



## *Measuring Transducer MT4xx series*

### AC Current Transducer MT406

- Sinusoidal AC voltage measurements
- Current range measurements up to 500 V<sub>L-N</sub>
- Galvanic insulation between input and output
- Accuracy class 0.5
- Self powered
- Housing for DIN rail mounting

## PROPERTIES

- Sinusoidal AC voltage measurements
- Current range measurements up to 500 V<sub>L-N</sub>
- Galvanic insulation between input and output
- Accuracy class 0.5 (EN 60688)
- Self powered
- Housing for DIN rail mounting

## DESCRIPTION

MT406 is intended for measuring and monitoring voltage in electrical power network. Voltage input is electrically insulated from the system by means of voltage transformer. The signal is rectified, smoothed and amplified into an independent DC current output.

## APPLICATION

The MT406 voltage transducer is used for a permanent monitoring of a single-phase voltage value. PLCs, PCs, microprocessor control, indicators, alarms units etc. can be operated by the output signal.

Voltage input can be connected either directly to low-voltage network or shall be connected to network via a corresponding voltage transformer (with standard 100 V output).

## COMPLIANCE WITH STANDARDS:

Standard EN	Description
61010	Safety requirements for electrical equipment for measurement, control and laboratory use
60688	Electrical measuring transducers for converting AC electrical variables into analogue and digital signals
61326-1	EMC requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements
60529	Degrees of protection provided by enclosures (IP code)
60068-2-1/-2/-6/-27/-30	Environmental testing (-1 Cold, -2 Dry heat, -30 Damp heat, -6 Vibration, -27 Shock)
UL 94	Tests for flammability of plastic materials for parts in devices and appliances

## TECHNICAL DATA

### Measurement input

Nominal frequency (f <sub>N</sub> )	50 / 60 Hz
Measuring frequency range	f <sub>N</sub> ± 10 %

### VOLTAGE MEASUREMENTS

Standard nominal input voltage (U <sub>N</sub> )	57.7, 63.5, 69.3, 100, 110, 115, 120, 127, 220, 230, 240, 250, 380, 400, 415, 440, 500 V
Measuring range limit values	0 ... 50 V to 0 ... 500 V
Overload capacity:	acc. to EN 60688
Max. measured value (cont.)	1.2 x U <sub>N</sub>
Max. allowed value	2 x U <sub>N</sub> ; 1 s, 10 times, 10 s interval
Consumption	< 2 VA

### Measuring output

Standard ranges I <sub>AN</sub> :	0 ... 1 mA, 0 ... 5 mA, 0 ... 10 mA 0 ... 20 mA
Burden voltage:	10 V
External resistance:	R <sub>B max</sub> = 10 V / I <sub>AN</sub>
Maximal output voltage (open circuit current output)	< 25 V
Maximal output current	3 x I <sub>AN</sub>
Residual ripple	< 1 % p.p.
Response time	< 300 ms

The output may be either short or open-circuited. It is electrically insulated from all other circuits.

### Accuracy (according to EN 60688)

Reference value:	Output end value
Basic accuracy:	Class 0.5

### REFERENCE CONDITIONS

Current	0 % ... 100 % x I <sub>N</sub>
Ambient temperature range	15 ... 30 °C
Frequency	f <sub>N</sub> ± 2 Hz
Output burden	R <sub>B max</sub> / 2

### ADDITIONAL ERROR

Temp influence:	max. ± 0.2 % / 10 K
Frequency influence:	0.5 % / (Δ 10 Hz)
Burden influence:	0.1 % / (Δ R <sub>B max</sub> / 2)

### Safety

	acc. to EN 61010-1
Protection class:	II
Pollution degree	2
Installation category	CAT III 600V MT406 > 300V <sub>AC</sub> CAT III 300V MT406 ≤ 300V <sub>AC</sub>
Test voltage	50 Hz, 1 min. 5200 V, measuring input versus measuring output and other surface
Enclosure material	PC / ABS (acc. to UL 94 V-0)
Enclosure protection	IP 20 (acc to EN 60529)

### Environmental conditions

Nominal temperature range	- 10 ... 15 ... 30 ... 55 °C
Operating temp. range	- 20 to + 70 °C
Storage temperature range	- 40 to + 70 °C
Average annual humidity	≤ 93 % r.h.
Altitude	≤ 2000 m
Indoor use only	

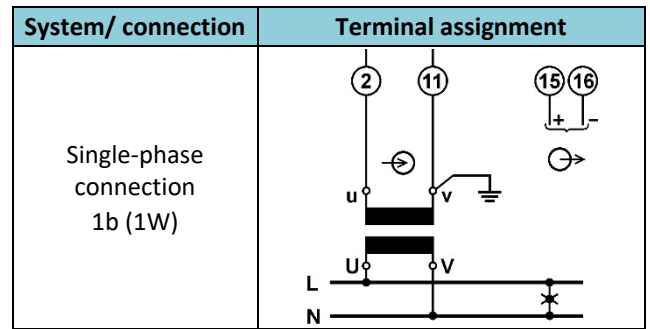
### Mechanical data

Dimensions	W45 × H75 × D105 mm
Mounting	Rail mounting 35 × 15 mm (acc. to EN 50022)
Enclosure material	PC / ABS
Flammability	Acc. to UL 94 V-0
Connection terminals	≤ 4.0 mm <sup>2</sup> solid wire ≤ 2.5 mm <sup>2</sup> stranded wire
Weight	approx. 280 g

### Ambient test

Vibration withstand	0.7 g, 3 ... 100 Hz, 1 oct/min 10 cycles in each of three axes
Shock withstand	300 g, 8 ms pulse 6 shocks in each of three axes

### CONNECTION



### CONNECTION TABLE

Function		Connection	
Measuring input	AC voltage	U ω	2/11
Analogue output		+ ω	15
		- ω	16

### DATA FOR ORDERING

When ordering MT406, all required specifications should be stated in compliance with the ordering code. Default settings will be applied if no requests are submitted.

### EXAMPLE OF ORDERING

Example of ordering code for MT406: Nominal voltage 57.74V; Output 1 mA; Nominal frequency 50Hz; Standard finish.

**MT406 57V4 1M0 50 A**

### General ordering code

All specifications are obligatory except function of analogue output(s), which should be stated in a form of description.

Type	Nominal Voltage	Output IO1	Nominal Frequency	Finish
MT406	X	X	X	X
				A Standard *
				H HVE (Tropical Seal)
			50	50Hz *
			60	60Hz
		1M0		1 mA
		5M0		5 mA
		10M		10 mA
		20M		20 mA
57V7	57.74 V			
63V5	63.5 V			
69V3	69.3 V			
100V	100 V			
110V	110 V			
115V	115 V			
120V	120 V			
125V	125 V			
127V	127 V			
132V	132 V			
150V	150 V			
200V	200 V			
220V	220 V			
230V	230 V			
240V	240 V			
250V	250 V			
276V	276 V			
380V	380 V			
400V	400 V			
415V	415 V			
440V	440 V			
480V	480 V			
500V	500 V			

\* - standard

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