**SEM1015 VOLTAGE / CURRENT CONVERTOR**

- Accepts DC Voltage Input between (-10 and 100) V DC
- (4 to 20) mA Output Loop Powered
- Galvanic Isolation 500 V DC Flash Tested 1 KV
- High Accuracy 0.05%
- 12.5 mm Wide

**INTRODUCTION**

This (4 to 20) mA isolator can be configured to accept most of the common voltage ranges found in both commercial and industrial applications. The input is fully isolated from the output circuit. The isolator range can be specified at the time of order, but if required the user may re-range the transmitter to a new range. The Isolator is housed inside a plastic enclosure, suitable for DIN rail mounting. Screw terminals are provided for wire connections. The enclosure provides side entry access to coarse offset and span adjusters and a range selector switch.

**SPECIFICATIONS @ 20 °C**

**Output**
- **TYPE**: Passive 2 wire current output
- **RANGE**: (4 to 20) mA (30 mA MAX)
- **PROTECTION**: Reverse connection plus overvoltage
- **VOLTAGE**: (10 to 30) VDC
- **STABILITY**: Typical 0.01 % / °C
- **RIPE**: Less than 40 µA / V (Measured at 1 V ripple 50 Hz)
- **RESPONSE**: 200 ms to reach 70 % of final value

**Input**
- **TYPE**: Isolated DC Voltage covered by six ranges;
  - Range | Span | Offset
  - A | (20 to 200) mV | (-20 to 80) mV
  - B | (0.2 to 1.0) V | (-0.1 to 0.4) V
  - C | (1.0 to 5.0) V | (-0.5 to 2.0) V
  - D | (5.0 to 25) V | (-2.5 to 15) V
  - E | (25 to 48) V | (-5 to 25) V
  - F | (20 to 100) V | (-10 to 40) V

The above settings are capable of covering most standard industrial ranges. Range F is provided to allow for (-10 to 10) V inputs. Note: VMAX IN is limited to 48 VDC for BS EN61010-1 compliance.

**CONNECTION**: Captive clamp screws

**CABLE SIZE**: 4 mm² solid / 2.5 mm² stranded

**FLAMMABILITY**: To UL94-VO VDE 0304 Part 3, Level IIIA

**CAGE MATERIAL**: Grey Polyamide

**DIMENSIONS**: (60 x 60 x 11.5) mm (67.5 Above Rail)

**MOUNTING**: Snap on top hat (DIN EN50022-35)

**ISOLATION**: 500 V DC (Flash tested to 1 kV)

**IMPEDANCE**: > 1 MΩ

**ACCURACY**: Typical linearity ± 0.01 % (0.05 % maximum)

**RANGE SELECT**: Coarse Settings, by side entry 16 setting position rotary screw adjustment switches. Fine by front access potentiometers. Range setting by side entry rotary switch.

**GENERAL**
- **AMBIENT**: (0 to 70) °C, (10 to 95) % RH non condensing
- **EMC Tested to**: BS EN 61326

**MECHANICAL DETAILS**

**Schematic**

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SEM1015 subtractor (Non-isolated)

It is a frequent requirement to provide a different output from two (4 to 20) mA transmitters. The circuit shown enables each transmitter to be used independently and at the same time produce a (4 to 20) mA output signal proportional to the difference between the two signals.

(4 to 20) mA = A - B

*NOTE: Input and output loads can be driven from separate supplies to maintain isolation.

SEM1015 - adder (Non-isolated)

In a similar way to the Subtractor outlined above, the adder circuit enables the outputs from two (4 to 20) mA transmitters to be used independently whilst providing an isolated output proportional to the sum of the two signals.

(4 to 20) mA = A + B

NOTE: Input and output loads can be driven from separate supplies to maintain isolation.

ORDER CODE: SEM1015