



## AC VOLTAGE TRANSDUCER iMT406

- SINUSOIDAL AC VOLTAGE MEASUREMENTS.
- VOLTAGE RANGE MEASUREMENTS UP TO 500 VL-N.
- GALVANIC INSULATION BETWEEN INPUT AND OUTPUT.
- ACCURACY CLASS 0.5.
- SELF POWERED.
- HOUSING FOR DIN RAIL MOUNTING.

## PROPERTIES

- Sinusoidal AC voltage measurements.
- Voltage 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.

## APPLICATION

The iMT406 voltage transducer 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.

The iMT406 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
61010-1	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 ( $f_N$ )	50 / 60 Hz
Measuring frequency range	$f_N \pm 10\%$

### VOLTAGE MEASUREMENTS

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 x $U_N$
Max. allowed value	2 x $U_N$ ; 1 s, 10 times, 10 s interval
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	3 x $I_{AN}$
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	0 % ... 100 % x $I_N$
Ambient temperature range	15 ... 30 °C
Frequency	$f_N \pm 2\text{ Hz}$
Output burden	$R_{B\max} / 2$

### ADDITIONAL ERROR

Temp influence	max. $\pm 0.2\%$ / 10 K
Frequency influence	0.5 % / ( $\Delta 10\text{ Hz}$ )
Burden influence	0.1 % / ( $\Delta R_{B\max} / 2$ )

### Safety

	acc. to EN 61010-1
Protection class	II
Pollution degree	2
Installation category	CAT III 600V iMT406 > 300V <sub>AC</sub> CAT III 300V iMT406 ≤ 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	

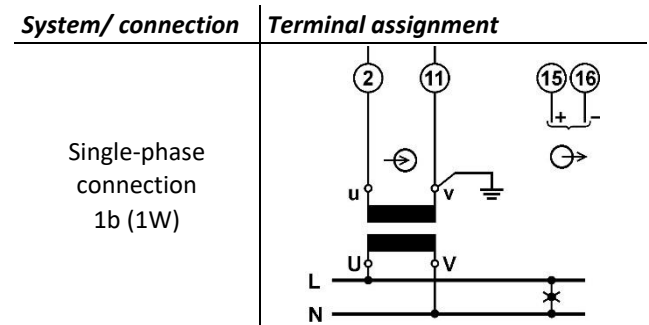
### Mechanical data

Dimensions (WxHxD)	45 × 75 × 105 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 
Analogue output		+ 
		- 

### DATA FOR ORDERING

When ordering iMT406, 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

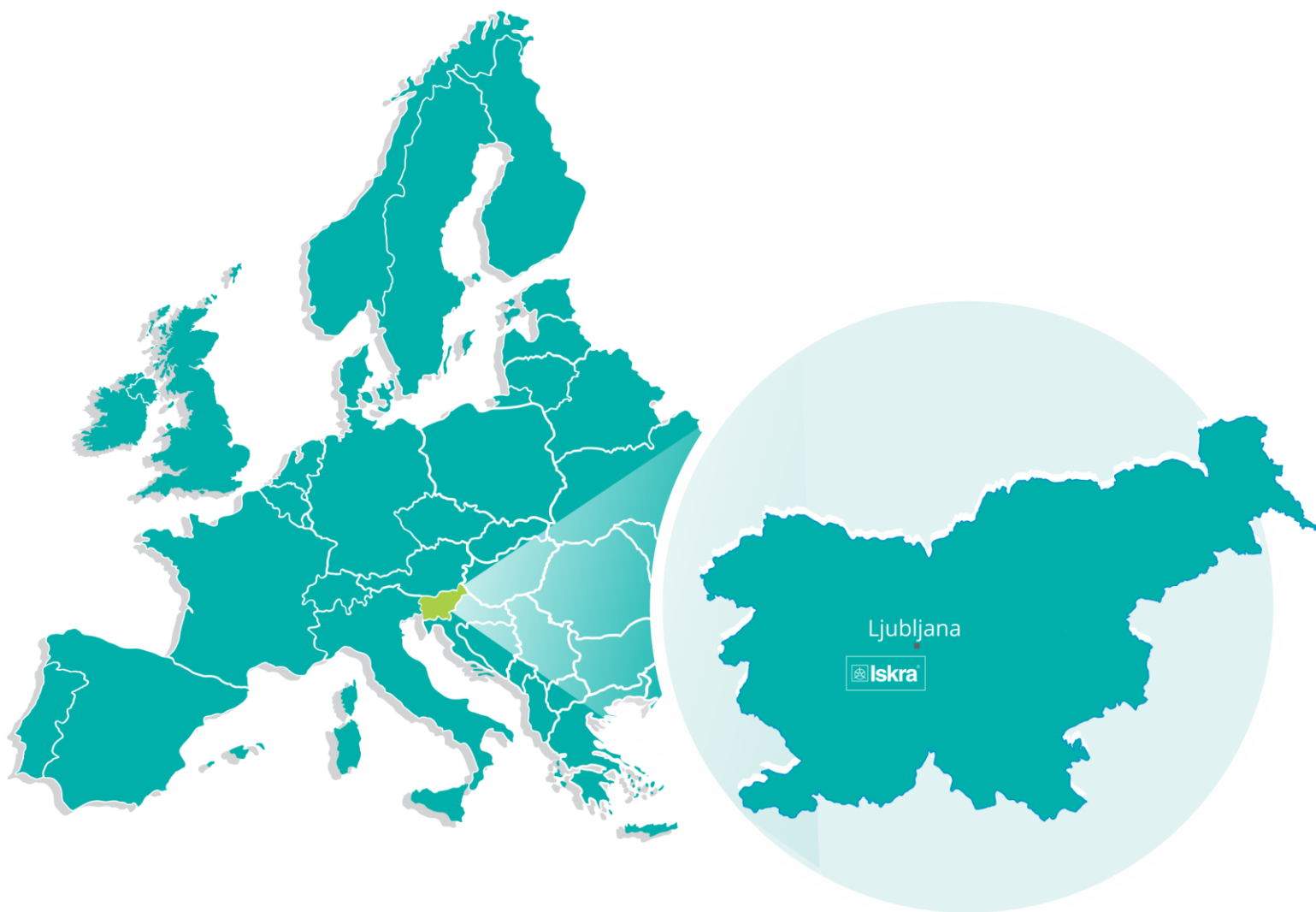
Example of ordering code for iMT406: Nominal voltage 57.74V; Output 1 mA; Nominal frequency 50Hz; Standard finish.

**iMT406 57V7 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.

Device Type	Nominal Voltage	Output	Nominal Frequency	Finish	
iMT406	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			



**Iskra, d.o.o.**  
**BU Ljubljana**

Stegne 21  
SI-1000, Ljubljana  
Phone: +386 1 513 10 00

**Iskra, d.o.o.**  
**BU Capacitors**

Vajdova ulica 71  
SI-8333, Semič  
Phone: +386 7 38 49 200

**Iskra, d.o.o.**  
**BU MIS**

Ljubljanska c. 24a  
SI-4000, Kranj  
Phone: +386 4 237 21 12

**Iskra, d.o.o.**  
**BU Batteries & Potentiometers**

Šentvid pri Stični 108  
SI-1296, Šentvid pri Stični  
Phone: +386 1 780 08 00

**Iskra, d.o.o.**  
**BU Electroplating**

Glinek 5  
SI-1291, Škofljica  
Phone: +386 1 366 80 50

**Iskra IP, d.o.o.**

Vajdova ulica 71  
SI-8333, Semič  
Phone: +386 7 384 94 54

**Iskra STIK, d.o.o.**

Ljubljanska cesta 24a  
SI-4000, Kranj  
Phone: +386 4 237 22 33

**Iskra Lotrič, d.o.o.**

Ljubljanska c. 24a  
SI-4000, Kranj  
Phone: +386 4 237 21 12

**Iskra ODM, d.o.o.**

Ljubljanska c. 24a  
SI-4000, Kranj  
Phone: +386 4 237 21 12

**Iskra Tela L, d.o.o.**

Omladinska 66  
78250, Laktaši  
Phone: +387 51 535 890

**Iskra Sistemi - M dooel**

UI, Dame Gruev br. 16/5 kat  
1000, Skopje  
Phone: +389 75 444 498

**Iskra Commerce, d.o.o.**

Hadži Nikole Živkoviča br. 2  
11000, Beograd  
Phone: +381 11 328 10 41

**Iskra Hong Kong Ltd.**

33 Canton Road, T.S.T.  
1705, China HK City  
Phone: +852 273 00 917

**ISKRA ELECTRONICS GmbH**

Südliche Münchner Str. 55  
82031 Grünwald  
Deutschland



**Iskra, d.o.o.**  
Stegne 21  
SI-1000 Ljubljana, Slovenia

Phone: +386 (0) 1 513 10 00  
[www.iskra.eu](http://www.iskra.eu)