MI408 Measuring transducer for AC current

FEATURES

- Measuring of AC current
- Low power consumption
- Accuracy class: 0.5
- Self powered
- Housing for DIN rail mounting



Picture 2: Measuring transducer for AC current MI408

TECHNICAL DATA

INPUT:

- Input current, I_N (meas. range end value): Measuring range limit values 0...1 A to 0...7.5 A
- Nominal frequency f_N: 50/60 Hz
- 45...65 Hz Frequency range:
 - Own consumption: < 2 VA
- Overload capacity: according to EN 60688: 1992

Measured quantity (I _N)	Number of applications	Duration of one application	Interval between two successive applications
1.2 x I _N		continuously	
20 x I _N	5	1 s	300 s

Table 2: Overload capacity

ANALOG OUTPUT:

- Current output, I_{OutN} (out. range end value): Output range values 0...5 mA, 0...10 mA or 0...20 mA
- Burden voltage: 15 V 1 6 3 7

•	External re	esistance:	$R_{Bmax}.[k\Omega] =$	$\frac{15 \text{ V}}{\text{I}_{\text{OutN}} [\text{mA}]}$
	-			

< 300 ms Response time: Residual ripple: <1 % p.p.

ACCURACY:

•	Reference value:	Input end value
,	Accuracy class:	0.5

Reference conditions:

•	Ambient temperature:	1530 °C
•	Input:	0100 % I _N
•	Connection:	
	low-voltage network:	via current transformer $P_T \ge 5 \text{ VA}$

high-voltage network:

via high-voltage current transformer $P_T \ge 5$ VA

POWER SUPPLY:

Power supply from measuring circuit.

APPLICATION

Measuring transducer MI408 converts sinusoidal AC current signal into proportional DC current signal. The analogue output signal is appropriate for regulation of analog and digital devices, computer inputs, processing and electroenergetic systems, etc.

LAYOUT AND MODE OF OPERATION

According to the block diagram (Picture 1), the transformer (A) serves for the galvanic separation between measuring input and signal output as well as adaptation of the input signal to the rectifier unit (B). In the low – pass filter (C) a signal proportional to the input level will be achieved.



Picture 1: Block diagram

STANDARD VERSIONS

The following transducer versions are available as standard versions (Table 1).

Input current (I _N)	Nominal frequency (f _N)	Output signal (0I _{OutN})	Maximal external resistance (R _{Bmax})
1.4		05 mA	3 kΩ
1 A 5 A	50/60 Hz	010 mA	1.5 kΩ
JA		020 mA	750 Ω

Table 1: Standard versions of MI406

Transducers are self - powered, and are mounted on standard rail 35 x 15 mm (according to DIN EN 50022).



HOUSING:

- Material of housing: PC/ABS
- incombustibility complies with UL 94 V-0

•	Enclosure protection:	IP 50
		(IP 20 for connection terminals)
		according to EN 60529: 1989
•	Mounting:	For rail mounting, 35 x 15 mm
		according to DIN EN 50022: 1978
•	Weight:	< 250 g

CONECTION TERMINALS:

• Permissible cross section of the connection leads:

 \leq 4.0 mm² single wire 2 x 2.5 mm² fine wire

REGULATIONS:

ata	Protection:	Protection class II
		300 V rms , installation category III
		pollution degree 2
•	Test voltage:	3.7 kV rms
	•	according to EN 61010-1 : 1990

ENVIRONMENTAL CONDITIONS:

•	Climatic rating:	Climate class 3 acc. to
		EN 60688: 1992
•	Operating temperature	-10 to +55 °C
•	Storage temperature	-40 to +70 °C
•	Annual mean relative humidity:	≤ 75% r.h.

EU DIRECTIVES CORRESPONDING FOR CE MARKING

Low voltage directive 73/23/EEC:

EN 61010-1: 1993 and EN 61010-A3: 1995

Safety requirements for electrical equipment for measurement, control, and laboratory use, Part 1: General requirements

EMC directive 89/336/EEC:

EN 61326-1: 1997

Electrical equipment for measurement, control, and laboratory use

EMC requirements, Part 1: General requirements

CONNECTION

Transducer's preferential use is connection into low-voltage network via the current transformer.

To the high-voltage network it can be connected via high-voltage current transformer (Picture 3).

The connection terminals marking can be found on the frontal housing plate.



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Picture 4: Example of input – output characteristic

SPECIFICATION AND ORDERING INFORMATION

INPUT – OUTPUT CHARACTERISTIC

Example of input - output characteristic for measuring

For ordering it is necessary to declare type of the transducer (MI408), measuring range and output range.

A ⊕

Ordering code: MI408 b A; c mA

transducer MI408 1 A; 20 mA:

0.5

G+ mA 20

16

12

8

Δ

MI408		Value	Code
	Measuring range:	01 A	1
b	weasuring range.	05 A	5
	Non – standard versions	0X A	Х
с	Output signal:	05 mA	5
		010 mA	10
		020 mA	20

Table 3: Ordering information

Non - standard ratings are available on request.

ORDERING EXAMPLE

Measuring transducer MI408, with measuring range 0...1 A and output range 0...10 mA:

MI408 1 A; 10 mA

DIMENSIONAL DRAWING



Picture 5: Dimensional drawing (all dimensions are in mm)

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