

Measuring transducers

I40 for alternating current U40 for alternating voltage

I40 and U40 are transducers converting a sinusoidal AC current/voltage into a load independent DC signal proportional to the measured value that can be connected to one or several receiving instruments such as indicators, recorders, controllers etc.

The transducers measure rectified average value and show effective value at sine wave-form. They work with auxiliary power and have galvanic separation between input, output and power supply.

The transducers are mounted directly on profiled bar 35 EN 50022. Connection to self-opening clamps for max 2,5 mm 2 wires. The transducers are manufactured according to IEC 688.

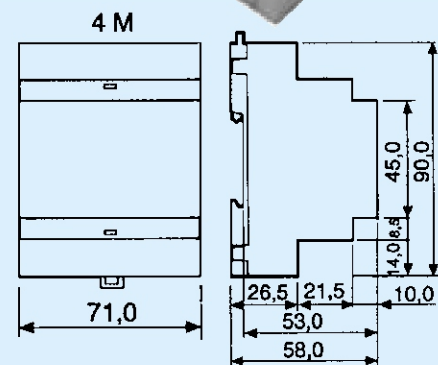
Order facts:

Type	Output	External load
I40-151 U40-151	0 – 5 mA	0-2000 Ω
I40-152 U40-152	0 □ 10 mA	0-1000Ω
I40-153 U40-153	0 □ 20 mA	0- 500Ω
I40-154 U40-154	0 □ 20 mA	0- 500Ω
I40-155 U40-155	0 □ 10 V	>700Ω

Orderform:

Measuring transducer for alternating current

Type I40-154
 Input 0 – 5 A, 50 Hz
 Output 4 – 20 mA
 Power supply 230 VAC



Technical data

Input I40

Measuring range any value between 0,3 and 7 A
 Standard range 0-1/2/5/6 A
 Frequency range 15 □ 45-65 □ 300 Hz
 Consumption (burden) <0,05 VA
 Overload capacity 2 × I in continuously
 10 × I in during 15 s
 40 × I in during 0,5 s (max 200 A)

Input U40

Measuring range any value between 10 and 300 V
 Standard ranges 0-110/120/132/137,5/250 V
 Frequency 15 □ 45-65 □ 300 Hz
 Consumption (burden) U in × 1 mA
 Overload capacity 1.5 × U in continuously
 2 × U in during 10 s

Output

Output signal (span) min 0-1 mA
 max 0-20 mA
 Standard ranges 0 □ 5/10/20 mA, 4-20 mA
 Load max. 10 V
 Current limitation <30 mA
 Voltage 0-10 V
 Burden >700 Ω
 Ripple <1% p.p.

General data

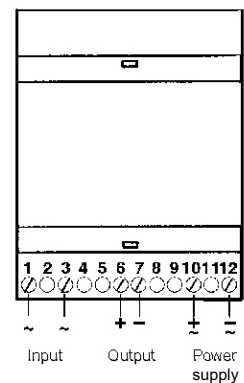
Accuracy class 0,5 according to IEC688 (option 0,2)
 Linearity error <0,1%
 Response time 0-90% <80 ms
 Temperature influence <0,1% / 10°C
 Temperature range -25...+60°C operation
 -40...+70°C storage
 Test voltage 3,7 kV, 50 Hz, 1 min
 Power supply AC 24, 110, 230 V ±15%
 47-70 Hz, ca 2 VA
 Universal current 20-85 V AC/DC
 80-250 V AC/DC
 Weight 0,4 kg

Options on request

Standards

General standards for measuring transducers
 EN60688, IEC699
 EMC emission EN50081-2
 immunity EN50082-2*)
 Safety EN61010-1, IEC 1010-1
 Inputs overvoltage cat. III
 Outputs overvoltage cat. II
 Pollution degree 2

*) At certain frequencies minor deviations from the class accuracy may occur during the disturbance.



Connecting diagrams I/U40

Design

The transducer consists of an input transformer that transforms the input signal to a proper level and at the same time gives galvanic separation between in- and output. In the next stage rectifying and smoothing is made after which the signal is fed to the output amplifier. Here the signal is transformed to a proportional load independent DC signal. The AC power supply comes from a transformer that gives a galvanic separation. Those parts that need separate power get it via a rectifying stage. The DC power comes from a switched unit that gives galvanic separation.