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ABOUT

ISOLATED CONVERTER 9000C SERIES

- 9000C Series are compact yet rugged 4 and 2 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. (Aux Powered Model)
- 9000C 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.
- 9000C (Aux Powered Model) is equipped with Built in transmitter power supply (TPS) that can drive field transmitters in case of 4-20mA DC input signal.
- 9000C Series isolators act as signal distributor when used with more number of outputs.
- 9000C Offers excellent accuracy and stability delivering reliable operation in hostile environments with full 3 port isolation between input, output and power supply.
- 9000C Series are flexible for DIN rail mounting and easily installable. Its compact design consumes less space and hence reduces cost of overall installation.
- With 9000C 'L' Loop Powered Version, overall wiring can be reduced availing same performance and overall power consumption can be reduced.
- 9000C with HART Pass through (Aux Powered Model) is dedicated Signal Isolator, for 2-wire HART Programmable devices, with HART Pass capability and all enhanced features of 9000C Series and can provide an additional Output of Current for Non HART compatible devices.

FEATURES

- Slimmest in its class:12.5mm Single output and 17.5mm Dual output
- Available in Aux Powered (AP) and Loop Powered (LP) options
- Extended Universal Power Supply Range: 20V to 265V DC or AC Capable to provide Safe and Sufficient Power For Field Transmitter (Aux Powered Model)
- Switch Selectable Input/Output. User can change I/O as per their requirement. (Aux Powered Model)
- Rugged & accurate 4 wire and 2 wire isolator
- Up to 2 outputs with Short Circuit Protection (Aux Powered Model)
- Wide zero & span adjustment limits
- 1.5KV AC Isolation between I/P, O/P and Supply
- High CMRR and NMRR
- High output Load Driving Capability

9000C Loop Powered



9000C Aux Powered

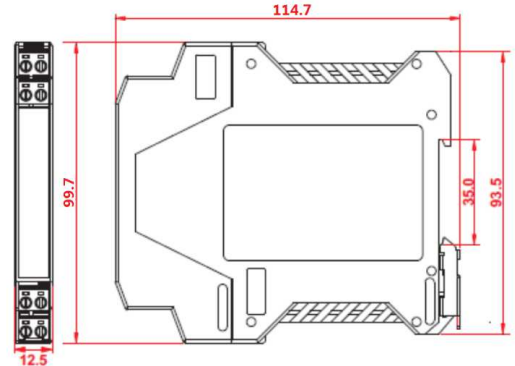


- Universal AC/ DC Aux. supply
- Front Calibration Facility
- Signal Isolator, dual output
- Three port isolation
- Excellent long term stability
- Built in transmitter's power (Aux Powered Model)
- Slim DIN rail enclosure

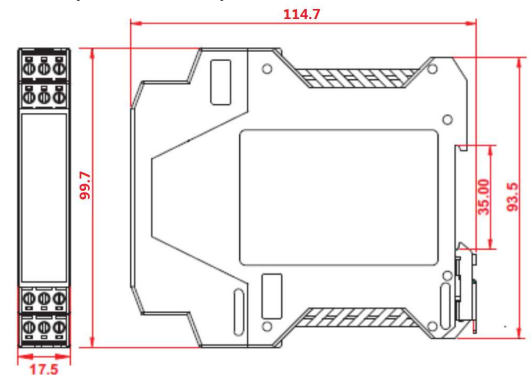
SPECIFICATION	
Input	
Input Type	Voltage/ Current
Input Range	'L' Version: 4-20mA 'S' Version: 4-20mA (Standard) 'M' Version: 0/4 to 20mA , 0/1 to 5V , 0 to 10V (DIP switch selection) 'H' Version: 4-20mA, HART Pass
Input Impedance	≤100 Ω (Loop Powered)
Current I/P	≤10 Ω (Aux Powered)
Voltage I/P	≥1 MΩ
Output	
Output Type	Voltage/Current
Loop Powered	'L' Version: 4-20mA
Aux Powered	'S' Version: 4-20mA (Standard) 'M' Version: 0/4 to 20mA , 0/1 to 5V , 0 to 10V (DIP switch selection) 'H' Version: 4-20mA HART Pass on o/p-1, 4-20mA Standard on o/p-2
Response Time	≤50 ms
Accuracy	± 0.1% of FS
Output Load (Loop Powered)	$R_{Load} = [(Loop\ Supply\ Voltage - 10)/0.021]\Omega$
Output Load (Aux Powered)	mA: Load Voltage ≤ 15V (e.g. for 4-20mA: 15V/20mA ≤ 750Ω) V: Load Current ≤ 5 mA (e.g. for 0-5V: 5V/5mA ≥ 1 KΩ) For 4 to 20mA (HART Pass): ≤ 600Ω
Output Loop status LED	Green (Aux Powered, "S" version only)
TPS Output (Aux Powered)	Transmitter Power Supply 24VDC Max current Limit: 26mA Electronic
Power Supply (Loop Powered)	10 to 36VDC with reverse polarity protection
Power Supply (Aux Powered)	20 to 265VDC/AC, 45Hz-65Hz ≤5VA
Power ON status LED	Red (Aux Powered only)
CMRR	>100dB
NMRR	>70dB
Isolation	
Isolation	Power to Input / Output, Input to Output, Output to Output- 1.5KV 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	12.5(W)x99.7(H)x114.7(D) mm (for SOP Aux and Loop Powered Model) 17.5(W)x99.7(H)x114.7(D) mm (for DOP and HART Pass SOP and DOP Model)
Weight	100 gms Approx. For SOP model 130 gms Approx. For DOP model
Enclosure Material	PA66
Terminal	
Terminal type and cable size	Screw type, 2.5mm ²

Dimensions

9000C SOP (LOOP POWERED AND AUX POWERED)



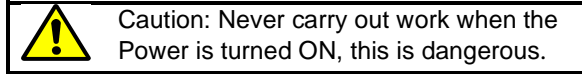
9000C DOP (AUX POWERED) / SOP AND DOP HART PASS (AUX POWERED)



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.



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

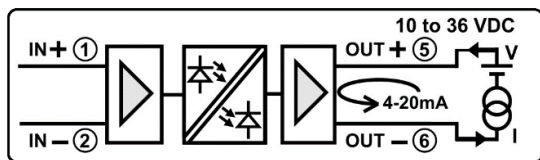
Before startup it is particularly important to ensure:

- 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.

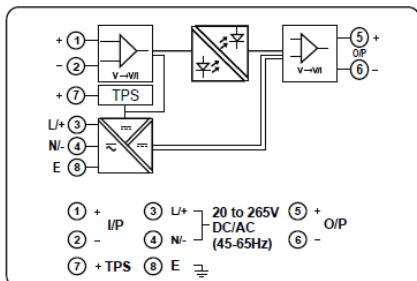
CONNECTION

Connection details:

Block Diagram and connection details of Loop Powered Device

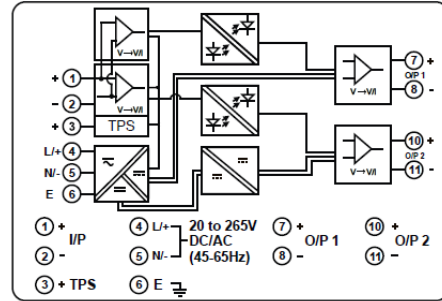


Block Diagram and connection details of SOP

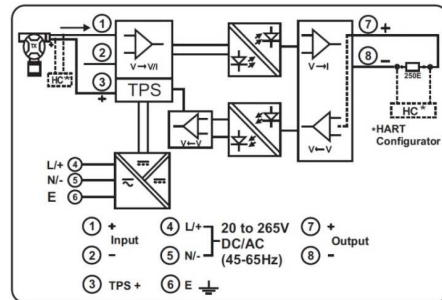


Note: In case of DC supply connect DC (+) to terminal no. 3 and DC (-) to terminal no. 4.

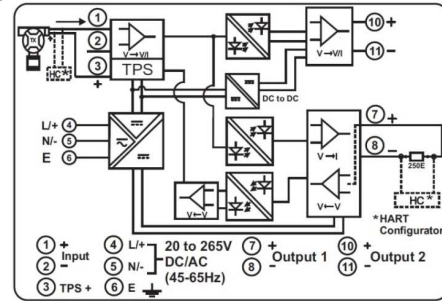
Block Diagram and connection details of DOP



Block Diagram Connection details SOP HART Pass Suitable for 2 wire transmitter only



Block Diagram and connection details of DOP HART Pass Suitable for 2 wire transmitter only



Note: In case of DC supply connect DC (+) to terminal no. 4 and DC (-) to terminal no. 5.

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

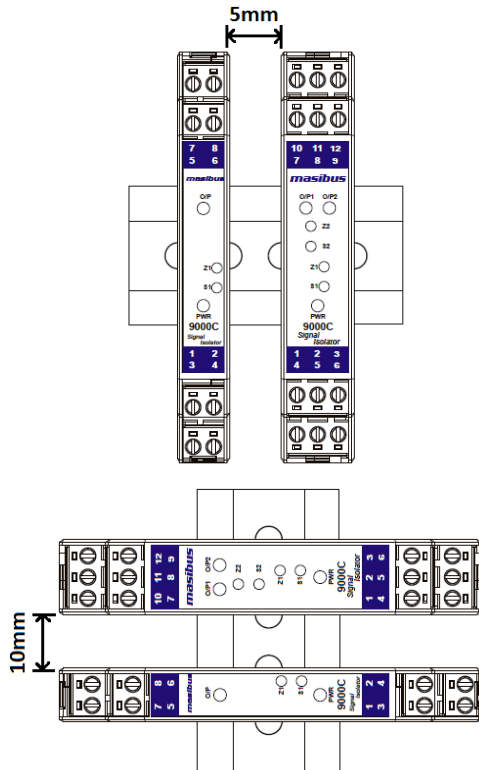
Din Rail Mounting:

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. Adequate Air circulation must be considered between each Aux Powered devices to maintain their Operating temperature ranges, by keeping some space between each devices depending upon their mounting orientation.

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



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.

⚠ Loop Powered Device

If device is not delivering loop current, check the circuit from Power supply to Isolator & receiving device. If still transmitter is not delivering loop current, check the supply connections and polarity of Output terminals.

Notice:

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 Masibus 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.

Ordering Code

Aux Powered Model							
Model	Input Type	No of O/P		O/P Type			
9000C	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		
9000C	M	X	X		X	X	
		C	4-20mA	1	One	1	4-20mA
		D	0-20mA	2	Two	2	0-20mA
		E	1-5VDC			3	1-5VDC
		F	0-5VDC			4	0-5VDC
		G	0-10VDC			5	0-10VDC
						5	0-10VDC

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

Loop Powered Model				
Model	Input Type	O/P Type-1		
9000C	L	X	X	
		C	4-20mA	1

masibus Automation & Instrumentation Pvt. Ltd.
B/30, GIDC Electronics Estate, Sector- 25,
Gandhinagar-382044, Gujarat, India
Ph: 91-079-23287275 / 76 / 77
Fax: 91-079-23287281/ 82
Email: support@masibus.com
Web: www.masibus.com