

## Measuring transducers

### I 400 for alternating current U 400 for alternating voltage

I 400 and U 400 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 without auxiliary power and have galvanic separation between in- and output.

I 400 and U 400 in rack modules can be delivered with a single transducer or with two transducers (double) in each 8TE module. In a 19" rack there is place for 10 modules. The modules can be delivered in different application types (see separate leaflet).

I 400 and U 400 in plastic cases contain only one transducer and are mounted directly on profiled bar 35 EN 50022. Connection to self-opening clamps for max 6 mm<sup>2</sup> wires.

The transducers are manufactured according to IEC 688.

#### Order facts:

Enclosed for mounting on profiled bar 35 EN 50022	19" rack modul (wide 8 TE)	
	Single	Double
<b>Type</b>	<b>Type</b>	<b>Type</b>
<b>I 400L-15x</b>	<b>I 400R-15x</b>	<b>I 400R-25xx</b>
<b>U 400L-15x</b>	<b>U 400R-15x</b>	<b>U 400R-25xx</b>
Replace <b>x(x)</b> with last digit(s) for output according to table below		
Output	External resistans load	Last digit <b>x(x)</b>
0 - 5 mA	0-3000 Ω	<b>1</b>
0 - 10 mA	0-1500 Ω	<b>2</b>
0 - 20 mA	0- 750 Ω	<b>3</b>

#### Order form:

Measuring transducer for alternating current

Type **I 400L-153**  
 Input 0 - 5 A, 50 Hz  
 Output 0 - 20 mA

Enclosed for mounting on profiled bar 35 EN 50022

## Technical data

### Input I 400

Measuring range any value between 0,5 and 7,5 A  
 Standard ranges 0 - 1/2/5/6 A  
 Frequency range 45-55 Hz alt. 55-65 Hz  
 Consumption (burden) 0,5 - 1 VA  
 Overload  $2 \times I_{in}$  continuously  
 $40 \times I_{in}$  during 1 s

### Input U 400

Measuring range any value between 20 and 500 V (rackversion max 300 V)  
 Standard ranges 0-110/120/132/137,5/250/500 V  
 Frequency 45-55 alt. 55-65 Hz  
 Consumption (burden) 0,5-1 VA  
 Overload capacity  $1,5 \times U_{in}$  continuously  
 $2 \times U_{in}$  during 10 s

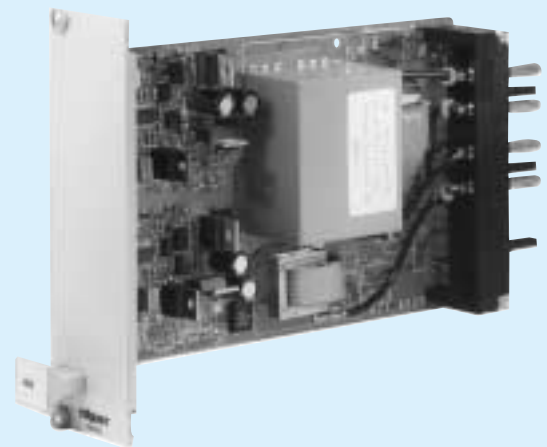
### Output

Output signal (span) min 0-5 mA  
 max 0-20 mA  
 Standard ranges 0...5/10/20 mA  
 For 4-20 mA or 0-10 V choose types **I/U 480**  
 Load max 15 V  
 Current limitation 140%  
 Ripple < 1% p.p.

IU400-FA



IU400-FB



## General data

Accuracy class 0,5 according to IEC 688 (for U 400: 20-120 %) 0,2 on request  
 Linearity error < 0,2%  
 Response time 0-90% < 120 ms  
 Temperature influence < 0,1% / 10°C  
 Temperature range -25...+60°C operation  
 -40...+70°C storage  
 Test voltage 5,6 kV, 50 Hz, 1 min (rackversion 3,7 kV)  
 Weight 0,4 kg

#### Options on request

## Standards

General standards for measuring transducers EN 60688, IEC 688  
 EMC emission EN 50081-2  
 immunity EN 50082-2 \*  
 Safety EN 61010-1, IEC 1010-1  
 Inputs overvoltage cat. III  
 Outputs overvoltage cat. II  
 Pollution degree 2

\*) At certain frequencies can minor deviations from the class accuracy occur during the disturbance

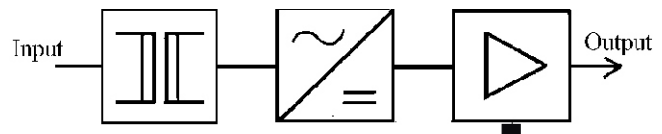
## Design

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 power supply to the output amplifier is taken internally from the input signal.

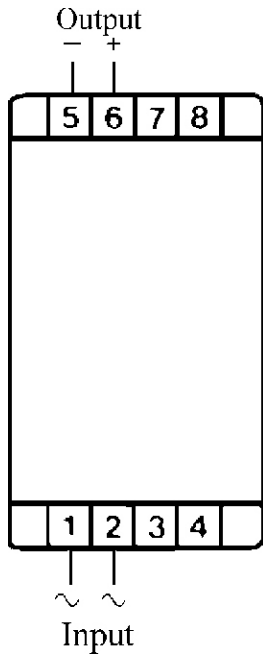
IU400-BE



## Connection diagrams

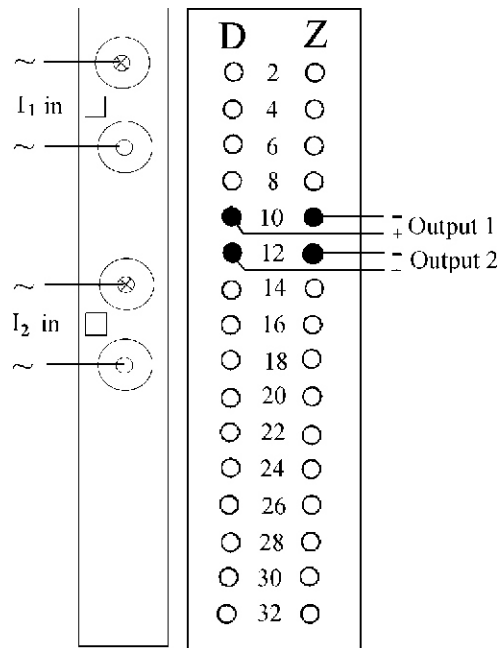
### I/U 400 L

IU400LAE



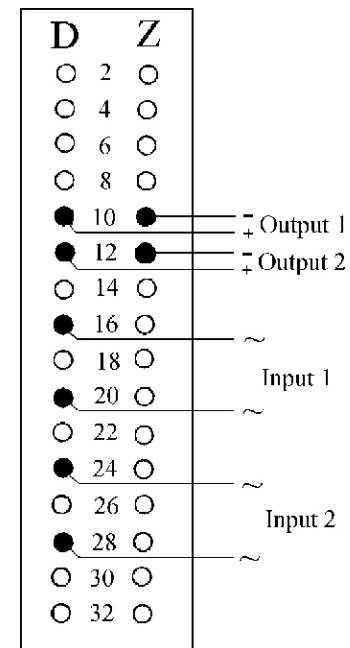
### I 400R

I400RE



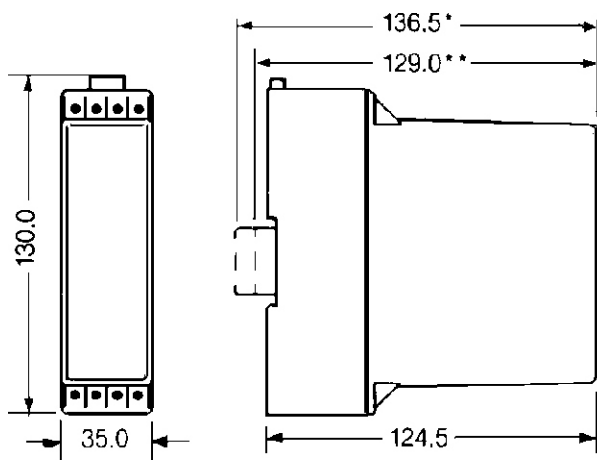
### U 400R

U400RE



### I/U 400L

MATOMV-ME



\*) Profile bar 35 EN 50022, height 15 mm

\*\*) Profile bar 35 EN 50022, height 7,5 mm

### I/U 400R

