SRC-H1 Indoor humidity transmitter

Features

- Replaceable sensor element
- Indoor humidity measurement
- Minimum and maximum value memory
- 0…10 V, 0…20 mA or 2…10 V, 4…20 mA measuring signals selectable with jumpers
- Optional alternative signal ranges programmable
- Selectable averaging signal
- Optional external display (OPA-S)
- Status LED

Applications

- Indoor, Indoor humidity measurement for heating, ventilation and air conditioning applications
- Recording of minimum and maximum values for critical environments
- Supervision of critical humidity

Humidity transmitter

A unique capacitive sensor element is used for measuring relative humidity. The applied measuring technology guarantees excellent reliability and long-term stability. The microprocessor samples the humidity once per second. It calculates an averaging signal over a preset number of seconds and generates the output signal.
Standard output signal range and types may be selected by jumpers. Standard signal ranges are: 0…10 VDC, 0…10 VDC, 4…20 mA and 0…20 mA. Other ranges can be defined by using a programming tool (OPA-S).

Minimum and maximum values

Using a display & programming accessory, the user has the option to read out and reset minimum and maximum values. The minimum and maximum values may as well be used as output signals. The minimum and maximum values are saved into the EEPROM and are available after a power interruption.

Ordering

Per default a sensor element with 3% RH accuracy is included. Contact your local sales contact to order sensing elements with different accuracies.

Transmitter

Item Name	Item code	Description/Option
SRC-H1-A3	40-300140	Humidity transmitter

Sensor element

Item Name	Item code	Humidity Accuracy [%rH]	Temperature Accuracy [K] @25°C (77°F)	Description/Option
AES3-HT-A2	40-500102	2%	± 0.5°	
AES3-HT-A3	40-500103	3%	± 0.4°	Humidity sensor element
AES3-HT-A5	40-500104	5%	± 0.3°	

Accessories

Item Name	Item code	Description/Option
OPA-S	40-500006	External display module

Technical Specifications

Important notice and safety advice

This device is for use as a humidity transmitter. It is not a safety device. Where a device failure could endanger human life and property, it is the responsibility of the client, installer and system designer to add additional safety devices to prevent such a device failure. Ignoring specifications and local regulations may cause equipment damage and endangers life and property. Tampering with the device and misapplication will void warranty.

|		
Power supply	Operating Voltage Transformer	24 VAC 50/60 Hz ± 10%, 24VDC ± 10% SELV to HD 384, Class II, 48VA max
	Power Consumption	Max 2 VA
	Terminal Connectors	For wire 0.34…2.5 mm^2 (AWG 24…12)
Sensing probe	Humidity Sensor: Range Measuring Accuracy Hysteresis Repeatability Stability	Capacity sensor element 0…100 % rH See Figure 1 ± 1% ± 0.1% < 0.5% / year
Signal outputs	Analog Outputs Output Signal Resolution Maximum Load	 DC 0-10V or 0…20mA 10 Bit, 9.7 mV, 0.019.5 mA Voltage: ≥1kΩ Current: ≤250Ω
Environment	Operation Climatic Conditions Temperature Humidity	To IEC 721-3-3 class 3 K5 0…70°C (32…158°F) <95% R.H. non-condensing
	Transport & Storage Climatic Conditions Temperature Humidity Mechanical Conditions	To IEC 721-3-2 and IEC 721-3-1 class 3 K3 and class 1 K3 0…70°C (32…158°F) <95% R.H. non-condensing class 2M2
Standards	CE conformity EMC Directive Low Voltage Directive	 2014/30/EU 2014/35/EU
	Product standards automatic electrical controls for household and similar use	EN 60730−1
	Electromagnetic compatibility for domestic and industrial sector	Emissions: EN 60 730-1 Immunity: EN 60 730-1
	Degree of Protection	IP30 to EN 60 529
	Safety Class	III (IEC 60536)
General	Housing Materials Cover Mounting Plate	Fire proof PC+ABS plastic (UL94 class V-0) Galvanized steel
	RoHS compliant according to	2011/65/EU
	Dimensions (H x W x D)	21 x 88 x 88 mm (0.8 x 3.5 x 3.5 in)
	Weight (including package)	160 g (5.6 oz)

Relative humidity absolute accuracy
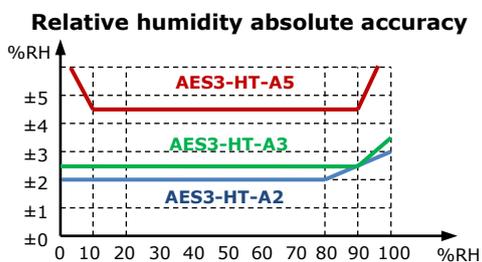
Figure 1: Max RH-tolerance at 25 °C (77 °F) per sensor type

Note on accuracy: allow one hour after power up for compensation swing in

Dimension mm(inch)
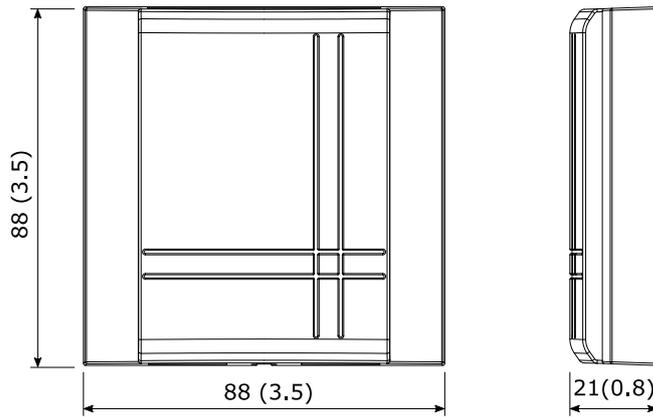
Mounting location

- On a flat, easily accessible inner wall
- The following installation locations should be avoided:
  - Protect from direct exposure to sunlight
  - Do not install near heat sources, e.g. radiators or other heat-generating devices
  - Air storage spaces and niches, e.g. behind doors or shelves
  - Outside walls insufficiently insulated
  - In the direct sphere of influence of ventilation openings and fans

Warning about storage, packaging and usage environment

The sensing part is a polymer, which measures the humidity in the ambient air. For proper sensor operation some mandatory precautions need to be taken during storage, packaging and usage.
The transmitter and its sensing element should not be packaged, stored or used in out-gassing plastic materials, which could cause sensor contamination. In particular, it is recommended not to use any glue or adhesive tapes (Sellotape, Scotch-Tape, Tesa-Film, etc.) within the package or close proximity of the sensor. Foamed materials often cause contamination problems and should not be used to package the transmitter. Best packaging material is a simple cardboard box or a deep-drawn plastic case in a cardboard box.

Mounting instruction / replacing the sensor element

See installation sheet no. 70-000568 (www.vectorcontrols.com).

Configuration

The transmitter can be adapted to fit perfectly into any application by adjusting the software parameters. The parameters are set with the operation terminals OPA-S. The OPA-S may also be used as remote indicator.

Input configuration

Parameter	Description	Range	Default
IP 00	H1: Show Percent	ON, OFF	ON
IP 01	H1: Samples taken for averaging control signal	1…255	10
IP 02	H1: Calibration	-10…10%	0

Output configuration

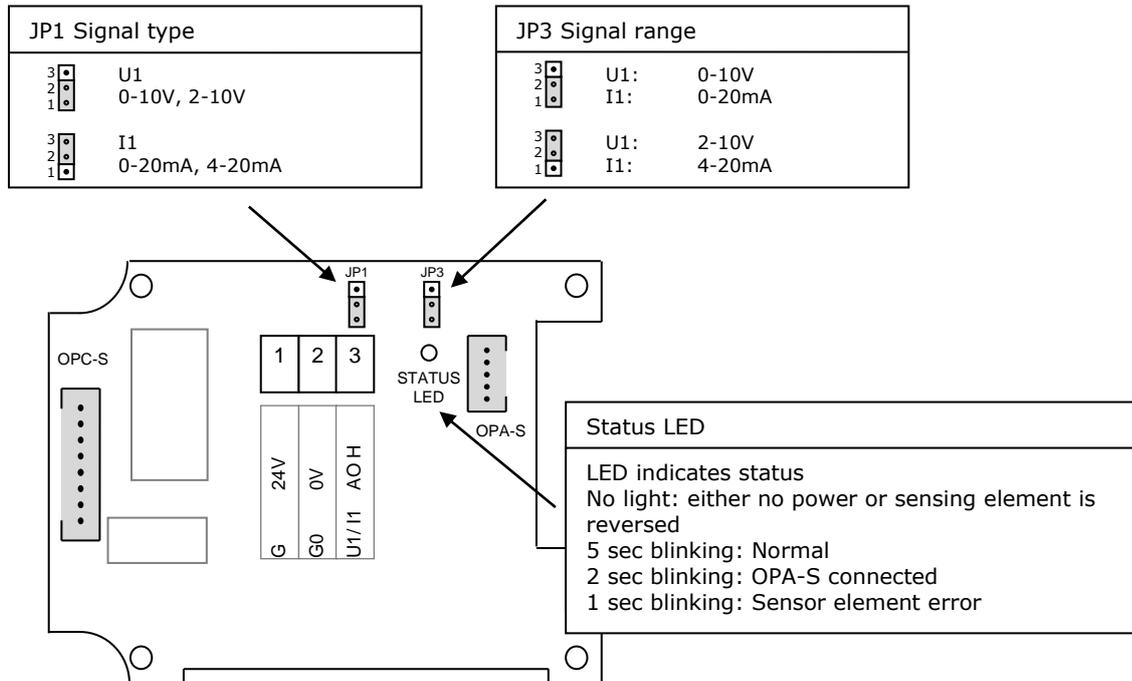| Parameter	Description	Range	Default
OP 00	AO1: Humidity: Configuration of output signal: 0 = Feedback humidity input, 1 = Feedback humidity minimum value 2 = Feedback humidity maximum value	0 – 2	0
OP 01	AO1: Humidity: Minimum limitation of output signal	0 – Max %	0%
OP 02	AO1: Humidity: Maximum limitation of output signal	Min – 100%	100%

Output signal configuration

The analog output signal type may be configured with a jumper for 0-10 VDC or 0-20 mA control signals. The jumpers are located next to the terminal connector of each analog output. See table below for jumper placement. The factory setting is to 0-10 VDC.

Signal type	JP1
0 – 10 V	(1-2)
0 – 20 mA	(2-3)

The signal range may be set with JP3 for both analog outputs. JP3 will only operate if the output range specified with OP01 and OP02 is left at the default position of 0…100%. With any other setting the position of JP3 has no influence and the range defined with the output parameters applies.

Signal range	JP3
0 – 10 V, 0 – 20 mA	(1-2)
2 – 10 V, 4 – 20 mA	(2-3)

Jumper settings

Status LED

LED indicates status
No light: either no power or sensing element is reversed
5 sec blinking: Normal
2 sec blinking: OPA-S connected
1 sec blinking: Sensor element error

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Vector Controls GmbH
Switzerland

info@vectorcontrols.com
www.vectorcontrols.com/