Quality Management
ISO 9001:2008
▶ Voluntary participation in regular monitoring
DEKRA Certification
DEKRA certified

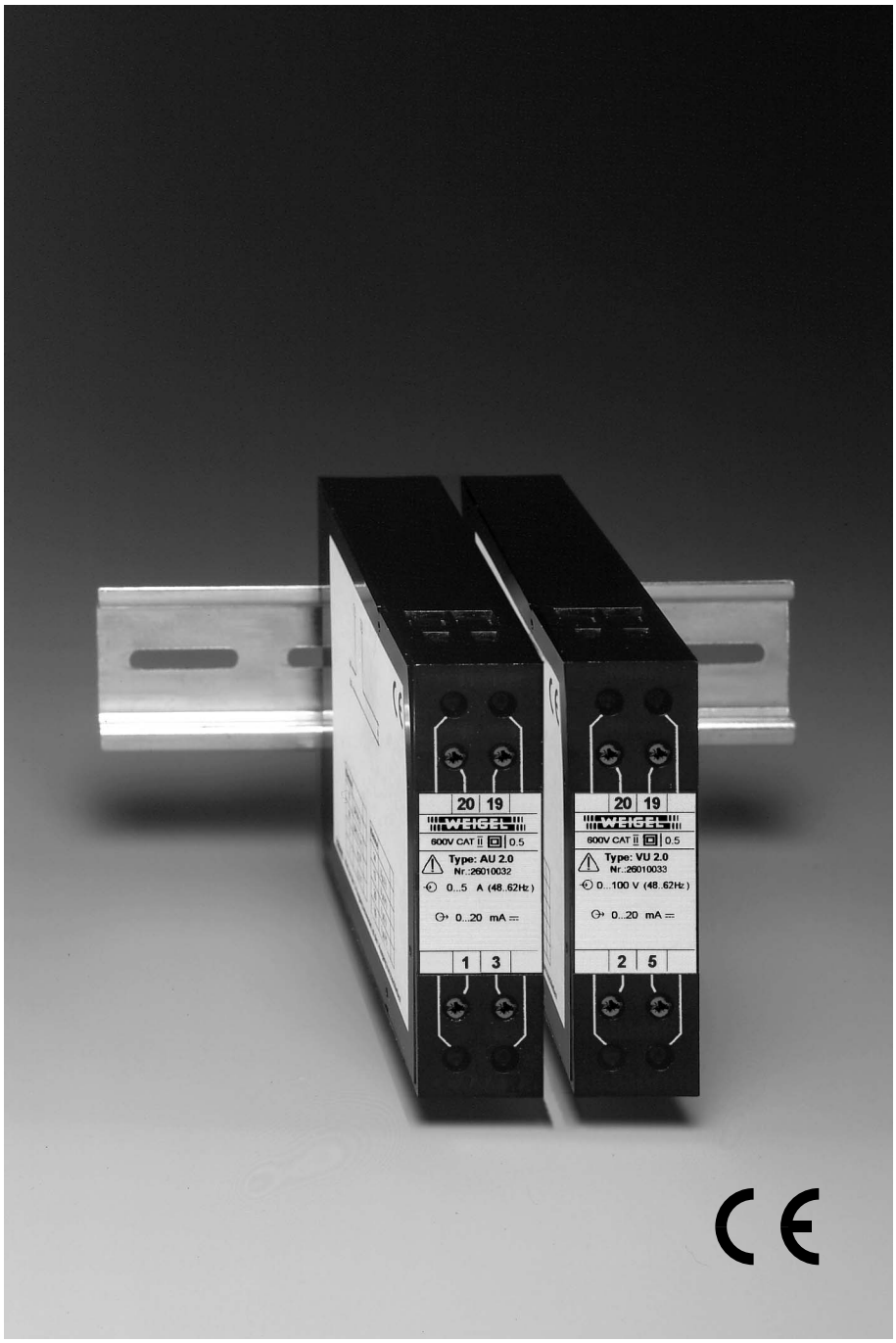
J / U
=

Data Sheet

045.7e

Transducers for AC Current or AC Voltage without Auxiliary Supply

AU 2.0
VU 2.0



WEIGEL

Application

The transducer models **AU / VU 2.0** convert **RMS values of sinusoidal AC currents resp. AC voltages** to a load independent DC current output signal. This signal can be transmitted over a considerable distance and fed into indicators, recorders and/or control systems.

It is possible to connect more than one measuring or control device to the output circuit provided the total impedance does not exceed the rating.

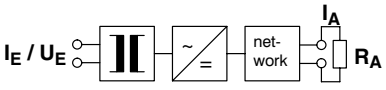
Input and output circuits are **galvanically isolated from each other**. The output circuit is **short-circuit proof** and **safe against idling**.

The transducers are designed to be mounted in machines/systems. Regulations for installation of electrical systems and equipment have to be observed.

Operating Principle

The AC input current/voltage is galvanically isolated, rectified and fed into a network which produces a load independent DC output current proportional to the input signal.

Block Circuit Diagram



General Data

case details	projecting case clamping to TH 35 DIN rail according to DIN EN 60 715
material of case	ABS/PC black self-extinguishing to UL rating 94 V–0
terminals	screw-terminals
wire cross-section	4 mm^2 max.
enclosure code	IP 40 case IP 20 terminals
dielectric test	2210 V input to case, 3536 V output to case, measuring circuit to output
operating voltage	300 V (rated voltage phase to zero)
class of protection	II
measurement category	CAT III
pollution level	2
dimensions WxHxL	22.5 mm x 80 mm x 115 mm
weight	approx. 0.35 kg

Inputs

input rating	sinusoidal AC current (AU 2.0) sinusoidal AC voltage (VU 2.0)	
frequency range	48 ... 62 Hz	
power consumption		
voltage transformer	< 3 VA	
current transformer 5A	< 4 VA	
current transformer 1A	< 2 VA	
operating voltage	519 V max.	
input	**AU 2.0** rated current I_{EN} ➧	**VU 2.0** rated voltage U_{EN} ➧
	1 A *) 1.2 A 5 A *) 6 A	57.7 V (100 V : $\sqrt{3}$) 63.5 V (110 V : $\sqrt{3}$) 100 V *) 110 V *) 150 V 250 V 400 V 500 V
	*) also for use on transformer	
	AU 2.0	**VU 2.0**
measuring range	0 ... I_{EN}	0 ... U_{EN}
modulation range	1.2 I_{EN}	1.2 U_{EN}
overload limit	1.5 I_{EN} continuously 10 I_{EN} 1 s max.	1.2 U_{EN} continuously 2 U_{EN} 1 s max.

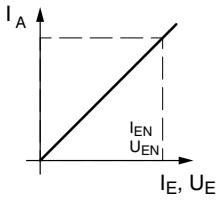
Outputs

current output

output current	I_A	load independent DC current	
rated current	I_{AN}	0 ... 20 mA	
load range	R_A	0 ... 500 Ω	
load error		≤ 0.4% based on 50% load change	
idling voltage		≤ 20 V	
residual ripple		**AU 2.0**	**VU 2.0**
based on $R_{A\ max.}$		3 mV_{eff} approx.	9 mV_{eff} approx.
response time		**AU 2.0**	**VU 2.0**
based on $R_{A\ max.}$		≤ 300 ms	≤ 100 ms

Input and output circuits are galvanically isolated.

Conversion Characteristics



Input 0 ... I_{EN} / 0 ... U_{EN}
Output 0 ... 20 mA

Auxiliary Supply

not required

➧ for other ratings refer to **Extras**

Quality Management ISO 9001:2008
▶ Voluntary participation in regular monitoring
DEKRA Certification
DEKRA certified

J / U
=

Data Sheet

045.7e

Transducers for AC Current or AC Voltage without Auxiliary Supply

Accuracy at Reference Conditions

accuracy	**class 0.5** (±0.5% of end value)
temperature coefficient	≤ 0.003%/K
reference conditions	
frequency	50 ... 60 Hz
wave form	sine wave, distortion factor ≤ 0.1%
load	0.5 $R_{A\ max}$ ±1%
ambient temperature	23°C ±1K
warm-up	≥1 min

Environmental

climatic suitability	climatic class 3 to VDE/VDI 3540 sheet 2
operating temperature range	–10 ... +55°C
storage temperature range	–25 ... +65°C
relative humidity	≤ 75% annual average, non-condensing

Rules and Standards

DIN EN 60 529	Enclosure codes by housings (IP-code)
DIN EN 60 688	Electrical measuring transducers converting AC quantities into analog or digital signals
DIN EN 60 715	Dimensions of low voltage switching devices: standardized DIN rails for mechanical fixation of electrical devices in switchgears
DIN EN 61 010-1	Safety requirements for electrical measuring, control and laboratory equipment Part 1: General requirements
DIN EN 61 326-1	Electrical equipment for measurement, control and laboratory use – EMC requirements Part 1: General requirements
VDE/VDI 3540 sheet 2	Reliability of measuring and control equipment (classification of climates for equipment and accessories)

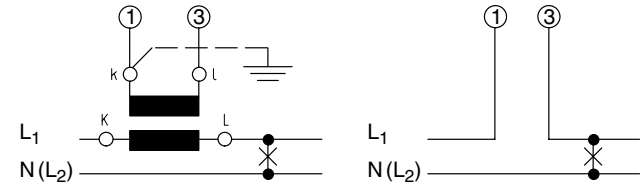
Extras

input ratings

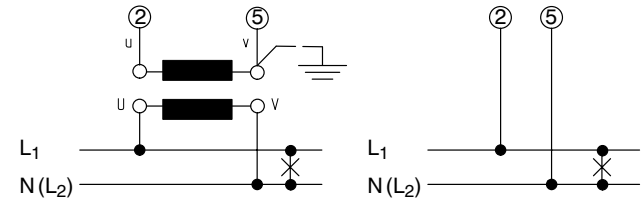
rated current I_{EN}	deviating from standard inputs on request
rated voltage U_{EN}	deviating from standard inputs on request

Connections

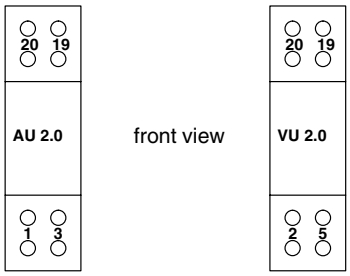
current



voltage



Terminals

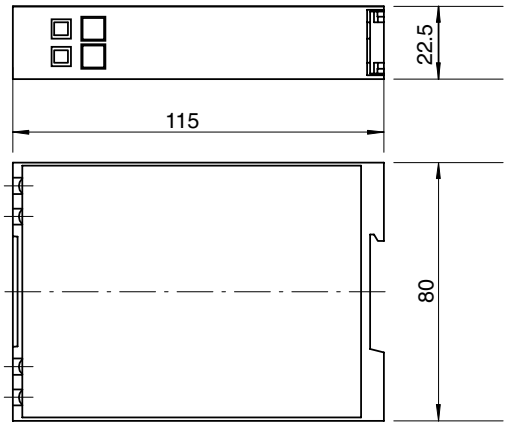


terminal	AU 2.0	VU 2.0
1	I_E	–
2	–	U_E
3	I_E	–
5	–	U_E
19	I_A (+)	I_A (+)
20	I_A (–)	I_A (–)

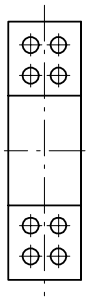
I_E current input
U_E voltage input
The numbers on the terminals conform to details in connection diagrams (refer to DIN 43 807).
I_A current output

Dimensions

side view



front view



(dimensions in mm)

Ordering Guide

type	transducers
	power current units
	without auxiliary voltage, class 0.5
AU 2.0	AC current
VU 2.0	AC voltage
	input AU 2.0
10	0 ... 1.0 A
12	0 ... 1.2 A
50	0 ... 5.0 A
60	0 ... 6.0 A
xx	special measuring range *)
	input VU 2.0
57,7	0 ... 57.7 V
63,5	0 ... 63.5 V
100	0 ... 100 V
110	0 ... 110 V
150	0 ... 150 V
250	0 ... 250 V
400	0 ... 400 V
500	0 ... 500 V
xxx	special measuring range *)
	output
5	0 ... 20 mA
	auxiliary supply
H0	none (not required)

*) on request

ordering example

AU 2.0	50	5	H0

transducer for AC current 0 ... 5 A, output 0 ... 20 mA,
without auxiliary voltage