

Signal Isolator v1 SI289

DESCRIPTION

The SI289 is an isolating transmitter designed for factory set input output combinations providing true 3-way galvanic isolation up to 2000V rms. The wide range ac/dc power supply 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 2kV, 1mA up to 10A). Final calibration is trimmed using the front accessible ZERO 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. 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.



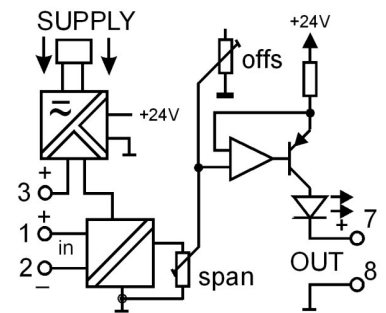
General Specifications

Size:	23.5W x 71.5H x 109D (mm).
Mounting:	Clip for 35mm DIN-Rail.
Housing material:	ABS
Termination:	Top mounted screw terminals.
Protection class:	IP40.
Weight:	0.120 kg.
Protection class:	IP40.
Calibration accuracy:	<0.2%.
Front 'SPAN' adjust:	±25% typical.
Front 'ZERO' adjust:	+20/ -10% typical.
Linearity:	<0.1%.
Long term drift:	<0.1%.
Temperature effect:	Typically 0.025% of span per °C.
Operating temperature:	-10...+60°C.
Output drive:	10mA into 0 - 2kΩ, 20mA into 0 - 1kΩ.
Input impedance:	Current 51Ω. Voltage 2M7Ω (10V/5V range). 560kΩ (2V/1V range). mV 140kΩ (250-1000mV ranges). 30kΩ (40-200mV ranges).

Supply/Input/Output Isolation: 2kV rms.

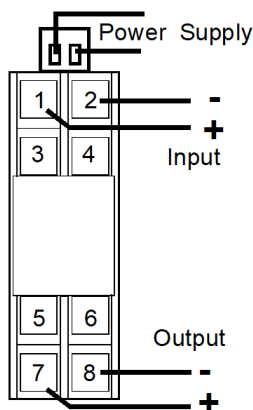
Electromagnetic compatibility: Complies with AS/NZS 4251.1 (EN 50081.1)

Block Diagram



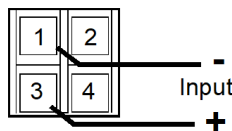
Standard Connection

The power supply is on a separate plug-able terminal block



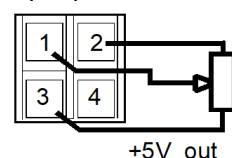
Loop Powered Input (16)

Terminal 3 is a +20V output to supply input sensors



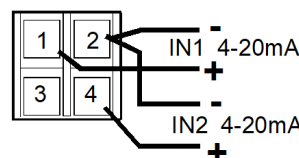
Potentiometer Input (42)

Terminal 3 has a precision +5V output to supply the input potentiometer.



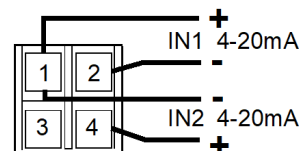
Input Adder(61)

For full scale output both inputs must be 20mA.



Input Subtractor(62)

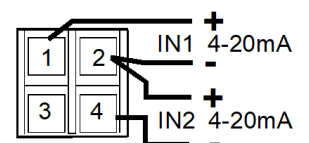
For full scale output one input is at 4mA and the other input is at 20mA.



MAX(64)/MIN(65) Selector

On MAX select the output follows the higher of the two inputs.

On MIN select the output follows the lower of the two inputs.



TYPE NO. DESIGNATION

Power Supply:

1 = 85-265Vac 50/60Hz (90–280Vdc) 2 = 16-42Vac 50/60Hz (10-60Vdc) .

Input :

- | | |
|------------------|---|
| 01 = 0 – 100mV. | *) 19 = Other. (Specify 100Vdc or 100mA max). |
| 02 = 0 – 200mV. | *) 21 = DC voltage up to 2000Vdc. |
| 03 = 0 – 500mV. | *) 22 = DC millivolt, <100mVdc. |
| 04 = 0 – 1V. | *) 23 = DC voltage, bipolar 10mV to ±2kV. |
| 05 = 0 – 2V. | *) 24 = DC current input 10A max. |
| 06 = 0 – 5V. | *) 42 = Potentiometer 3W, 5V reference on terminal 3 |
| 07 = 0 – 10V. | *) 43 = Watermark Soil Moisture SMS009. |
| 08 = 0 – 100V. | *) 61 = Adder, 2 inputs 4 - 20mA floating. |
| 09 = 1 – 5V. | *) 62 = Subtractor, 2 inputs 4 - 20mA floating. |
| 11 = 0 – 1mA. | *) 63 = One of two 4-20mA inputs select using remote switch SPL09941. |
| 12 = 0 – 5mA. | *) 64 = MIN selector, 2 inputs 4-20mA signal. |
| 13 = 0 – 10mA. | *) 65 = MAX selector, 2 inputs 4-20mA signal. |
| 14 = 0 – 20mA. | *) 66 = Triple input adder (3x 4-20mA floating). |
| 15 = 0 – 50mA. | *) 67 = Quad input adder (4x 4-20mA floating). |
| # 16 = 4 – 20mA. | *) 99 = Other. |
| 17 = 10 – 50mA. | |

Specify calibration details for all optional inputs.

Output:

- 0 = Table 5 (4-20mA default). *) Z = Other specify
 *) L = 4-20mA(loop powered signal)

Action:

1 = Direct. 2 = Reverse.

Options:

- | | |
|--|---|
| 0 = None. | *) 4 = 2.5V AUX Supply on terminal 3. |
| *) 1 = Customised response specify. | *) 5 = 12V AUX Supply on terminal 3. |
| *) 2 = Output ramp. | *) A = SPL0954, 200Hz Input Signal Filter |
| *) 3 = Extended range on SPAN and ZERO trim pots. (Specify). | *) Z = Other (Specify). |

*) = Price Extra.

= Terminal 3 is 20Vdc with 22mA drive suitable for 2-wire transmitter.

Response time selection

Disabled by options 1 and 2

	LK1/6	LK1/7
5ms		
50ms	X	
500ms		X

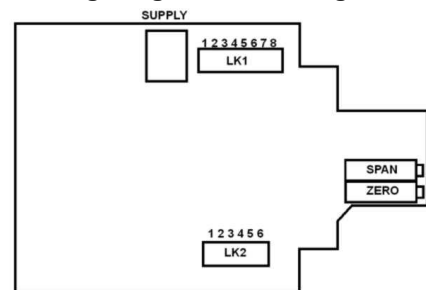
Output Table 5

Output	LK2					
	1	2	3	4	5	6
4-20mA	X		X			
0-20mA		X				
0-10mA				X		
0-5V		X				X
1-5V	X		X			X
0-10V		X			X	

To change ranges

1. Unplug supply plug.
2. Remove terminal covers.
3. Slightly depress lid to base clips and withdraw from housing.
4. Set coding plugs as required.
5. Reassemble unit and connect power.
6. Adjust SPAN and ZERO pots to recalibrate.
7. Change the label information to the new input/output values.

Coding Plug Location Diagram



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