

Voltage AC Transducer

MT406



**Self
powered**

**CLASS
0.5**

- ***Sinusoidal AC voltage measurements***
- ***Voltage range measurements up to 500 V_{L-N}***
- ***Galvanic insulation between input and output***
- ***Accuracy class 0.5***
- ***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 100V output).



TECHNICAL DATA

MEASURING INPUT

Standard nominal input voltage (U_N)	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.)	$1,2 \times U_N$
Max. allowed value	$2 \times U_N$; 1 s, 10 times, 10 s interval
Nominal frequency (f_N)	50, 60 Hz
Measuring frequency range	$f_N \pm 10 \%$
Consumption	< 2 VA

MEASURING OUTPUT

Standard ranges I_{AN} :	0 ... 1 mA, 0 ... 5 mA, 0 ... 10 mA, 0 ... 20 mA
Burden voltage:	10 V
External resistance:	$R_{B \max} = 10 \text{ V} / I_{AN}$
Maximal output voltage (open circuit current output)	< 25 V
Maximal output current	$2 \times I_{AN}$
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:

Voltage	20 % ... 100 % $\times U_N$
Ambient temperature range	15 ... 30°C
Frequency	$f_N \pm 2 \text{ Hz}$
Output burden	$R_{B \max} / 2$

Additional error:

Temp influence:	max. $\pm 0.3 \%$ / 10 K
Frequency influence:	0,25 % / ($\Delta 5 \text{ Hz}$)
Burden influence:	0,1 % / ($\Delta R_{B \max} / 2$)

SAFETY:

Protection class:	acc. to EN 61010-1 II
Pollution degree	2
Installation category	CAT III 600V MT406 > 300Vac CAT III 300V MT406 \leq 300Vac
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)

COMPLIANCE WITH STANDARDS:

Standard EN	Description
61010-1:2001	Safety requirements for electrical equipment for measurement, control and laboratory use
60688:1995/A2:2001	Electrical measuring transducers for converting AC electrical variables into analogue and digital signals
61326-1:2006	EMC requirements for electrical for measurements, control and laboratory use- Part 1:General requirements
60529:1997/A1:2000	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

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	

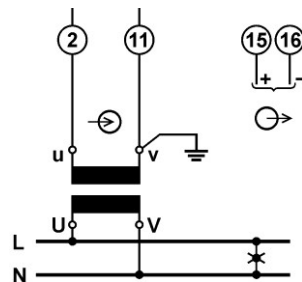
MECHANICAL DATA

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 ² solid wire ≤ 2.5 mm ² stranded wire
Weight	approx. 280 g

AMBIENT TESTS

Vibration withstand	7g, 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



ORDERING

For ordering it is necessary to declare type of the transducer (MT406), measuring range and output range.
Ordering code: MT406 - ab

MT406		Value	Code
a	Measuring range:	0 ... 57.74 V	1
		0 ... 63.5 V	2
		0 ... 69.3 V	3
		0 ... 100 V	4
		0 ... 110 V	5
		0 ... 115 V	6
		0 ... 120 V	7
		0 ... 127 V	8
		0 ... 220 V	9
		0 ... 230 V	A
		0 ... 240 V	B
		0 ... 250 V	C
		0 ... 380V	D
		0 ... 400V	E
0 ... 415V	F		
0 ... 440 V	G		
0 ... 500 V	H		
	Non – standard versions	0 ... X V	X
b	Output signal:	0 ... 1 mA	1
		0 ... 5 mA	2
		0 ... 10 mA	3
		0 ... 20 mA	4

Non - standard ratings are available on request.

ORDERING EXAMPLE

Measuring transducer MT406, with measuring range 0 ... 57.74V and output range 0 ... 10 mA:
MT406 - 13



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