

SMART RTD / RESISTANCE / SLIDE WIRE INPUT TRIP ALARM



SEM1633

- SIMPLE CONFIGURATION VIA USB PORT
- RTD, SLIDE WIRE or RESISTANCE INPUT
- POWERED BY 10 to 32VAC or 10 to 48VDC
- DUAL RELAY OUTPUTS 250VAC, 1 AMP; 30VDC, 1 AMP
- HIGH, LOW, DEVIATION and INVERTED TRIP ACTIONS
- RELAYS ISOLATED FROM EACH OTHER, INPUT & POWER SUPPLY
- DIN RAIL MOUNT
- IDEAL FOR HVAC and BMS APPLICATIONS



INTRODUCTION

The SEM1633 provides an accurate alarm / switching function when used with RTD or Slide Wire sensors. The flexible design also allows the use of any resistance sensor within the range 10 to 10500Ω. This means that in the standard product Pt100, 500, 1000, Ni or Cu sensors as well as slide wire sensors up to 100KΩ, can be accommodated. Other sensor characteristics or your own 22 point linearization characteristic (for slide wire or linear resistance) can be downloaded into the product enabling you to adapt it exactly to your application.

Trip outputs are independently configured for action, set point and dead band. Six actions are provided: normal High/Low/Deviation and inverted High/Low/Deviation.

For ease of use, a high efficiency switch mode power supply is fitted as standard and does not require any adjustment between AC or DC applications. Operating voltages are 10 to 48VDC and 10 to 32VAC.

Our USB interface is fitted for quick and easy configuration by simply connecting a standard USB cable between the SEM1633 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 SEM1633 does not need to be wired to a power supply during the configuration process as it is powered via the USB interface from your PC.

SEM1633 INPUTS

Process Sensor	Range	Accuracy
Pt100 IEC 0.003851	-328 to 1,562°F	±0.36°F + (±0.05% of Rdg) Note 2
Pt100 IPTS-68 0.00391	-328 to 1,166°F	
Pt100 IPTS-68 0.00392	-328 to 1,166°F	
Ni 100 DIN 0.00618	-76 to 356°F	
Ni 120 0.00672	-112 to 500°F	
Cu 100 0.00427	-58 to 356°F	
Cu 53	-58 to 356°F	
BMS/HVAC Sensors		
Pt 1000 IEC	-328 to 1,112°F	±0.36°F + (±0.05% of Rdg) Note 2
Pt 500 IEC	-328 to 1,382°F	
Ni 1000	-26 to 356°F	
Ni 1000 TK5000	-58 to 302°F	
Cu 1000	-112 to 500°F	
Ni 507.5	-112 to 680°F	
Ni 604	-328 to 392°F	
Resistance		
10 to 500 Ω	Auto	±0.055 Ω
500 to 2500 Ω	Auto	±0.5 Ω
2500 to 10500 Ω	Auto	±10.0 Ω

SEM1633 INPUTS

BMS/HVAC Silicon Sensors	Range	Accuracy
KTY81-110 KTY81-120	-67 to 347°F	±0.36°F + (±0.05% of Rdg) Note 2
KTY81-121 KTY81-122		
KTY81-150 KTY81-210		
KTY81-220 KTY81-221		
KTY81-222 KTY81-250		
KTY82-110 KTY82-120		
KTY82-121 KTY82-122		
KTY82-150 KTY82-210		
KTY82-220 KTY82-221		
KTY82-222 KTY82-250		
KTY81-151 KTY82-151		
KTY83-210 KTY83-220		
KTY83-250 KTY83-121		
KTY83-222		
KTY84-130 KTY84-150	-40 to 572°F	
Slide Wire		
1 KΩ to 100 KΩ Note 3	0 to 100%	0.1%

Key: Rdg = Reading; FS = Full Scale

Note 1 Any span may be selected, full accuracy is only guaranteed for spans greater than the minimum recommended.

Note 2 Basic measurement accuracy includes the effects of calibration, linearization and repeatability.

Note 3 Slide wire end to end resistance, range 0 to 100% represents end to end travel.

Note 4 Data files are available for °F °C

SPECIFICATIONS @ 68°F

INPUT

Sensor Connection Type	2 or 3 wire screw terminals
Maximum Range	RTD, Resistance, Slide Wire 0 to 10000Ω, 0 to 100% Slide Wire 1 to 100KΩ Pot
Standard RTD	Pt100, Pt500, Pt1000, Cu100, Cu1000, Ni100, Ni120, Ni1000, Cu53, Library
Update Accuracy	300mS See tables on front page.
Warm up time	1 minute.

TRIP A

Type	Form C relay contacts
Response Time	< 500mS to reach 95% of final value
Start Up Time	< 3 Seconds
Contact Rating	250VAC RMS @ 1A 30VDC @ 1A resistive load
Trip Action	High-Low-Deviation; Inverted High-Low-Deviation
Indication	Trip On – Red LED
Protection	Protect with 2A (T) fuse fitted externally
Isolation	3750VAC between Trips and Input

TRIP B

Type	Form C relay contacts
Response Time	< 500mS to reach 95% of final value
Start Up Time	< 3 Seconds
Contact Rating	250VAC RMS @ 1A 30VDC @ 1A resistive load
Trip Action	High-Low-Deviation; Inverted High-Low-Deviation
Indication	Trip On – Red LED
Protection	Protect with 2A (T) fuse fitted externally
Isolation	3750VAC between Trips and Input

SUPPLY

Range	10 to 48VDC 10 to 32VAC RMS
Power Protection	less than 1 watt @ full output current Internal resettable fuse 0.5A and Over Voltage protection.

USER INTERFACE

Type	USB 2.0
Baud Rate	19,200 baud
Equipment	PC running XP or later, USB Cable.

USER INTERFACE FUNCTIONS

Scaling	User signal to process value scaling, for simplified setup.
Filter	Adjustable time constant 0 to 100 Seconds.
User Linearization	2 to 22 segments Ω (Slide Wire) to process.
Process Units	4 Characters (signal input only)
Temperature Units	°C or °F (RTD inputs only)
Tag Number	20 Characters
Trip Action	Individual Actions for Trip A and Trip B
Set Point	Individual Set Points for Trip A and Trip B
Dead Band	Individual Dead Bands for Trip A and Trip B
High/Low Band	Individual High/Low Band settings for Trip A and Trip B

ENVIRONMENTAL

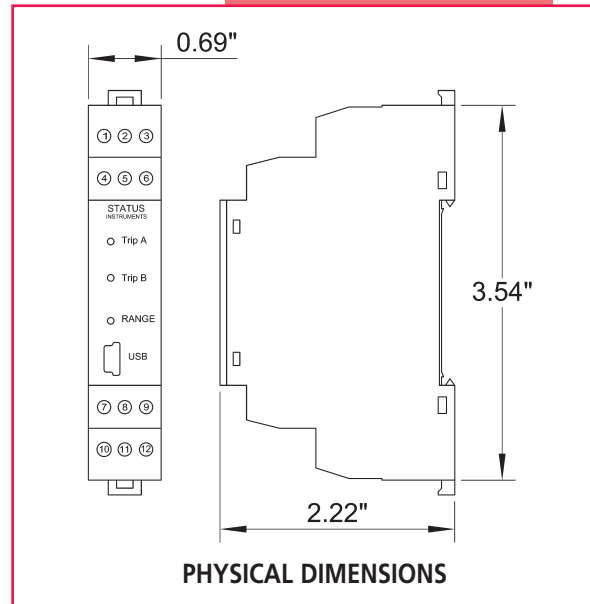
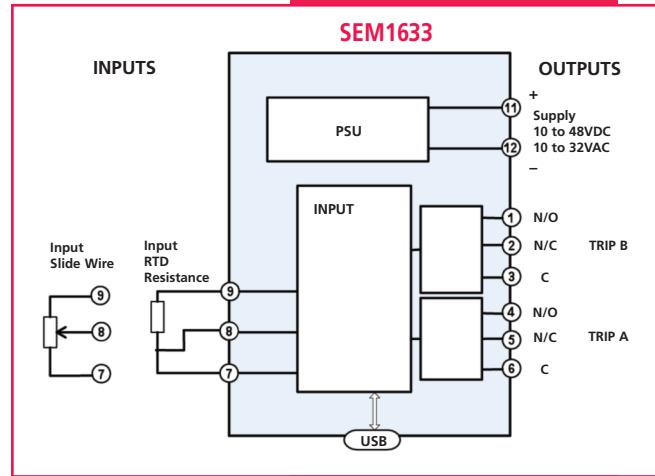
Operating Ambient	-22 to +158°F; 10 to 90% RH Non Condensing
Storage Ambient	-22 to +158°F; 10 to 90% RH Non Condensing
Configuration Ambient	50 to 86°F
Installation Enclosure	DIN rail enclosure offering Protection >= IP65

APPROVALS

CE	BS EN 61326 BS EN 61010-1 Installation Category II Pollution Degree The product is classed as “PERMANENTLY CONNECTED EQUIPMENT”
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MECHANICAL

Style	DIN 43880 (1 Module)
Color	Gray
Material	Polymide 6.6 self-extinguishing
Terminals	2.5mm Maximum
Weight	< 70 grams



ORDER CODES:

SEM1633 RTD – RESISTANCE – SLIDE WIRE INPUT / DUAL SPDT TRIP ALARM

Accessories

USB KIT USB CONFIGURATION KIT
USB SPEED LINK SOFTWARE (FREE FROM INTERNET SITE)

Associated Products

SEM1630 UNIVERSAL INPUT / DUAL TRIP ALARM
SEM1636 LOOP POWERED INPUT / DUAL TRIP ALARM
SEM1600T RESISTANCE or THERMOCOUPLE INPUT / CURRENT or VOLTAGE OUTPUT
SEM1600VI CURRENT or VOLTAGE INPUT / CURRENT or VOLTAGE OUTPUT
SEM1603P RTD INPUT / CURRENT OUTPUT
SEM1603TC THERMOCOUPLE INPUT / CURRENT OUTPUT
SEM1610 UNIVERSAL INPUT / CURRENT OUTPUT
SEM1620 UNIVERSAL INPUT / VOLTAGE OUTPUT

Local Representation



12H Worlds Fair Drive, Somerset, NJ 08873
Phone: (800) 700-3272 Fax: (800) 700-5468 (US & CA only)
Email: sales@statinst.com Web: www.statinst.com