

## **SEM710PM SERIES USER GUIDE**

DUAL (4 to 20) mA OUTPUT PRESSURE and TEMPERATURE

### TRANSMITTER

WITH DATA LOGGING FUNCTION + DISPLAY OPTION (DP)

Important - Please read this document before installing.

Every effort has been taken to ensure the accuracy of this document; however, we do not accept responsibility for damage, injury, loss or expense resulting from errors and omissions, and we reserve the right of amendment without notice.

# IMPORTANT – CE, UKCA & SAFETY REQUIREMENTS

The instrument is designed to be directly attached to the sensor probe assembly. The user must ensure all cable entries maintain environmental protection to at least IP65 rating.

The product contains no serviceable parts, or internal adjustments. No attempt must be made to repair this product. Faulty units must be returned to supplier for repair. This product must be installed by a qualified person. All electrical wiring must be carried out in accordance with the appropriate regulations for the place of installation. Before attempting any electrical connection work, please ensure the battery is removed.

ABSOLUTE MAXIMUM CONDITIONS (To exceed may cause damage to the unit).		
Supply Voltage	± 30.0 VDC (Protected for over-voltage and reverse connection)	
Supply Current	± 100.0 mADC (Protected for over-voltage and reverse connection)	
Ambient	Temperature (-30 to 70) °C, Humidity (10 to 95) % RH (Non- condensing)	



### 1~DESCRIPTION.

The SEM710PM and SEM710PM/DP are dual channel loop powered transmitters with sealed gauge pressure ranges up to 100 bar, plus temperature.

A datalogging feature is provided via either USB or NFC (suitable Android device) connectivity.

The logging function can record pressure or a scaled process value with the temperature of the medium.

The SEM710PM/DP version can display pressure in various units, a scaled process value (custom units) and temperature (°C or °F) on a 6-digit LCD display.

# 2~RECEIVING AND UNPACKING.

Please inspect the packaging and instrument thoroughly for any signs of transit damage. If the instrument has been damaged, please notify your supplier immediately.

### 3~SPECIFICATION.

Refer to data sheet for full specification.

Factory default	(4 to 20) mA Outputs: CH1 full sensor range in bar, CH2 (0 to
	50) °C :Display option, bar
	Both CH1 + CH2 high burnout

### **4~INSTALLATION AND ELECTRICAL WIRING**

Note: If only a single output channel is to be connected, it MUST be Channel one. Channel two will not function if Channel one is not powered.

### 4.1~MECHANICAL.

In order to ensure correct operation, the following must be observed: The product must be stored in a dry clean environment and remain in original packaging prior to installation.

The instrument must not be installed adjacent to electro-mechanical starters,

controllers, thyristor power units or electrical switch gear.

Any cleaning of the instrument must be done using a mild detergent and soft cloth. No solvents or abrasive cleaners should be used.

Stated ambient operating conditions must not be exceeded.

### ALERT LED

The Alert LED will flash if the input signal is lost.

### 4.2~ELECTRICAL.

For a wiring diagram please refer to the rear panel of the SEM710PM inside the case housing.

Connections: CH1 + / - and CH2 +/-

Two-part connectors are used allowing the unit to be easily removed from the housing for reprogramming or data download if this is not possible in situ.

IMPORTANT: Always turn off the power supply before any wiring takes place. Gain access to the connectors by unscrewing the cap ring to release front panel assembly from case

OUTPUT CONNECTION: Two two-part connectors are used for the (4 to 20) mA output channels.

#### If only single channel is to be connected for use it must be channel one. A

INPUT CONNECTION: The input sensor is pre-wired using a two-part connector.



#### 5~USER-CONFIGURATION. IMPORTANT

READ COMPLETE SECTION BEFORE ATTEMPTING CONFIGURATION.

The instrument is provided with a USB interface for direct connection to a PC. Free software USBSpeedLink is available. Please refer to the USBSpeedLink software for further information on configuration. The software can be downloaded from www.status.co.uk

DISPLAY: The display provides six 14-segment characters for display of %RH, temperature, dew point and delta T, together with an 8-segment bar graph and six icons. The display can operate in an ambient temperature range of (-30 to 70) °C, but at temperatures lower than -5 °C (due to the slow LCD speed), scrolled/toggling between different process is not practical



1. NFC - The Symbol is on when a NFC field is detected. When a detected field is lost the symbol will turn off after a few seconds.

2. TRANSMIT/RECEIVE: Symbol on when either NFC or USB communication is active. 3. USB: Symbol on when USB port is connected to a PC.

4. LOG: Not used

5. Not used

6. BAR GRAPH: Indicates the state of the logger. The condition is dependent on the selected logger mode, either Single or Rolling mode



discarded)

<u> </u>		
Start of Log	Mid Log	Rolled over Log (max bar toggles

7. DEG: Degree symbol "" used to indicate either °C or °F on the last digit.

 DIGITS: Six-digit 14 segment display with – sign, range 9999.9 to -9999.9.
 WARNING ICON: This symbol will toggle on and off to indicate a warning. The warning symbol will be active either when the sensor signal is out of range or not connected.

#### 5.1~USB CONFIGURATION

Using the USBSpeedLink software to program a new configuration into the device ,work from left to right through the option tabs.

The USB port is located inside the housing on the rear panel.

Configuration steps
Install and run the USBSpeedLink software
Select the correct programming page in the software (follow any on-screen
safety precaution warnings)
Connect the USB lead to the PC, connect the USB lead to the device
Read the unit configuration into the software
Re-configure or adjust configuration options as required
Send the new configuration to the unit

#### 5.1.1~Transducer tab

Use this tab to confirm the range of the transducer (sensor in bar). This tab can also be used to apply sensor calibration data at up to 5 points in bar

1	SEM710PM_D Dual Channel Two Wire (4 to 20) mA Pressure/Temperature transmitter with Smart display/Logger						
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	Transducer Pressure Scaling Profile Outputs	(mA) Logger \ Display	Options (	Other Device Options			
	TX Type : Gauge Sealed						
	Apply User Calibration	0.000	to	30.000	bar		

#### 5.1.2~Pressure Scaling tab

Use this tab to select the preferred pressure variable units from a drop-down list. A user custom option is also available for non-standard engineering units to be used.

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ansducer	Pressure Sca	ling Profile	Outputs (mA)	Logger \ Display Options	Other Device Options
Press	ure Range So	caling			
Us	e Pressure S	Select for a	common rand	ges, Custom ranges er	nter values.
				, , <u>,</u>	
Lov	v Scale	0.000	bar =	0.000	Units
Hig	h Scale	30.000	bar =	435.113 🗘	PSI
F	Pressure Sca	ale Select			
Ful	I Display Ra	nge -9999	199 to 99999	9 with auto ranging.	
Set	the maximum	decimal pla	aces to display	, 000.000	•
Те	mperature U	nits :		deg C	-

#### 5.1.3~Profile tab

Use this tab to enter any profile to the input value, such as converting level to volume. Up to 22 x,y conversion points can be added for nonlinear relationships.

C C C H+       M S M S         Transducer       Pressure Scaling       Profile       Outputs (mA)       Logger \ Display Options       Other Device Options         Use this table to define a relationship between the selected engineering unit of pressure (left column) and a second profile unit (right column). <ul> <li>Pressure Scaling</li> <li>Profile</li> <li>Outputs (mA)</li> <li>Logger \ Display Options</li> <li>Other Device Options</li> </ul> Ind a second profile unit (right column). <ul> <li>Pressure Scale</li> <li>Pressure Scale</li> <li>Station volume (litres)</li> <li>Station 20000.000</li> <li>Station 20000000</li> <li>Station 2000000000000000000000000000000000000</li></ul>	SEM/IDPM_D Dual Channel Two wire (4 to 20) mA Pressure/Temperature tran	smitte	er with Smart	t display/Logge	r
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Display Range -999999 to 999999 Auto Ranging Set Number of Point 5	Max Profile Decimal Places Displayed				
Set Number of Point 5	Display Range -9999999 to 999999 Auto Ranging				
	Set Number of Point 5				
	Units It				

#### 5.1.4~Outputs (mA) tab

Use this tab to select the input source for each channel. Pressure, Profile or Temperature can be selected for either or both channels.

This tab is also used to enter the retransmission range and burnout value for each channel.

#### 5.1.5~Logger/ Display Options tab (display versions only)

Use this tab to select the values that will appear on the display. If more than one option is selected, the display will toggle the values.

If data logging is to be utilised, use this tab to select between Pressure and Profile values for recording.

#### 5.1.6~Other Device Options tab

Use this tab to set the "Tag" and "Contact" free-type fields stored to the device. A passcode to protect the device log from being overwritten by an Android device can be added.

Longitude and latitude data can be entered. This will show in the log files and can help identify data logs recorded from multiple devices.

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Transducer Bar :	Calibrated Bar
5.869 bar	5.869 bar
Pressure :	
5.8694 Bar	
Profile	
195.6 lt	
Temperature	
20.5 °C	68.8°F
CH1 mA Out : 7.130 mA (19.50	6 %)
CH2 mA Out :	
10.544 mA (40.	90 %)

cess Scale USB only)

°C

21.5

30.00

21.5

50.000

High

30.00

30.00

Pressure Scale (

Scale select

Max DP 8888.88 

Process Range 0.0 to 30.0lt
mA Outputs - Source - Error
Ch1 Pressure

CH1 Low/High 0.00

CH2 Low/High 0.000

Log Pressure

Ch2 T amb

low

0.000

0.00

#### 5.1.3~Live data reading: Process Data

The section on the right-hand side of the software can be used to view live readings of process values and the output mA signal(s).

#### 5.2~NFC CONFIGURATION

It is possible to configure the SEM710PM series using NFCLink software. A suitable NFC enabled Android device is required. NFCLink software is available from the manufacturer or

NFCLink software is available from the manufacturer or supplier

### 6~DATA LOGGING

USB and Android NFC software allows the user to read existing logs, change the log manifest, start a new log, synchronise the instrument clock and reset the maximum/minimum readings.

Logs can run to a fixed number and stop or continually roll over. Up to 5000 log points can be recorded. The start of the log can be delayed up to one month. Data from can be viewed on screen as a graph or table and can also be saved to a csv file.

#### 6~1 USB LOGGING

USB LOGGER INTERFACE (connector inside housing)

The USB interface allows the instrument to communicate with a PC running the USBLogLink software

The prime function of the interface is to read logged data from the device using free software available to download.

The software allows the user to read existing logs, change the log manifest, start a new log, synchronise the instrument clock.

USBLogLink is available from the manufacturer or supplier.

#### 6~2 NFC LOGGING

NFC LOGGER INTERFACE

The NFC interface allows the instrument to communicate with an Android device using NFC connectivity.

The prime function of the interface is to read logged data from the device using a free app, which is available for downloading to Android devices.

The app allows the user to read existing logs, change the log manifest, start a new log, synchronise the instrument clock. Logs can run to a fixed number and stop or continually roll over. The start of the log can be delayed up to one month.

Note: For larger logs the data may take over a minute to fully download via the NFC interface.

**Note:** Not all Android devices fully implement the near field communication (NFC) standard and may not hold the full number of log points. Software is available from the manufacturer or supplier.

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