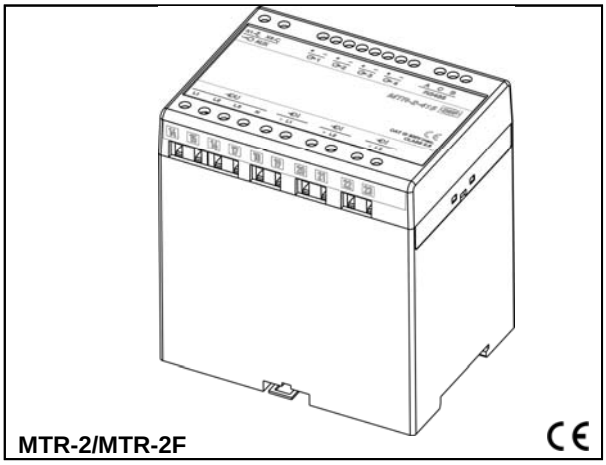
DEIF A/S

Type MTR-2, MTR-2F

Multi-transducer

4921220046F

- ***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***



MTR-2/MTR-2F

Application

The MTR-2/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
- φ, 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...20 mA, burden voltage 15 V
  Example: 0...1 mA or 4...12...20 mA
- All between -10...10 V, burden current 20 mA
  Example: 0...1 V or 0...10 V

General output characteristics

Response time/ripple
MTR-2-315
MTR-2-415 < 300 ms
Ripple: < 1% p.p.

MTR-2F-215 < 50 ms
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: cosφ/sinφ = 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: 5 A

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

Overload tolerance (according to EN 60688):

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

Power supply

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

Communication

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

RS485:

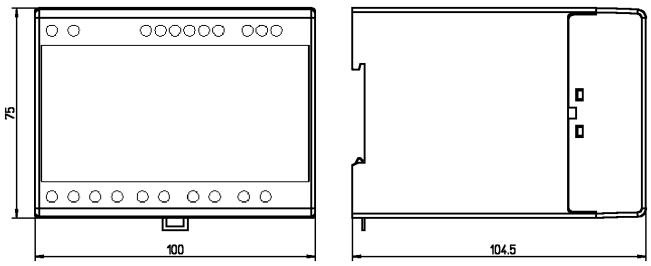
Connection:	Multi-drop
Signal levels:	RS485
Cable type	Belden 3105A or equivalent (twisted pair)
Maximum cable length:	up to 1000 m
Connection:	Screw terminals
Message format:	Modbus RTU
Data rate:	1,200-115,200 bits/s

Ambient temperature

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

Housing

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



All dimensions in mm

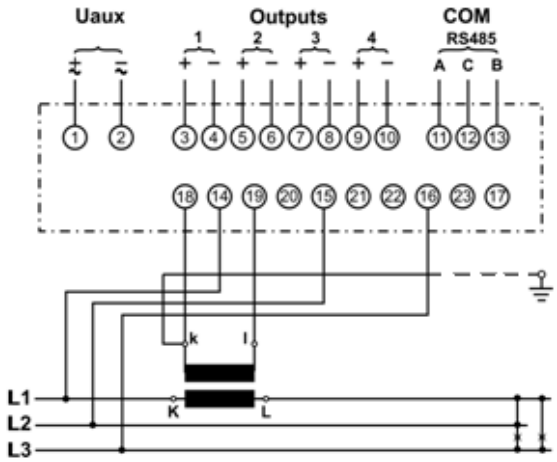
General compliance with specifications

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

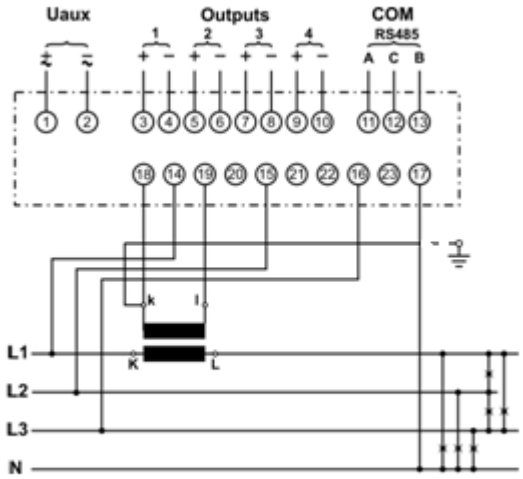
Plus basic EN/IEC standards referred to from the generic standards above.

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

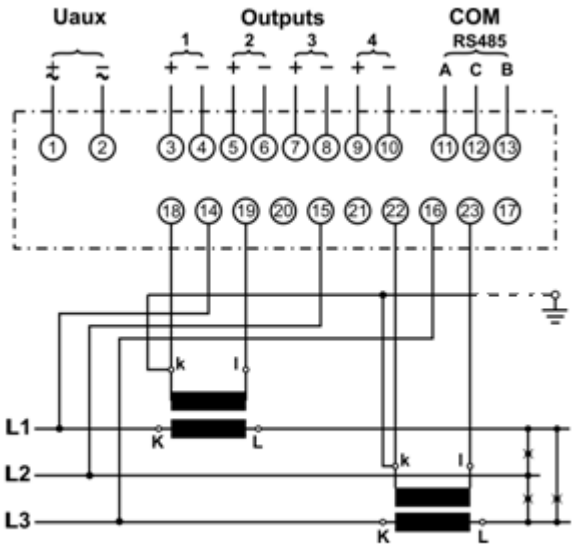
Connection options



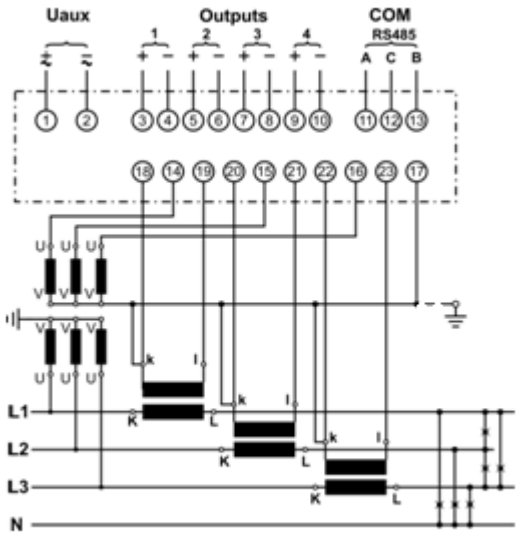
Three-phase three-wire balanced (1W3/3b)



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

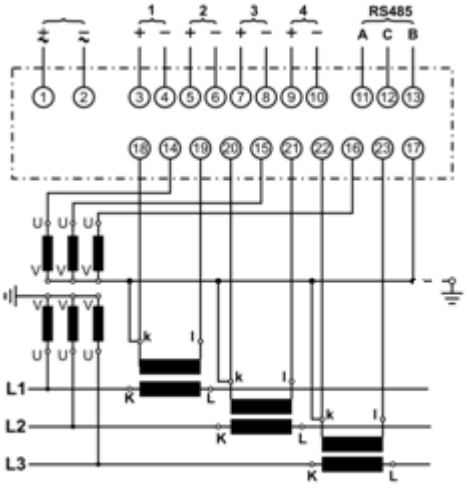


Three-phase three-wire unbalanced (2W3/3u)



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

Note:
If the transducer is connected as a 3-wire coupling, e.g. when used on a three-phase net without neutral, the connection mode 3b (balanced = 1W3) or 3u (unbalanced = 3W3) should be selected in the utility software.



Three-phase 3-wire unbalanced (3W3)

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

Due to our continuous development we reserve the right to supply equipment which may vary from the described.

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