

SEM104TC ANALOGUE IN HEAD TEMPERATURE TRANSMITTER

SEM104TC

- **TYPE K, T, J INPUT**
- **(4 to 20) mA OUTPUT**
- **ANALOGUE TECHNOLOGY**
- **FAST RESPONSE TIME**
- **USER RE-RANGEABLE WITH LINKS**

➤ **INTRODUCTION**

The SEM10TC is a (4 to 20) mA temperature sensor transmitter which can be housed in a head mount DIN standard enclosure.

The SEM104TC is for Thermocouple inputs and is field re-rangeable if necessary, using links on the printed circuit board and the use of on-board SPAN and ZERO potentiometers.

A wide selection of compatible probe assemblies are available with various immersion lengths and process connections.

The same two wires that power the transmitter also carry the transmission current such that only two connections are required. This reduces installation and wiring costs whilst the nature of current transmission provides superb noise immunity and ensures that line impedances, thermoelectric effects etc. do not introduce errors.

➤ **FEATURE HIGHLIGHTS**

LOOP POWERED

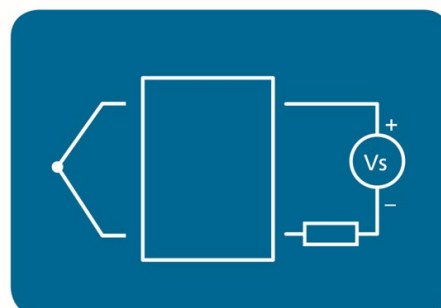
The instrument is powered by the loop current; no additional power supply is required.

ANALOGUE PERFORMANCE

The SEM104TC uses a proven and reliable analogue design on the input and output sections of its circuits. This leads to a very fast and smooth response time as there is no analogue-to-digital and digital-to-analogue conversions to be carried out during input monitoring through to retransmission of the signal.

As no microcontrollers or digital ICs are used on the SEM104TC, it makes it suitable for applications where digital components are to be avoided.

The SEM104TC uses resistor pots to allow the user to “trim” the 4 mA and 20 mA range points for maximum accuracy.



SEM104P ANALOGUE IN HEAD TEMPERATURE TRANSMITTER

INPUT		SPECIFICATIONS @20°C
Type/Function	Range/Description	Accuracy/Stability
T/C K, T, or J	Range and Offset adjustment via solder links	± 0.1 %FS + Cold junction errors non-linearised.
Zero offset adjustment	± 100 °C	
Maximum span	1000 °C	
Minimum span	100 °C	
Thermal drift	Zero at 20 °C	± 0.01 °C/°C
Cold Junction	(0 to 70) °C	0.2 °C Tracking 0.05 °C/°C

OUTPUT		SPECIFICATIONS @20°C
Type/ Function	Range/Description	Accuracy/Stability/Notes
Two wire current	(4 to 20) mA (Directly proportional to mV input)	(mA output /2000) or 5 uA (Whichever is the greater)
Loop supply	(10 to 30) VDC	SELV
Protection	Reverse connection protected	
Sensitivity		10 uA/V
Loop voltage effect		0.2 uA / V
Maximum output load	[(V supply – 10)/20] KΩ	700 Ω @ 24 V DC
Maximum output		< 30 mA
Thermal drift	Zero drift, 0 % at 20°C Span drift, 0 % at 20°C	± 0.02 %/°C ± 0.005 %/°C
At > 24 V supply use with a minimum 250 Ω load		

GENERAL		SPECIFICATIONS @20°C
Function	Description	
Response time	< 100 ms to reach 70 % of final value	
Start-up time	< 4 s	
Warm-up time	180 s to full accuracy	
Default configuration	Un-ranged (no links set)	
Add required range to be pre-set to order number		

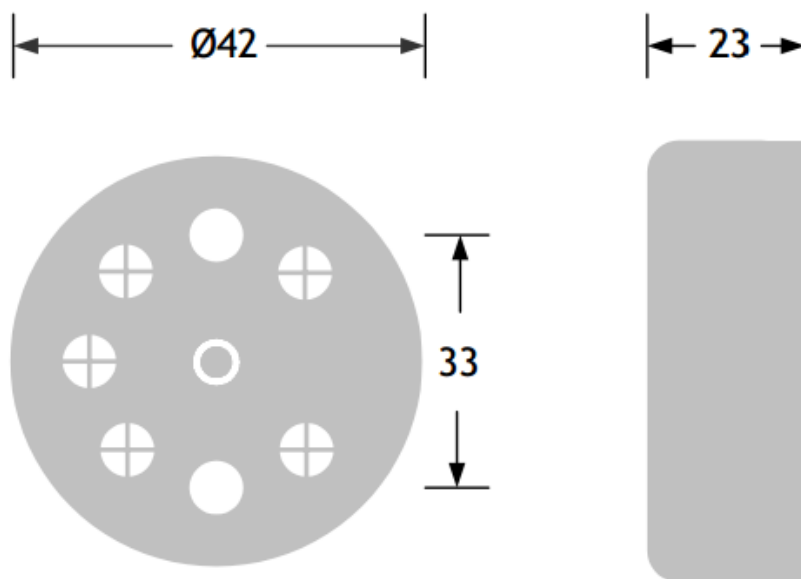
ENVIRONMENTAL	
Function	Description
Ambient temperature	Operating: (0 to 70) °C Storage: (-40 to 90) °C
Ambient Humidity	Operating/Storage (0 to 90) %RH non-condensing
Protection requirement	>= IP65 recommended

MECHANICAL	
Function	Description
Dimensions	42 mm diameter; 23 mm height
Fixing centres	2 x 5.5 mm holes on 33 mm centres
Weight	25 g approximately

SEM104P ANALOGUE IN HEAD TEMPERATURE TRANSMITTER

APPROVALS	
EMC	BS EN 61326: Note – Tested with sensor input wires at 3 m
Ingress protection	BS EN 60529
RoHS	Directive 2011/65/EU Incorporation RoHS 3 amendment directive EU2015/863

MECHANICAL



Dimensions in mm.

Fixing holes 2 x Ø5.5 mm, on 33 mm centres

ORDER CODE	SEM104TC
------------	----------

ACCESSORIES	
Head options	Please refer to www.status.co.uk
Probe options	Please refer to www.status.co.uk
RMK/3-T	"Top hat" DIN rail profile mounting clip

The data in this document is subject to change. Status Instruments assumes no responsibility for errors.
To maintain full accuracy, annual calibration is recommended. Contact support@status.co.uk for details.