

Signal Isolator – 9000C



INTRODUCTION

9000C Signal Isolator is slim yet rugged 4 wire isolator used for reliable isolation and attenuation of industry standard field signals. 9000C is available in single or dual output models.

9000C has higher noise rejection ratio that ensures accurate and noise free signal conditioning. Its slim DIN rail mount design occupies less space and reduces cost of overall installation.

Dual output model acts as signal distributor. A typical application could be where the signal has to be distributed for indication on local panel, field control room, main control room or DCS system. The Isolator provides good protection to sensitive system parts against voltage spikes etc.

9000C has built-in Transmitter Power Supply (TPS) to drive 2-wire field transmitters. An exceptional feature of extended universal power supply for the range of 20V to 265V DC or AC makes 9000C suitable for any Aux power supply available in field and thus providing easy to stock and easy to install.

9000C 'M' version model is further enhanced with switch selectable I/O configuration for I/O ranges 0/4-20mA, 0/1-5V and 0-10V. This feature allows user to have freedom to change 0/4-20mA, 0/1-5V and 0-10V I/O types, using side DIP switches available on the device and with minor calibration using front accessible trim-pots, depending upon field requirements, truly one model for all signals and all applications.

9000C model offers excellent accuracy and stability for reliable operation in hostile environments and full isolation safely separates input channel, each output channel and the power supply.

FEATURES

- Extended Universal Power Supply Range: 20V to 265V DC or AC
- Slim DIN rail mount design of 12.5mm for single output and 17.5mm for dual output
- Rugged & accurate 4 wire Isolator
- Switch option for 0/4-20mA, 0/1-5V and 0-10V I/O selection
- Extended universal power supply range: 20V to 265V DC or AC
- Full three port isolation
- Up to 2 outputs with short circuit protection
- High CMRR and NMRR
- Negligible long term drift
- CE certified model option
- High output load driving capability
- Wide zero & span adjustment limits
- Front calibration facility via multi turn trimpots

APPLICATION

- Field interface device
- Isolation of field signals
- Distribution of signals
- Translation of signals
- Factory automation SCADA
- DCS
- Impedance matching of transmitters and receiver instruments
- Powering of field transmitters

SPECIFICATION

INPUT	
Input Type	Voltage/Current
Input Range	'L' Version: 4-20mA 'S' Version: 4-20mA (Standard) 'M' Version: 0/4 to 20mA,0/1 to 5V,0 to 10V (DIP switch selection)
Input Impedance	Current Input: ≤10 Ω Voltage Input: ≥1 MΩ
CMRR	>100 dB
NMRR	>70 dB
Temp-co	≤100ppm/°C

OUTPUT	
Output Type	Voltage/Current
Output Range	'S' Version: 4-20mA (Standard) 'M' Version: 0/4 to 20mA , 0/1 to 5V , 0 to 10V (DIP switch selection)
Response Time	≤50 mS
Accuracy	± 0.1% of FS
Output Load	mA: ≤750Ω@20mA (SOP),≤550Ω@20mA (DOP) V: Load Current ≤ 5 mA (e.g. for 0-5V: 5V/5mA ≥ 1 KΩ)
Output Loop status LED	Green ('S' version only)
TPS Output	24VDC (±10%) @20mA (SOP) 22VDC (±10%) @20mA (DOP)

POWER SUPPLY	
Supply Voltage	20-265V DC/AC (50-60Hz)
Power Consumption	≤3W
Power ON status LED	Red

ISOLATION	
Power to Input and Output: - Reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 3KVAC (For CE marked 9000C SOP 'S' and 'M' Model) - Galvanic Isolation of 3KVAC for 1 minute (For CE marked and Non-CE Model)	
Input to Output: - Functional insulation according to IEC/EN 61010-1, rated insulation voltage 1.5KVAC (For CE marked 9000C SOP 'S' and 'M' Model) - Galvanic Isolation of 1.5KVAC for 1 minute (For CE marked and Non-CE Model)	
Output to Output: Galvanic Isolation of 1.5KVAC for 1 minute (For Non-CE Model)	

PHYSICAL	
Mounting	35 mm DIN Rail
Dimensions in mm	12.5(W)x100.2(H)x115.2(D) mm (SOP) 17.5(W)x100.2(H)x115.2(D) mm (DOP)
Enclosure Material	PA66
Weight	100 gms. Approx for SOP 130 gms. Approx for DOP

ENVIRONMENTAL	
Operating temperature	0 to 55 °C
Storage temperature	-20 to 85 °C
Humidity	30% to 95% RH(Non-condensing)

TERMINAL DETAIL	
Terminal Block	UL,CSA standard & CE certified
Terminal Cable Size	2.5mm²

DIRECTIVE CONFORMITY (Applicable only for CE Marked 9000C SOP 'S' and 'M' Model.)	
Electromagnetic compatibility Directive 2014/30/EU	IEC 61326-1:2012
Low voltage Directive 2014/35/EU	IEC 61010-1:2010

NOTICE

The contents of this manual are subject to change without notice as a result of continual improvements to the instrument's performance and functions.

Every effort has been made to ensure accuracy in the preparation of this manual. Should any errors or omissions come to your attention, however, please inform our sales office or sales representative. Under no circumstances may the contents of this manual, in part or in whole, be transcribed or copied without our permission

SAFETY / WARNING PRECAUTIONS

ESD precautions: Before Installing or Operating the Instrument, always make sure to discharge the static electricity that might be available on your body to prevent any damages to Instrument.



Caution: Never carry out work when the Power is turned ON, this is dangerous. This indicates a danger that may result in minor or moderate injury or only a physical damage if not avoided.

Wiring must be carried out by personnel, who have basic electrical knowledge and practical experience. To minimize the possibility of fire or shock hazards, do not expose this instrument to rain or excessive moisture.

Do not use this instrument in areas under hazardous conditions such as excessive shock, vibration, dirt, moisture, corrosive gases or oil. The ambient temperature of the areas should not exceed the maximum rating specified. Instruments suspected of being faulty must be disconnected and removed first and it is recommended to send Instrument to our Customer Support Division for testing and repair.

Before start-up, it is particularly important to ensure:

- Terminal wiring: check that all cables are connected correctly and are according to the connection diagram.
- All wiring must confirm to appropriate standards of good practice and local codes and regulations. Wiring must be suitable for voltage, current and temperature rating of the system. Beware not to over-tighten the terminal screws.
- Unused terminals should not be used as jumper points as they may be internally connected, which may cause damage to the unit.

After installation the terminal area must be covered to provide sufficient protection against unauthorized Access to live parts. This is ensured by installing the device in the control Cabinet or distributor box.

WARRANTY

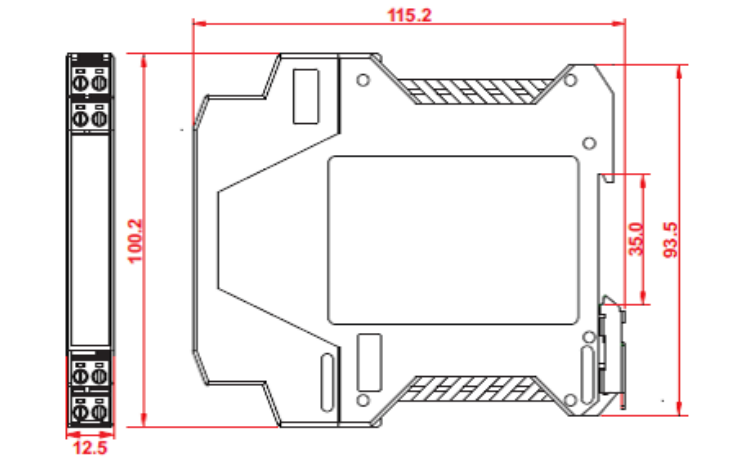
Warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification.

We are not liable for special, indirect or consequential damages or for loss of profit or for expenses sustained as a result of a device malfunction, incorrect application or adjustment.

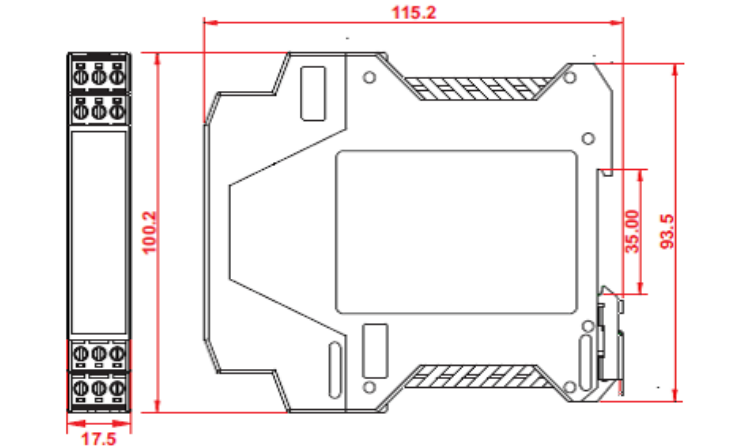
Our total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

OVERALL DIMENSIONS (In mm)

9000C SOP

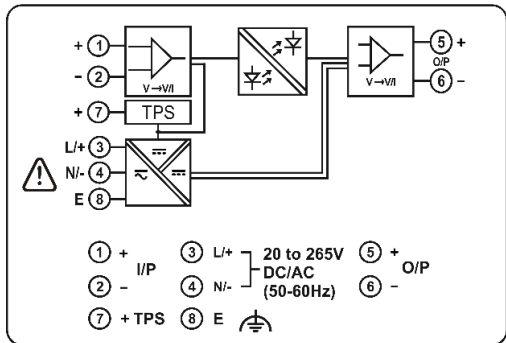


9000C DOP

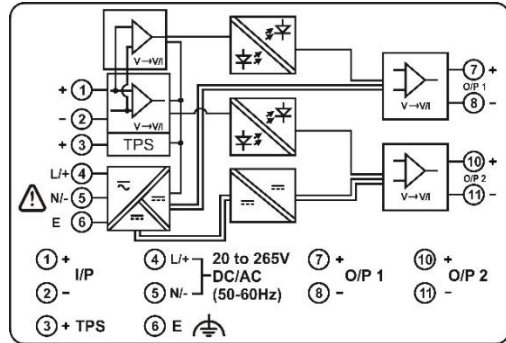


CONNECTION DETAILS

Block Diagram and Connection Details of SOP Model



Block Diagram and Connection Details of DOP Model



SWITCH SELECTION DETAILS for 'M' Model SOP/DOP

SWITCH	4-20mA	0 -20mA	1-5V	0-5V	0-10V
OUTPUT	1				
	2				
	3				
	4				
	5				
	6				
INPUT	1				
	2				
	3				
	4				
	5				
	6				

Switch Selection Table for Different type of Input/Output

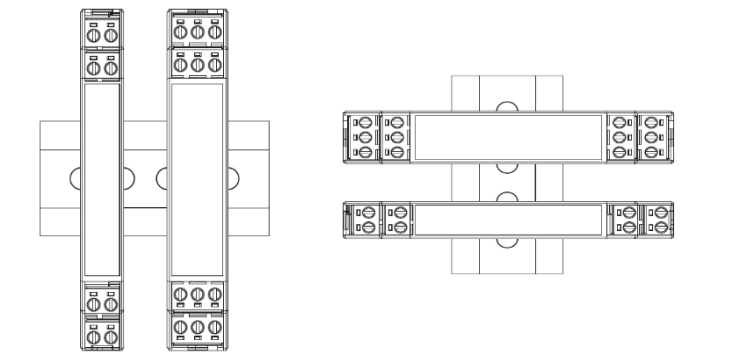
INSTALLATION

Din Rail Mounting:

The unit can be snapped onto all DIN rails (35mm) According to EN60715. The device must be mounted horizontally (Output terminal blocks facing upwards). The housing is mounted on the DIN rail by swivelling it into place. Adequate Air circulation must be considered between each Aux Powered devices to maintain their Operating temperature ranges, by keeping some space between each devices.

Removal:

Release the snap-on catch using a screwdriver and then detach the module from the bottom edge of the DIN Rail.



TROUBLE SHOOTING

Unit Not Turning ON?

If Red LED at the front side is not turned "ON", the device is not getting sufficient supply or the connections are not as per terminal details.



One must take care while dealing with Power wirings because it may create electrical shock

Output not matching with expected value?

Make sure the load on output of device is as per specification criteria. Make sure the output Signal is really incorrect with respect to input signal before attempting any re-calibration.

Unstable Reading?

Check for loose connections. First verify that all conventional instrumentation norms have been followed for wiring. Keep Electromagnetic noise away from signal isolator.

SERVICE

For all service related matters, Contact at below address.

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B-30, GIDC Electronics Estate, Sector-25, Gandhinagar-382016, Gujarat, India

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