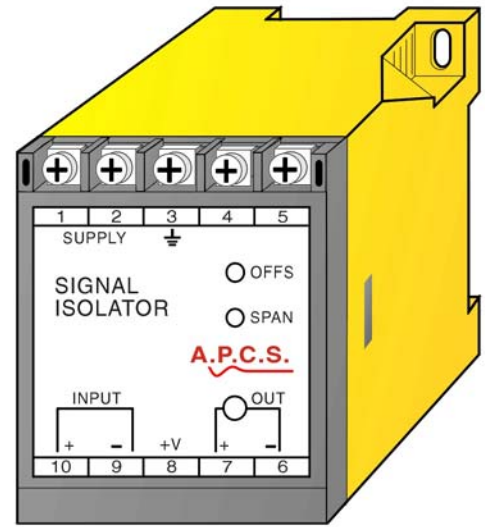


## SIGNAL ISOLATOR (v4) SI139

### DESCRIPTION

The SIGNAL ISOLATOR SI139 is a low cost isolating transmitter designed for single (factory set) input output combinations providing true 3-way galvanic isolation up to 2000V r.m.s. 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 conditioning card. Final calibration is trimmed using the front accessible 'offs' and 'span' 15-turn trim adjustments. The output signal level is indicated by a green L.E.D. 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.

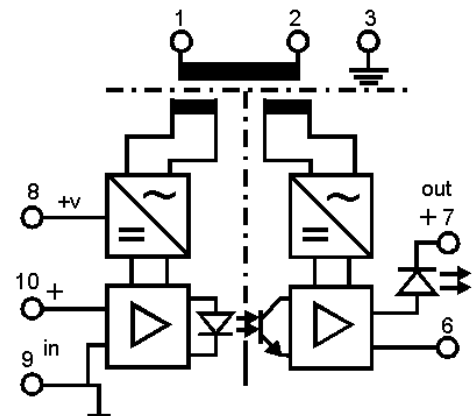


### General Specifications

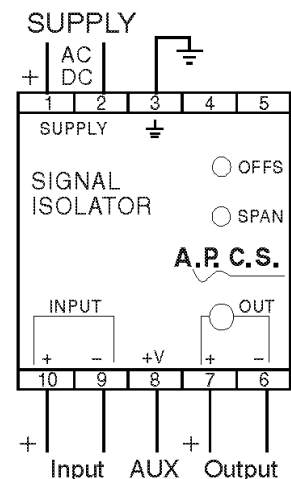
Size:	52 W x 70 H x 110 D (mm).
Housing material:	Polycarbonate.
Mounting:	DIN-Rail, gear plate.
Termination:	Screw terminals on front Terminal covers standard.
Protection class:	IP40 (IP65 Enclosure opt.)
Weight:	0.300 kg.
Accuracy:	0.15% of span.
Front 'OFFS' adjust:	±20% typical.
Front 'SPAN' adjust:	±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 Typically 0.02% of span/C.
Temperature effect:	
Operating temp. range:	-10...+60C.
Storage temp. range:	-20...+70C.
Output loop drive:	10mA into 0 - 2k Ω, 20mA into 0 - 1k Ω, 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 r.m.s.
Power requirements:	ac supply 4W, dc supply 3W.
Electromagnetic compatibility:	Complies with AS/NZS 4251.1 (EN 50081.1)
Optional input specifications:	All specifications quoted in this general section are for the standard inputs only. Specifications for the optional inputs are available upon request.

For link selectable process signal input and output refer to SI132  
 For link selectable mV or shunt input and process outputs use MVT123  
 For input / output combinations refer to TYPE NO. DESIGNATION overleaf.

### Block Diagram



### Connection Diagram



## TYPE NO. DESIGNATION

SI139 - X XX X X XX

### Power Supply:

- |                              |                              |
|------------------------------|------------------------------|
| 1 = 240V, 50/60Hz $\pm$ 10%. | *) 5 = 12Vdc (use '6').      |
| 2 = 120V, 50/60Hz $\pm$ 10%. | *) 6 = 8 - 60Vdc Isolated.   |
| 3 = 24V, 50/60Hz $\pm$ 10%.  | *) 7 = 48Vdc (use '6').      |
| *) 4 = 415V, 50/60Hz 10%.    | *) 8 = 60 - 240Vdc Isolated. |
|                              | *) 9 = Other (Specify).      |

### Input:

- |                       |  |
|-----------------------|--|
| 01 = 0 - 100mV (1M).  | 11 = 0 - 1mA (1 K).                          |
| 02 = 0 - 200mV (1M).  | 12 = 0 - 5mA (220 $\Omega$ ).                |
| 03 = 0 - 500mV (1 M). | 13 = 0 - 10mA (100 $\Omega$ ).               |
| 04 = 0 - 1V (1 M).    | 14 = 0 - 20mA (51 $\Omega$ ).                |
| 05 = 0 - 2V (1 M).    | 15 = 0 - 50mA (20 $\Omega$ ).                |
| 06 = 0 - 5V (1 M).    | # 16 = 4 - 20mA (51 $\Omega$ ).              |
| 07 = 0 - 10V (1 M).   | 17 = 10 - 50mA (20 $\Omega$ ).               |
| 08 = 0 - 100V (1 M).  |  |
| 09 = 1 - 5V (1 M).    | *) 19 = Other. (Specify 100Vdc or 100mA max) |

### Input Options (input continued)

- |   |  |
|---|--|
| *) 21 = DC voltage up to 2kV.                 | *) 65 = MAX selector, 2 inputs 4-20mA signal.                        |
| *) 22 = DC millivolt, <100mVdc.               | *) 66 = Triple input Adder (3x 4-20mA only)                          |
| *) 23 = DC voltage, bipolar up to $\pm$ 2kV.  | *) 67 = Quad input Adder (4x 4-20mA only)                            |
| *) 24 = DC current input 10A max.             | *) 68 = Add 2 floating inputs<br>(specify In1 Cal and In2 Cal)       |
| *) 25 = DC current, bipolar 10A max.          | *) 69 = Subtract 2 floating inputs<br>(specify In1 Cal and In2 Cal). |
| *) 30 = AC voltage 10mV to 500V span.         | *) 99 = Other.   |
| *) 32 = True r.m.s. other than sine wave.     | Specify calibration details for all optional inputs.                 |
| *) 42 = Potentiometer 3W voltage excited.     |  |
| *) 61 = Adder, 2 inputs 4-20mA floating.      |  |
| *) 62 = Subtractor, 2 inputs 4-20mA floating. |  |
| *) 64 = MIN selector, 2 inputs 4-20mA signal. |  |

### Output:

- |                                  |                                   |
|----------------------------------|-----------------------------------|
| 1 = 0 - 5V (50k $\Omega$ min).   | 6 = 10 - 50mA (360 $\Omega$ max). |
| 2 = 0 - 10V (100k $\Omega$ min). | 7 = 0 - 10mA (1.8k $\Omega$ max). |
| 3 = 0 - 20mA (900 $\Omega$ max). | 8 = 1 - 5V (50k $\Omega$ min).    |
| 4 = 4 - 20mA (900 $\Omega$ max). |                                   |
| 5 = 0 - 50mA (360 $\Omega$ max). | *) 9 = Other (Specify).           |

### Action:

- |             |              |
|-------------|--------------|
| 1 = Direct. | 2 = Reverse. |
|-------------|--------------|

### Options:

- 00 = None.
- \*) 01 = Customised response time (Specify).
  - \*) 02 = Output ramp.
  - \*) 03 = Extended range on "OFFS" and SPAN" front panel trim pots. (Specify range).
  - \*) 04 = Track and Hold (max hold 120 min).
  - \*) 05 = Peak Hold (max hold 120 min).
  - \*) 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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