

Specifications

Input:

- Voltage Input (field configurable):
 - Full Scale Range: 10mV to 100V
 - Impedance: >100K Ohms
 - Overvoltage:
 - 400 Vrms, max(Intermittent);
 - 264 Vrms, max (Continuous)
- Current Input (field configurable):
 - Full Scale Range: 1mA to 100mA
 - Impedance: 20 Ohms, typical
 - Overcurrent: 170mArms, max
 - Overvoltage: 60VDC
 - Common Mode (Input to Ground): 1500VDC, max

Zero Turn-Up:

- 50% of full scale range

Span Turn-Down:

- 50% of full scale range

Output:

- Voltage Output:
 - Output: 0-5V, 0-10V
 - Drive: 10mA, max. (1K Ohms min. load @10V)
- Current Output:
 - Output: 0-1mA, 4-20mA
- Compliance:
 - 0-1mA: 10V, max (10K Ohms max load)
 - 4-20mA: 20V, max (1K Ohms max load)

Pin Connections

- Power (Hot)
- Spare Termination
- Power (Neu)
- Output B (+)
- Input A (+)
- Input A (-)
- Output A (+)
- Output A (-)
- Output B (-)
- Input B (+)
- Input B (-)

LED Indication (green):

- Input Range:
 - >110% input: 8Hz flash
 - <-10% input: 4Hz flash

Accuracy (Including Linearity, Hysteresis):

- <20mV, <2mA: ±0.35% of full scale, typical, 0.5%, max
- >20mV, >2mA: ±0.1% of full scale, typical, 0.2%, max

Response Time:

- (10-90%) 200 mSec., typical

Stability (Temperature):

- ±0.025% of full scale/°C, typical, ±0.05%/°C, max.

Common Mode Rejection:

- DC to 60Hz: 120dB

Isolation (Input to Output):

- 1500 VDC between channels, input, output and power

ESD Susceptibility:

- Level 2 (4KV)

Humidity (Non-Condensing):

- Operating: 15 to 95% (@ 45°C)
- Soak: 90% for 24 hours (@ 65°C)

Temperature Range:

- Operating: -15 to 60°C (5 to 140°F)
- Storage: -25 to 70°C (-13 to 158°F)

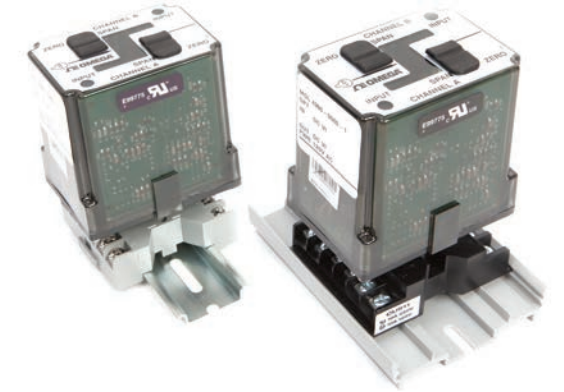
Power:

- Consumption:
 - 4W typical, 6W max
- Standard:
 - selectable 120/240VAC, ±10%, 50-60Hz

Weight: 0.66lbs

Approvals:

- UL recognized per standard UL508 (File No. E150323/E99775).



SMSC-2 DC Input, Dual Channel Signal Conditioner

INSTRUCTION
SHEET

M5482/0715

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For latest product manuals: www.omegamanual.info

Provides Two Independent, Fully Isolated DC Outputs in Proportion to Two DC Inputs

- High Density 2-Channel Package
- Eliminates Ground Loops with 1500V Isolation
- Six Configurable Output Ranges: 0-5V, 0-10V, 0-1mA, 4-20mA, -5 to 5V and -10 to 10V
- Plug-in Installation
- Selectable 120/240VAC Input Power

Description

The field configurable SMSC-2 series dual channel isolators offer wide ranging input and output capability for scaling and transmitting analog DC signals. The SMSC-2 series will accept input voltage spans from 10mV up to 100 volts, as well as input current spans from 1mA to 100mA. For a full scale output range, the input zero and span potentiometers enable 50% input zero and span adjustability. For example, the 0-10V input range can be elevated to 5-10V or compressed to 0-5V.

The SMSC-2 offers 4 popular output ranges which are positive voltages and currents (e.g. 0-5V, 0-10V, 0-1mA and 4-20mA). The model number defines the output channel ranges as shown in Table 1.

The 4-20mA compliance is a powerful 20VDC per channel. The SMSC-2 accepts bipolar inputs and each I/O channel offers selectable normal or reverse acting operation (e.g. 4-20mA or 20-4mA).

Each SMSC-2 is a dual, three-port, industrial isolator -- both output channels are optically isolated from their respective input channels up to 1500 VDC. The two ASIC-based I/O channels are independently transformer isolated from the selectable 120/240VAC power supply.

Table 1: SMSC-2 Series Output Ranges
(Bold indicates factory preset ranges)

Model	Channel	Output Selections
SMSC-2	A	0-5V, 0-10V, 0-1mA, 4-20mA
	B	0-5V, 0-10V, 0-1mA, 4-20mA

Application

The SMSC-2 field configurable isolators is useful in eliminating ground loops, converting signal levels and providing signal drive. The SMSC-2 series' dual channel design conserves installation space in high density applications and offers superior cost-benefit value over single channel isolators. The wide ranging capability of the SMSC-2 provides universal spare part coverage.

Diagnostic LED

The SMSC-2 series is equipped with dual function LED signal monitors. The green, top-mounted LED indicates line power and input signal status. Active line power is indicated by an illuminated LED. If the input signal is 10% above the full scale range, the LED will flash at 8Hz. Below 0%, the flash rate is 4Hz.

Option

- U Urethane coating of internal circuitry for protection from corrosive atmospheres.

Configuration

Each channel of the SMSC-2 series can be independently set for a wide variety of input and output ranges.

Factory Presets

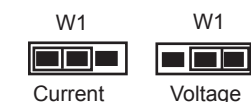
The factory presets the SMSC-2 input and output to 4-20 mA (as shown in Table 1 and Figure 1). The supply power is configured for 120 VAC operation. For other I/O ranges, remove the four base screws and case to access the I/O cards.

Refer to figures 1 & 2 for configuration and program the I/O channels as desired.

Replace the cover before applying power.

Input

- Position input jumper "W1" for Current (I) or Voltage (V) input.



WARRANTY/DISCLAIMER

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FOR **WARRANTY RETURNS**, please have the following information available BEFORE contacting OMEGA.

- Purchase order number which the product was PURCHASED,
- Model and serial number of the product under warranty, and
- Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY RETURNS**, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA.

- Purchase Order number to cover the COST of the repair,
- Model and serial number of the product and
- Repair instructions and/or specific problems relative to the product.

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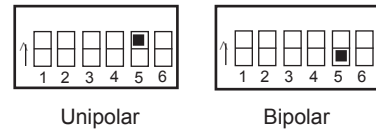
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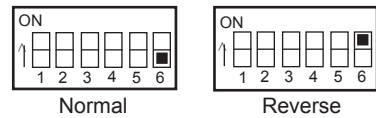
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2. Set position 5 of the Input Range Selector for Unipolar or Bipolar input operation.



Note: A bipolar range selection will double any range from Table 2 (e.g., 10V span = ±10V bipolar span)

3. Set position 6 of the Input Range Selector for Normal or Reverse operation. Reverse acting produces a decreasing output with an increasing input.



4. Using Table 2, configure positions 1 through 4 of the Input Range Selector for the desired maximum input. Round the desired maximum input value to the next highest range (e.g., 0-70V = 100V range).

WARNING: Do not change switch settings with power applied. Severe damage will result.

Output

1. For the SMSC-2 channels A and B use Table 3 to configure the output selector switches for one of the four(4) standard output ranges.

Power

1. Configure the AC jumpers for either 120 or 240 VAC operation. See Figure 3.

Calibration

1. Connect the input to a calibrated DC voltage or current source and apply power. Refer to PIN CONNECTIONS. Wait 1 hour for thermal stability before monitoring the voltage/current output.

2. Set the calibrator to the desired minimum input and adjust the Zero potentiometer for the desired minimum output.

3. Set the calibrator to the desired maximum input and adjust the Span potentiometer for the desired maximum output.

4. Repeat steps 2 and 3 for best accuracy.

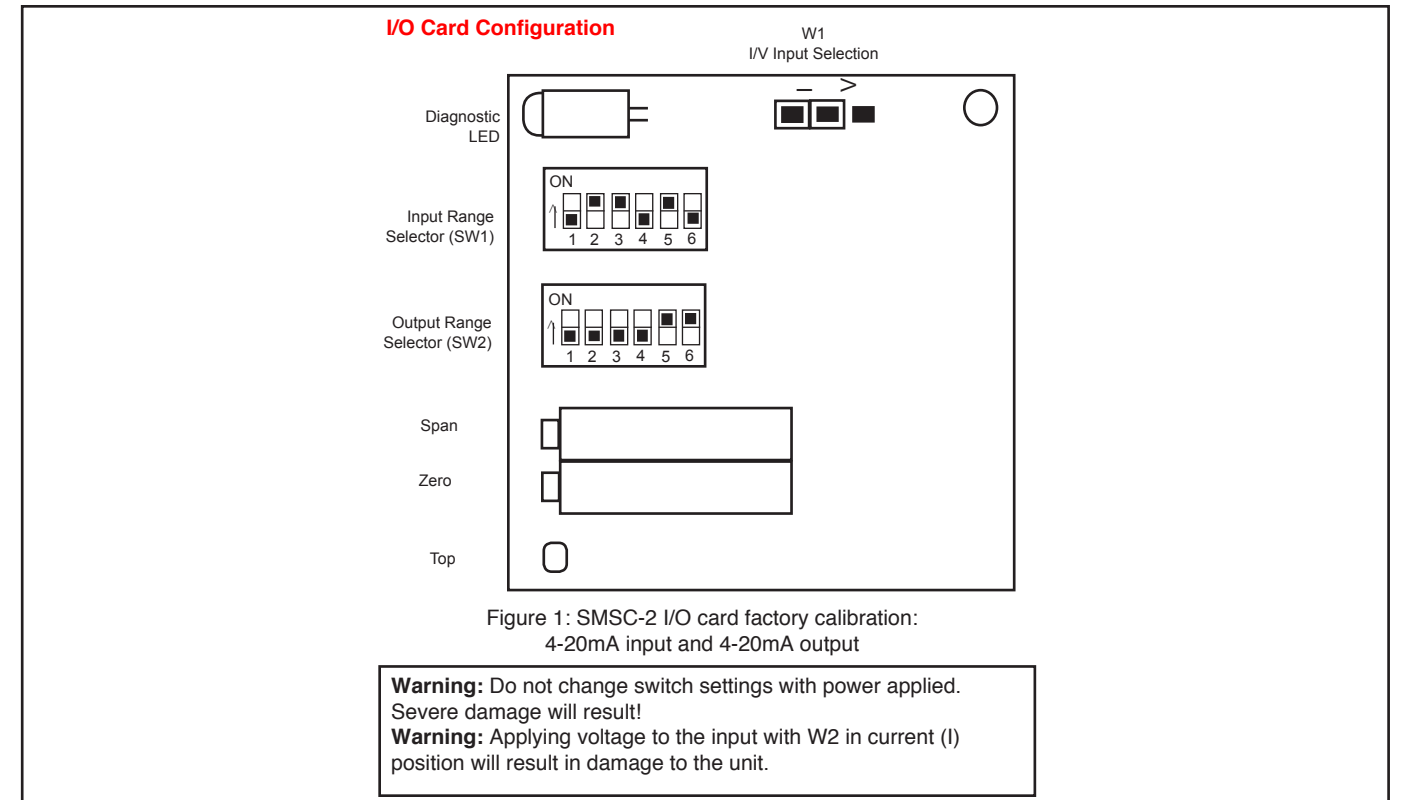
Table 2: SMSC-2 Series Input Ranges

Voltage*	Current*	Input Range Selector (SW1)
20mV	2mA	[Diagram: SW1 positions 1-4 right, 5 left, 6 right]
50mV	5mA	[Diagram: SW1 positions 1-4 right, 5 left, 6 right]
100mV	10mA	[Diagram: SW1 positions 1-4 right, 5 left, 6 right]
200mV	20mA	[Diagram: SW1 positions 1-4 right, 5 left, 6 right]
500mV	50mA	[Diagram: SW1 positions 1-4 right, 5 left, 6 right]
1V	100mA	[Diagram: SW1 positions 1-4 right, 5 left, 6 right]
2V		[Diagram: SW1 positions 1-4 right, 5 left, 6 right]
5V		[Diagram: SW1 positions 1-4 right, 5 left, 6 right]
10V		[Diagram: SW1 positions 1-4 right, 5 left, 6 right]
25V		[Diagram: SW1 positions 1-4 right, 5 left, 6 right]
50V		[Diagram: SW1 positions 1-4 right, 5 left, 6 right]
100V		[Diagram: SW1 positions 1-4 right, 5 left, 6 right]

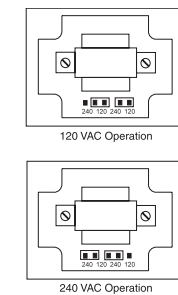
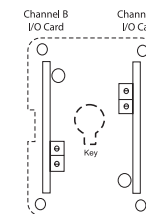
*Use jumper (W1) to configure either voltage or current input. All unipolar ranges are zero based.

Table 3: SMSC-2 Output Ranges

Range	Output Range Selector (SW2)
0 to 10V	[Diagram: SW2 positions 1-4 right, 5 left, 6 right]
0 to 5V	[Diagram: SW2 positions 1-4 right, 5 left, 6 right]
0 to 1mA	[Diagram: SW2 positions 1-4 right, 5 left, 6 right]
4 to 20mA	[Diagram: SW2 positions 1-4 right, 5 left, 6 right]



Top View Diagrams



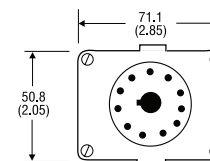
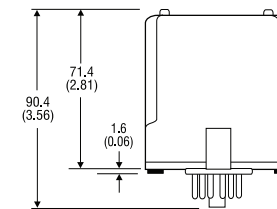
Warning: Do not change with power connected!

Mounting

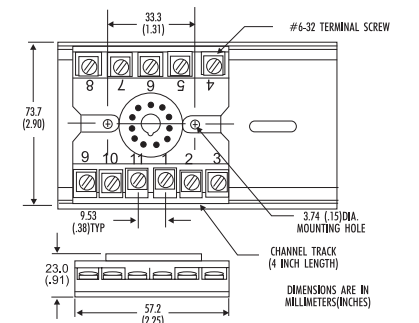
All modules feature plug-in installation. Model SMSC-2 uses an 11-pin base and either molded socket SKT-SM-11P or DIN socket SKT-DR-11P for mounting.

Dimensions

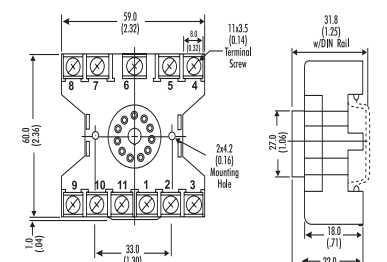
Dimensions are in millimeters (inches)



Mark II



SKT-SM-11P (Track/Surface)



SKT-DR-11P (DIN Rail)