SEM106P PT100 TEMPERATURE TRANSMITTER

> **SUITABLE FOR PT100 TEMPERATURE SENSORS**

> **(4 to 20) mA OUTPUT**

> **PC PROGRAMMABLE TEMPERATURE RANGE**

> **HIGH STABILITY**

> **OEM APPLICATIONS**

> ## INTRODUCTION

The SEM106P is a cost effective "smart" temperature transmitter that accepts PT100 temperature sensors and converts sensor output over a configured range to a standard industrial (4 to 20) mA transmission signal. Supplied as a circuit board, it is designed to be fitted into an OEM product.

PC configuration allows the user to select range, units and burnout direction, without requiring calibration equipment. Configuration is performed quickly using our USB port-driven configurator by simply connecting to the loop wires and following the software instructions. Configuration set-up may be saved as a file on the PC for later use.

If required, the desired range can be specified at the time of order, removing the need for user configuration.
If the range is not specified, then the transmitter will be shipped with the default range of (0 to 100) °C and upscale burnout.

> ## FEATURE HIGHLIGHTS

SENSOR REFERENCING
The SEM106P sensor referencing via the Windows based USBSpeedlink software allows for close matching to a known reference sensor eliminating possible sensor errors.

SENSOR BURN OUT DETECTION
If a sensor wire is broken or becomes disconnected the SEM106P output will automatically go to its user-defined level upscale or downscale.

STABILITY
The SEM106P in-head transmitter incorporates the latest digital technology to ensure accurate, low drift performance.

SMALL SIZE
At just (30 x 15 x 5.7) mm the SEM106P has a very small footprint making it ideal for use in OEM applications where space may be limited.
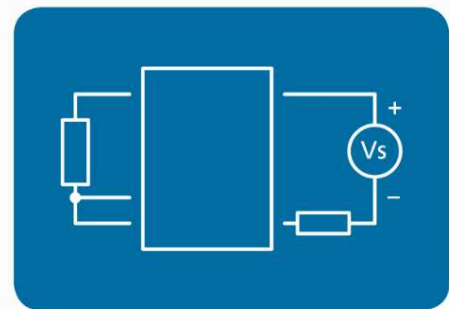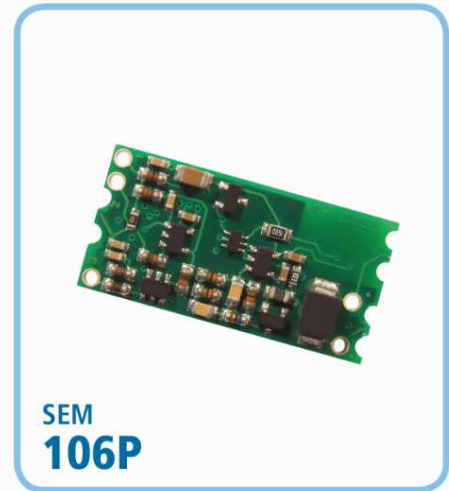
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INPUT PT100		SPECIFICATIONS @20˚C
Type/function	**Range/description**	**Accuracy/stability/notes**
PT100 2 or 3 wire	(-200 to 850) ˚C	± 0.2˚C ± 0.05 % of reading *2
Thermal drift	Zero at 20˚C	±0.02˚C/˚C
Minimum span	25˚C *1	
Linearization	BS EN 60751(IEC 751) standard /JISC 1604	
Excitation current		<200 uA
Lead resistance effect		0.002˚C / Ohms
Maximum lead resistance		20 Ohms per leg
*1 Any span may be selected; full accuracy is only guaranteed for spans greater than the minimum recommended		
*2 Basic measurement accuracy includes the effects of calibration, linearization and repeatability		

OUTPUT mA		SPECIFICATIONS @20˚C
Type/function	**Range/description**	**Accuracy/stability/notes**
Two wire current	(4 to 20) mA	(mA output /2000) or 5 uA (Whichever is the greater)
Thermal drift	Zero at 20˚C	2 uA /˚C
Maximum output current	21.5 mA	In high burnout condition
Minimum output current	< 3.9 mA	In low burnout condition
Loop voltage effect	0.2 uA/V	
Maximum output load	[(V supply – 10)/20] KΩ	700 Ω @ 24 VDC
Loop supply	(10 to 30) VDC	SELV

USB USER INTERFACE		
Type/function	**Range/description**	**Notes**
Configuration hardware	USB configuration module	USB-CONFIG-MKII
Configuration software	USBSpeedLink	Download www.status.co.uk
Sensor configuration	Temperature range for (4 to 20) mA retransmission Sensor offset Burnout current	˚C or ˚F ˚C or ˚F Upscale or downscale
Read live data	Temperature Output	˚C or ˚F mA
Save/Open configuration	From file	

| GENERAL	
Function	**Description**
Update time	500 ms
Response time	1 second
Start-up time	4 seconds (mA out < 4 mA during start up)
Warm up time	60 s to full accuracy
Default configuration	PT100 (0 to 100) ˚C , upscale burnout

ENVIRONMENTAL	
Function	**Description**
Ambient temperature	Operating/Storage (-40 to 85) ˚C Full accuracy only between (-30 to 75)˚C
Ambient Humidity	Operating/Storage (10 to 90) %RH non-condensing
Protection requirement	>= IP65 recommended
USB configuration ambient	(10 to 30) ˚C

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MECHANICAL	
Function	**Description**
Dimensions	30.0 mm x 15.0 mm x 5.7 mm
Sensor/output connection	Soldered wires
Weight	2.5 g (approxamatly)

APPROVALS	
EMC	BS EN 61326: Note - Sensor input wires to be less than 3 m to comply
Ingress protection	BS EN 60529
R0HS	Directive 2011/65/EU

MECHANICAL
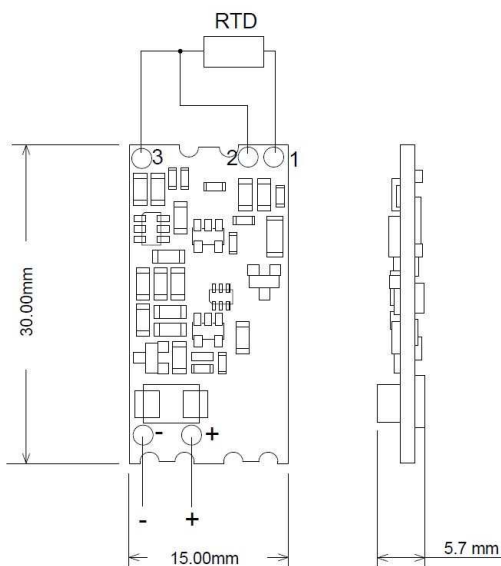
ORDER CODE	SEM106P

ACCESSORIES	
Configuration software	USBSpeedLink (free of charge from www.status.co.uk)
Configuration device	USB-CONFIG-MKII
Head options	Please refer to www.status.co.uk
Probe options	Please refer to www.status.co.uk

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

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INSTRUMENTS

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