

SEM710

- SIMPLE CONFIGURATION VIA USB PORT
- ISOLATED PT100, THERMOCOUPLE INPUT
- DISPLAY TEMPERATURE in °C / °F or OUTPUT DRIVE in mA
- PUSH BUTTON USER TRIM
- (4 to 20) mA TWO WIRE OUTPUT
- HOUSING ABS PLASTIC OR STAINLESS STEEL
- 10 YEAR WARRANTY



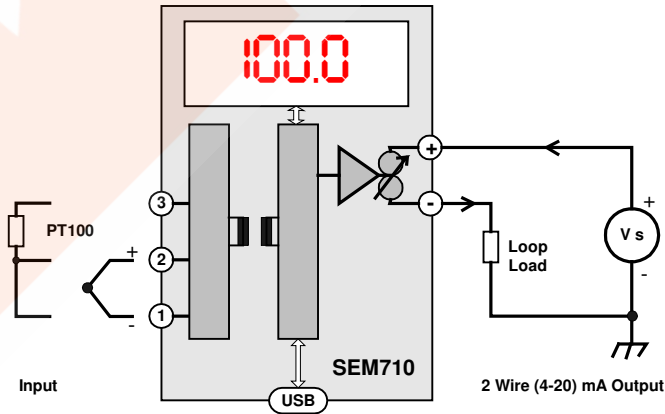
INTRODUCTION

The SEM710 is the first of a new generation head mounted temperature transmitter with display feature, . It has been designed to accept most common temperature sensor inputs and provide the user with a standard two wire (4 to 20) mA output signal. Isolation is provided between input and output and all temperature ranges are linear to temperature. The addition of a display provides the user with instant information of the loop condition at the point of measurement. It comes in either our SCH4 ABS plastic connector head or our new SCH15 Stainless steel connector head.

Designed for ease of use, our latest USB interface is fitted for quick and easy configuration. Just connect a standard USB cable between the SEM710 and your PC. Using our free configuration software, your PC will automatically upload the existing configuration data and guide you through any changes you wish to make. To further help save time, the SEM710 does not need to be wired to a power supply during the configuration process, it is powered via the USB interface from your PC. The following parameters are configurable :-

| INPUT TYPE                             | LOW RANGE    | HIGH RANGE    | UNITS  | BURNOUT                | USER TRIM | DISPLAY    |
|----------------------------------------|--------------|---------------|--------|------------------------|-----------|------------|
| PT100<br>Or<br>T/C K, J, E, N, T, R, S | Input @ 4 mA | Input @ 20 mA | °F, °C | Up/Scale<br>Down/Scale | On , Off  | °C, °F, mA |

The SEM710 is also provided with user push button trim, allowing trim adjustments at both 4 mA and 20 mA. The user trim function can be locked during configuration if not required. The display will flag error message for sensor failure, also the display will flash under or over range alternatively with actual Input reading, when the temperature exceeds the set range.



# UNIVERSAL DIN RAIL TRANSMITTER

## SPECIFICATION

### INPUTS

| INPUT | RANGE             | ACCURACY<br>(Note 1)                                          | STABILITY            | O/C | CJ<br>(Note 3) | Sensor<br>excitation<br>(Note 4) | IMPEDANCE                |
|-------|-------------------|---------------------------------------------------------------|----------------------|-----|----------------|----------------------------------|--------------------------|
| K     | (-200 to 1370) °C | 0.1 % of FSR $\pm 0.5$ °C<br>(type T 0.2 % FSR. $\pm 0.5$ °C) | $\pm 0.01$ % of FSR  | Yes | Yes            | -                                | 1 M $\Omega$<br>(Note 5) |
| J     | (-100 to 1200) °C |                                                               |                      |     |                |                                  |                          |
| E     | (-100 to 1000) °C |                                                               |                      |     |                |                                  |                          |
| N     | (-180 to 1300) °C |                                                               |                      |     |                |                                  |                          |
| T     | (-100 to 400) °C  |                                                               |                      |     |                |                                  |                          |
| R     | (-10 to 1760) °C  | $\pm 0.5$ °C $\pm 0.1$ % of FSR<br>(Note 2)                   | $\pm 0.005$ % of FSR |     |                |                                  |                          |
| S     | (-10 to 1760) °C  | $\pm 0.5$ °C $\pm 0.1$ % of FSR<br>(Note 2)                   |                      |     |                |                                  |                          |
|       |                   |                                                               |                      |     |                |                                  |                          |
| P     | (-200 to 850) °C  | $\pm 0.1$ °C / $\pm 0.05$ % of rdg                            | $\pm 0.005$ % of FSR |     | No             | <450 uA                          |                          |

**Key** Rdg = Reading ; FSR = Full Scale Range ; O/C = programmable open circuit sensor detect; CJ = Cold junction error

### Notes

1. Accuracy for PT100 and T/C do not include sensor and cold junction errors.
2. Only over the range (800 to 1600) °C
3. Cold junction range (-20 to 70) °C, Accuracy  $\pm 0.5$  °C , Tracking  $\pm 0.05$  °C
4. PT100 input Maximum lead resistance 20 R, Lead effect 0.015 °C /  $\Omega$ .
5. Impedance – not including 0.2 uA open circuit detect bias current effect.

### OUTPUT

#### Type

#### Supply

#### Response time

#### Calibration Accuracy

#### Loop Effects

#### Protection

#### User Trim

Two wire current sink; signal range (4 to 20) mA; full range (3.8 to 24) mA  
(15 to 30) V dc , 24 V nominal giving Max loop load of 450 R @ 24 V

< 500 ms to reach 95 % of final value ; Start up time < 3 s

$\pm 5$  uA

Loop ripple 0.03 % of FSR; Supply sensitivity 0.05 uA / °C ; supply ripple rejection <  $\pm 5$  uA error @ 1 V

rms 50 Hz ripple

Reverse connection and over-voltage protection. Max over voltage current 100 mA.

Raise and lower buttons, active for offset when output is between (3.8 to 6) mA, Span between (18 to 22)

mA. Trim lock option.

### GENERAL

#### Isolation

#### Ambient

#### Approvals

#### Protection

#### Display

#### Display Resolution

#### Display Errors

Input to output tested at 500 V dc.

operating (-40 to 85) °C (10 to 95) % RH non condensing. Storage (-40 to 85) °C

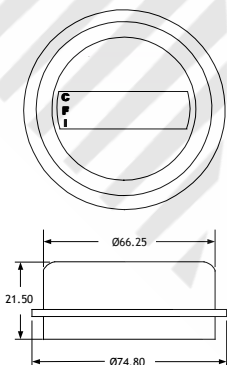
CE tested to BS EN 61326

IP67 when used with SCH4 head

4 Digit seven segment Red LED Height 7.3 mm

0.1 °C , 0.1 °F, or 0.00 mA

Err (sensor error) ; Flash Over (over range) Flash Under (under range)



REFER TO  
INSTRUCTION MANUAL BEFORE USE

Terminals Screw terminal  
Cable 2.5 mm Max  
Colour Grey

### ORDER CODE : SEM710

#### ASSOCIATED PRODUCTS

USB CABLE A/M TO MINI B/M  
M-CONFIG S/W

#### ORDER CODES

48-200-0001-01  
48-605-1150-07

FOC

SCH4 ABS Plastic Enclosure  
SCH15 Stainless Steel Enclosure