

Type MTR-2, MTR-2F

**Multi-transducer**

4921220046D

- **Up to 4 analogue outputs**
- **RS485 serial communication**
- **Class 0.5 accuracy**
- **Wide range aux. supply**
- **Measures more than 50 parameters**
- **Response time <50ms type MTR-2F**

**Application**

The MTR-2 and MTR-2F is a configurable multi-output transducer for measurement of values on a three-phase network.

The MTR-2 features up to 4 analogue outputs, serial communication. The standard versions are the following:

Type	Analogue outputs	Serial output*	Accuracy class
MTR-2-015	-	X	0.5
MTR-2-315	3	X	0.5
MTR-2-415	4	X	0.5
MTR-2F-215	2	X	0.5

\*: RS485 Modbus.

**Measurements**

The following parameters are measured by the MTR

- AC voltage
- AC current
- Active/reactive/apparent power
- $\phi$ , power factor
- Frequency
- THD
- Dynamic demands
- Maximum demands

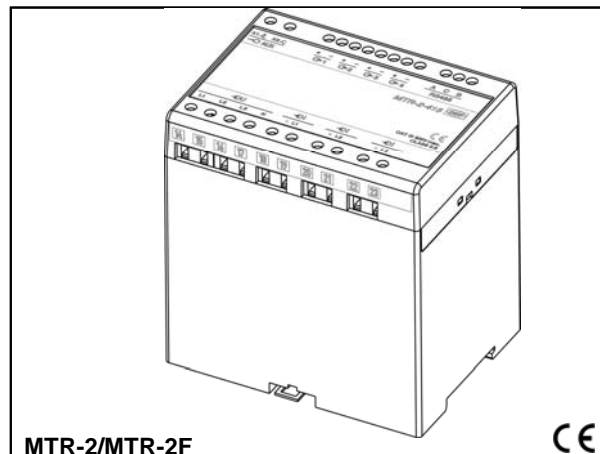
**Configurable parameters**

By means of the free utility software, the following parameters of the MTR can be programmed:

- Analogue outputs (which measurements are presented on the different outputs)
- Curve form of analogue outputs (linear or with up to five cross points)

By means of the utility software, the analogue outputs can be configured to:

- All between -20...20mA, burden voltage 15V  
Example: 0...1mA or 4...12...20mA
- All between -10...10V, burden current 20mA  
Example: 0...1V or 0...10V



MTR-2/MTR-2F

**General output characteristics**

Response time/ripple

MTR-2-315

MTR-2-415 < 300ms

Ripple: < 1% p.p.

MTR-2F-215 < 50ms

Ripple < 2% p.p.

**Accuracy (according to EN 60688)**

- Current: 0.5
- RMS voltage: 1.0
- Phase to neutral voltage and average phase to neutral voltage: 0.5
- Phase to phase voltage and average phase to phase voltage: 1.0
- Frequency: 0.2
- Active, reactive and apparent power: 0.5
- Power factor: 0.2
- Phase angle: 0.2
- Dynamic demand values: 1.0
- Maximum demand values: 1.0

**Reference conditions:**

Ambient temperature: 15...30°C

Input: 0...100% I/Un

Active/reactive factor:  $\cos\phi/\sin\phi = 1$

Waveform: Sinusoidal, form factor 1.1107

**Measuring input**

Voltage: 50 to 500V AC phase to neutral  
87 to 866V AC phase to phase

Current: 5A

Frequency: 50/60Hz (45...65Hz)

Overload tolerance (according to EN 60688):

Value	No. of instances	Duration	Interval
Current			
2 x In	-	Continuous	-
20 x In	5	1s	300s
Voltage			
1.5 x Un	-	Continuous	-
2 x Un	10	1s	100s

Type MTR-2/MTR-2F

Power supply

Rated voltage:	19...300V DC 40...276V AC
Frequency:	40...70Hz
Supply burden:	< 3VA

Communication

Message format:	Modbus RTU
Data rate:	1,200-115,200bits/s

RS485:

Connection:	Multi-drop
Signal levels:	RS485
Maximum cable length:	1,000m
Connection:	Screw terminals
Message format:	Modbus RTU
Data rate:	1,200-115,200bits/s

Ambient temperature

Ambient temperature:	-10...55°C (nominal) -25...70°C (operating) -40...70°C (storage)
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Temperature coefficient: Max. ±0.2% of full scale per 10°C

Housing

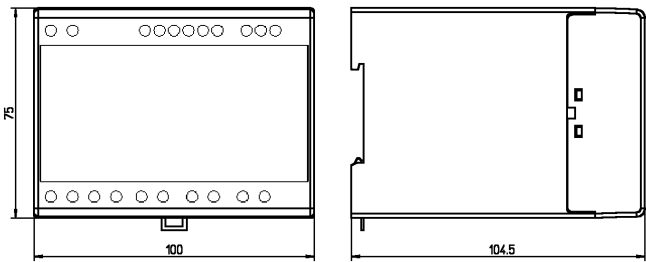
Mounting:	DIN-rail
Enclosure:	IP50
Weight:	600g
Connection:	< 4.0mm <sup>2</sup> single core 2 x 2.5mm <sup>2</sup> multi core

General compliance with specifications

Performance:	EN/IEC 60688, according to specification
Safety:	EN/IEC 60688 EN/IEC 61010-1 EN/IEC 60695-2-2, flammability
EMC:	Generic standards: EN/IEC 61000-6-1 EN/IEC 61000-6-2 EN/IEC 61000-6-4

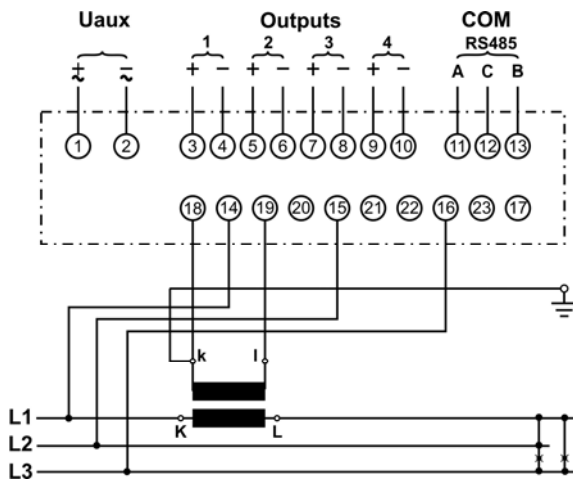
Plus basic EN/IEC standards referred to from the generic standards above.

Climate:	IEC 60068-2-1, according to specification IEC 60068-2-2, according to specification IEC 60068-2-2, 2 x 24h
Vibration:	IEC 60068-2-6, ±1mm/0.7g
Shock:	IEC 60068-2-27, 50g
Galvanic separation:	500V between outputs 4kV between inputs and outputs 4kV between inputs and aux. supply 4kV between aux. supply and outputs

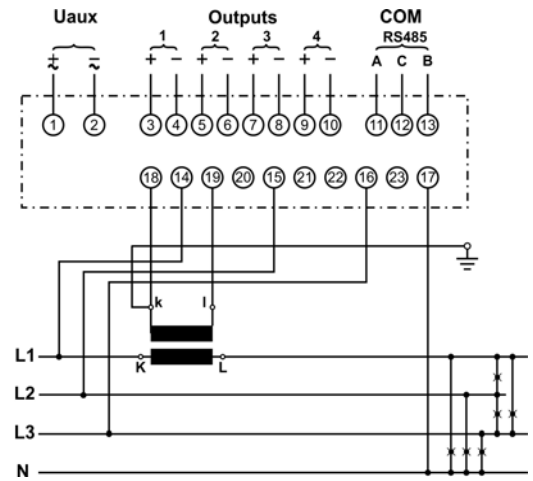


All dimensions in mm

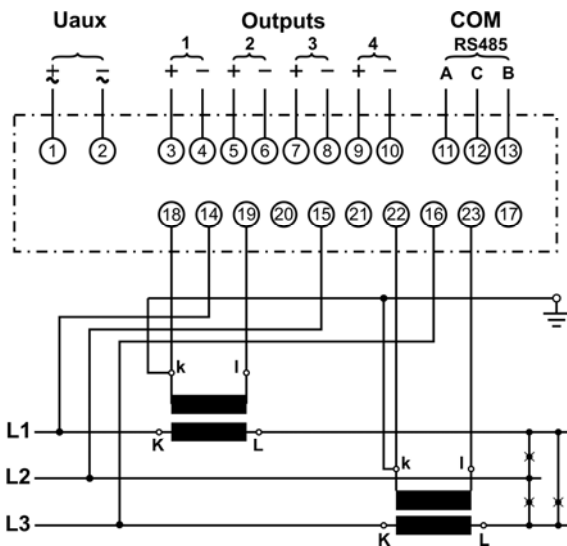
## Connection options



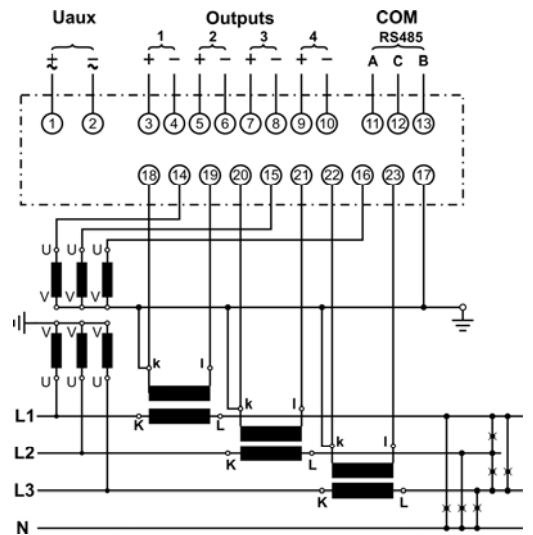
Three-phase three-wire balanced (1W3/3b)



Three-phase four-wire balanced (1W4/4b)



Three-phase three-wire unbalanced (2W3/3u)



Three-phase four-wire unbalanced (3W4/4u)

### Note:

If the transducer is connected as a 3W3 coupling, e.g. when used on a three-phase net without neutral, the connection mode 3W4 should be selected in the utility software.

Type MTR-2/MTR-2F

### Order specifications

To order a transducer, quote the type.

*Examples:*

Transducer without output:  
MTR-2-015

Transducer with 3 outputs:  
MTR-2-315

Transducer with 4 outputs:  
MTR-2-415

Transducer with 2 outputs and fast response:  
MTR-2F-215

### For configuration/communication:

USB – RS485 signal converter



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