

# PROCESS SIGNAL ISOLATORS

## SEM1020 LOOP BOOSTER

- (4 to 20) mA Output
- Galvanic Isolation 500 V DC Flash Tested 1 KV
- High Accuracy 0.05%
- 12.5 mm Wide



### INTRODUCTION

The SEM1020 isolator is designed for use when power is available at both sides of the isolation barrier. This isolator requires no user adjustment during commissioning, apart from an initial test, to ensure it operates correctly over its full working range. Minor adjustments can be made to the calibration of the device by means of the two front panel accessible calibration potentiometers. Incorrect connection in the loop will not damage the device as long as the specified maximum currents/voltages are not exceeded.

### SPECIFICATIONS @ 20 °C

<b>INPUT</b>	<b>TYPE</b>	Current input 2 wire Loop powered
	<b>RANGE</b>	(4 to 20) mA (30mA Maximum)
	<b>PROTECTION</b>	Reverse connection
	<b>VOLTAGE DROP</b>	2.7 V maximum
	<b>MAX LOOP VOLTS</b>	35 V

<b>OUTPUT</b>	<b>TYPE</b>	2 wire Current Sink (4 to 20) mA
	<b>LOOP VOLTAGE</b>	(5 to 32) V d.c. (reverse protected)

LOOP VOLT DROP = 2.7 V      LOAD = 900 ohm @ Vs = 24 V  
 LOAD = 1200 ohm @ Vs 30 V  
 Loads must be >250 R for ambients >50 °C

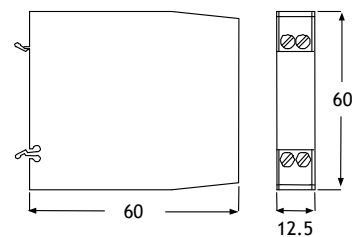
#### GENERAL SPECIFICATION

<b>ISOLATION</b>	500 V DC (flash tested @ 1 kV) (Isolation method, opto coupler / transformer)
<b>ENVIRONMENT</b>	BS EN61010-1 POLLUTION DEGREE 2; INSTALLATION CAT II; CLASS I
<b>AMBIENT</b>	(0 to 70) °C ; (10 to 95) % RH non condensing
<b>ACCURACY</b>	±0.05 % (±0.008 mA ) of full range output
<b>STABILITY</b>	0.01 % / °C
<b>RESPONSE TIME</b>	Less than 100 mS to reach 70 % of final value.
<b>EMC Tested to</b>	BS EN 61326
<b>ADJUSTMENT</b>	Front Entry Fine Zero and Span Adjustment

### MECHANICAL DETAILS

<b>CONNECTION</b>	Captive clamp screws
<b>CABLE SIZE</b>	Maximum 4 mm sq solid / 2.5 mm sq stranded
<b>CASE MATERIAL</b>	Grey Polyamide
<b>FLAMMABILITY</b>	To UL94-VO VDE 0304 Part 3, Level IIIA
<b>DIMENSIONS</b>	Case A: (60 x 60 x 12.5) mm (67.5 above rail)
<b>MOUNTING</b>	Snap on "top hat" rail (DIN EN 50022-35)

(All dimensions in mm)

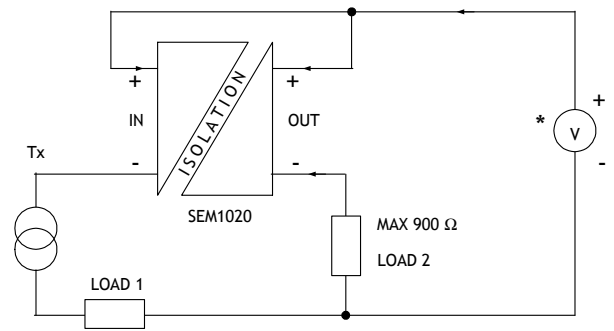


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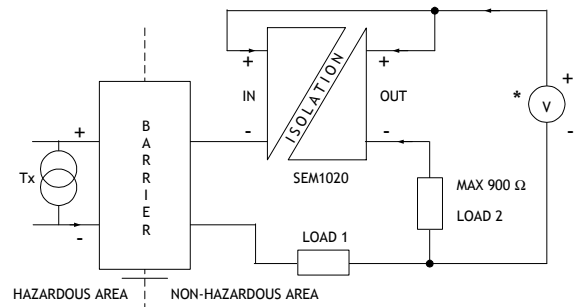
## APPLICATIONS

SEM1020

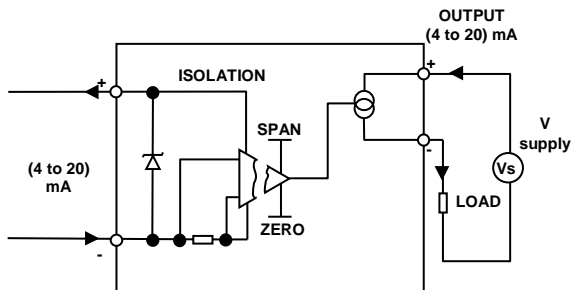
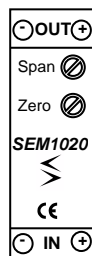
Used to increase the load drive capability of a (4 to 20) mA loop



Used to increase the limited drive capability of an intrinsically safe (4 to 20) mA loop



## SCHEMATIC



ORDER CODE: SEM1020