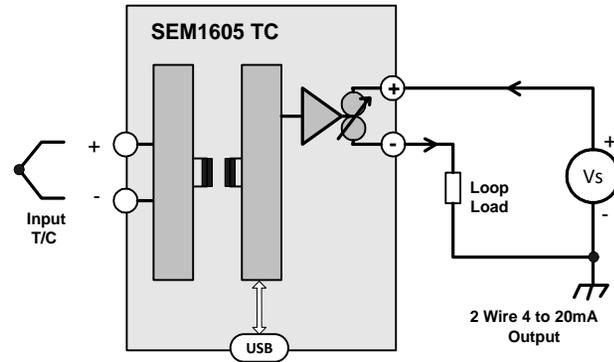# STATUS INSTRUMENTS

SEM1605/TC USER GUIDE

SMART DIN RAIL MOUNTED ISOLATED TRANSMITTER
INPUT THERMOCOUPLE
TWO WIRE 4 to 20mA

CE

Important - Please read this document before any installing.

SEM1605 TC

Input T/C

Loop Load

Vs

2 Wire 4 to 20mA Output

USB

IMPORTANT - CE & SAFETY REQUIREMENTS

Product must be mounted inside a suitable enclosure providing environmental protection to IP65 or greater.

To maintain CE EMC requirements , input wires must be less than 3 meters.

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 all supplies are switched off.

ABSOLUTE MAXIMUM CONDITIONS (To exceed may cause damage to the unit) :-

Supply Voltage	± 30VDC (Protected for over voltage and reverse connection)
Current with over voltage	± 100mA
Input Voltage	± 3V between any terminals
Ambient	Temperature (-30 to 70) °C Humidity (10 to 95) % RH (Non condensing)

PRODUCT SPECIFICATION

Please refer to the product data sheet for full specification, available to download at www.status.co.uk.

RECEIVE 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.

CONFIGURATION

IMPORTANT - The SEM1605TC can be configured whilst connected and powered, but a portable battery powered computer must be used to avoid the effects of ground loops.

USB SPEEDLINK SOFTWARE

COMPUTER

SEM1605 TC

USB CABLE

Download @
www.statinst.com
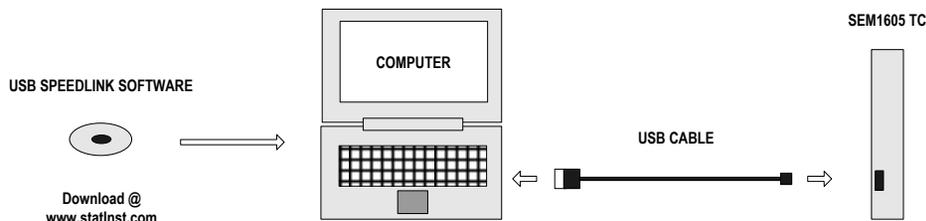
The following parameter can be configured by simply entering as prompted by the software package.
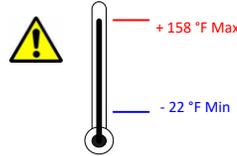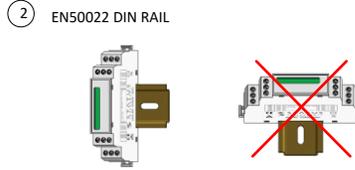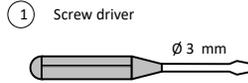
· **Input type (K,J,E,N,T,R,S,L,U,B,C,D,G)**
· **Low range**
· **High range**
· **Units   (°C, °F)**
· **Burnout (direction of output current on sensor burnout)**

Factory default:
Input type   = K
Low Range = 0
High Range = 1000
Units   = °C
Burnout   = UPSCALE

MECHANICAL INSTALLATION

MOUNTING

1. Screw driver ⌀ 3 mm

2. EN50022 DIN RAIL

+ 158 °F Max

- 22 °F Min
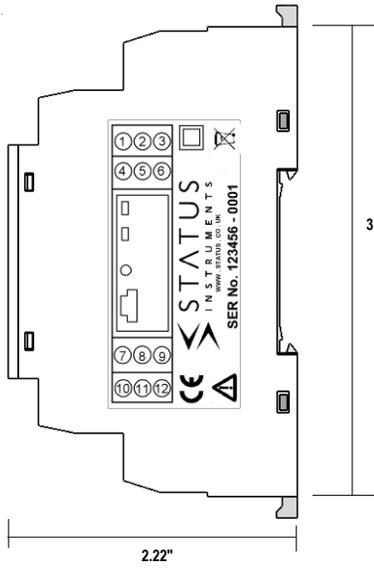
SEM1605TC Enclosure

Style	DIN 43880 (1 module width)
Material	Polyamide 6.6 self extinguishing
Terminals	Screw terminal
Cable	2.5 mm Max
Color	Gray

⌀ 3 mm

1.
2.
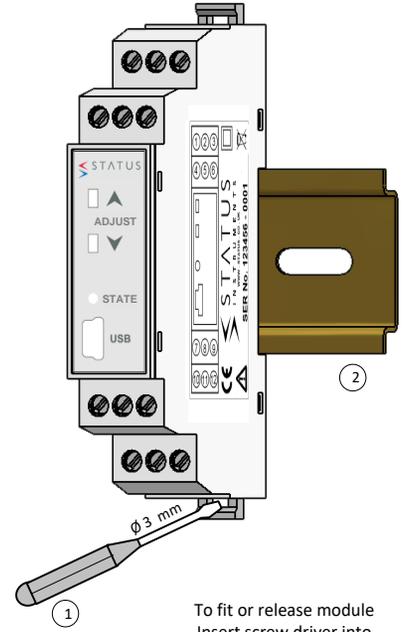
To fit or release module
Insert screw driver into
slot and lever latch
away from body

3.54"

0.69"

2.22"

ELECTRICAL INSTALLATION

Shielded Cable

Twisted Pair Cable
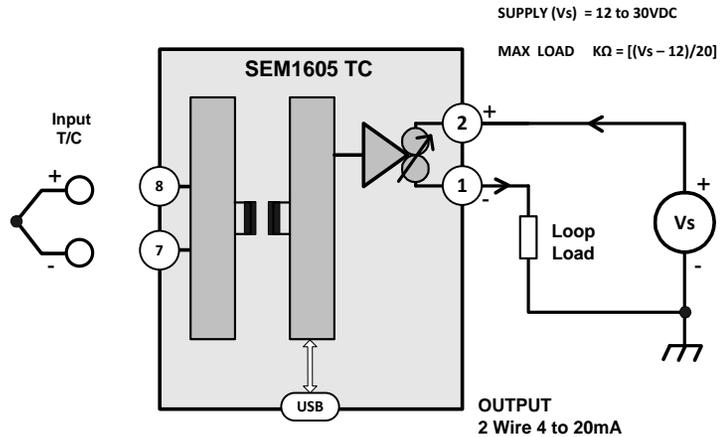
TC Compensation Cable
Shielded

Screw Driver ⌀ 3mm

TURN OFF SUPPLY BEFORE WORKING ON ANY ELECTRICAL CONNECTION

INPUT CONNECTION
Thermocouple inputs must use correct compensation cable.
To maintain CE compliance cable length must be less than 3 Meters.

OUTPUT CONNECTION
Use twisted pair or shielded cables for cable lengths greater than 30 Meters. Max cable length 1,000 Meters. Ensure loop is grounded at one point.

SUPPLY (Vs) = 12 to 30VDC

MAX LOAD $K\Omega = [(Vs - 12)/20]$

SEM1605 TC

Input
T/C

+
-

8
7

2 +
1 -

Loop
Load

Vs
+
-

USB

OUTPUT
2 Wire 4 to 20mA

Button Configuration options.

The SEM1605TC has two options selectable in the USB Speed Link software, User Range and Off.
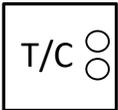
➤ USER RANGE

Screw Driver

Ø 3mm
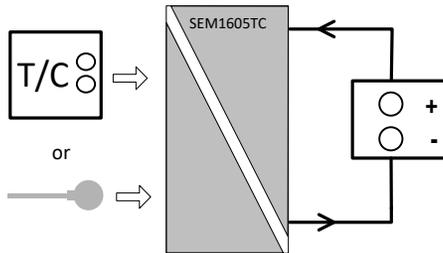
Power supply 12 to 30VDC

○ +
○ -

Thermocouple Simulator

T/C ○ ○

or sensor

User range function allows manual adjustment of the 4mA and 20mA output range in relation to the input value.

T/C ○ ○ ⇒

or

⇒

SEM1605TC

○ +
○ -

Method

1.0 Connect the thermocouple simulator or the input sensor to the SEM1605TC using the two input connection terminals. Connect the SEM1605TC to a 12 to 30VDC power supply, a digital ammeter connected in series with the SEM1605TC will be useful to monitor the 4 to 20mA current but is not essential.
Turn on the supply and allow 1 minute warm up period.

2.0 Set the thermocouple simulator to the simulated temperature of the sensor for the required low range temperature, or apply required low range temperature to the sensor.
Allow 10 seconds for the SEM1605TC to settle.

3.0 Press and hold the Low range ADJUST button, marked with a blue down arrow, until the STATE LED starts to flash, then release the button.
Press and release the Low range ADJUST button again, the STATE LED will flash quickly for a short time and the new low range will be stored. The output current will go to 4.0mA.

4.0 Set the thermocouple simulator to the simulated temperature of the sensor for the required high range temperature, or apply required high range temperature to the sensor.
Allow 10 seconds for the SEM1605TC to settle.

5.0 Press and hold the High range ADJUST button, marked with a Red up arrow, until the STATE LED starts to flash, then release the button.
Press and release the High range ADJUST button again, the STATE LED will flash quickly for a short time and the new high range will be stored. The output current will go to 20.0mA.
The ranging of the SEM1605TC is now complete.

Note:- The Low and High user adjust can be set individually and in any order as required.

➤ OFF

Pressing the button has no action.