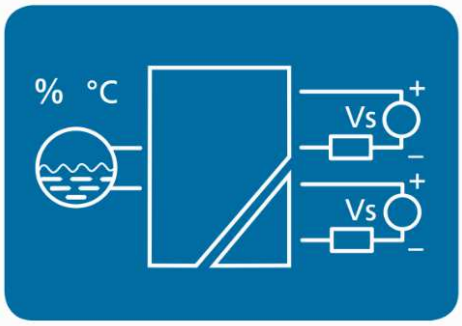
SEM161, SEM162 HUMIDITY/TEMPERATURE TRANSMITTER

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



INTRODUCTION

The SEM161/162 series are cost effective humidity and temperature transmitters with either 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 dew-point 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 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 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.

FEATURE HIGHLIGHTS

WALL/DUCT MOUNT

The SEM161/SEM162 has wall and duct mount options with different stem lengths available for duct mount. The device also has a remote sensor option (2 and 5) m for access to difficult areas.

REPLACEABLE SENSOR

Should the measuring tip of the SEM161/SEM162 become damaged or contaminated, the sensor tip is field-replicable for ease of maintenance.

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USER-CALIBRATION/ALIGNMENT

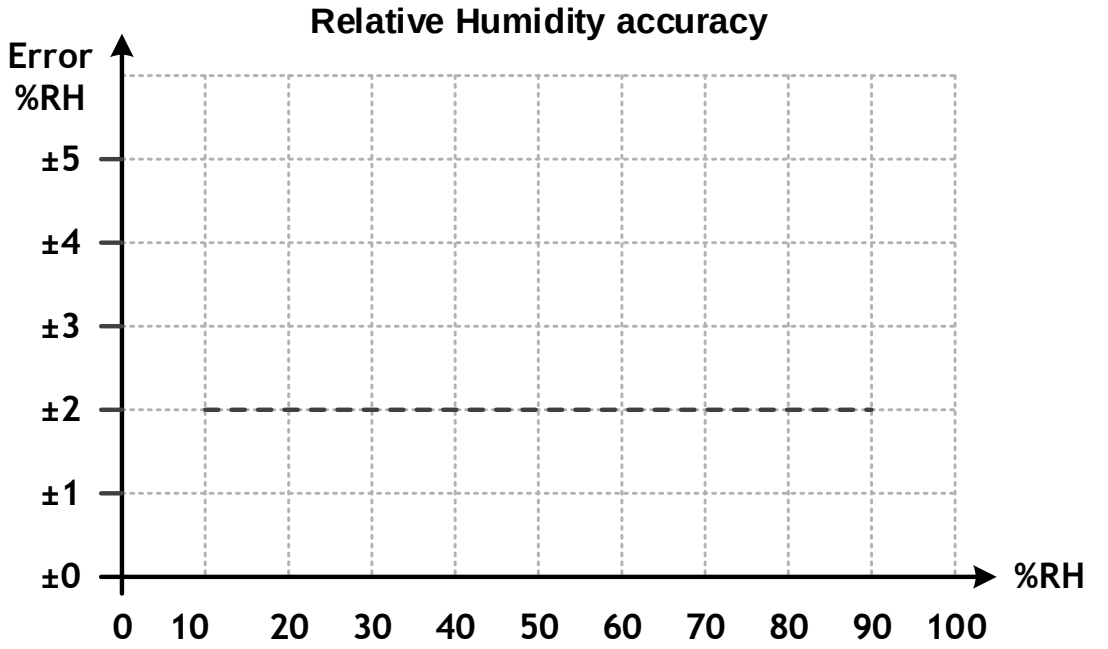
The SEM161/SEM162 can be user-aligned to a reference source or meter for %RH and temperature input readings.

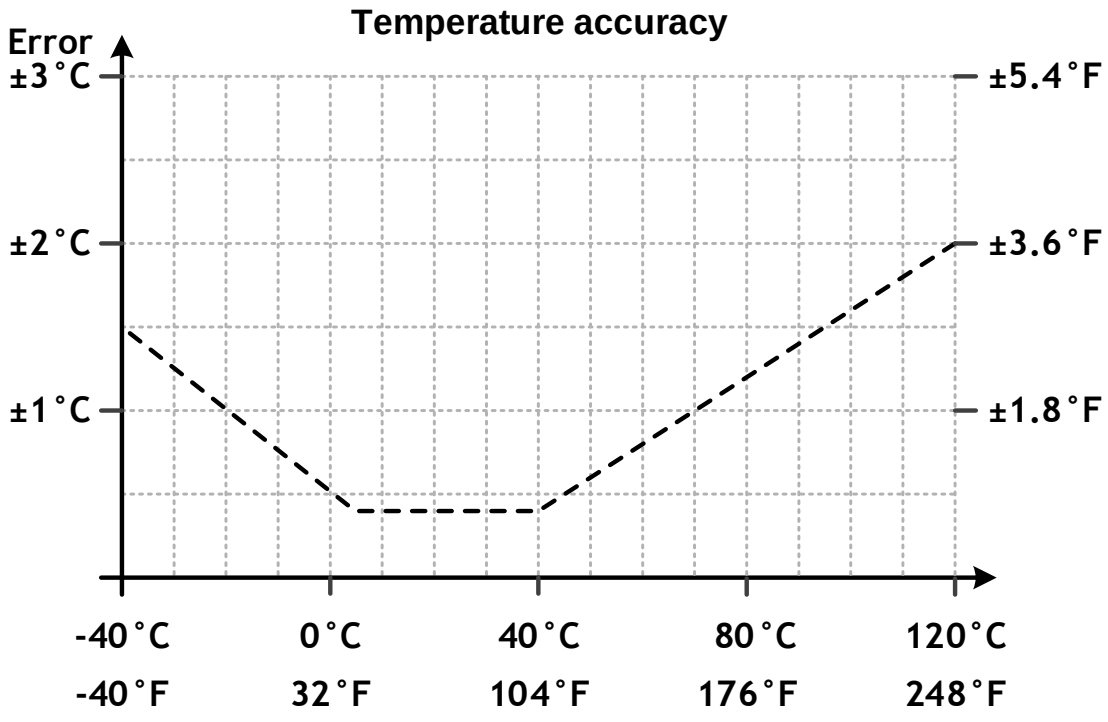
USB CONFIGURATION

The SEM161/162 is quick and easy to set up using the USBSpeedLink software and can be set to %RH and temperature output options.

INPUT	
Type/Function	**Range/Description**
Sensor type	Humidity/Temperature
Humidity range	(0 to 100) % RH
Temperature range	(-30 to 100) °C (See Defaults)

PROCESS ACCURACY (without Alignment)





OUTPUT **CH1 (CH2 when fitted)**	
Type/Function	**Range/Description**
Output type	2 wire (4 to 20) mA current loop
Humidity range	(0 to 100) % RH
Humidity accuracy	(10 to 90) %, see graph Relative Humidity accuracy
Temperature range	(-30 to 100) °C, (- 22 to 212) °F
Temperature accuracy	See graph Temperature accuracy
Dew-point range	(-30 to 100) °C, (- 22 to 212) °F
(T ambient – T dew-point)	(0 to 50) °C, (32 to 122) °F
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	20.5 mA (in high fault condition)
Minimum output	3.9 mA (in low fault condition)
Maximum output load	[(Vsupply-10)/20] K Ohms (Example: 700 Ohms @ 24 V)

OUTPUT **Display option**	
Type/Function	**Range/Description**
LED	4-digit (9 mm) Red
Ranges	Humidity, Temperature, Dew-point
Resolution	0.1 %, 0.1 °C /°F
Display update rate	800 mS

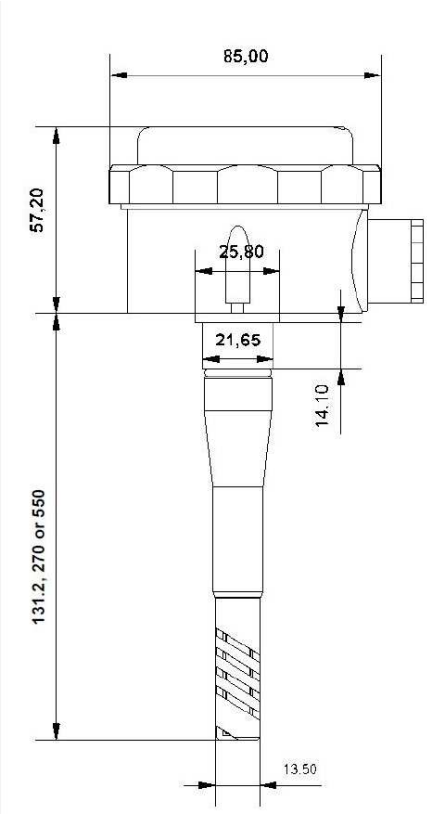
USB USER-INTERFACE		
Type/Function	**Range/Description**	**Notes**
Configuration hardware	USB module	USB-CONFIG-MKII
Configuration software	USBSpeedLink	Download www.status.co.uk
Channel 1 Channel 2 (SEM162 only)	RH, Temperature, Dew-point, Delta temperature	%, °C/°F
	Output range	mA
Tag number		6 characters
Display (option)	RH (%), Temperature (°C/°F), Dew-point (°C/°F), Toggle all (%, °C/°F)	
Alignment	%RH, Temperature	Off On: Offset, span, clear
Read live-data	%RH Temperature, Dew-point Delta temperature Output channel 1	% °C/°F °C/°F mA (+ channel 2 for SEM162)
Factory defaults		
SEM161/SEM162 CH1	RH	(0 to 100) %
	Alignment	Off
	Display (option)	RH
SEM162 CH2	Temperature	(0 to 50) °C
	Alignment	Off

GENERAL	
Function	**Description**
mA output response time	3 s
Supply voltage	(10 to 30) Volts dc, (15 to 30) Volts dc with display, SELV
Output connection	Two-part screw terminals
Start-up time	10 s (mA out < 4 mA during start-up)
Note: for channel 2 to give a (4 to 20) mA output, channel 1 must also be powered	
Should the measuring sensor become damaged or contaminated the measuring tip is field-replicable The sensor tip (P.N. HUMICHIP) is available for user fitting	

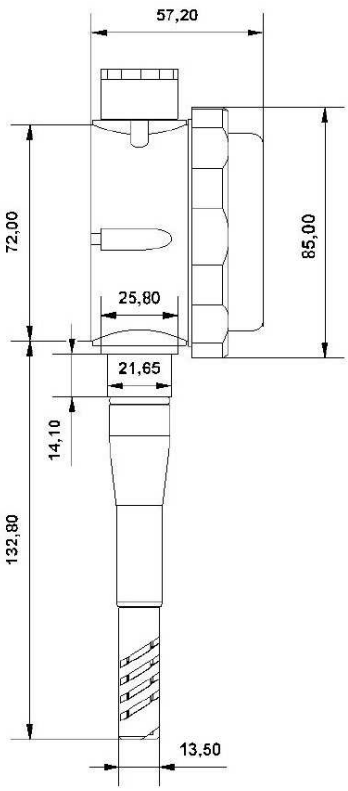
ENVIRONMENTAL	
Function	**Description**
Ambient temperature	Operating/Storage (-30 to 70) °C
Probe temperature	(-30 to 100) °C
Ambient humidity	Operating/Storage (0 to 100) %RH non-condensing
Protection	IP65 main housing, IP40 sensing tip
USB configuration ambient	(10 to 30) °C

MECHANICAL	
Function	**Description**
Dimensions	See below
Enclosure	Wall, duct mount
Material	ABS plastic with UV, UL rating HB: Grey
Connections	Screw terminals 2.5 mm wire maximum
Weight	170 g approximate

Duct mount



Wall mount



In mm

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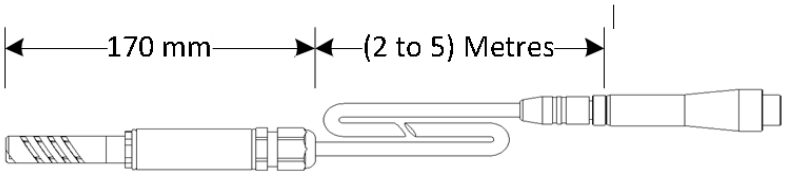
Remote sensor



APPROVALS	
EMC	BS EN 61326
Ingress protection	BS EN 60529
RoHS	Directive 2011/65/EU

ORDER CODE SEM161/SEM162

Type		Mounting	Stem options				Display option	
				161	162		No	Fitted
1 CH =	SEM161	W = Wall	W	H	HP	110 mmm	-	DP
2 CH =	SEM162	D = Duct	D	H01	HP01	120 mm		
		R = Remote	D	H02	HP02	250 mm		
			D	H03	HP03	530 mm		
			R	H01	HP01	2 m		
			R	H02	HP02	5 m		
Example: Two channel with a 250 mm duct mount sensor, display option fitted								
SEM162		/	D	/	HP02	/	DP	

ACCESSORIES	
Configuration software	USBSpeedLink (free of charge from www.status.co.uk)
Replacement measuring tip	HUMICHIP
Configuration	USB Configuration module
Calibration	Contact sales@status.co.uk

To maintain full accuracy annual calibration is required. Contact support@status.co.uk for details.
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