

Current Source Simulator Without Display USS20M24V-P

The USS20M24V-P is a compact, cost-effective 3-wire 0/4–20mA analog current source simulator designed for panel mounting. Featuring a smooth 5-turn precision potentiometer, front-panel PWR status LED, and rear range-selection jumper, it provides a dependable analog current signal for testing and calibrating PLC analog inputs, DCS controllers, and field indicators where an integrated digital readout is not required.



Key Features

- Active 3-wire 0/4–20mA current generation from 24V DC power
- Jumper-selectable 0–20mA or 4–20mA output range
- 5-turn precision wirewound potentiometer for smooth adjustment
- High output drive capability powering loop loads up to 1,100 Ω
- Input reverse polarity and continuous output short-circuit protection
- Standard 48 mm × 48 mm panel mount enclosure
- Dimensions: 48 mm × 48 mm × 90 mm

Ordering Information

Product Code	Description
USS20M24V-P	Current Source Simulator 0/4 to 20mA Without Display (24V DC, Panel Mount)
USS20M48V-P	Current Source Simulator 0/4 to 20mA Without Display (48V DC Input, Panel Mount)
USS20M24V-D	Current Source Simulator 0/4 to 20mA (with 4-Digit Display, 24V DC)
USS20M24V-2P	Dual Output Current Source Simulator (DIN Rail Mountable, 24V DC)
USS10V24V-D	Voltage Source Simulator 0-10V (with 4-Digit Display, 24V DC)
ULS20M24V-P	Loop Current Source Simulator 4-20mA (2-Wire, Panel Mount)

Applications

- **PLC & DCS Analog Channel Testing:** Simulating 0–20mA or 4–20mA process signals to verify PLC I/O card scaling and alarm trip points.
- **Transmitter Replacement & Diagnostics:** Injecting test current into control loops to isolate faulty transmitters or field wiring.
- **Valve & Actuator Calibration:** Setting travel limits and position feedback on analog control valves, dampers, and positioners.
- **Bench Calibration & Field Service:** Portable calibration reference for routine plant instrument maintenance.

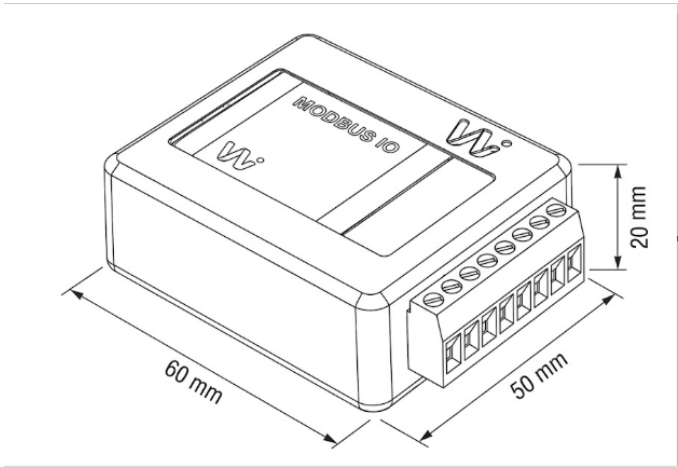
Specifications

Parameter	Value
Mounting Type	Panel Mounting (with side clamping brackets)
Dimensions	48 mm x 48 mm x 90 mm (W x H x D)
Preferred Panel Cutout	45 mm x 45 mm
Weight	Approximately 150 g
Enclosure Material	Industrial Grade ABS
Operating Temperature	–10 °C to +60 °C
Storage Temperature	–40 °C to +85 °C
Relative Humidity	5% to 95% RH (non-condensing)

Electrical Specifications

Parameter	Specification
Power Supply (Standard)	24V DC External
Power Supply (48V Model)	48V DC External (USS20M48V-P)
Power Indicator	Red LED (front panel)
Output Current Range	0/4 mA to 20 mA (jumper selectable)
Output Accuracy	±1% of Full Scale
Adjustment Mechanism	5-turn wirewound precision potentiometer
Adjustment Resolution	≥ 0.01 mA step resolution
Load Resistance Range	10 Ω to 1.1 k Ω
Reverse Polarity Protection	Integrated series protection diode
Short Circuit Protection	Continuous electronic current limiting

Mechanical Dimensions



Terminal Details & Wiring

Terminal Connections & Jumper Configuration

The USS20M24V-P features a rear screw terminal block for power supply input, active current output, and range selection.

Terminal Pin	Label	Function	Description
1	1 V+	DC Power Positive	+24V DC (or +48V DC on 48V model) Power Supply Input
2	2 V-	DC Power Negative	0V / Power Ground Return
3	3 +	Current Output (+)	Active 0/4–20mA Current Output Signal
4	4 -	Current Output (-)	Current Return / Signal Ground
7 & 8	Jumper	Range Mode Selection	Closed (Bridged): 0 to 20 mA range Open: 4 to 20 mA range

Revision History

Revision	Date	Description of Change
Rev 1.0	2026-09-09	Initial datasheet release

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