

Universal-Measuring Transducer/ Isolating Amplifier

Type MU100U

General

The universal measuring transducer MU100U can be connected to any supply voltage AC or DC between 24 and 240 V. Input signals and output signals

are electrically isolated from each other.

Signals DC 0/4-20 mA or 0-10 V can be connected to the inputs. The input signals are transduced to standard-signal 0-10 V, 0/4-20 mA at the outputs.

Function

The measuring signal applied to one of the inputs is converted into a normalized voltage signal and changed into a frequency. The frequency signal is transferred by means of an optocoupler for

electrical isolation. It is then converted again into a voltage and amplified. Signals 0/4-20 mA and 0-10 V are now available at the outputs.

The electronics before and after the optocoupler are supplied from the power supply unit with potential separated voltages each.

Application

It is often necessary to separate the potentials of signals by means of isolation amplifiers as otherwise this would lead to adulteration of measuring values because of compensating currents. Furthermore, the low-voltage side is effectively protected against damage caused by malfunctions at the primary side.

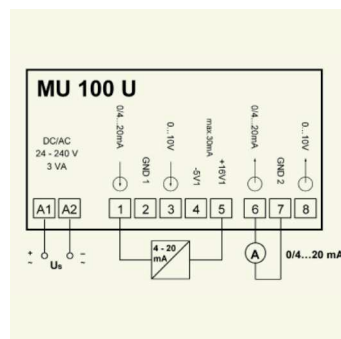
Because of the variety of the current standard signals (0-20 mA, 4-20 mA, 0-10 V), it often happens that the output of a measuring transducer is not compatible with the input of the evaluation unit.

MU 100 U eliminates these problems. Stockkeeping is largely facilitated by the universal supply voltage and different input and output signals in one device.

These measuring transducers almost always fit.

MU100U:

- Input signals DC 0 - 20 mA, 0 - 10 V
- Output signals DC 0 - 20 mA, 0 - 10 V
- Offset with signals 4 - 20 mA can be compensated by the user
- Universal supply voltage AC/DC 24 - 240 V
- electrical isolation between inputs and outputs
- supply voltage for external measuring transducers -5/+18 V/ max. 30 mA
- Isolation voltage 2.5 kV



Technical Data

Power Supply	Rated supply voltage U_s adm. tolerance DCV adm. tolerance ACV Power consumption recommended fuse	AC/ DC 24V - 240V DC 20 - 297 V AC 19 - 264 V, Frequency 20 - 120 Hz < 3 W 2 A slow (gL)
Inputs	Input voltage Nominal input resistance Input current max. current Nominal input resistance	DC 0 - 10 V > 500 k Ω DC 0/ 4 - 20 mA DC 50 mA 50 Ω
Voltage supply for ext. Measuring Transducer	voltage current	DC -5 V/ ground GND1 -16 - 20 V max. 30 mA
Outputs	Output voltage max. no load voltage max. current Output current max. short-circuit current max. load Accuracy Temperature effect Nominal rise time $T_{0,9}$	2 outputs with common ground DC 0 - 10 V DC 12 V DC 20 mA DC 0/4 - 20 mA DC 30 mA (short-circuit-proof) 500 Ω class 0,2 at $T_u = 23^\circ\text{C}$ 0,025%*K ⁻¹ 50 ms
Operation Conditions	rated ambient temperature range ambient storage temperature	0...50°C -20...+70°C
Test Conditions	Isolation EMV Operating time	Input/Output/Supply voltage 2500 VAC EN 61000-6-4 / EN 61000-6-2 100%
Housing	Dimensions H x B x T Line connection one-wire fine-wire with multicore cable ends Fitting position Fastening Protection housing / terminals Burning behaviour Stripping length Connection torque of screw Weight Order-numbers	Design K: 75 x 22,5 x 110 [mm] 1 x 0,5 - 2,5 mm ² 1 x 0,14 - 1,5 mm ² any Snap mounting on 35 mm standard rail conforms to DIN EN 60 715 or M4 screws IP 40 / IP 20 UL 94 V-2 8 mm max. 0,5 Nm approx. 200 g T236010