

SINGLE AND DUAL CHANNEL RELATIVE HUMIDITY TRANSMITTERS

SEM161 and SEM162

- SIMPLE CONFIGURATION VIA USB PORT POWERED CONFIGURATOR
- INTERCHANGEABLE DIGITAL SENSOR
- RH, TEMPERATURE, DEW POINT or (Tamb–T_{dew} point) SELECTABLE OUTPUTS
- HIGH ACCURACY AND STABILITY
- ISOLATED OUTPUTS
- DISPLAY OPTION



INTRODUCTION

The SEM161 & SEM 162 are cost effective “smart” relative humidity transmitters with a single two wire 4 to 20 mA output (SEM161) or a dual two wire 4 to 20 mA output (SEM162). The design uses a smart interchangeable digital sensor for relative humidity that can be replaced without effecting system accuracy and a precision Pt100 sensor for temperature measurement. A four digit display is optional.

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

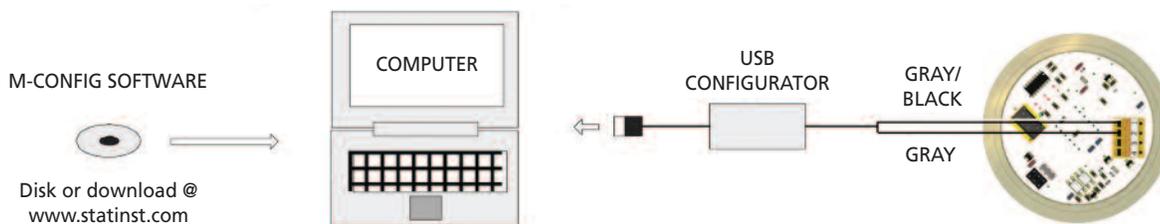
Configuration is performed quickly using our new USB port driven configurator by connecting the transmitter to the configurator and following the software instructions. The software allows you to tag the device, set installation date and set output range plus has an “Alignment” feature that allows the user to precisely calibrate the unit at a specific RH reading. Either fixed ranges or your own custom ranges can be configured for all output types in °F or °C.

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 NEMA 4 connection head, the SEM161/162 series can be ordered for duct, wall or remote sensor mounting. If required the desired range can be specified at the time of order, removing the need for user configuration however, range can be changed by user if required.

PC CONFIGURATION

Running Windows XP or later with USB port



SPECIFICATIONS @ 68°F

GENERAL

Update Time	3 Seconds
Start Up Time	10 Seconds (Output < 4 mA during Start up)
Power Supply	10 to 30 VDC 15 to 30 VDC with Display

MECHANICAL

Conduit Connection	1/2" NPTF
Solid Wire (AWG)	20-28
Stranded Wire (AWG)	20-28
Wire Strip Length	1/4"

INPUTS

Sensor Type	Humidity/Temperature
Humidity Range	0 to 100% RH
Temperature Range	-22°F to 212°F

PROCESS ACCURACY

Humidity	±2%
Temperature	±0.7°F

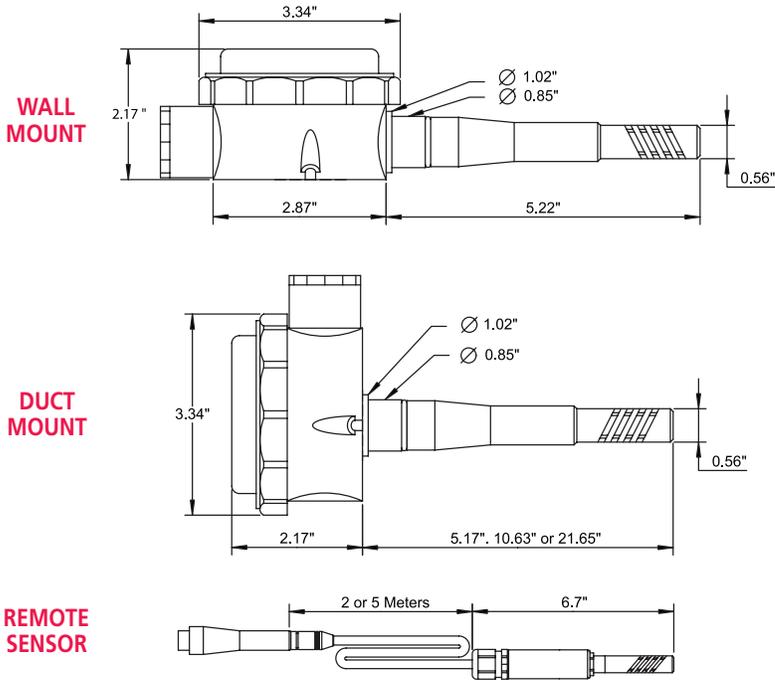
OUTPUTS

Humidity Range	0 to 100% RH
Temperature Range	-22°F to 212°F
Dew Point Range	-22°F to 212°F
(Tamb – Tdew point)	32°F to 122°F
Output Type	2 wire 4 to 20 mA current loop
Output Range	4.0 to 20.0 mA
Output Connection	Two connection 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 μ A whichever is the greater

Loop Voltage Effect	0.2 μ A / V
Thermal Drift	1 μ A / °C
Maximum Output Load	[(Vsupply – 10)/20] K Ohms (Example: 700 Ohms @ 24V)
Channel Isolation	500 VDC

DISPLAY OPTION

Type	4 digit (9 mm) Red LED
Variables Displayed	RH, Dew Point and Temperature
Resolution	0.1% - 0.1 °C/°F
Update Rate	800 ms



ENVIRONMENTAL

PROBE

Ambient Operating Range	-22°F to +212°F
Ambient Humidity Range	0 to 100% RH

TRANSMITTER

Ambient Operating Range	-22°F to +185°F
Ambient Storage Temperature	-58°F to +194°F
Ambient Humidity Range	0 to 90% RH non condensing

APPROVALS

EMC – BS EN 61326 : 1998

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)

ORDER CODES:

SEM16	Output	/	Mounting	/	Probe	/	Display																																															
	<table border="1"> <tr> <th colspan="2">Outputs</th> </tr> <tr> <td>1 Output – Humidity</td> <td>1</td> </tr> <tr> <td>2 Outputs – Humidity & Temperature ..</td> <td>2</td> </tr> </table>	Outputs		1 Output – Humidity	1	2 Outputs – Humidity & Temperature ..	2		<table border="1"> <tr> <th colspan="2">Mounting</th> </tr> <tr> <td>Wall</td> <td>W</td> </tr> <tr> <td>Duct</td> <td>D</td> </tr> <tr> <td>Remote...</td> <td>R</td> </tr> </table>	Mounting		Wall	W	Duct	D	Remote...	R		<table border="1"> <tr> <th>Probe</th> <th>161</th> <th>162</th> <th>Length</th> </tr> <tr> <td>Wall</td> <td>H</td> <td>HP</td> <td>100mm</td> </tr> <tr> <td>Duct</td> <td>H01</td> <td>HP01</td> <td>120mm</td> </tr> <tr> <td>Duct</td> <td>H02</td> <td>HP02</td> <td>250mm</td> </tr> <tr> <td>Duct</td> <td>H03</td> <td>HP03</td> <td>530mm</td> </tr> <tr> <td>Remote</td> <td>H01</td> <td>HP01</td> <td>2M</td> </tr> <tr> <td>Remote</td> <td>H02</td> <td>HP02</td> <td>5M</td> </tr> </table>	Probe	161	162	Length	Wall	H	HP	100mm	Duct	H01	HP01	120mm	Duct	H02	HP02	250mm	Duct	H03	HP03	530mm	Remote	H01	HP01	2M	Remote	H02	HP02	5M	<table border="1"> <tr> <th colspan="2">Display Option</th> </tr> <tr> <td>No Display ...</td> <td>Blank</td> </tr> <tr> <td>Display</td> <td>DP</td> </tr> </table>	Display Option		No Display ...	Blank	Display	DP
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Local Representation



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