illustrations in the present manual may vary slightly from the actual message.
- Specifications, design and other contents outlined in this manual are subject to change without notice.

Safety Precautions and Instructions *Please carefully observe the following safety measures when using our product

To prevent any loss or damage to our customers, other people and/or property, and to ensure the proper use of this product we ask that before using it you carefully read, understand and follow the safety rules and precautions for our products as outlined below.

[Explanation of the warning symbols]

	DANGER	These entries are actions that absolutely under no circumstance should be taken. The taking of such an action may cause serious personal physical damage or death.
	CAUTION	These entries are actions that if taken may lead to physical injury or damage to persons or things.

	This symbol denotes an important warning or caution. Inside or near the symbol will appear another symbol giving details. (Ex. ⚡ stands for ELECTROCUTION)
	This symbol denotes a forbidden action. Inside or near the symbol will appear another symbol giving details. (Ex. ⚠ stands for DO NOT TAKE APART)
	This symbol denotes an action that you must take. Inside or near the symbol will appear another symbol giving details. (Ex. 📵 stands for TAKE PLUG OUT OF SOCKET)

DANGER

- Do not take apart, repair or modify the main unit. It may cause fire, electrocution or damage. For any problem ask to Italcoppie sensori.
- If any smoke or strange smells are emitted from the unit, immediately cease using it. Continued use may cause fire, electrocution or damage.
- Do not use the device in the place subject to flammable or explosive gas.

- To make sure that the supply voltage is correspondent to that on the nameplate.
- If there is a danger of a serious which had incident to one breakdown or to a defect of this instrument, is necessary to equip the apparatus of a appropriate external protection
- The unit is planned in order to only work in industriale atmosphere.

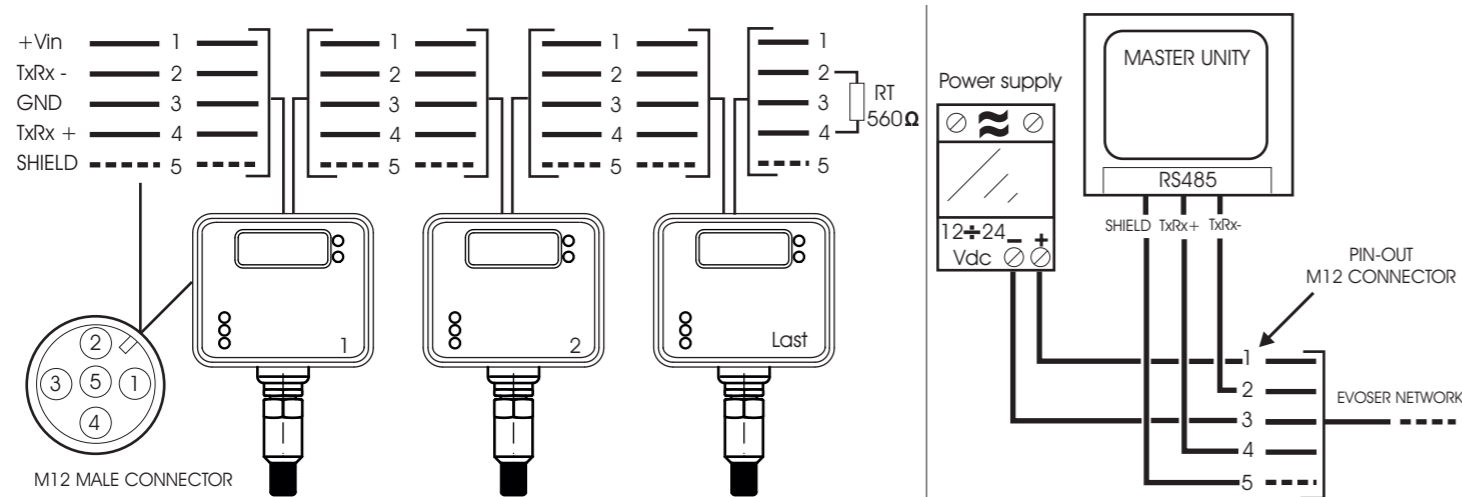
CAUTION

- Italcoppie sensors is not responsible for eventual disadvantages or malfunzionamenti provoked from the use of this product or for any other problem provoked from the malfunctioning of the unit. Before using the product, carefully estimating eventual correlated risks
- This product has been planned exclusively for industrial applications and are not destined to the use in situations in which it is necessary to observe rigid safety precautions, as an example for applications directly or indirectly correlated to medical equipment.**
- Not to make to fall the unit or esporia to hits rapes**
- Do not place any foreign objects in the inputs cable jack.**
- The safety normative require a power supply line switch to cut a device power supply. As ulterior security, insert a protection delayed fuse (T250mA 250Vca).**
If the installation previews more evo serveur online, to insert a fuse adapted to the absorption of the installed devices.
- This unit doesn't have parts that can be repaired.

- The unit is not equipped with an ON-OFF switch, therefore will turn on immediately when power supply is applied.**
- The unit must be wired with appropriate cables with reference to the limited voltage and current values reported on this user's manual.**
Do not use or store the unit in places such as listed below. It may cause electrocution, fires or damages at the unit.
 - Areas exposed to water or high-pressure water flow.
 - Areas exposed to organic solvents and corrosive gas.
 - Areas exposed to strong magnetic fields.
 - Areas exposed to static electricity.
 - Areas exposed to fire or overheating.
 - Areas exposed to excessive dust or smoke

Before installing the device please read carefully the user's manual available for download from www.italcoppie.it

Electrical connections



- The device must be cabled with wiring suited to the limit voltage and current specifications given in the technical data: we recommend using the appropriate Italcoppie 4 pole + shield cable [CAV071]; this cable can be used for a network composed of up to 32 Evoser devices.
- The device or network must be powered with a DC voltage in the range 12÷30Vdc (we recommend using the EvoS-Power [STR129])
- The serial interface is not galvanically isolated. We recommend using the 'EvoS-Conv' [EVO006] or 'EvoS-Repeater' [EVO005] options.
- Make sure that the working environment falls within the specified range.
- Incorrect power hookup to serial terminals 2 and 4 can break the device.

LED ERROR MESSAGES

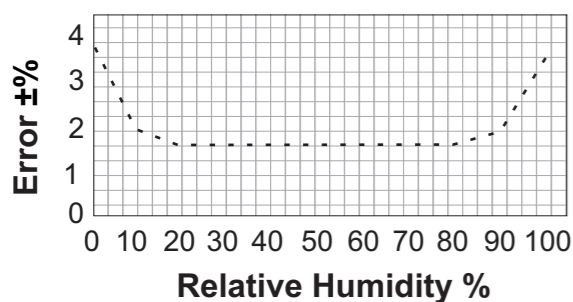
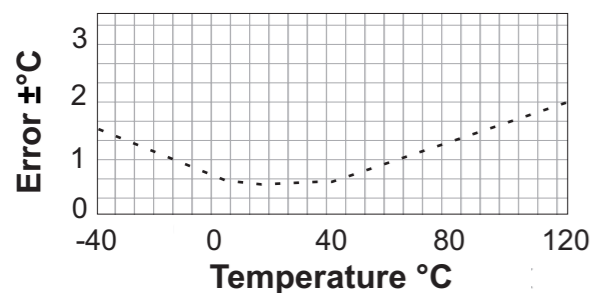
<ul style="list-style-type: none"> Power Tx Rx 	<p>Fast flashing: temperature over/under range</p> <p>Slow flashing: Temperature sensor failure (technical service required)</p>
<ul style="list-style-type: none"> Power Tx Rx 	<p>Power + Tx leds flashing: EEprom write error (technical service required)</p>
<ul style="list-style-type: none"> Power Tx Rx 	<p>Power + Rx leds flashing: System ready for firmware update</p>

DISPLAY ERROR MESSAGES

----	Temperature sensor failure (technical service required)
EE	System error: Corrupted Eeprom (technical service required)

The display is optional: the device can be programmed to show the relative humidity (red led '%' on) and the temperature (red led '°C' on) alternatively.

UNCERTAINTY TOTAL ON THE MEASURE



EVOSEER SERIES ACCESSORIES

Wall mounting bracket [AMEC192]
Serial repeater [EVO005]
RS485-->PC (RS232) isolated serial converter [EVO006]
M12-5 connector poles female 90° [CONV109]
Terminal resistor integrated to M12 connector [EVO001]
EVOSEER 4 pole + shielding cable [CAV071]
Extensions of various lengths with co-moulded M12-5 poles connectors for connecting EVOSEER units [the PRV#]
Power supply 92-265Vac / 24Vdc 2,5A [STR129]
Configuration KIT [EVOSEERSET]

EVOSEER CABLE

+VIN	1	RED	AWG22(0,33mm ²)
GND	2	BLACK	
-RxTx	3	BLUE	AWG24(0,20mm ²) Twisted
+RxTx	4	WHITE	
SHIELD	5	-	

MODBUS TABLE

REGISTERS				
Modbus Address	Parameter Name	Range	Note	E ² P
0[0x00]	Temperature	-50.0÷450.0°C	Read Only	
1[0x01]	Relative Humidity	0.0÷100.0%	Read Only	
2[0x02]	Dewpoint	-40.0÷120.0°C	Read Only	
3[0x03]	Temperature Bias	-12.5÷12.5°C		
4[0x04]	Humidity Bias	-12.5÷12.5°C	R/W	X
5[0x05]	Max. Rel. Humidity peak			
6[0x06]	Min. Rel. Humidity peak			
7[0x07]	Max. Temperature peak	--	Read Only	X
8[0x08]	Min. Temperature peak	--	Read Only	X
9[0x09]	Rest peaks	1	R/W	
10[0x0A]	Modbus address	0÷255	R/W	X
11[0x0B]	Baud Rate modbus		R/W	X
	0 - 2400 bps	0÷7		
	1 - 4800 bps			
	2 - 9600 bps			
	3 - 19200 bps			
4 - 38400 bps				
12[0x0C]	Parity		R/W	X
	0 - none	0÷2		
	1 - even			
2 - odd				
13[0x0D]	Number data bits		R/W	X
	0 - 8 bit	0÷1		
1 - 7 bit				
14[0x0E]	Number of stop bits		R/W	X
	0 - 1 Stop bits	0÷1		
1 - 2 Stop bits				
15[0x0F]	Modbus delay	0÷255	R/W (x2mS)	X
	System error		Read only	
16[0x10]	0 - OK	0÷4		
	1 - Sensor failure			
	2 - EEprom Error			
	3 - Over Range			
	4 - Under Range			
17[0x11]	Show zeroes on display		R/W	X
	0- No zeroes	0÷1		
1- Yes Zeroes				
18[0x12]	Display modality		R/W	X
	0- Temperature	0÷3		
	1- Relative Humidity			
2- Temperature / Humidity				
19[0x13]	Visualitation time on display in scan mode	0÷10 sec	R/W	X
	Temperature / Humidity			
20[0x14]	Device Name	2 caratteri ASCII	R/W	X
	Device Name 1	2 caratteri ASCII	R/W	X
21[0x15]	Device Name 1	2 caratteri ASCII	R/W	X
22[0x16]	Watch dog time	0÷250	R/W (*0,5sec)	X
23[0x17]	Software version	0,0÷99,9	Read only	
24[0x18]	Hardware version	0,0÷99,9	Read only	
25[0x19]	Serial Number	0-65535	Read only	X
26[0x1A]	Batch	0-65535	Read only	X
27[0x1B]	Reserved	--	--	
28[0x1C]	Default Parametri	0xA444	Write Only	
29[0x1D]	Reserved	----	--	
30[0x1E]	Reserved	----	--	

COILS

Modbus Address	Parameter name	Range	Note	E ² P
0	Enable Watch Dog event	0÷1	R/W	
1	Watch Dog event	0÷1	R/W	
2	Power-UP event	0÷1	R/W	

Note: the registries and the coils marked in column "E²P" come saved in EEprom (permanent memory) every time that come written. For more information on Modbus protocol download the instruction's manual available from our web site www.italcoppie.it site

DEFAULT REGISTERS

Temperature/humidity bias	0,0°C / 0%
Modbus Address	1
Baud rate	9600 bps
Parity	None
Number of data bits	8
Number of stop bits	1
Delay time Tx/Rx	2mS
Time Watch dog	0,5 sec.

RESET TO FACTORY DEFAULT

It is possible to reset the communication parameters at the factory default values by the application «Evoser Factory Default», available for download from our web site www.italcoppie.it. The reset is only possible in the first 4 seconds after the power-on when the three leds Power / Tx / Rx blink as the sequence showed beside. (For more information read carefully the user's manual included in the application «Evoser Factory Default»).