Datasheet

Current Isolator

SUP-1002S

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Current Isolator
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The isolator provides isolated working power to 2-wire and 3-wire transmitters, isolating and converting the current signal generated by the transmitter into signals required by other instruments. It achieves three-terminal isolation between input, output, and power, thereby improving the industrial process control system's anti-interference capability, ensuring system stability, and reliability. The isolator can be used in conjunction with various instruments, DCS, PLC, and other equipment.

Applications

- Petroleum
- Petrochemical
- Manufacturing
- Power
- Metallurgy

Features

- Low power consumption with efficient heat dissipation design.
- Distributive output with current-limiting protection for increased reliability and safety.
- Supports a maximum load of 550Ω for current output.
- Ultra-thin design with a 13mm slim casing, saving installation space.
- Flame-retardant casing for enhanced safety.

Current Isolator

Principle

The working principle of the current isolator 1002S is based on the principle of electromagnetic induction or optical coupling. It uses a transformer or an optocoupler to isolate the input current from the output current. The input current is converted into a magnetic field or light signal, which is then converted back into an output current after passing through the isolation element. This ensures that there is no direct electrical connection between the input and output sides, providing electrical isolation and protecting the circuit from interference and potential damage.

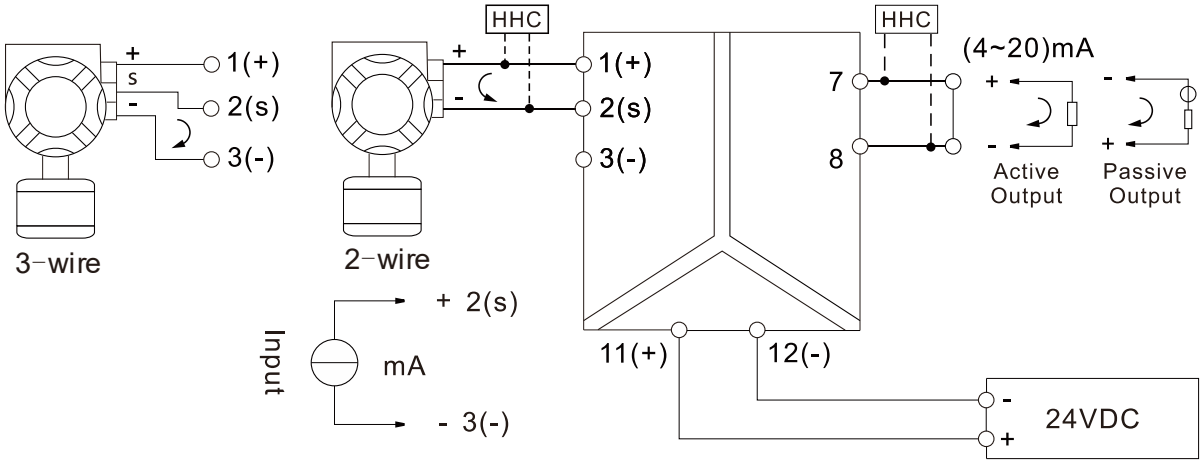
Parameters	
Input signal	(4~20)mA、(0~20)mA
Input impedance	≤100Ω
Input current	≤30mA
Distribution voltage/max current	≥20V，20mA
Output signal	(0~20)mA、(4~20)mA、 (0~5)V、(1~5)V、(0~10)V、(2~10)V
Output load resistance	(4~20)mA、(0~20)mA：R_L≤550Ω； (0~5)V、(1~5)V、(0~10)V、(2~10)V：R_L≥1MΩ
Transmission accuracy (20℃)	0.1%FS
Isolation strength (between input/ output/power)	1500Vrms (1 min，no spark)
Response time	≤400ms
Temperature drift	≤50ppm
EMC	EMC conforms to GB/T18268 (IEC 61326-1) requirements for industrial equipment application
Power supply	(20~35)VDC
Power consumption	Single-channel output：≤1.5W Double-channel output：≤2.6W
Operating temperature	(-20~60)℃
Storage temperature	(-20~60)℃
Relative humidity	25%～85%
Installation method	35mm DIN rail mounting
Applicable field devices	2-wire, 3-wire transmitters, DC current sources

Wiring

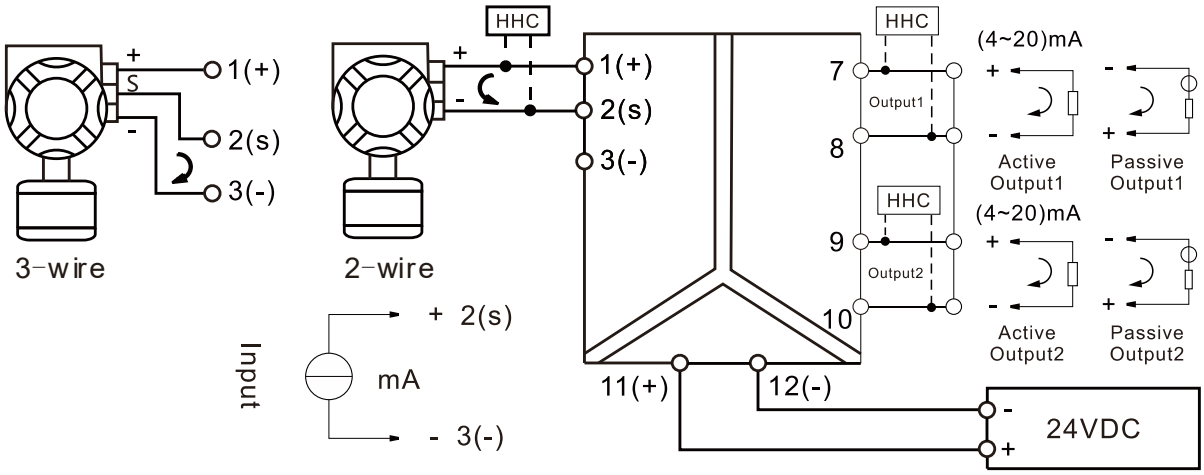
Wiring Requirements:

The wiring cable of the instrument should be far away from electromagnetic interference sources (such as relay drive cables, high-frequency wires, etc.). The wiring cable should be a single-core or multi-core cable with a cross-section of 0.5mm² to 2.5mm².

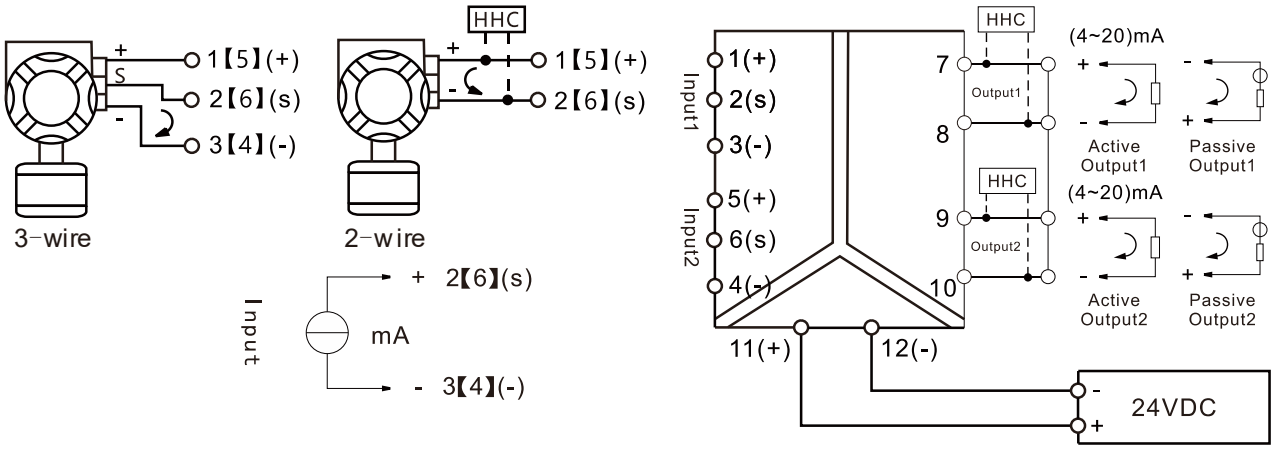
Wiring diagram of Single-channel input and Single-channel output:



Wiring diagram of Single-channel input and Double-channel output:



Wiring diagram of Double-channel input and Double-channel output:dx

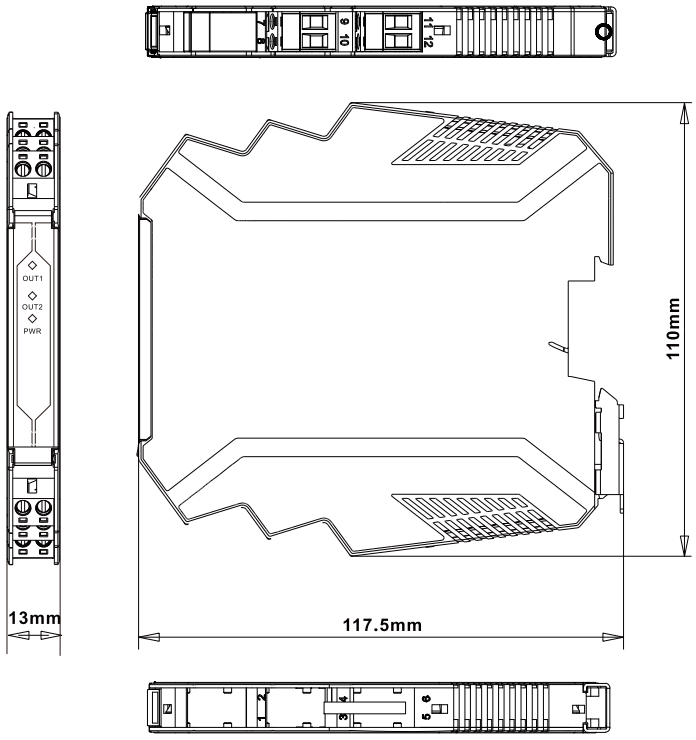


Dimension

Dimensions: 117.5mm*110mm*13mm.

Weight: 130g.

Note: The number of terminal connectors in the figure may vary depending on the product specifications; please refer to the actual product.



Installation

■ Installation

The isolator is for indoor use only. Please install it in a safe location and meet the environmental conditions required by the isolator's technical specifications.

The isolator can be mounted on a standard 35mm DIN rail, complying with the TH35-7.5 type rail size specifications in national standard GB/T19334-2003.

When installing or disassembling instruments, please turn off the power and disconnect the signal input to ensure safety. Do not apply loads exceeding the design capacity to the instrument.

Mounting Method on the DIN rail (see Fig.1):

(1) Hook the upper end of the instrument's mounting bracket onto the standard DIN rail.

(2) Push the instrument towards the DIN rail to fully fit the mounting bracket onto the DIN rail.

(3) Press the installation locking clip to secure it to the DIN rail.

Disassembly method from the DIN rail (see Fig.2):

(1) Insert a flat-head screwdriver (blade width ≤3mm) into the instrument's installation locking clip.

(2) Pry open the installation locking clip slightly to release the instrument from the DIN rail.

(3) Pry open the installation locking clip slightly to release the instrument from the DIN rail.

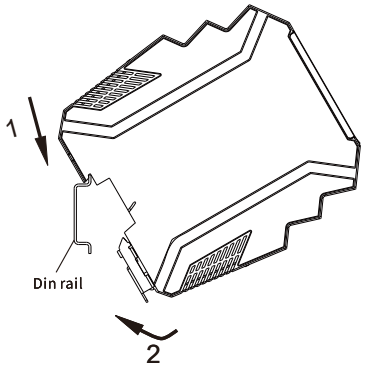


Fig.1: Mounting method

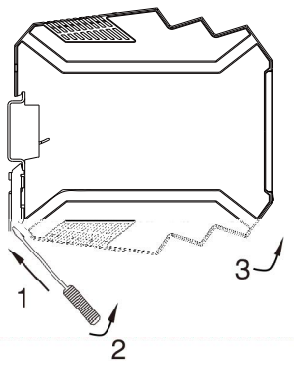


Fig.2 Disassembly method

Ordering code

SUP-1002S -0-AA-A1-C					Description
SUP-1002S	-	-	-	-	
Channel Type	0				One Input, One Output
	2				One Input, Two Outputs
	4				Two Inputs, Two Outputs
Input Signal		AA			4-20mA
		BB			0-20mA
		XX			Other
Output Signal			A1		4-20mA Active
			V1		0-10V
			V2		0-5V
			V3		1-5V
			B1		0-20mA Active
			A0		4-20mA Passive
			B0		0-20mA Passive
			XX		Other
Power Supply				C	24VDC