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ABOUT

ISOLATED CONVERTER 9000U⁺ SERIES

- 9000U⁺ Series are compact yet rugged 4 wire Signal isolators designed for conditioning and safe guarding custom-built wide range of voltage and current field signals. Field Signal is then isolated and converted to standard instrumentation signals, acceptable to commercially off the shelf (COTS) automation products.
- Equipped with Advanced Extended Power Supply Range of 20V to 265V AC or DC.
- 9000U⁺ Series offer a wide range of input / output signal types like mA, mV, VDC which are factory settable as per user requirements. 9000U⁺ model is further enhanced with Switch selectable I/O configuration for I/O ranges i.e. 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 only, using switch available on side of device and with minor tuning using front accessible trim-pots, depending upon field requirements.
- 9000U⁺ is equipped with Built in transmitter power supply (TPS) that can drive field transmitters in case of 4-20mA DC input signal.
- 9000U⁺ Series isolators acts as signal distributor when used with more number of outputs.
- 9000U⁺ Offers excellent accuracy and stability delivering reliable operation in hostile environments with full 3 port isolation between input, output and power supply.
- 9000U⁺ Series are flexible for DIN rail mounting and easily installable. Its compact design consumes less space and hence reduces cost of overall installation.

FEATURES

- Slimmest in its class: 35 mm Single output and Dual output
- Extended Universal Power Supply Range:20V to 265V DC or AC Capable to provide Safe and Sufficient Power For Field Transmitter
- Rugged & accurate 4 wire isolator
- Up to 2 outputs with Short Circuit Protection
- Wide zero & span adjustment limits
- 2.0KV AC Isolation between I/P, O/P and Supply
- High CMRR and NMRR
- High output Load Driving Capability
- Non-standard Input and Output options also available

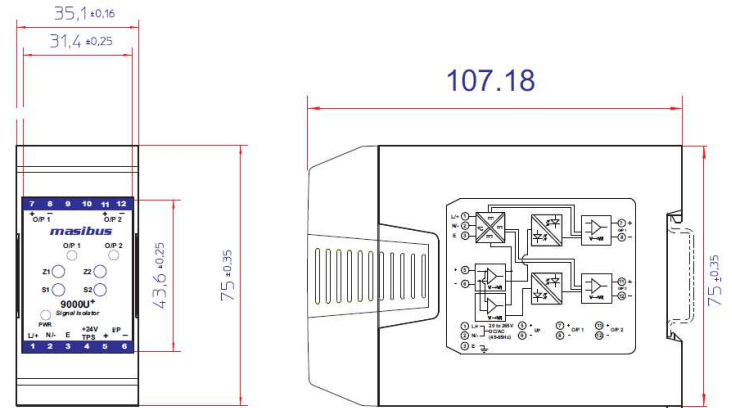
SOP & DOP



- Universal AC/ DC Aux. supply
- Front Calibration Facility
- Signal Isolator, dual output
- Three port isolation
- Excellent long term stability
- Built in transmitter's power
- Compact DIN rail enclosure

SPECIFICATION

Input	
Input Type	Voltage/ Current
Input Range	'S' Version: 4-20mA (Standard) 'M' Version: 0/4 to 20mA, 0/1 to 5V, 0 to 10V (DIP switch selection) 'M' model with Factory settable Input as per user requirements are: For Voltage : Min: 0 to ± 10 mV, Max: 0 to ± 600 VDC For Current : Min: 0 to ± 1 mA, Max: 0 to ± 100 mA
Input Impedance	Current I/P $\leq 10 \Omega$; Voltage I/P $\geq 1 \text{ M}\Omega$
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) 'M' model with Factory settable Output as per user requirements are: For Voltage : Min: 0 to ± 100 mV Max: 0 to ± 10 VDC For Current : Min: 0 to ± 1 mA, Max: 0 to ± 10 mA/ ± 20 mA
Output Load resistance	mA: Load Voltage ≤ 15 V (e.g. for 4-20mA: $15\text{V}/20\text{mA} \leq 750\Omega$) V: Load Current ≤ 5 mA (e.g. for 0-5V: $5\text{V}/5\text{mA} \geq 1 \text{ K}\Omega$)
TPS Output	Transmitter Power Supply 24VDC Max current Limit: 26mA Electronic
Accuracy	$\pm 0.1\%$ of FS
Response Time	≤ 50 ms
Power Supply	
Power Supply	20 to 265VDC/AC, 45Hz-65Hz
Power Consumption	Less than 5VA
CMRR	>100 dB
NMRR	>70 dB
Isolation	
Isolation	Power to Input / Output, Input to Output, Output to Output- 2.0KV AC for 1 minute
Environmental	
Operating temperature	0 to 55°C
Temp. Co-efficient	≤ 100 PPM
Relative humidity	30 to 95% RH (Non-Condensing)
Protection	Conformal Coating on PCB
Physical	
Mounting Type	DIN RAIL (35 mm) Mounting
Dimensions	35.1(W)x75(H)x107.25(D) mm (For SOP/DOP)
Weight	Less than 120 gms For SOP model Less than 150 gms For DOP model
Enclosure Material	ABS
Terminal Detail	
Terminal type and cable size	Screw type, 2.5mm ²

Dimensions**9000U⁺ SOP/ DOP**

All dimensions are in mm.

SAFETY AND WARNING

To ensure that the device can be operated safely and all function can be used, please read these instructions carefully before installing the device.

⚠ Caution: Never carry out work when the Power Is turned on, this is dangerous.

Installation and startup must be carried out by qualified person only. The relevant country-Specific regulations (e.g., VDE, DIN) must also be observed.

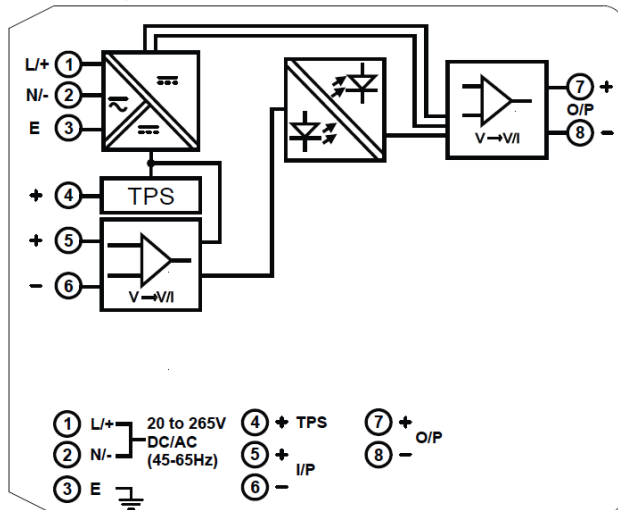
Before startup it is particularly important to ensure:

- **Terminal wiring:**
Check that all cables are connected According to the connection diagram.
- The Power supply has been connected correctly.
- Protection is provided against electric shock.
- The device can be switched off outside the power Supply according to EN 60950 regulations.
(e.g., by the line protection on the primary side)
- All supply lines should have sufficient fuse protection and are of correct size.
- All output cables are of correct size for the maximum device output current or have separate fuse protection.
- Sufficient convection is ensured.
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.

CONNECTION

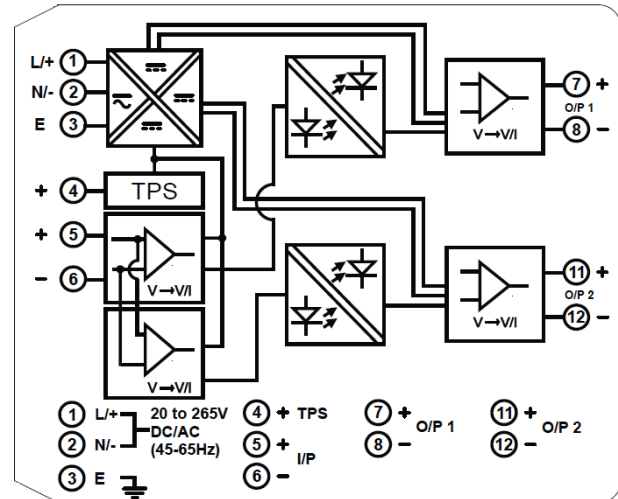
Connection details:

Block Diagram and connection details of SOP.



Note: In case of DC supply connect DC(+) to terminal no. 1 and DC(-) to terminal no. 2.

Block Diagram and connection details of DOP.



Note: In case of DC supply connect DC(+) to terminal no. 1 and DC(-) to terminal no. 2.

Switch Selection Table For Different Input /Output '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				

INSTALLATION

Din Rail Mounting:

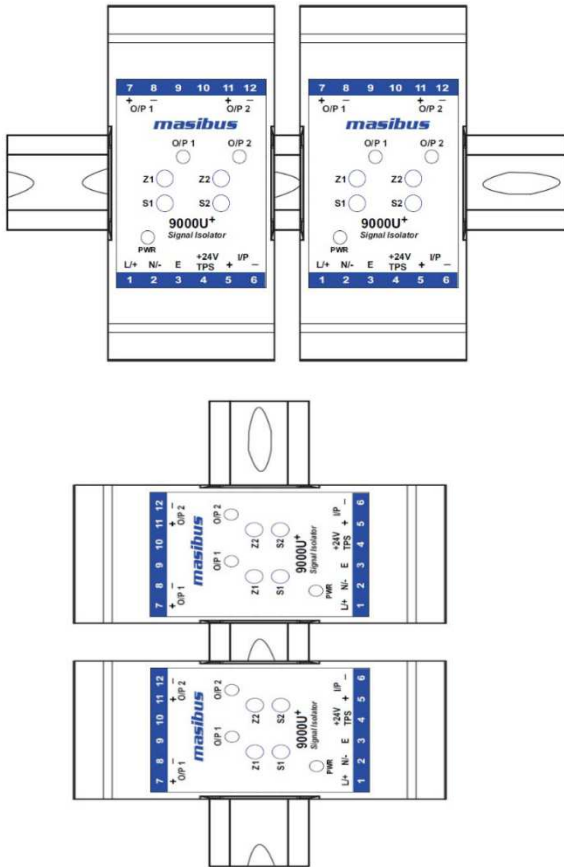
The unit can be snapped onto all DIN rails (35 mm) According to EN60715. The device must be mounted horizontally (Output terminal blocks facing upper wards). The housing is mounted on the DIN rail by swiveling it into place.

Removal:

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

Installation of SOP & DOP

Note: If 9000U⁺ Devices installed in sequence, make sure to put 5mm distance between each devices for vertical installation and 10mm distance between each devices for horizontal installation.



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.
 Make noise away from signal isolator.

⚠ Fluctuation in Reading

The reason can be reverse input connections.

Ordering Code

Model		Input Type	No of O/P	O/P Type
9000U ⁺	S	X	X	X
		C 4-20mA	1 One	1 4-20mA
			2 Two	

Model		Input Type	No of O/P	O/P Type-1	O/P Type-2
9000U ⁺	M	X	X	X	X
		C 4-20mA	1 One	1 4-20mA	0 None
		D 0-20mA	2 Two	2 0-20mA	1 4-20mA
		E 1-5VDC		3 1-5VDC	2 0-20mA
		F 0-5VDC		4 0-5VDC	3 1-5VDC
		G 0-10VDC		5 0-10VDC	4 0-5VDC
		S Special		S Special	5 0-10VDC
					S Special

* Switch selection is not possible in Special I/O, being factory set.