MEASURING TRANSDUCERS FOR ALTERNATING VOLTAGE (SINUSOIDAL)

Uw-MU

General information This operating manual is included with the equipment as standard. It contains the information required for correct usage. It is aimed at trained personnel and specialist staff who are familiar with the assembly, installation and commissioning of the product described here. If additional information is required, further details can be requested by the address given below.

Conformity This equipment conforms to the requirements of the Directive from the Council of the European Community on the harmonisation of the member states regarding electromagnetic compatibility, EMC Directive 2004/108/EC, as well as Low Voltage Directive 2006/95/EC.

Application The measuring transducers Uw-MU serve to convert a sinusoidal alternating voltage into a load-independent direct-current and/or direct-voltage signal. In the version with double outputs the outputs are switchable between 0-20 mA / 0-10 V and 4-20 mA / 2-10 V.

Function The alternating voltage to be measured will get to the succeeding rectifying circuit via a voltage transformer serving for galvanic separation. The direct voltage gained in this way will be increased and converted into a load-independent direct-current and/or into an impressed direct voltage. The outputs are no-load resistant and short-circuit proof. Any connection between both outputs will be unacceptable. An auxiliary voltage will be required only in case of "live zero" resp. for the version with double outputs or rated voltage > 500 V.

Technical data

Input	Input quantity	sinusoidal alternating voltage
	Rated values	0-100 V, 0-250 V, 0-500 V or 0-600 V
	Rated frequency	50 Hz, 60 Hz or 400 Hz
	Overload permanent	1,2-fold
	Surge overload	2-fold 1 sec.
	Own consumption	2,5 VA, in case of "live zero" 0,3-2 VA
Output	Output quantities	single-output or double-output
	Rated values	0-20 mA/500 Ohm of load or 0-10 V max. load 10 mA
	Option	**- "live zero"** 4-20 mA/500 Ohm of load (aux. will be required) **- 0-20mA**/0-500 Ohm of load and **0-10V** max. load 10 mA as well as **4-20mA**/0-500 Ohm of load and **2-10V** max. laod 10 mA front-laterally switchable (aux. will be required) **- Frequency module -** a value of 0 – 5 Hz up to 0 – 10 kHz ○ „Open-collector" NPN, max. 30V 100 mA loadable, impulse/break 50/50 % ○ Square wave signal 5V, max. 10 mA loadable, impulse/break 50/50 %
Dynamic system behaviour	Accuracy	+/- 0,5 % at 10-100 % of the rated value (in case of aux. 0-100 % of the rated value)
	Frequency influence	< 0.01 % with difference frequency 10 Hz
	Temperature range	-15°C up to +20°C up to +30°C up to +55 °C
	Temperature influence	< 0,1 % at 10 K
	Influence of aux.	none
	Load influence	none
	External magnetic field influence	none (up to 400 A/m)
	Residual ripple	< 30 mV_{ss}
	Response time	< 400 ms (with frequency module < 400 ms)
	No-load voltage	max. 24 V
	Current limitation	max. 2-fold in case of saturation
	Testing voltage (working voltage up to 300V)	4 kV between input and output, input and aux., output and aux. 4 kV between output and aux., 5,2 kV between input and output
	Testing voltage (working voltage up to 600V)	aux. 230 VAC and 110 VAC: 4 kV between input and aux. aux. 24 VDC, 6-30 V AC/DC and 36-265 V AC/DC: 5,2 kV between aux. and input

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Adjustment

After taking off the plexiglass cover it is possible to adjust with the potentiometer which is named "SPAN" the final value.
In case of switchable double-outputs the ouputs can be switched over with the slide between "LIVE ZERO" (4-20 mA/2-10 V) and "ZERO" (0-20 mA/0-10 V).

Regulations

EMC	DIN EN 61326
Mechanical strength	DIN EN 61010 part 1
Electrical security	DIN EN 61010 part 1 Housing all insulated, protection class II, at a working voltage up to 300V (network to neutral conductor) degree of pollution 2, overvoltage category CAT III at a working voltage up to 600V (network to neutral conductor) degree of pollution 2, overvoltage category CAT III
Accuracy, overload	DIN EN 60688
Separation	DIN EN 61010 part 1, 3,52 kV 50 Hz 10 sec.
Air gaps and creep distances	DIN EN 61010 part 1
System of protection	DIN EN 60529 housing IP30, terminals IP20
Connection	DIN 43807

Auxiliary voltage

Only necessary in case of "live zero", in case of switchable double outputs or rated voltage > 500 V:

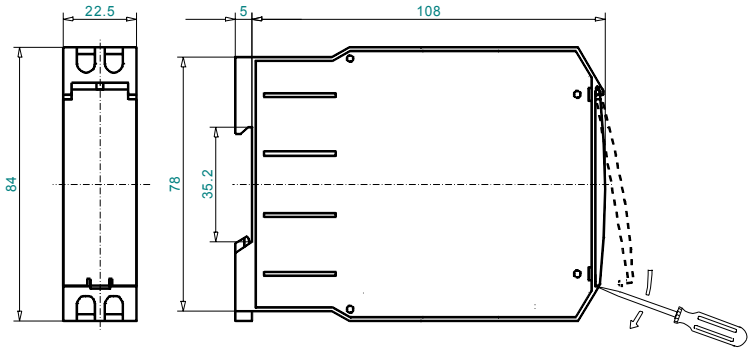
230 V AC ± 20 %, 45-65 Hz, 2,5 VA

Option
- 110 V AC ± 20 %, 45-65 Hz, 2,5 VA
- 24 V DC, -15 % bis +25 %, 2 W, (EMC DIN EN 61326 class A)
- 6-30 V AC + DC or 36-265 V AC + DC, 2 VA, (EMC DIN EN 61326 class A)

Weight

190g

Dimensions

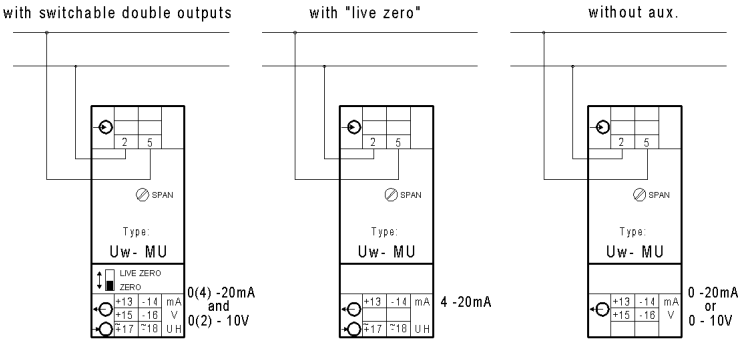


Installation

Attachement	snap-on mounting according to DIN EN 50 022
Electrical connection	threaded terminal end 4 mm² max.

Connection

AC-voltage measurement (sinusoidal)



Transducers with frequency module have no further outputs and no "LIVE-ZERO"-switching.
At the clamps +13 and –14 the frequency output is available.

Warning! ***Before starting any work on or in a device, it must be disconnected from the mains or switched to a voltage-free state.***

Maintenance **The device is maintenance-free when used correctly.**

Caution! **Servicing or maintenance work must only be carried out by trained specialist personnel.**

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