# Measuring transducers

## I 480 for alternating current
## U 480 for alternating voltage

(with or without suppressed initial range)

## U 484 for alternating voltage

(designed to withstand nominal voltage
e.g. 0-15 V, withstand 110 V).

I 480, U 480 and U 484 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 rack modules can be delivered with a single transducer or with two transducers (double) in each 8 TE module. In a 19" rack there is place for 10 modules. The modules can be delivered in different application types (see separate leaflet).

The transducers 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 mm² wires.

**Order facts:**

| Enclosed for mounting on profiled bar 35 EN 50022 | 19" rack modul (wide 8 TE) | |
|---|---|---|
| | Single | Double |
| **Type** | **Type** | **Type** |
| **I 480L-15x** | **I 480RT-15x** | **I 480RT-25xx** |
| **U 480L-15x** | **U 480RT-15x** | **U 480RT-25xx** |
| **U 484L-15x** | **U 484RT-15x** | **U 484RT-25xx** |
| Replace **x(x)** with last digit(s) for output according to table below | | |
| Output | External resistans load | Last digit **x(x)** |
| 0 - 5 mA | 0-3000 Ω | **1** |
| 0 -10 mA | 0-1500 Ω | **2** |
| 0 -20 mA | 0- 750 Ω | **3** |
| 4 -20 mA | 0- 750 Ω | **4** |
| 0 -10 V | > 700 Ω | **5** |

**Order form:**

Measuring transducer for alternating current
Type **I 480L-154**
Input 0 - 5 A, 50 Hz
Output 4 - 20 mA
Power supply 230 V, 50 Hz
Enclosed for mounting on profiled bar 35 EN 50022

## Technical data

**Input I 480**

| | |
|---|---|
| Measuring range | any value between 0,3 and 10 A |
| Standard ranges | 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* |

**Input U 480 (U 484)**

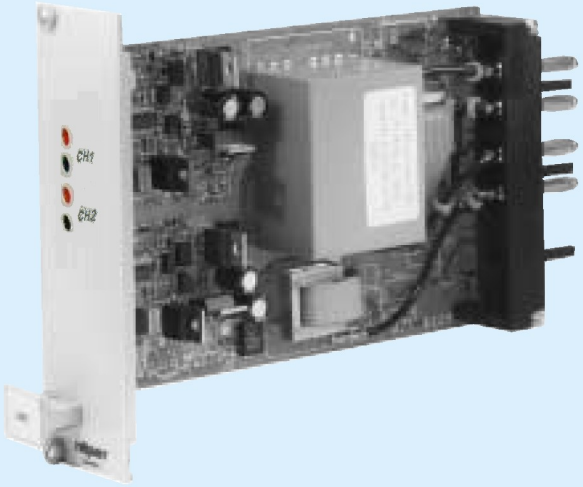
| | |
|---|---|
| Measuring range (Rack version max 300 V) | any value between 10 and 500 V |
| Standard ranges | 0-110/120/132/137,5/250/500 V |
| Frequency | 15...45 - 65...300 Hz |
| Consumption (burden) | <$U_{in}$ × 1 mA |
| Overload capacity | 1.5 × $U_{in}$ continuously |
| | 2 × $U_{in}$ during 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. 15 V |
| Current limitation | < 30 mA |
| Voltage | 0-10 V |
| Burden | > 700 Ω |
| Ripple | < 1% p.p. |

IU480-FA

IU480-FB




## General data

| | |
|---|---|
| Accuracy | class 0.5 according to IEC 688 |
| | 0.2 on request |
| 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 | 5,6 kV, 50 Hz, 1 min (Rack version 3,7 kV) |
| Power supply | 24, 110, 230 VAC ± 15%, 47-70 Hz, ca 2 VA |
| | 24-130 VDC ± 20%, ca 2,5 |
| Weight | 0,4 kg |

**IU480RT** has **test plugs** in front to provide a mirror image of the output signals

**Options on request**

## Standards

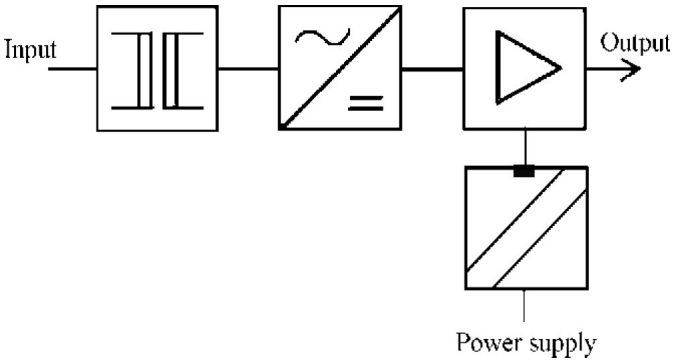
General standards for measuring transducers EN 60688, IEC 688

| | |
|---|---|
| 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

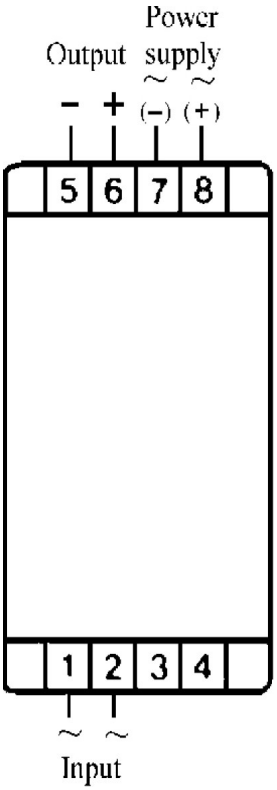
IU480BE



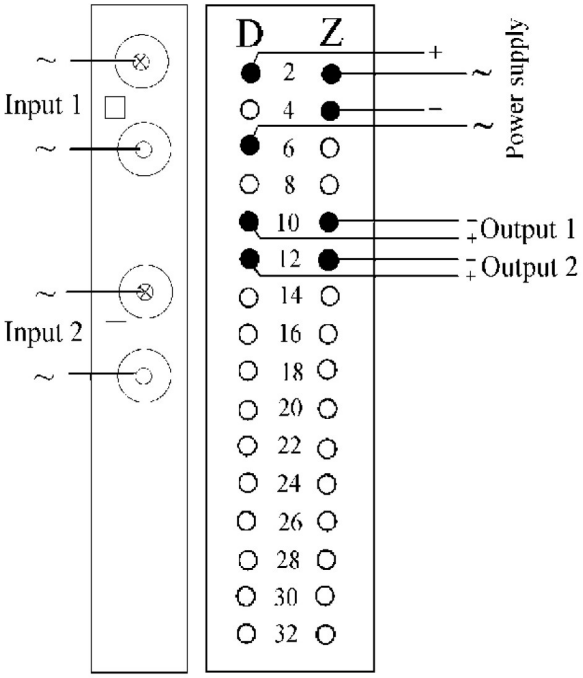

The transducer consists of an input transformer that transforms the input signal to a proper level and at the same time gives galvanic separation between in- and output.
In the next stage rectifying and smoothing is made after which the signal is fed to the output amplifier. Here the signal is transformed 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 and covers the span from 24 to 130 VDC.

## Connection diagrams

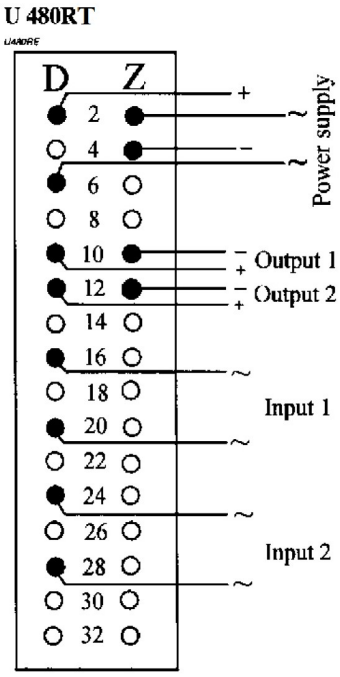
**I/U480L**



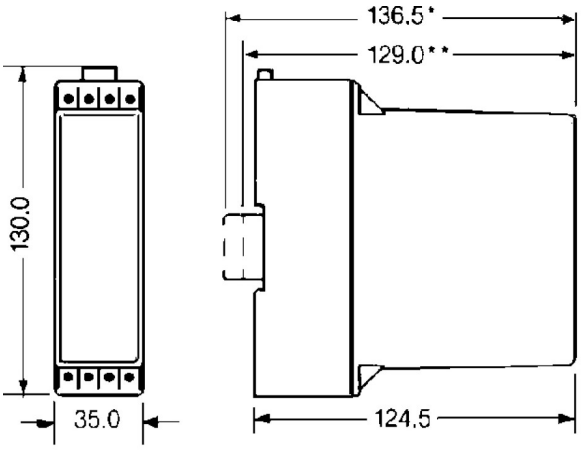

**I480RT**




**U480RT**




**I/U 480L**




*) Profile bar 35 EN 50022, hight 15 mm
**) Profile bar 35 EN 50022, hight 7,5 mm

**I/U 480RT**