

## Measuring transducers for alternating voltage

### U 424 with suppressed final range

(Ex. input 0 - 15 - 110 V, output 0 - 18 - 20 mA)

### U 425 with suppressed initial range

(Ex. input 0 - 80 - 120 V, output 0 - 2 - 20 mA)

U 424 and U 425 are transducers converting a sinusoidal AC voltage either directly or via a transformer. The transducers work with two different amplifications in the two different ranges.

The output gives a load independent DC signal proportional to the measured value that can be connected to one or several receiving instruments such as panel indicators, recorders, controllers etc.

They work with auxiliary power and have galvanic separation between input, output and power supply.

The transducers in plastic case are mounted directly on profiled bar 35 EN 50022. Connection to selfopening clamps for max 6 mm<sup>2</sup> wires. Transducers for mounting in 19" racks can be delivered in different application types (see special leaflet). The rack modules are 8 TE wide and in a 19" rack is place for 10 modules.

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)	
<b>Type</b>	<b>Type</b>	
<b>U 424L-15x</b>	<b>U 424R-15x</b>	
<b>U 425L-15x</b>	<b>U 425R-15x</b>	
Replace x with last digit for output according to table below		
Output	External resistans load	Last digit 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:

Transducer for alternating voltage with suppressed final range

Type **U 424L-153**  
 Input 0 - 15 - 110 V, 50 Hz  
 Output 0 - 18 - 20 mA DC  
 Power supply 230 VAC

## Technical data

### Input

Measuring range any value between 10 and 500 V (rack version max 300 V)  
 Frequency range 15...45-65...300 Hz  
 Consumption (burden) < UN × 1 mA  
 Overload capacity 1,5 × U<sub>in</sub> continuously  
 2 × U<sub>in</sub> during 10 s

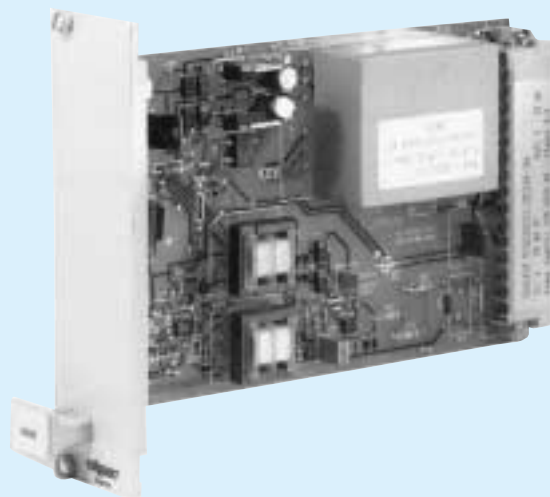
### Output

Current output signal min 0-1 mA  
 (span) max 0-20 mA  
 Range 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.

U424FA



U424FB



## General data

Accuracy class 0,5 according to IEC 688  
 0,2 on request  
 Linearity error < 0,1%  
 Response time 0-90% < 250 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)  
 Power supply 24, 110, 230 VAC ± 15%, 47-70 Hz, ca 2 VA  
 24-130 VDC ± 20%, ca 2,5 W

### 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 input voltage is galvanically separated and adapted to a suitable level in the input transformer.

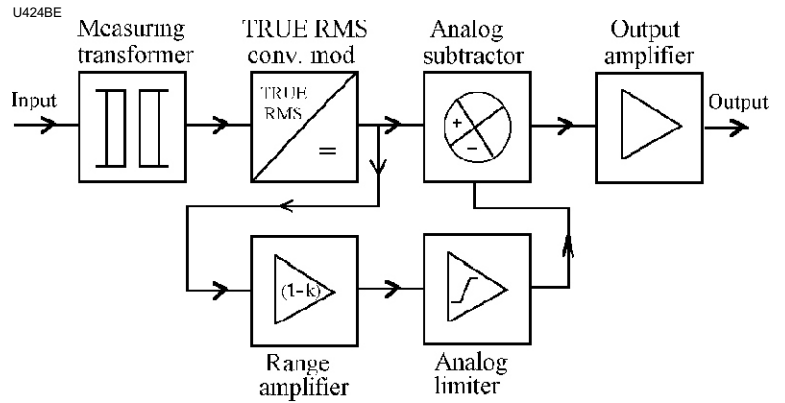
The DC output from the following RMS/DC converter is proportional to the true RMS value of the input signal.

The amount to be suppressed is amplified in the range amplifier and is exactly corrected in the analog limiter.

In the analog subtractor the suppress-value is added or subtracted to the input signal and is led to the output amplifier which gives a load independent DC current or voltage 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.

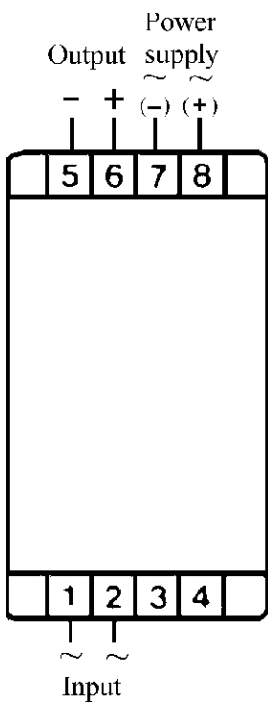
The DC power comes from a switched unit that gives galvanic separation and covers the span from 24 to 130 VDC.



## Connection diagrams

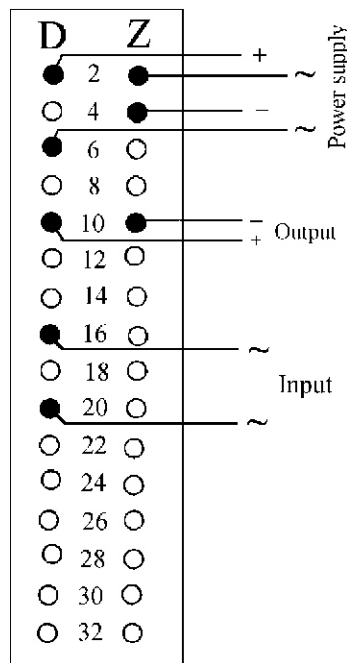
### U 424L/U 425L

U424LE



### U 424R/U 425R

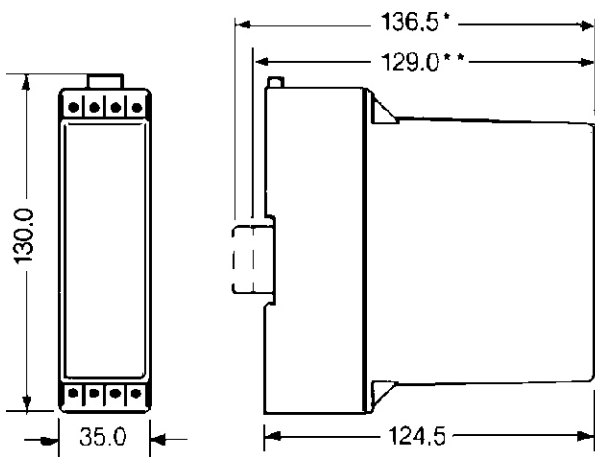
U424RE



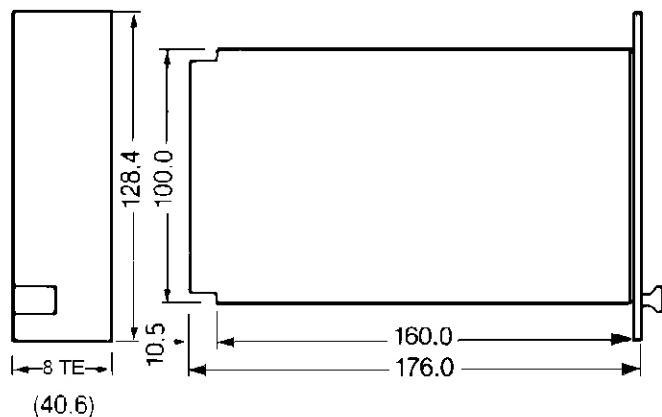
## Dimensions, mm

### U 424L/U 425L

MAT0MVM6



### U 424R/U 425R



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

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