

METRAFLEX | 6001XBL, 6003XBL

Flexible AC Current Sensors

for Energy and Power Disturbance Analyzers

3-349-890-03
1/2.16

- Wide range of applications, 3 measuring ranges 60 A/600 A/6000 A AC and large bandwidth 10 Hz ... 20 kHz for harmonic analysis
- Simultaneous measurement in all 3 phases (METRAFLEX 6003XBL)
- Precise measurements even with low currents, due to wide dynamic range and high sensor sensitivity
- Low conductor position influence and minimum stray field influence
- Easy to operate in restricted space thanks to small sensor cross-section of 9.9 mm and slim end cap of 13.6 mm
- Safe handling even with protection gloves; opening of sensor and measuring range setting in one-hand operation
- Extremely long battery life of up to 2,000 hours, (METRAFLEX 6003XBL up to 1,000 hours)
- External power supply for long-term measurements METRAFLEX 6001XBL/6003XBL:
 - MAVOWATT 230/240/270/270-400: power supply via MAVOWATT, no further accessory required
 - MAVOWATT 20/30/40/70 incl. DC/DC-Transformer ISOFLEX-MHXL
- Current sensor with protection type IP65, measuring amplifier with IP40
- High level of safety for the user, measurement category 1000 V@CAT III, 600 V @ CAT IV and unlimited overload capacity, rated for continuous use



Application

The METRAFLEX are AC current probes utilising Rogowski principle. They can be used to measure AC current up to 6000 A by being connected to an appropriate measuring device (power analyser).

The flexible probe allows current measurements on conductors that are hard to reach. To this end, the flexible current transformers can be placed around one or several conductors of any type and design (insulated cable, busbars, pipes).

Internal batteries allow for an independent operation of the measuring amplifier.

Current sensor / Application	MAVOWATT 230, 240, 270 MAVOSYS 10	MAVOWATT 20, 30, 40, 70 MAVOSYS 10
METRAFLEX 3001XBL	•	•
METRAFLEX 3003XBL	•	•

METRAFLEX 6001XBL and 6003XBL

The flexible current sensors can be used for long-term measurements by means of external power supply.

For MAVOWATT 230/240/270/270-400 instruments, the current sensors are supplied with voltage directly from the instrument. No external power supply is required.

METRAFLEX 6003XBL

The 3 current sensors of the METRAFLEX 6003XBL are designed for AC measurements in any desired 3-phase system.

Technical Data

Feature	METRAFLEX 6001XBL METRAFLEX 6003XBL		
	60 A	600 A	6000 A
Measuring ranges	60 A	600 A	6000 A
Scaling factor	40	400	4000
Output sensitivity	25 mV/A	2,5 mV/A	0,25 mV/A
Accuracy (45 ... 65 Hz)	±1 % of rdg. ±0.1 A ¹⁾		±1 % of rdg. ±1 A ¹⁾
Noise	8 mV eff.	2 mV eff.	
Output Connector	4 pin Hypertronics plug		

¹⁾ under reference conditions

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Influencing Quantities

Output load	≥ 100 kΩ for specified accuracy
Frequency range	10 Hz bis 20 kHz (–10% attenuation)
Phase angle error	< ± 1° (45 ... 65 Hz)
Position sensitivity	±2% of reading
External fields	±0.2% of measuring range at a distance of > 200 mm from sensor
Temperature coefficient	±0.1% of reading/°K

Reference Conditions

Ambient temperature	+15 °C ... +25 °C
Relative humidity	20% ... 75%
Operating voltage	3 V ±0.5 V
Frequency of measured quantity	45 Hz ... 65 Hz
Waveshape of measured quantity	Sine
Power-frequency magnetic field	< 30 A/m
Conductor position	Conductor vertical in relation to sensor level and at the geometrical center
Measuring loop shape	circular
Output load	100 kΩ

Power Supply of Measuring Amplifier

Power supply	two AA MN1500 LR6 alkaline batteries or external supply (2...3 V DC/max.100 mA)
Battery life	METRAFLEX 6001XBL: approx. 2,000 hrs. METRAFLEX 6003XBL: approx. 1,000 hours
External power supply	with connector cable, length 0.5 m with 2 mm safety plug
Connector*	Barrel plug socket 5.5/2.1 mm minus at center pin

Display Functions

Battery status	LED (orange) „LOW BATTERY“ lights up: – battery voltage too low, or – external power supply
Overcurrent	LED (red) „OVERLOAD“ lights up

Mechanical Design

Measuring Amplifier

Dimensions	110 (H) x 65 (W) x 23 (D) mm
Output measuring signal	1 m coaxial cable connected with 4 pin Hypertronics plug
Material	ARNITE T06-200SNF double insulation, UL94 V-0
Protection	IP40 per DIN VDE 0470 Part 1/EN 60529

Flexible Rogowski Current Sensor (Probe)

Probe length	61 cm (24 inches), 91 cm (36 inches) or 122 cm (48 inches), double insulation
Probe diameter	9.9 mm, slim end cap of 13.6 mm
Connector cable	between probe and housing, length 2 m
Material	Probe: Alcryn 2070 NC Lock: LATI LATENE 7H2W V0
Protection	IP65 per DIN VDE 0470 Part 1/EN 60529

Ambient Conditions

Operating temperature	–20 °C to +65 °C (–4 °F to +149 °F)
Storage temperature	–40 °C to +75 °C (–40 °F to +167 °F)
Humidity	15% to 85%, no condensation allowed

Electrical Safety

Safety class	II, double insulation
Safety standards	EN 61010-1:2001 EN 61010-031:2002 EN 61010-2-032:2002
Measuring category	1000 V _{RMS} CAT III, 600 V _{RMS} CAT IV
Voltage between output and ground	max. 30 V
Pollution degree	2 (probe and measuring amplifier)

Electromagnetic Compatibility EMC

Interference emission	EN 61326-2:2006 class B
Interference immunity	EN 61326-2:2006

Applicable Regulations and Standards

DIN EN 61010-2-032 (VDE 0411-2-032)	Safety requirements for electrical equipment for measurement, control and laboratory use – Particular requirements for hand-held and hand-operated current sensors
EN 60529 VDE 0470 Part 1	Test instruments and test procedures – degrees of protection provided by enclosures (IP code)

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METRAFLEX 6001XBL



METRAFLEX 6003XBL



Order Information

Type	Description	Article Number
METRAFLEX 6001XBL/24	Flexible AC Current Probe 60/600/6000A sensor length 61 cm (24"), battery/external supply, 1.5 V output on Hypertronics plug, Operating Instructions	Z461A
METRAFLEX 6001XBL/36	Flexible AC Current Probe 60/600/6000A sensor length 91 cm (36"), battery/external supply, 1.5 V output on Hypertronics plug, Operating Instructions	Z461B
METRAFLEX 6001XBL/48	Flexible AC Current Probe 60/600/6000A sensor length 122 cm (48"), battery/external supply, 1.5 V output on Hypertronics plug, Operating Instructions	Z461C
METRAFLEX 6003XBL/24	Flexible AC Current Probe 60/600/6000A sensor length 61 cm (24"), battery/external supply, 1.5 V output on Hypertronics plug, Operating Instructions	Z463A
METRAFLEX 6003XBL/36	Flexible AC Current Probe 60/600/6000A sensor length 91 cm (36"), battery/external supply, 1.5 V output on Hypertronics plug, Operating Instructions	Z463B
METRAFLEX 6003XBL/48	Flexible AC Current Probe 60/600/6000A sensor length 122 cm (48") battery/external supply, 1.5 V output on Hypertronics plug, Operating Instructions	Z463C

All METRAFLEX are supplied with batteries.

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Edited in Germany • Subject to change without notice • A pdf version is available on the internet

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