

SOC-T1

Outdoor temperature transmitter

Features

- Outdoor temperature 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 LCD display (OPC-S) or external display (OPA-S)
- LED operation status

Applications

- Outdoor temperature measurement in heating, ventilation and air conditioning applications.
- Recording of minimum and maximum values for critical environments
- Supervision of critical temperatures



Temperature transmitter

The transmitter measures the temperature by the use of a precision sensing element. The microprocessor samples the temperature once per second. It calculates an averaging signal over a preset number of seconds and generates an output signal based on lower and upper signal range values. Standard range is -40...60 °C (-40...140 °F) and 10 seconds average. The measuring range and the averaging samples may be customized with the programming tool.

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 or OPC-S). A version with display is possible by ordering the integrated display accessory OPC-S.

Minimum and maximum values:

Using the programming tool, 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 PG9 cable gland for cables (AMC1) Ø 4 – 8 mm (AWG 6 – 1) is included. Contact your local sales contact if you prefer a sensor with conduit connectors or a built in display module.

Item name	Item code	Description/option
SOC-T1-1-xx	40-30 0153-xx	Temperature transmitter incl. cable gland (AMC1)
SOC-T1-1-W0	40-30 0xxx-0	0 Temperature range: -40...60 °C (-40...140 °F) (Default)
SOC-T1-1-W1	40-30 0xxx-1	1 Temperature Range: -35...35 °C (-31...95 °F)
SOC-T1-1-W2	40-30 0xxx-2	2 Temperature Range: 0...50 °C (32...122 °F)
SOC-T1-1-W3	40-30 0xxx-3	3 Temperature Range: Special – Specify in order

Accessories

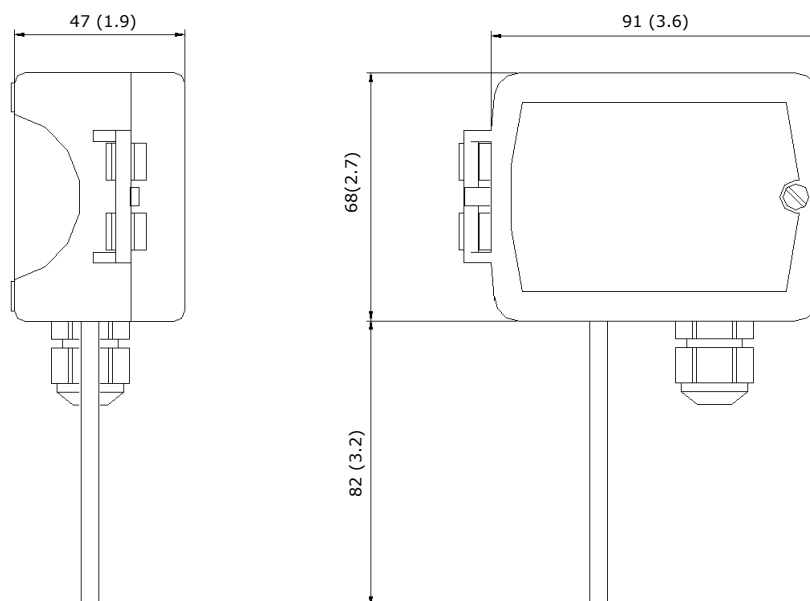
Item name	Item code	Description/option
OPC-S	40-50 0029	Built in display and programming module
OPA-S	40-50 0006	External display module
AMC-2	40-500074	Conduit connector NPT 1/2

Technical specification

Warning! Safety advice! This device is intended to be used for comfort applications. Where a device failure endangers human life and/or property, it is the responsibility of the owner, designer and installer to add additional safety devices to prevent or detect a system failure caused by such a device failure. The manufacturer of this device cannot be held liable for any damage caused by such a failure. Failure to follow specifications and local regulations may endanger life, cause equipment damage and void warranty.

Power supply	Operating voltage	24 V AC 50/60 Hz \pm 10%, 24 VDC \pm 10%
	Transformer	SELV to HD 384, Class II, 48 VA max.
	Power consumption	Max. 2 VA
	Terminal connectors	For wire 0.34...2.5 mm ² (AWG 24...12)
Sensing probe	Temperature:	
	Accuracy: -40...0 °C (-40...32 °F):	0.5 K
	0...50 °C (32...122 °F):	0.2 K
	50...70 °C (122...158 °F):	0.5 K
Signal outputs	Analog outputs	
	Output signal	DC 0-10 V or 0...20 mA
	Resolution	10 Bit, 9.7 mV, 0.019.5 mA
	Maximum load	Voltage: \geq 1k Ω Current: \leq 250 Ω
Environment	Operation	To IEC 721-3-3
	Climatic conditions	class 3 K5
	Temperature	-40...70 °C (-40...158 °F)
	Humidity	<95% R.H. non-condensing
	Transport & storage	To IEC 721-3-2 and IEC 721-3-1
	Climatic conditions	class 3 K3 and class 1 K3
	Temperature	-40...80 °C (-40...176 °F)
	Humidity	<95% R.H. non-condensing
Standards	CE conformity	
	EMC directive	2004/108/EC
	Low voltage directive	2006/95/EC
	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	IP65 to EN 60 529
	Safety class	III (IEC 60536)
General	Housing materials	Cover, back part Probe
		PC+ABS (UL94 class V-0) Stainless steel
	Dimensions (H x W x D):	150 x 91 x 47 mm (5.9 x 3.7 x 1.9 in)
	Weight (including package)	220 g (7.8 oz.)

Dimensions mm (in)



Mechanical design and installation

The unit consists of two parts: (a) The back part with the probe and (b) the cover.

Mounting location

The transmitter should be installed, probe facing down, directly on the wall, in a weather protected area. The weather shield accessory is recommended, in case the transmitter is exposed to weather and direct sunlight.

Mounting instruction

See installation sheet no. 70-000561 (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 or OPC-S. The OPA-S may also be used as remote indicator.

Input configuration

Parameter	Description	Range	Default
IP 00	TI1: Celsius or Fahrenheit, C = OFF, F = ON	ON, OFF	OFF
IP 01	TI1: Samples taken for averaging control signal	1...255	10
IP 02	TI1: Calibration	-10...10	0
IP 03	TI1: Minimum temperature	-40...215 °C/F	0 °C
IP 04	TI1: Maximum temperature	-40...215 °C/F	50 °C

Output configuration

Parameter	Description	Range	Default
OP 00	AO1: Configuration of output signal: 0 = Feedback temperature input, 1 = Feedback temperature minimum value 2 = Feedback temperature maximum value	0 - 2	0
OP 01	AO1: Minimum limitation of output signal	0 - Max %	0%
OP 02	AO1: 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)

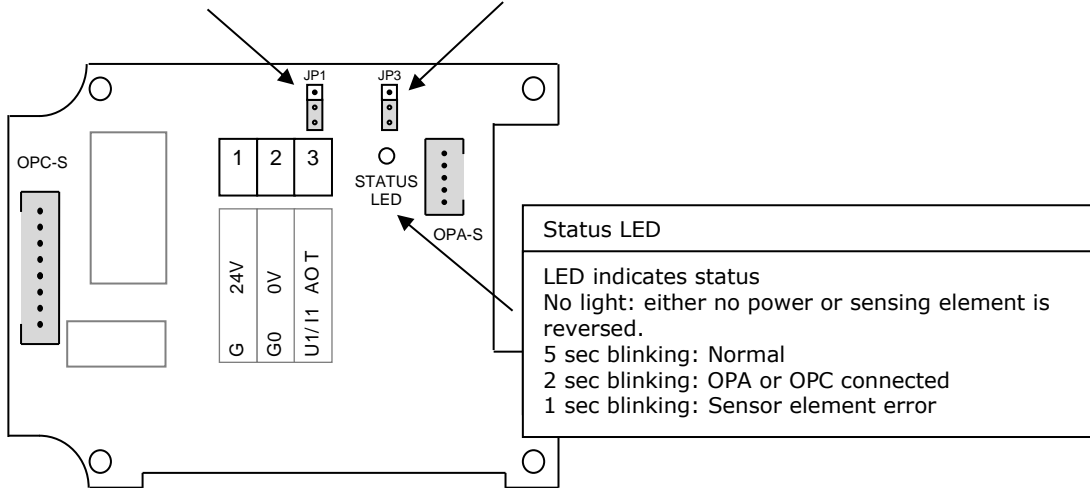
The signal range may be set with JP3 for both analog outputs. JP3 will only operate if the output range specified with OP01 and OP02 is left at the default position of 0...100%. With any other setting the position of JP3 has no influence and the range defined with the output parameters applies.

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

Jumper Settings

JP1 Signal type							
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JP3 Signal range							
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Status LED
LED indicates status
No light: either no power or sensing element is reversed.
5 sec blinking: Normal
2 sec blinking: OPA or OPC connected
1 sec blinking: Sensor element error