

SEM315 MKII

DIN RAIL UNIVERSAL HART TRANSMITTER USER INSTRUCTIONS

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 & SAFETY REQUIREMENTS



Product must be mounted inside a suitable enclosure providing environmental protection to => IP65 is recommended.

Tested with 30-meter input sensor wires to meet BS EN 61326 use: keeping input cable within this length is recommended.

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



Important – Read this document before installing.

1~DESCRIPTION.

The SEM315 MKII is a HART 5 upwards, (generic device) compatible universal transmitter. It accepts RTD, Thermocouple, Potentiometer or millivolt input signals and converts them to the industry standard (4 to 20) mA transmission signal. Alternatively, HART multidrop mode can be selected.

The SEM315 MKII is programmed using a standard type USB lead and our free configuration "USB Speedlink" software downloaded from www.ststus.co.uk. Standard features (HART generic device) can also be programmed using HART communication.

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. Download at www.status.co.uk

Factory Default	Single Pt100 (0 to 100) ° C, Upscale burnout, Address 0
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4~INSTALLATION AND WIRING



Important safety requirements

This equipment is suitable for environment Installation BS EN61010-1 Pollution Degree 2; Installation CAT II; CLASS I and is classed as "PERMANENTLY CONNECTED EQUIPMENT". This equipment is intended for industrial and commercial application.

In NORMAL USE, the equipment will only be accessed for maintenance by qualified personnel. Please ensure the equipment is mounted vertically with terminals (10, 11 and 12) at the bottom. This will provide maximum ventilation. This equipment may generate heat. Ensure the enclosure size is adequate to dissipate heat. Be sure to consider any other equipment inside the enclosure.

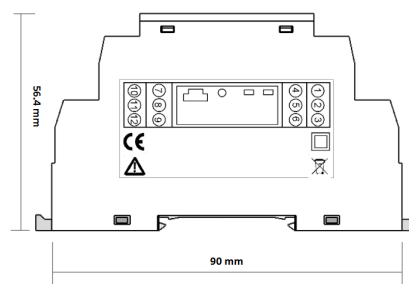
The equipment surfaces may be cleaned with a damp cloth. Use a mild detergent/water. Ensure the supply is OFF before cleaning and, on completion of cleaning, the equipment is completely dry before the supply is turned back ON.

4.1~MECHANICAL.

The equipment must be mounted on a DIN rail style DIN EN50022 inside a plastic or metal enclosure with a protection level >= IP65. All wiring should be secured. Maximum cable sizes 2.5 mm². Connection is via screw clamp terminals.

4.1.1 Housing

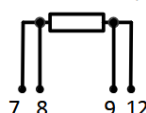
Main body material Polyamide 6.6 self-extinguishing.



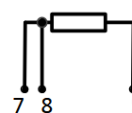
4.2~ELECTRICAL.

4.2.1 Sensor Connection

4 Wire Resistance (RTD)

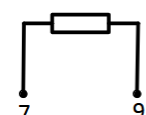


3 Wire Resistance (RTD)

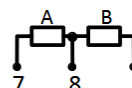


RTD wire should be equal in length and gauge.

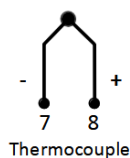
2 Wire Resistance (RTD)



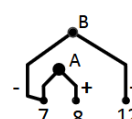
Dual RTD (2 wire) No Redundancy



RTD wire should be equal in length and gauge.

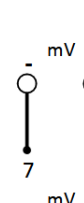


Thermocouple

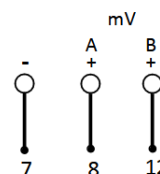


Dual Thermocouple Isolated tip only

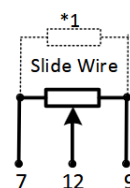
T/C inputs must use correct compensating cable



mV

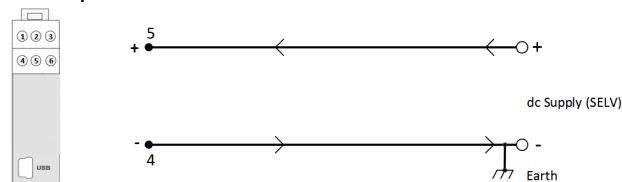


Dual mV



No wiper wire break detect for values above 2 k ohms. If required, shunt slide wire with 1 k ohm resistor. *1
Burn out limited to (4 to 20) mA range.

4.2.2 Loop Connection



Pins 2 or 5 + supply, Pins 1 or 4 – supply

Output: For connections for cable length >3 metres, use screen or twisted pair cables. Maximum cable run = 1000 metres. The output loop should be grounded at a single point preferably by the power source.

The use of a protection fuse in the mA loop circuit is recommended.

5-USER CONFIGURATION.



IMPORTANT

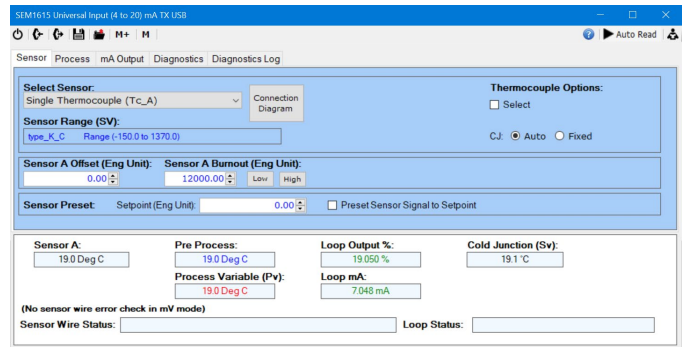
READ COMPLETE SECTION BEFORE ATTEMPTING CONFIGURATION.



The device can be configured whilst powered or unpowered. If powered, a battery powered PC or USB isolator should be used to avoid the effects of ground loops if the (4 to 20) mA loop is grounded. This may damage the device.

5.1-PC CONFIGURATION USBSpeedLink Software

PC Configuration steps	
1	Download and install the USBSpeedLink software from www.status.co.uk
2	Run the software and open to the correct screen for the SEM315
3	Connect to the PC using an A to Mini B USB lead. ^{*1}
4	Read the current configuration into the software.
5	Configure the device to the required settings for operation.
5.1	Sensor configuration options Tab: Sensor type. Sensor offset. Sensor pre-set input value: This will fix the input value to the device at the entered value. ^{*4} Error signal value (burnout).
5.2	Process configuration options Tab: Off. Scale Temperature I/P: °C, °F, °R, K Scale Process I/P: I/P to O/P two-point scaling, Eng unit. Profile: I/P to O/P multi-point scaling, up to 22 points, Eng unit.
5.3	mA Output configuration options Tab: Damping in seconds. Range for input vs (4 to 20) mA output span. Namur 43 burnout. Fixed loop set in mA: This will fix the output to the entered mA. Min and Max current limits. Current Trim at 4 mA and 20 mA.
5.4	Diagnostic configuration options Tab: Read diagnostic data. Reset diagnostic data.
5.5	Diagnostic Log configuration options Tab: Save I/P and O/P values onto the SEM315 instrument (150 points) Set diagnostic log. Read diagnostic log.
5.6	HART Data configuration options Tab: Tag. Polling Address. Serial number. ID. Free type fields.
5.7	HART Information flags: Device specification Status flags showing HART state
6	Write/Save the configuration to the device. ^{*2}
7	Read data Menu Button: Live data can be displayed showing input and output values. This can only be done if the device is powered as well as connected to the software via the USB lead. ^{*3}
^{*1} Once only, on the first time connecting to the SEM315, drivers will install to the PC: allow time for this before proceeding.	
^{*2} The configuration is not saved onto the device unless the configuration screen is sent.	
^{*3} The SEM315 can be configured whilst unpowered or powered. The SEM1615 can only read live data correctly whilst powered. A battery powered computer or USB isolator must be used to avoid the effects of ground loops.	
^{*4} This will only clear when removed using the software.	



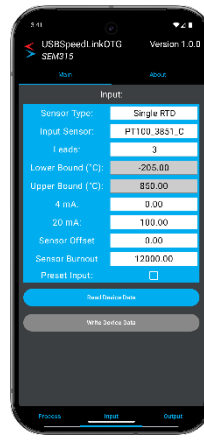
Example of SEM315 configuration screen in USB SpeedLink

5.2-ANDROID CONFIGURATION OTG USB SpeedLink Software



The device can be configured whilst powered or unpowered.

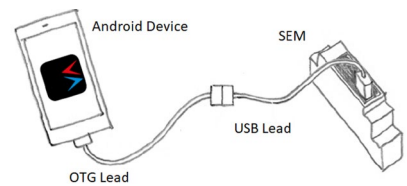
Android Configuration steps	
1	Download and install the OTG USBSpeedLink software from the Google Play Store.
2	Run the app.
3	Connect to the Android device using a suitable OTG lead for the Android device and an A to Mini B USB lead. ^{*1} ^{*3}
4	Read the current configuration into the software.
5	Configure the device to the required settings for operation. Note: Some functions of the SEM315 may require the PC version of USB SpeedLink.
5.1	Process Tab: Read data: Live data can be displayed showing input and output values. This can only be done if the device is powered as well as connected to the software via the OTG/USB lead. ^{*3}
5.2	Input Tab: Sensor type (Single temperature sensors only). Sensor offset. Sensor pre-set input value: This will fix the input value to the device at the entered value. ^{*4} Range for input vs (4 to 20) mA output span. Error signal value (burnout).
5.3	Output Tab: Min and Max current limits. Namur 43 burnout. Fixed loop set in mA: This will fix the output to the entered mA.
6	Write/Save the configuration to the device. ^{*2}
^{*1} Leaving the instrument connected to an Android device will add additional battery drain.	
^{*2} The configuration is not saved onto the device unless the configuration screen is sent.	
^{*3} The SEM315 can be configured whilst unpowered or powered. The SEM315 can only read live data correctly whilst powered.	
^{*4} This will only clear when removed using the software.	



Example of SEM315 configuration screen in OTG USB SpeedLink on an Android device.

An Android device running OS version 6 or later is required.

A user guide for the USB-OTG SpeedLink software is available at www.status.co.uk.



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