

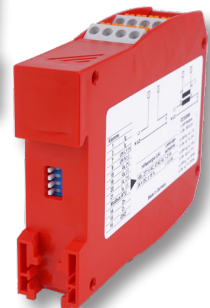
WE MAKE YOUR VALUES VISIBLE.



MEASURING TRANSDUCER

with digital output

via Modbus RTU / RS 485





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Measuring transducer with digital output via Modbus RTU / RS 485



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MTI

Measuring transducer for sinusoidal and non-sinusoidal alternating current with digital output via Modbus-RTU / RS 485



Characteristics / uses

- Measuring output as double output, switchable: 0(4) ... 20 mA and 0(2) ... 10 V
- With auxiliary power supply
- Housing for 35 mm nach DIN EN 60 715AC rail
- Measuring output: Unipolar and live-zero output variables
- AC or DC auxiliary energy
- Measuring range and outputs easily switchable via dip switch

Application:

Measuring transducer for the conversion of sinusoidal and non-sinusoidal alternating (distorted) current. As output signal is a load independent DC current signal and a load independent voltage signal, which is proportional to the measured value of the input variable. Both outputs are switchable between 0 ... 20 mA and 4 ... 20 mA or 0 ... 10 V und 2 ... 10 V.

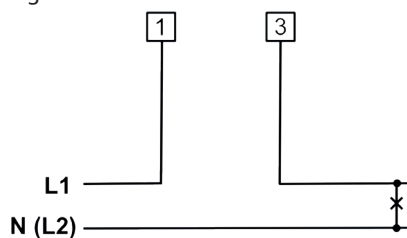
Technical parameters:

Measuring input		Accuracy	
Nominal frequency f _N	50 Hz or 60 Hz	Basic accuracy	± 0,5 % at 0 - 120 % of the final value I _N
Nominal input current I _N	0 ... 1 A or 0 ... 5 A switchable Higher currents on request	Temperature range	-20 °C to +70 °C
		Temperature influence	< 0,05 % at 10 K
Measuring range	0 ... 1,2 A or 0 ... 6 A	Humidity	10 -70 % rel. humidity, non condensing
Burden	0,01 Ω	Auxiliary energy	
Overload capacity	2 · I _{Nr} permanent 20 · I _{Nr} 1 sec.	AC voltage	100 ... 277 V AC, 47 - 63 Hz condensing
Measuring output 0(4) ... 20 mA		DC voltage	24 V DC, ± 15 %
Load-independent DC (0 ... 1,2 A or 0 ... 6 A)	0 ... 24 mA / 750 Ω Burden or live zero 4 ...23,2 mA / 750 Ω Burden	Auxiliary voltage influence	no
		Internal consumption	< 1,4 W @ 24 V DC < 2 VA @ 230 V AC
Load-independent DC at I _N max.	20 mA / 750 Ω Burden	Waveform	Non-sinusoidal, Crestfactor < 4
Open-circuit voltage	max. 22 V	Safety	
Current limitation	max. 25 mA on overload	Test voltage	4 kV between input, output, auxiliary voltage 230 V AC or 1 kV for auxiliary voltage 24 V DC
Measuring output 0(2) ... 10 V			
Imprinted DC voltage (0 ... 1,2 A or 0 ... 6 A)	0 ... 12 V / ≥ 10 kΩ Burden or live zero 2 ... 11,6 V / ≥ 10 kΩ Burden	Weight	ca. 110 g
		General technical data	
Imprinted DC voltage at I _N max.	10 V / ≥ 10 kΩ Burden	Protection class	2
Voltage limitation	12,5 V in case of overload	Protection type	IP 20
Residual ripple	< 10 mVpp	Measuring category	CAT III
Setting time	< 200 ms	Switchable via dip switch	
Frequency influence	< 0,05 % at 10 Hz Frequency change	1: Dip active / inactive	OFF = Setting acc. to Modbus
			ON = Setting acc. to DIP 2, 3, 4
External field influence	no (400 A/m)	2: Measuring range	OFF = 1 A
			ON = 5 A
Digital interface		3: Measuring output voltage	OFF = 0 ... 10 V
Protocol	Modbus RTU		ON = 2 ... 10 V
Electrical	RS 485	4: Measuring output current	OFF = 0 ... 20 mA
Line length	max. 30 m, shielded from 3 m (non-interbuilding)		ON = 4 ... 20 mA

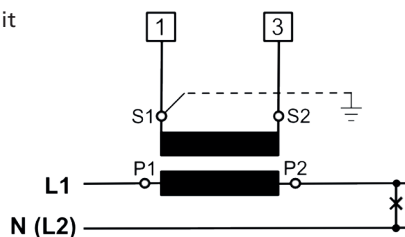
MTI – Measuring transducer for sinusoidal and non-sinusoidal alternating current with digital output via Modbus RTU / RS 485

Features	Measurement output / adjusted					
	Primary current (A)	0 ... 10 V and 0 ... 20 mA	0 ... 10 V and 4 ... 20 mA	2 ... 10 V and 0 ... 20 mA	2 ... 10 V and 4 ... 20 mA	Setting via 4-pole DIP switch
1. Auxiliary voltage U_H						
230 V	1 A	100225101	100225102	100225103	100225104	100225100
230 V	5 A	100225105	100225106	100225107	100225108	
24 V	1 A	100225201	100225202	100225203	100225204	100225200
24 V	5 A	100225205	100225206	100225207	100225208	

Direct switching



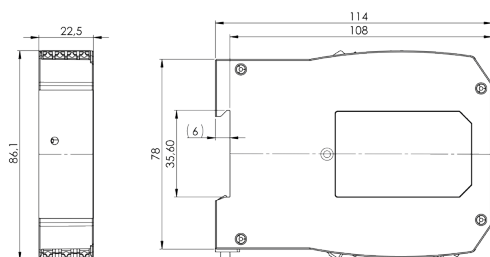
Transducer circuit



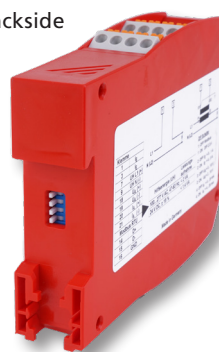
Terminal assignment

Terminal	
1	I_E
3	I_E
7	UH L1 (+)
9	UH N (-)
18	U_A (+)
19	U_A (-)
20	I_A (+)
21	I_A (-)
Modbus RTU	
14	D+
15	D-
16	GND

Dimension drawing



Dip switch backside



Dip switch





MTU

Measuring transducer for sinusoidal and non-sinusoidal alternating voltage with digital output via Modbus-RTU / RS 485



Characteristics / uses

- Measuring output as double output, switchable: 0(4) ... 20 mA and 0(2) ... 10 V
- With auxillary power supply
- Housing for 35 mm nach DIN EN 60 715AC rail
- Measuring output: Unipolar and live-zero output variables
- AC or DC auxillary energy
- Measuring range and outputs easily switchable via dip switch

Application:

Measuring transducer for the conversion of sinusoidal and non-sinusoidal alternating (distorted). As output signal is a load independent DC current signal and a load-independent voltage signal, which is proportional to the measured value of the input variable. Both outputs are switchable between 0 ... 20 mA and 4 ... 20 mA or 0 ... 10 V und 2 ... 10 V.

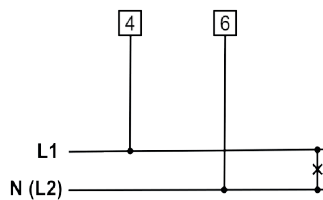
Technical parameters:

Measuring input		Accuracy	
Nominal frequency f _N	50 Hz or 60 Hz	Basic accuracy	± 0,5 % at 0 - 120 % of the final value U _N
Nominal input current U _N	0 ... 250 V or 0 ... 500 V switchable	Temperature range	-20 °C to +70 °C
		Temperature influence	< 0,05 % at 10 K
Measuring range	0 ... 300 V or 0 ... 600 V	Humidity	10 -70 % rel. humidity, non condensing
Overload capacity	4 · U _N , permanent	Auxiliary energy	
Internal resistance	4 MΩ	AC voltage	100 ... 277 V AC, 47 - 63 Hz condensing
Measuring output 0(4) ... 20 mA		DC voltage	24 V DC, ± 15 %
Load-independent DC (0 ... 300 V or 0 ... 600 V)	0 ... 24 mA / 750 Ω Burden or live-zero 4 ...23,2 mA / 750 Ω Burden	Auxiliary voltage influence	no
		Internal consumption	< 1,4 W @ 24 V DC < 2 VA @ 230 V AC
Load-independent DC at U _N max.	20 mA / 750 Ω Burden	Waveform	Non-sinusoidal, Crestfactor < 4
Open-circuit voltage	max. 22 V	Safety	
Current limitation	max. 25 mA on overload	Test voltage	4 kV between input, output, auxiliary voltage 230 V AC or 1 kV for auxiliary voltage 24 V DC
Measuring output 0(2) ... 10 V			
Imprinted DC voltage (0 ... 300 V or 0 ... 600 V)	0 ... 12 V / ≥ 10 kΩ Burden or live-zero 2 ... 11,6 V / ≥ 10 kΩ Burden	Weight	ca. 115 g
		General technical data	
Imprinted DC voltage at U _N max.	10 V / ≥ 10 kΩ Burden	Protection class	2
Voltage limitation	12,5 V on overload	Protection type	IP 20
Residual ripple	< 10 mVpp	Measuring category	CAT III
Setting time	< 200 ms	Switchable via dip switch	
Frequency influence	< 0,05 % at 10 Hz Frequency change	1: Dip active / inactive	OFF = Setting acc. to Modbus ON = Setting acc. to DIP 2, 3, 4
External field influence	no (400 A/m)	2: Measuring range	OFF = 250 V ON = 500 V
Digital interface		3: Measuring output voltage	OFF = 0 ... 10 V
Protocol	Modbus RTU		ON = 2 ... 10 V
Electrical	RS 485	4: Measuring output current	OFF = 0 ... 20 mA
Line length	max. 30 m, shielded from 3 m (non-interbuilding)		ON = 4 ... 20 mA

MTU – Measuring transducer for sinusoidal and non-sinusoidal alternating voltage with digital output via Modbus RTU / RS 485

Features	Measurement output / adjusted					
	Nominal input voltage (V)	0 ... 10 V and 0 ... 20 mA	0 ... 10 V and 4 ... 20 mA	2 ... 10 V and 0 ... 20 mA	2 ... 10 V and 4 ... 20 mA	Setting via 4-pole DIP switch
1. Auxiliary voltage U_H						
230 V	250 V	100225301	100225302	100225303	100225304	100225300
230 V	500 V	100225305	100225306	100225307	100225308	
24 V	250 V	100225401	100225402	100225403	100225404	100225400
24 V	500 V	100225405	100225406	100225407	100225408	

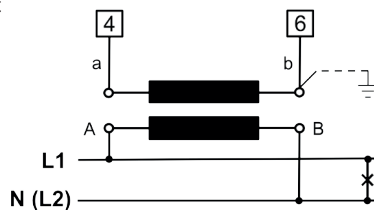
Direct switching



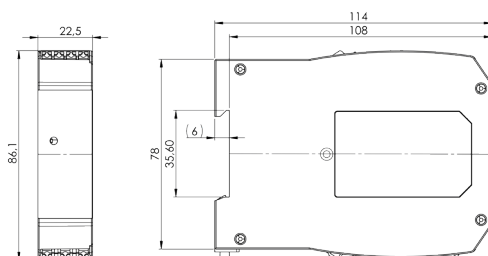
Terminal assignment

Terminal	
4	U_E
6	U_E
7	UH L1 (+)
9	UH N (-)
18	U_A (+)
19	U_A (-)
20	I_A (+)
21	I_A (-)
Modbus RTU	
14	D+
15	D-
16	GND

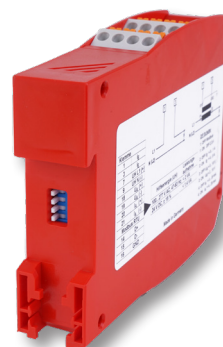
Transducer circuit



Dimension drawing



Dip switch backside



Dip switch



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