

# SEM160i RH/TEMPERATURE TRANSMITTER

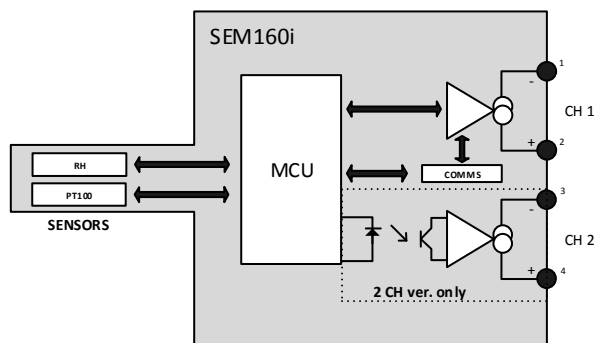
## SEM160i

- > SINGLE AND DUAL CHANNEL VERSIONS
- > DIRECT USB CONFIGURATION
- > (4 TO 20) MA LOOP OUTPUT
- > DUCT AND WALL MOUNT VERSIONS
- > SWITCH TO SELECT PRE-CONFIGURED RANGES FOR DUAL CHANNEL VERSION
- > RH, TEMPERATURE, DEW POINT AND DELTA TEMPERATURE MEASUREMENT SELECTION



## > INTRODUCTION

The SEM160i is a low cost single/dual channel RH and temperature transmitter for industrial and BMS/HVAC applications. The unit can be supplied in single or dual channel ( two wire (4 to 20) mA ) versions, the single channel version has a thermistor mounted in the sensor tip for direct temperature sensing by the users. A USB HID interface is provided for user configuration using USBSpeedLink configuration software, allowing the user to select signal source and range for each channel. The dual channel version has four switch set ranges for easy onsite configuration. The four ranges can be programmed individually to the customer's requirement off site via the configuration software. Single point alignment is provided for both temperature and humidity ranges. The configuration software also provides data readings together with a basic logger function for diagnostics. Wall and duct mount versions are available.



### FACTORY DEFAULT:

SEM160i		
CH1	RH	(0 to 100) %
SEM160i		
CH2 Version	Switch=A	Tamb
		(0 to 50) °C

## > PC CONFIGURATION

Type	USB 2.0
Baud rate	19,200 baud
Equipment	PC running windows XP or later, USB cable.
USB Speed Link Software	Download



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## > SPECIFICATIONS @ 20 °C

### INPUT

RH range	(0 to 100) %RH
RH accuracy	+/- 4 %RH between (10 to 90) %RH
Temperature range	(-30 to 100) °C
Temperature accuracy	+/- 0.5 °C between (-20 to 80) °C
Dew point range	(0 to 50) °C
Delta temperature (Delta T)=	Ambient temperature - dew point temperature
Delta T range	(0 to 50) °C
Thermistor	Optional discrete thermistor to replace second (4 to 20) mA channel. Thermistor to be read directly by user. Single channel version only. 10 K NTC, data on request.

### CH1 (CH2) OUTPUTS

Output type	2 wire (4 to 20) mA current loop
Output range	(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 output /2000) 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 @ 24V)
Channel isolation	500 Vdc
Switch settings CH2 only	Four switch selected ranges provided

Note CH1 = main supply channel and must be powered, CH2 acts as slave to CH1

### 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
Operating temperature	
Electronics housing	(-20 to 70) °C
Probe	(-30 to 100) °C

### USER PROGRAMMING Via USB Speed Link Software (all temperatures in °C)

SENSOR	
Humidity	Single point offset correction %RH
Temperature	Single point offset correction
CH1	Source (RH, Temperature, Dew point, Delta T), Range and error signal
CH2	
Position A	Source (RH, Temperature, Dew point, Delta T), Range and error signal
Position B	Source (RH, Temperature, Dew point, Delta T), Range and error signal
Position C	Source (RH, Temperature, Dew point, Delta T), Range and error signal
Position D	Source (RH, Temperature, Dew point, Delta T), Range and error signal
Read live data	RH, Temperature, Dew point, Delta T, CH1 mA, CH2 mA, Date/Time
Basic data log	Text file saved to PC while connected via USB
Tag number	User entered

*The required configuration can be specified at time of order, removing the need for user configuration. If the range is not specified the transmitter will be supplied with the default CH1 (0 to 100) %RH 21.5 mA error signal. CH2 (0 to 50) °C 21.5 mA error signal.*

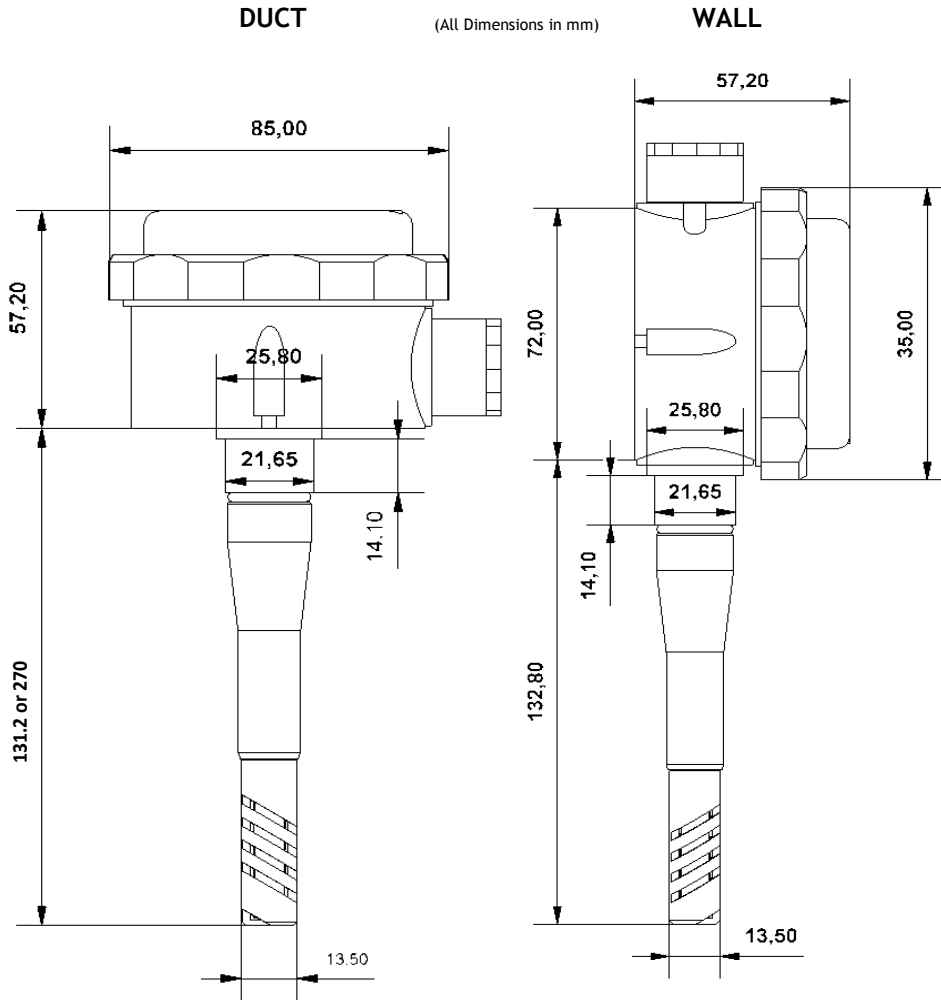
### APPROVALS

EMC - BS EN 61326	Electrical equipment for measurement control and laboratory use.
ANNEX A	Immunity test requirements for equipment intended for use in industrial locations
ANNEX F	Test configurations, operational conditions and performance criteria for transducers with integrated or remote signal conditioning.
IEC 61000-4-2	Electrostatic discharge
IEC 61000-4-3	EM Field
IEC 61000-4-4	Transient Burst (output)
IEC 61000-4-5	Surge (output)

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## ➤ MECHANICAL

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



Order Code:

SEM160i  /   Duct only

D = Duct  
 W = Wall

H = Single CH  
 HP = Dual CH

Duct only  
 01 = 120 mm Probe  
 02 = 250 mm Probe