

# HUMIDITY / TEMPERATURE TRANSMITTER

## SEM161, SEM162

- CONFIGURATION USING USB PORT POWERED CONFIGURATOR
- HUMIDITY, TEMPERATURE, DEW POINT MEASUREMENT
- INTERCHANGEABLE DIGITAL SENSOR
- HIGH ACCURACY AND STABILITY
- DISPLAY OPTION
- USER CALIBRATION FACILITY



### ➤ INTRODUCTION

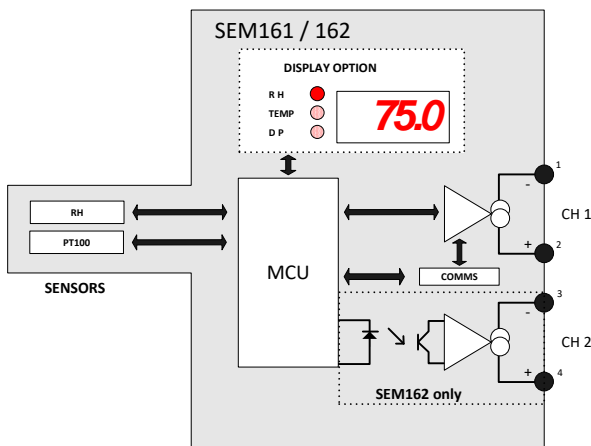
The SEM161 / 162 series are a cost effective “smart” humidity and temperature transmitter with a single two wire (4 to 20) mA output ( SEM161) or dual two wire (4 to 20) mA output (SEM162). The design uses a digital sensor which plugs into the sensor stem. A 4 digit display option is also available.

The product will measure humidity, temperature, dew point and delta T (the difference between dewpoint and ambient temperature) values. Using our free software, available on our website, PC configuration allows you to measure any one of these 4 parameters on the SEM161, or any two on the SEM162. You can even programme the SEM162 to measure the same parameter on both loops.

Configuration is performed quickly using our new USB port driven configurator by connecting the transmitter to the configurator and following the software instructions. The software allows you to tag the device, set installation date and set output range. Either fixed ranges or your own custom ranges can be configured for all temperature output types in °C or °F and RH in %.

The 4-digit LED display option provides you with a visual indication of the process parameters, the display may be set to indicate either humidity, temperature, dew point or toggle between all three parameters.

Using our popular SCH4 connection head, the SEM161/162 series can be ordered for duct, wall or remote sensor mounting.

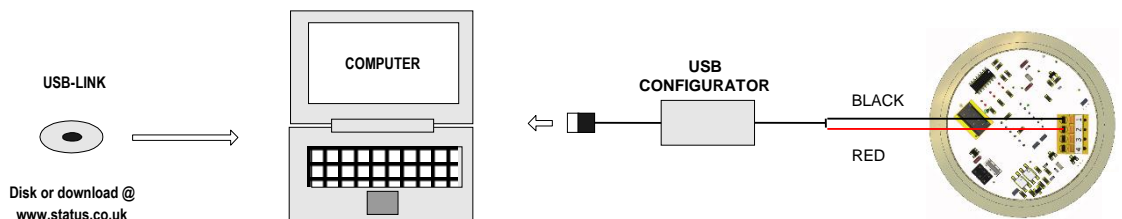


#### FACTORY DEFAULT:

<b>SEM161</b>		
CH1	RH	(0 to 100) %
Alignment	off	
Display option	RH	
<b>SEM162</b>		
CH1	RH	(0 to 100) %
CH2	Tamb	(0 to 50) °C
Alignment	off	
Display option	RH	

### ➤ PC CONFIGURATION

Running Windows XP or later with USB port



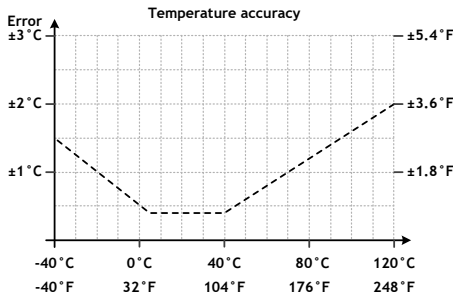
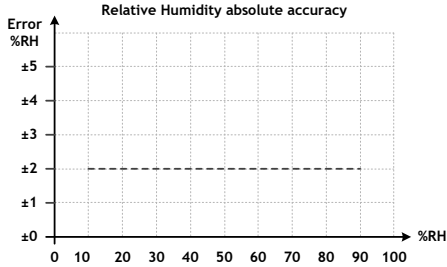
# HUMIDITY / TEMPERATURE TRANSMITTER

## SPECIFICATIONS @ 20 °C

### INPUT

Sensor Type Humidity/Temperature  
 Humidity Range (0 to 100) % RH  
 Temperature Range (-30 to 100) °C (See Defaults)

### PROCESS ACCURACY (without Alignment)



### CH1 OUTPUT (CH2 when fitted)

Humidity Range (0 to 100) % RH  
 Humidity Accuracy (10 to 90) % see graph above  
 Temperature Range (-30 to 100) °C (-22 to 212) °F  
 Dew Point Range (-30 to 100) °C (-22 to 212) °F  
 (T amb - T dew point)  
 Output Type (0 to 50) °C (32 to 122) °F  
 Output range 2 wire (4 to 20) mA current loop  
 (4.0 to 20.0) mA  
 Output Connection Two Part Screw Terminal  
 Maximum output 20.5 mA (in high burnout condition)  
 Minimum output 3.9 mA (in low burnout condition)  
 Accuracy (mA Out x 0.0005) or 5 uA (Whichever is the greater)  
 Loop Voltage effect 0.2 uA / V  
 Thermal drift 1 uA / °C  
 Maximum output load [(Vsupply-10)/20] K Ohms  
 (Example: 700 Ohms @ 24 V)

### DISPLAY OPTION

Type 4 digit (9 mm) Red LED  
 Ranges Humidity, Temperature, Dewpoint  
 Resolution 0.1 % - 0.1 °C / °F  
 Update rate 800 mS

### GENERAL SPECIFICATION

Update time 3 Seconds  
 Start up time 10 seconds (I out < 4 mA during start up)  
 Power Supply (10 to 30) Volts dc  
 (15 to 30) Volts dc with display

### ENVIRONMENTAL

#### Probe

Ambient operating range (-30 to +100) °C  
 Ambient humidity range (0 to 100) % RH

#### Transmitter

Ambient operating range (-30 to +85) °C  
 Ambient storage temperature (-50 to +90) °C  
 Ambient humidity range (10 to 90) % RH non-condensing

### APPROVALS

EMC - BS EN 61326

ANNEX A

ANNEX F

IEC 61000-4-2  
 IEC 61000-4-3  
 IEC 61000-4-4  
 IEC 61000-4-5

Electrical equipment for measurement control and laboratory use.  
 Immunity test requirements for equipment intended for use in industrial locations  
 Test configurations, operational conditions and performance criteria for transducers with integrated or remote signal conditioning.  
 Electrostatic discharge  
 EM Field  
 Transient Burst (output)  
 Surge (output)

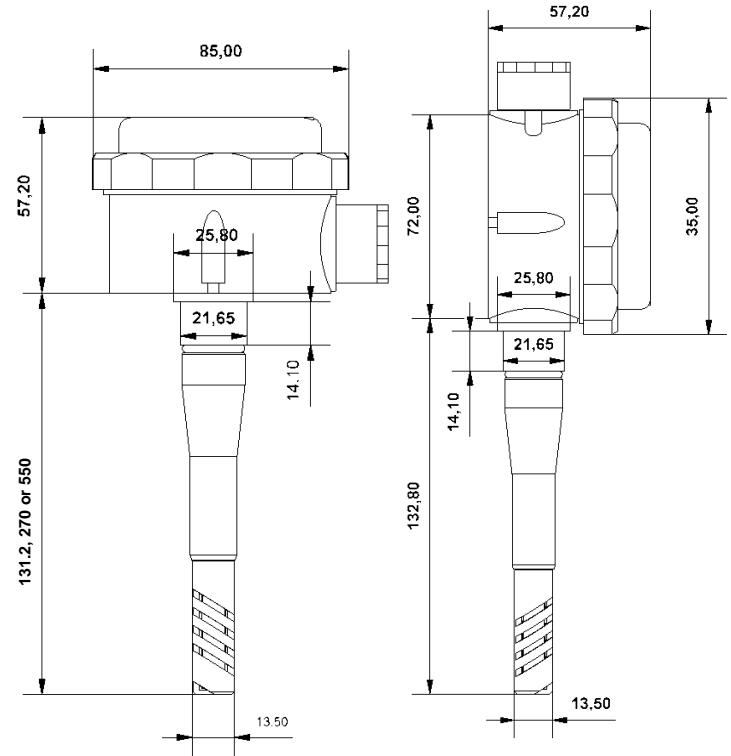
## MECHANICAL

Output Connection M20  
 Wire Range: (20 to 28) AWG  
 Solid / Stranded Wire (6 to 7) mm  
 Wire Strip Length

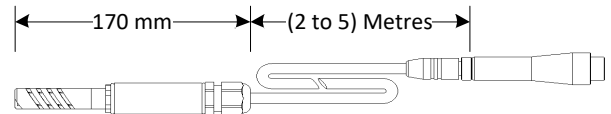
### DUCT

### WALL

(All Dimensions in mm)



### REMOTE SENSOR



### Order Code:

<b>SEM</b>	<b>No of Channels</b>	<b>M / S / D</b>						
Channels	161	Mounting	W	Stem	161	162	Length	Display Option
Hum 1	161	Wall	W	Wall	H	HP	110 mm	Fitted <b>DP</b>
Hum + Temp 2	162	Duct	D	Duct	H01	HP01	120 mm	
		Remote	R	Duct	H02	HP02	250 mm	
				Duct	H03	HP03	530 mm	
				Remote	H01	HP01	2 m	
				Remote	H02	HP02	5 m	

Accessories: USB Configurator