

Signal Isolator v5 SI139

DESCRIPTION

The SI139 is a isolating transmitter designed for factory set input output combinations providing true 3-way galvanic isolation up to 2000V rms. The power supply (ac or dc) is magnetically coupled to both the input and the output circuit section separately, achieving power/input/output isolation. Input signals are transferred optically to the output stage. The standard Signal Isolator will accept DC voltage or current input signals directly (0.1V up to 100V, 1mA up to 100mA). The SI139 also accepts a wide variety of different sensors and signals using optional input Final calibration is trimmed using the front conditioning card. accessible 'offs' and 'span' 15-turn trim adjustments. The output signal level is indicated by a green LED on front of the module, giving a clear indication of module function, signal presence and loop condition for current outputs. Various power supply choices are available ranging from 240Vac down to 8Vdc. All supply models contain a dual output for power isolation. Reverse or direct action are factory configured. Special requirements for input/output response time variation can be



accommodated by optional "customised response" or "output ramp" models. Surge protection for power supply and input is standard with all Series 100 modules.

General Specifications

Size: 52 W x 70 H x 110 D (mm).

Housing material: ABS.

Mounting: DIN-Rail, gear plate.
Termination: Screw terminals on front
Terminal covers standard.

Protection class: IP40.
Weight: 0.300 kg.
Accuracy: 0.15% of span.
Front 'OFFS' adjust: ±20% typical.
Front 'SPAN' adjust: ±20% typical.

Linearity: 0.15% of span above 0.2mA.

Repeatability: 0.1% of span.

Response time: 0.5 sec for T90 standard. Faster or slower

response on request

Temperature effect: Typically 0.02% of span/C.

Operating temp. range: -10...+60C. Storage temp. range: -20...+70C.

Output loop drive: 10mA into $0 - 2k\Omega$, 20mA into $0 - 1k\Omega$,

50mA into 0 - 400 Ω

Higher output drive on request.

Output load change effect: less than 0.2% up to maximum load stated.

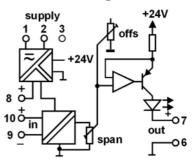
Input/output isolation: >2kV rms. Power requirements: 3W.

Electromagnetic compatibility: Complies with AS/NZS 4251.1 (EN 50081.1) Coptional input specifications: All specifications quoted in this general section are

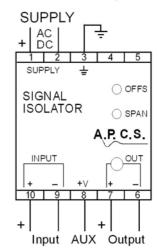
for the standard inputs only. Specifications for the

optional inputs are available upon request.

Block Diagram



Connection Diagram



For input / output combinations refer to TYPE NO. DESIGNATION overleaf.

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TYPE NO. DESIGNATION

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Power Supply:
   1 = 90-280Vac 50/60Hz (65-280Vdc).
                                                  *) 6 = 8 - 60Vdc.
*) 3 = 16-48Vac 50/60Hz (10-60Vdc)
*) 4 = 415V, 50Hz ±10%.
                                                  *) 9 = Other (Specify).
Input:-
   01 = 0 - 100 \text{mV} (1 \text{M}\Omega).
                                                      11 = 0 - 1mA (1KΩ).
   02 = 0 - 200 \text{mV} (1 \text{M}\Omega).
                                                      12 = 0 - 5\text{mA} (220\Omega).
   03 = 0 - 500 \text{mV} (1 \text{M}\Omega).
                                                      13 = 0 - 10mA (100\Omega).
   04 = 0 - 1V (1M\Omega).
                                                      14 = 0 - 20 \text{mA} (51 \Omega).
   05 = 0 - 2V (1M\Omega).
                                                      15 = 0 - 50 \text{mA} (20 \Omega).
   06 = 0 - 5V (1M\Omega).
                                                  # 16 = 4 - 20mA (51\Omega).
   07 = 0 - 10V (1M\Omega).
                                                      17 = 10 - 50 \text{mA} (20 \Omega).
   08 = 0 - 100V (1M\Omega).
   09 = 1 - 5V (1M\Omega).
                                                  *) 19 = Other. (Specify 100Vdc or 100mA max)
Input Options (input continued)
                                                  *) 65 = MAX selector, 2 inputs 4-20mA signal.
*) 21 = DC voltage up to 2kV.
                                                   *) 66 = Triple input Adder (3x 4-20mA only)
*) 22 = DC millivolt, <100mVdc.
                                                   *) 67 = Quad input Adder (4x 4-20mA only)
*) 23 = DC voltage, bipolar up to ±2kV.
*) 24 = DC current input 10A max.
                                                   *) 68 = Add 2 floating inputs
*) 25 = DC current, bipolar 10A max.
                                                      (specify In1 Cal and In2 Cal)
*) 30 = AC voltage 10mV to 500V span.
                                                  *) 69 = Subtract 2 floating inputs
*) 32 = True rms other than sine wave.
                                                      (specify In1 Cal and In2 Cal).
*) 42 = Potentiometer 3W voltage excited.
*) 61 = Adder, 2 inputs 4-20mA floating.
                                                      Specify calibration details for all optional inputs.
*) 62 = Subtracter, 2 inputs 4-20mA floating.
*) 64 = MIN selector, 2 inputs 4-20mA signal. *)99 = Other.
Output: -
   1 = 0 – 5V (50kΩ min).
                                                      6 = 10 - 50 \text{mA} (360 \Omega \text{ max}).
   2 = 0 - 10V (100k\Omega min).
                                                      7 = 0 - 10 \text{mA} (1.8 \text{k}\Omega \text{ max}).
   3 = 0 - 20 \text{mA} (900 \Omega \text{ max}).
                                                      8 = 1 - 5V (50k\Omega min).
   4 = 4 - 20 \text{mA} (900 \Omega \text{ max}).
   5 = 0 - 50 \text{mA} (360 \Omega \text{ max}).
                                                  *) 9 = Other (Specify).
Action:_
   1 = Direct.
                                                      2 = Reverse.
Options:
   00 = None.
*) 01 = Customised response time (Specify).
*) 02 = Output ramp.
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- *) 03 = Extended range on "OFFS" and SPAN" front panel trim pots. (Specify range).
- *) 06 = External ratio adjust (0.5...1.5 typical), (Specify range).
- *) 07 = External Gain and Bias, (Specify range).
- *) 99 = Other (Specify).

= Includes 24Vdc/22mA aux supply on terminal 8.

*) = Price Extra.

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