

Features

- ±2000V galvanic isolated
- ±5000V Surge protection
- Multiple measurement ranges
- Non-polarized power supply
- Low-power consumption
- DIN rail mounting

Advantages

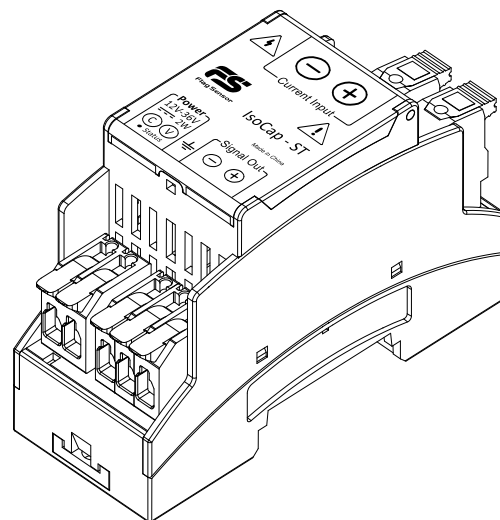
- Multiple ranges from ±3mA to ±100A
- Various output voltage options
- DC-100kHz bandwidth
- Accuracy up to ±0.1%

Applications

- EV and new energy testing
- Current monitoring
- Power analysis

Description

IsoCap-ST is a galvanic isolated current sensor that can measure voltage from ±3mA to ±100A, providing a



cost-effective solution for current measurement. In addition, IsoCap-ST has multiple measurement ranges selection, it can be customized for specific requirement. IsoCap-ST has many advantages, such as small size, high precision, and DIN rail mounting.

Specifications

| Electrical | | | | |
|--------------------------------------|-----------------|---------|---|---------|
| Parameter | Test conditions | Minimum | Typical values | Maximum |
| Input ranges | | ±3mA | | ±100A |
| Accuracy | @ 25°C | | ±0.1% of range or ±0.2% of range | |
| Bandwidth (-3dB) | | | DC-100kHz | |
| Nonlinear error | | | | 0.03% |
| Maximum dela | | | | 5us |
| Output offset voltage | @ 25°C | -1mV | | 1mV |
| Output voltage | | | ±5V differential pair or ±10V differential pair or customized | |
| Common mode rejection ratio (@ 50Hz) | @ 25°C | | 100dB | |
| Phase shift (@ 50Hz) | @ 25°C | | | 0.05° |
| Power supply voltage | | 12V | 24V | 36V |
| Power supply power | | 2W | | |

Typical ranges of IsoCap-ST (other ranges can be made on demand)

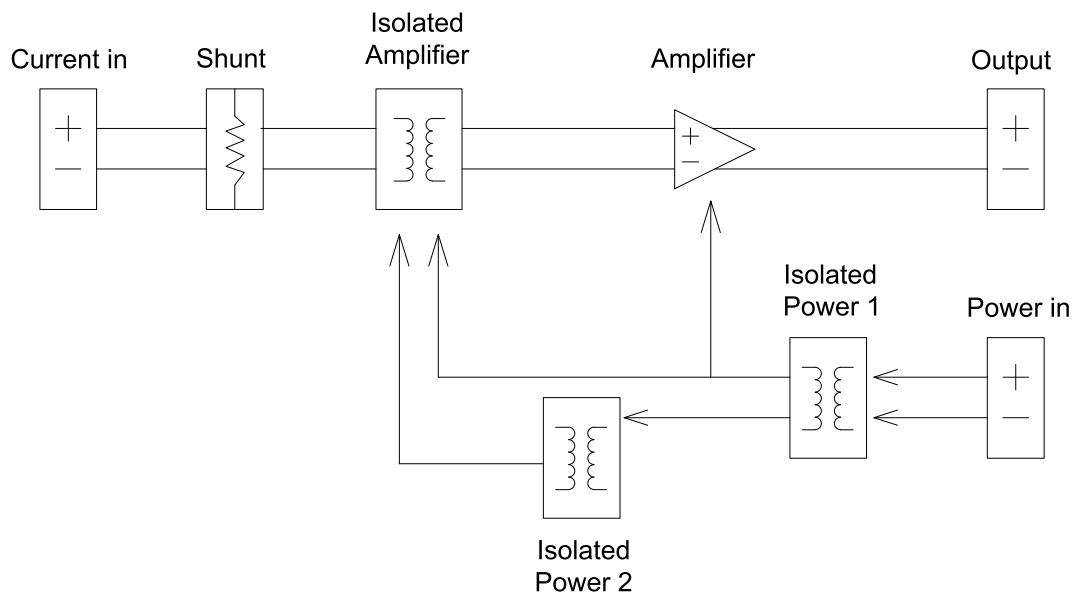
| | | | | | | | | |
|------|-------|-------|--------|-----|-----|------|------|-------|
| ±3mA | ±10mA | ±50mA | ±500mA | ±1A | ±5A | ±10A | ±50A | ±100A |
|------|-------|-------|--------|-----|-----|------|------|-------|

Insulation parameter

| | |
|--|---------|
| Primary and secondary isolation voltage | >±2000V |
| Withstand common mode surge voltage (1min) | ±5000V |
| Insulation resistance | >10GΩ |

Environmental and mechanical characteristics

| | |
|-----------------------|-----------------------------------|
| Operation temperature | -15°C ~ 70°C |
| Storage temperature | -25°C ~ 80°C |
| Weight | 78g |
| Mounting type | DIN rail mounting / wall mounting |
| Number of channels | 1 channel |
| Hot swapping | Not supported |

Block Diagram

IsoCap-ST block diagram

The IsoCap-ST uses the shunt to measure current flowing through input conductor. The isolated amplifier transfers the induced voltage on shunt from primary to secondary. The amplifier at the output side converts it to ±5V or ±10V differential voltage. The above diagram shows the signal processing in general.

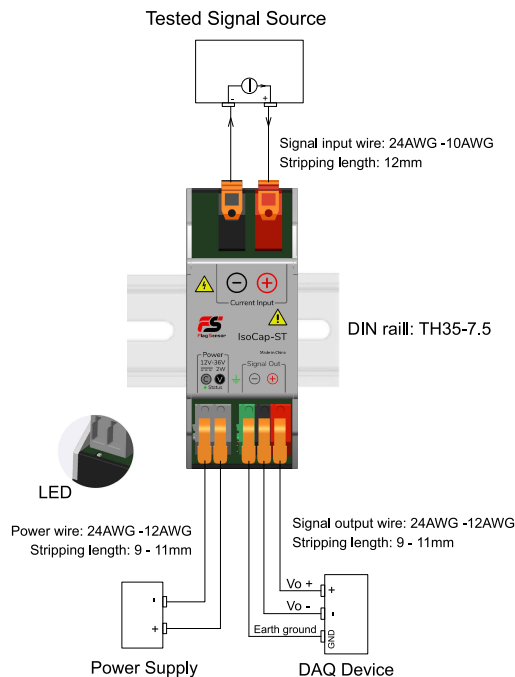
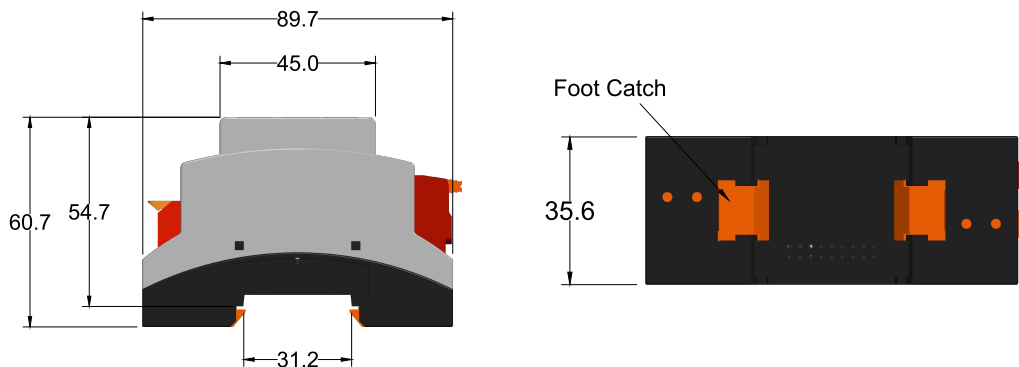
Testing Setup

1. Connect the output voltage to the DAQ/instrument, the ground must be well grounded.
2. Connect DC power supply to power it on.
3. Connect the measurement current to the input, make sure the tested current source is off before connecting.
4. Turn the tested current source on.

Disassemble

Ensure that the tested current source is turned off, then remove the tested current wire. Disconnect the sensor from power, and remove the output and grounding wires.

Dimensions (in mm)



Ordering Code

| Product name | Input ranges | Output voltage | Accuracy |
|--------------|---------------------------------------|-------------------------------------|------------------------------------|
| IsoCap-ST | $\pm 3\text{mA} \sim \pm 100\text{A}$ | $\pm 5\text{V}$ or $\pm 10\text{V}$ | $\pm 0.1\%$ (A) or $\pm 0.2\%$ (B) |

E.g. **IsoCap-ST-3mA-5-A** (3mA: input range is $\pm 3\text{mA}$, 5: output voltage is $\pm 5\text{V}$, A: accuracy of $\pm 0.1\%$ of range).

If you have queries regarding the IsoCap-ST or require specifications outside standard ranges, please do not hesitate to contact us.

CAUTION

Do not connect or disconnect sensor or test leads in operation.

To avoid fire or shock hazard, observe all ratings and markings on the product carefully.

If you suspect there is damage to this product, have it inspected by qualified service personnel.

Do not touch exposed connections and components in operation.

Do not operate in wet/damp conditions.

Do not operate in an explosive atmosphere.

Keep product surfaces clean and dry.

Warning

The service instructions are for use by qualified personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so. Refer to all safety contents prior to performing service.