masibus

# 9000U

## Signal Isolator

### Single/Dual/ Three/Four Output

Masibus signal isolator is a rugged 4 wire isolator available in compact DIN rail mounting enclosure designed to accept custom built and wide range of voltage and current input signals. Signal is isolated and converted to standard instrumentation signals compatible to commercially off the shelf (COTS) automation products.

9000U is available in two models, Single/Dual output and Three/Four output. Masibus' Signal Isolator Model 9000U provides galvanic isolation between field signals and receiving instrument, this in turn rejects any common mode voltage at field side and prevents ground loop problems. The isolator also protects expensive systems from high voltage faults on the field side.

With multiple outputs this model also acts as signal distributors. A typical application could be where the signal has to be distributed for indication on local panel, field control room, main control room and DCS system. 9000U is compatible with both 2 wire and 4 wire transmitters and has built-in transmitter power supply to power 2 Wire field transmitters.

Model 9000U offers a wide range of input/ output signal types which includes mA, mV, VDC. Model 9000U offers excellent accuracy and stability for reliable operation in hostile environments and offers full 3 port isolation between input, output and power supply.

Each channel zero and span calibration is adjustable by multi-turn potentiometers; the unit can accept a wide range of Aux. power from 90 to 265V AC or 18 to 36V DC.

Model 9000U is designed for easy customization and can be customized to signals levels from mV to Volts both at input and output side.

## Features

- Rugged & accurate 4 wire isolator
- Three port isolation
- Universal AC/ DC Aux. supply
- Upto 4 outputs of different types available
- Wide zero & span adjustment limits
- 2KV AC Isolation between I/P, O/P and supply
- All standard current/voltage input/output options
- Non-standard input/output options also available
- Compact DIN rail enclosure
- Excellent long term stability
- High CMRR and NMRR

## Applications

- Field Interface device
- Isolation of field signals
- Distribution of signals
- Translation of signals
- Factory automation
- SCADA
- DCS
- Impedance matching of transmitters and receiver instruments
- Powering of Field Transmitters

# TECHNICAL SPECIFICATIONS

| Input | |
|---|---|
| Input type | Voltage/ Current/ Potentiometer |
| Input Range<br>Voltage<br>Current<br>Potentiometer | <br>Min: 0 to ±10mV to Max: 0 to ±600VDC<br>Min: 0 to ±1mA to Max: 0 to ±100mA<br>0 to 10K Ω |
| Input Impedance<br>Current Input<br>Voltage Input | <br>51 Ω<br>> 1M Ω |
| Temperature Coefficient | < 100ppm/°C |
| CMRR | > 100 dB |
| NMRR | > 70 dB |

| Output | |
|---|---|
| Output Type | Voltage/ Current |
| Input Range<br>Voltage<br>Current | <br>Min: 0 to ±100mV to Max: 0 to ±10VDC<br>Min: 0 to ±1mA to<br>Max: 0 to ±10mA/+20mA |
| Response Time | < 50ms |
| Accuracy | ± 0.1% of FS |
| Load Resistance<br>mA Output<br>V Output | <br>Load Voltage <15V<br>Load Current < 5 mA |
| Transmitter Power Supply | 24V DC |
| Max Current Limit | 26mA Electronic |

| Power Supply | |
|---|---|
| Voltage | 90V AC-265V AC, 45Hz-65Hz /<br>110V DC-300V DC<br>18V DC-36V DC (Optional) |
| Power Consumption | < 10VA |
| Power Dissipation | 1.5W (Typical) |

**Isolation (Withstanding voltage)**
Between primary terminals* and secondary terminals**: **At least 2 KV AC for 1 minute**
Between primary terminals* and grounding terminal: **At least 2 KV AC for 1 minute**
Between grounding terminal and secondary terminals**: **At least 2 KV AC for 1 minute**
Between secondary terminals**: **At least 2 KV AC for 1 minute**
* Primary terminals indicate power terminals and relay output terminals.
** Secondary terminals indicate I/O terminals.
**Insulation resistance:** > 20MΩ@500 V DC between All terminals and grounding terminal.

| Physical | |
|---|---|
| Mounting (mm) | DIN RAIL (35 mm) Mounting |
| Terminal Block | UL, CSA standard |
| Terminal Cable Size | 2.5 $mm^2$ |
| Enclosure | ABS |
| IP Rating | IP20 |
| **Size** | |
| For SOP/DOP Model (mm) | 75(H) x 55(W) x 110(D) |
| For TOP/FOP Model (mm) | 75(H) x 100(W) x 110(D) |
| **Weight** | |
| For SOP/DOP Model | < 250 g |
| For TOP/FOP Model | < 450 g |

| Environmental | |
|---|---|
| Ambient Temperature | 0 to 55 °C |
| Storage Temperature | 0 to 85 °C |
| Humidity | 30 to 95% RH (Non-Condensing) |
| Protection | Conformal Coating on PCB |

**Ordering Code for 9000U SOP/DOP**

| Model | | Input Type | | Power Supply | | No of O/P | | O/P Type | |
|---|---|---|---|---|---|---|---|---|---|
| | | X | | XX | | X | | X | |
| 9000U | S | C | 4-20mA | U1 | 90-265V AC/ 110-300V DC | 1 | One | 1 | 4-20mA |
| | | D | 0-20mA | | | 2 | Two | | |
| | | E | 1-5V DC | U2 | 18-36V DC | | | | |
| | | F | 0-5V DC | | | | | | |
| | | G | 0-10V DC | | | | | | |

| Model | | Input Type | | Power Supply | | No of O/P | | O/P Type | |
|---|---|---|---|---|---|---|---|---|---|
| | | X | | XX | | X | | X | |
| 9000U | M | C | 4-20mA | U1 | 90-265V AC/ 110-300V DC | 1 | One | 1 | 4-20mA |
| | | D | 0-20mA | | | 2 | Two | 2 | 0-20mA |
| | | E | 1-5V DC | U2 | 18-36V DC | | | 3 | 1-5V DC |
| | | F | 0-5V DC | | | | | 4 | 0-5V DC |
| | | G | 0-10V DC | | | | | 5 | 0-10V DC |
| | | S | Special | | | | | S | Special |

***Note**: Non-Std I/P: Any I/P other than 0-20mA, 4-20mA, 0-5V, 1-5V, 0-10V **or**
Non-Std O/P: Any O/P other than 4-20mA will fall in 'M' Category.
For special range consult factory
**X** - Specify from table

**Ordering Code for 9000U TOP/FOP**

| Model | Input Type | | Power Supply | | No of O/P | | O/P Type | |
|---|---|---|---|---|---|---|---|---|
| 9000U | X | | XX | | X | | X | |
| | C | 4-20mA | U1 | 90-265V AC/ 110-300V DC | 3 | Three | 1 | 4-20mA |
| | D | 0-20mA | | | 4 | Four | 2 | 0-20mA |
| | E | 1-5V DC | U2 | 18-36V DC | | | 3 | 1-5V DC |
| | F | 0-5V DC | | | | | 4 | 0-5V DC |
| | G | 0-10V DC | | | | | 5 | 0-10V DC |
| | S | Special | | | | | S | Special |

***Note**: For special range consult factory
**X** - Specify from table

**Head Office:**
Masibus Automation And Instrumentation Pvt. Ltd.
B-30, GIDC Electronics Estate, Sector-25, Gandhinagar-382044, Gujarat, India.
Tel: +91 79 23287275-79, Fax: +91 79 23287281-82.
E-mail: sales@masibus.com, Web: www.masibus.com

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**Masibus Representative:**