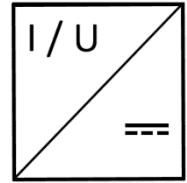


Measuring transducer for AC current or AC voltage without auxiliary voltage



AU 2.0
VU 2.0



Application

The transducers of the 2.0 series convert existing currents or voltages into a load independent DC current. The output signal can be indicated, recorded and/or used for controlling directly at the test point or in measuring facilities located far away. It is possible to connect more than one indicator, recorder, controller, computer etc. to the output circuit provided the total impedance does not exceed the rating.

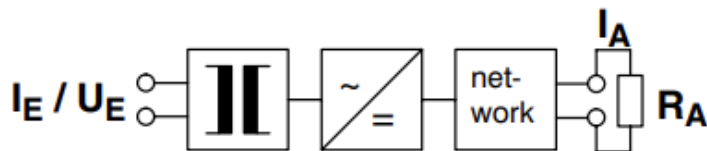
The outputs are short-circuit proof and safe against idling.

The measuring transducers are intended for installation in plants, devices or switchboards. The regulations regarding the construction of those electrical systems must be observed.

Operating Principle

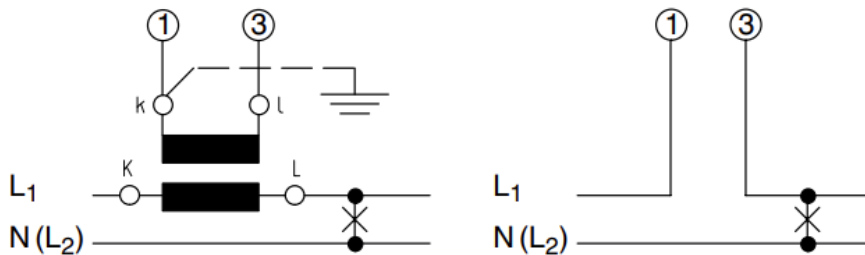
The alternating current or the alternating voltage is rectified after galvanic isolation and converted into a proportional impressed direct current via a network.

Block Circuit Diagram

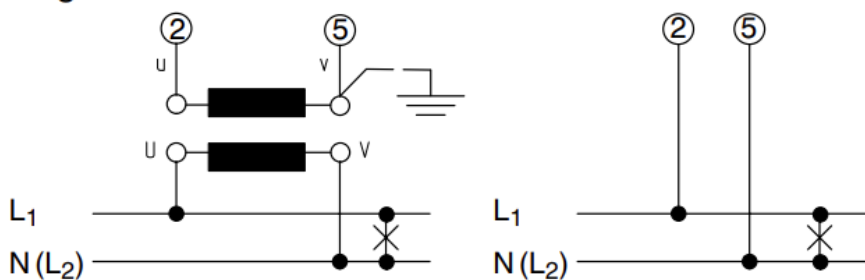


Connections

current



voltage



Input - Types

Type	Input	possible input values
AU 2.0	sinusoidal AC current	0–1 A, 0–2 A, 0–5 A,
VU 2.0	sinusoidal AC voltage	0-57.7 V, 0-63.5 V, 0-100 V, 0-110 V, 0-150 V, 0-120 V, 0-250 V, 0-400 V (LL) 0-500 V (LL)

frequency range	48 ... 62 Hz	
power consumption	Voltage transformer < 3 VA Current transformer 5A < 4VA Current transformer 1A < 2 VA	
operating voltage	max. 519 V AC (300V CAT III)	
overloads	current	voltage
modulation range	1,2 I _{EN}	1,2 U _{EN}
overload limit	1,2 I _{EN} continuously. 20 I _{EN} max. 1 s	1,2 U _{EN} continuously 2 U _{EN} max. 1 s

Output

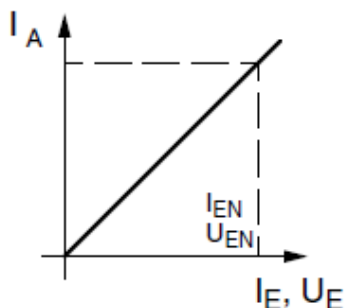
Current output

Output current I _A	impressed direct current
Rated current I _{AN}	0...20 mA
Burden area R _A	0...500 Ω
Burden error	< 0.4 % at 50 % load change
Open circuit voltage	< 20 V

residual ripple at R _{Amax}	AU 2.0	VU 2.0
	approx. 3 mV _{eff}	approx. 9 mV _{eff}

Setting time at R _{Amax}	AU 2.0	VU 2.0
	< 300 ms	< 100 ms

Conversion Characteristics



Auxiliary supply

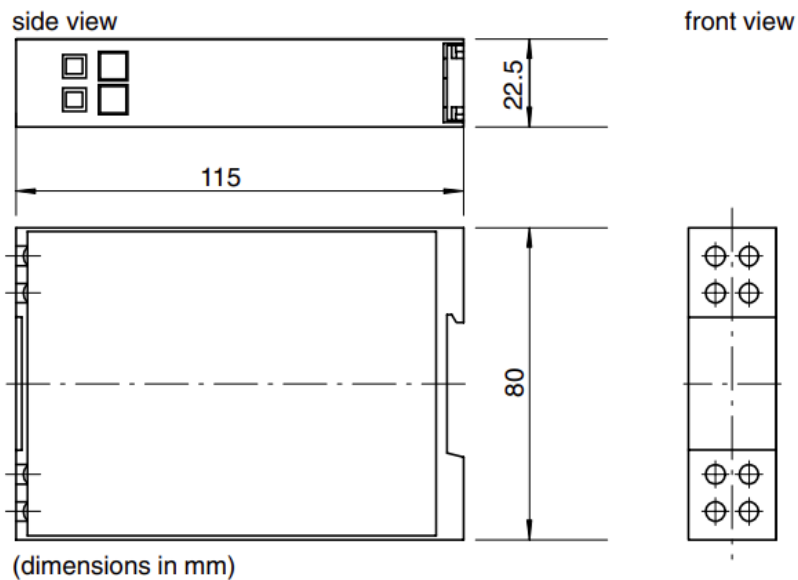
Not required.

Terminal assignment

terminal	AU 2.0	VU 2.0
1	I_E	–
2	–	U_E
3	I_E	–
5	–	U_E
19	$I_A (+)$	$I_A (+)$
20	$I_A (-)$	$I_A (-)$

I_E current input
 U_E voltage input
 The numbers on the terminals conform to details in connection diagrams (refer to DIN 43 807).
 I_A current output

Dimensions



(Symbolic illustration)

General technical data

Design	Surface-mounted housing for snap mounting on DIN rail TH 35 according to DIN EN 60 715
Case material	ABS/PC red self-extinguishing according to UL 94 V-0
connections	Screw terminals, max. torque 0.8 Nm
Wire cross section	max. 4mm ²
Protection class	IP 30 housing IP 20 terminals
Test voltages	Measuring circuit and auxiliary voltage against output: 3510 Vrms 5 sec Measuring circuit and auxiliary voltage against housing: 3510 Vrms 5 sec Output against housing: 2210 Vrms 5 sec
Working voltage	300 V (nominal line voltage phase-zero)
Protection class	II
Measurement category	CAT III
Pollution level	2
Dimensions	22.5 mm x 80 mm x 115 mm
Weight	Approx. 0.4 kg
Sealevel of the place of use	max. 2000 m above sea level

Accuracy at reference conditions

accuracy class	0.5 (±0.5 % of end value)
temperature drift	≤ 0.03 % / K, valid for standard version and max. 1 year

reference conditions	
input voltage	U _{EN} ± 2 %
frequency	50...60 Hz
curve shape	sine, harmonic distortion ≤ 0.1 %
burden	0.5 R _{Amax} ± 1 %
ambient temperature	23 °C ± 1 K
warm-up time	≥ 1 min

Environmental conditions

Climate suitability	Climate class 3 according to VDE/VDI 3540 sheet 2
Working temperature range	-10 ... +55 °C
Storage temperature range	-25 ... +65 °C
Relative humidity	≤ 75 % annual average, no condensation only use the device indoors

Ordering Guide AU 2.0 / VU 2.0

Order number		
IMU20-	AU 2.0	
UMU21-	VU 2.0	
Input		
	AU 2.0	VU 2.0
1	0...1 A	0...57,7 V
2	0...2 A	0...63,5 V
3	0...5 A	0...100 V
4	-	0...110 V
5	-	0...120 V
6	-	0...150 V
7	-	0...250 V
8	-	0...400 V
9	-	0...500 V
Frequency range input		
2	48...62 Hz	
Output		
1	0...20 mA	
Accuracy		
1	±0,5 % of end value *)	
Manufacturing certificate		
0	without *)	
1	with	

*) standard

Order example: Transmitter for Sinusoidal AC AU2.0, Nominal Input Current: 1 A, Frequency Range: 50 Hz, Output: 0-20 mA, accuracy ±0.5%, without test report.

Item number according to number code: IMU20-12110

Guidelines and standards

Directive 2014/30/EU	EMC Directive
Directive 2014/35/EU	Low Voltage Directive
Directive 2011/65/EU	RoHS Directive
DIN EN 60529	Protection types through housing
DIN EN 60688	measuring transducer for converting alternating current variables into analog or digital signals
DIN EN 60715	Dimensions of low-voltage switching devices
	Standardized mounting rails for the mechanical fastening of electrical devices in switchgear
DIN EN 61010-1	Safety regulations for electrical measuring, control, regulation and laboratory devices Part 1: General requirements
DIN EN 61326-1	Electrical measuring, control, regulating and laboratory devices - EMC requirements - Part 1: General requirements 61000-4-3 Evaluation criterion B

Safety regulations and general information



- Check the relevant details for installation of the Measuring transducer against the nameplate and the terminal connections to ensure that they are suitable for your area of application.
- The Measuring transducer may only be installed by qualified electricians.
- The Measuring transducer must be checked for transport damage before commissioning and may only be put into operation if it is in perfect condition. In case of safety-relevant damages the device may not be put into operation.



- Ensure that the connections match the terminal connections.
- Circuits must be fused for the maximum permissible currents.
- When commissioning and using the Measuring transducer, the applicable laws, regulations and provisions for the respective area of use and application must be observed.
- The Measuring transducer is not suitable for use in environments with explosive gases or explosive substances.
- The Measuring transducer may only be operated in the environmental and ambient conditions specified in the data sheet. Direct sunlight must be avoided.



- The Measuring transducer may only be installed on non-flammable materials. The applicable fire protection regulations in the area of use and application must be observed.
- Due to the operating voltage, the distance or insulation from other devices must be observed in accordance with the applicable regulations.

- Stranded cables are only permitted if they are fitted with wire end sleeves.
- Connecting cables must be laid away from electromagnetic interference fields.
- Dangerous electrical voltage (more than 75 V DC or more than 50 V AC) can lead to electric shock and burns.



- The Measuring transducer must always be disconnected when fitting, removing, installing, uninstalling or troubleshooting.
- The Measuring transducer is maintenance-free when used as intended.
- Improper use and non-compliance with these safety instructions can lead to serious injury or even death.

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