



Measuring transducer for current and voltage

True RMS

Type:
leff-MU / Ueff-MU



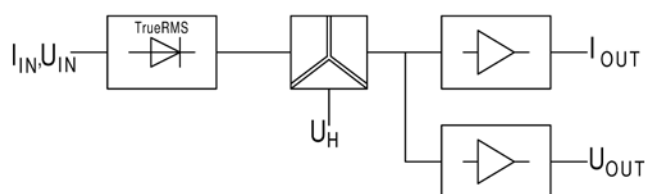
Application

The measuring transducers leff-MU and Ueff-MU are used for the transformation and isolation of a current or a voltage of arbitrary waveform into an impressed direct current and direct voltage signal. The calibrated double outputs are switchable between 0-20 mA and 0-10 V or 4-20 mA and 2-10 V.



Function

The measurand is transmitted to the rms rectifier via an input protective circuit and a filter. Crest factors (ratio between peak value and rms value) up to a value of 4 may be processed without problems. The direct voltage thus generated is galvanically isolated from the output by an optocoupler. A downstream amplifier effectuates the direct current and direct voltage impression. Both outputs are no-load proof and short-circuit proof. Connecting the two outputs is not permissible. An auxiliary voltage is required.



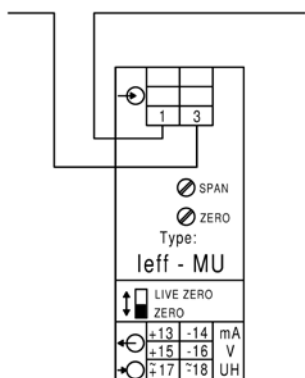
Types and variants

Input	leff-MU a value from 0-1 mA to 0-5 A Ueff-MU a value from 0-60 mV to 0-600 V
Output	0-20 mA and 0-10 V as well as 4-20 mA and 2-10 V, switchable on front side
Surcharges	Input directly up to 10 A for type leff-MU Sub-range Frequency range DC / 40-1000 Hz Response time 70 ms Auxiliary voltage other than 230 V AC: 24 V DC 6-30 V AC + DC 36-265 V AC + DC 110 V AC
Frequency module	Type FM (frequency output 0-5 Hz up to 0-10 kHz) (Description page 10)
Relay module	For limit monitoring type GWM (Description page 11)

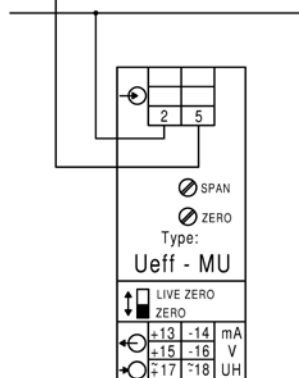


Connection

Strommessung (TrueRMS)
current measuring (TrueRMS)



Spannungsmessung (TrueRMS)
voltage measuring (TrueRMS)



Technical data

Input	Input variables	direct and alternating current of arbitrary waveform (True RMS)
	Rated values	<ul style="list-style-type: none"> ● a value from 0-1 mA to 0-5 A, voltage drop 60 mV ● a value from 0-60 mV to 0-600 V, Ri = 100 kΩ to 1 V, > 1 V 100 kΩ /V, however max. 2 MΩ
	Rated frequency	DC / 40-200 Hz
	Option	● DC / 40-1000 Hz (other values on request)
	Overload permanent	current: 1,2-fold voltage: 5-fold / max. 830 V
	High surge load	current: 20-fold, 1 s
Output	Output variables	double output
	Rated values	0-20 mA / 500 Ω load and 0-10 V / max. load 10 mA as well as 4-20 mA / 500 Ω load and 2-10 V / max. load 10 mA switchable on front side
Transfer behavior	Accuracy	± 0,5 %
	Crest factor	4 with 0,5 % error
	Frequency influence	< 0,5 % with DC / 40-200 Hz
	Temperature range	-15 °C to +20 °C to +30 °C to +55 °C
	Temperature influence	< 0,2 % at 10 K
	Auxiliary voltage influence	no
	Load influence	no
	External magnetic field influence	no (400 A/m)
	Residual ripple	< 30 mVss
	Response time	< 300 ms
	Open circuit voltage	max. 24 V
	Current limiting	max. 2-fold in case of overload
	Test voltage	≤ 500 V: 4 kV between input, output, auxiliary voltage > 500 V: 5,2 kV between input and output 4 kV input / output to auxiliary voltage
	Auxiliary voltage	
Options		<ul style="list-style-type: none"> ● 110 V AC ± 20 %, 45-65 Hz, 2,5 VA ● 24 V DC - 15 % to + 25 %, 2 W ● 6-30 V AC + DC, 2 VA ● 36-265 V AC + DC, 2 VA
Dimensions	Housing	Housing A, (22,5 mm wide) page A1
Weight		190 g
Installation	Fastening	Snap-on fastening on top hat rail 35 mm acc. to DIN EN 60 715
	Electrical connection	Screw terminal max. 4 mm ²