

PA33

Measuring Transducers



The PA33 transducers are designed to convert a selection of quantities in one phase as well three-phase low-voltage, high-voltage, and extra-high-voltage power systems, such as voltage, current, power, power factor, total harmonic distortion, and frequency, to 20 mA current signal or pulse signal.

The transducer's measuring inputs comprise three voltage inputs of nominal range 230 V_{ef} and three fully isolated current inputs of nominal range 5 A_{ef} (from metering current transformer outputs).

The transducer is manufactured with one or two analog outputs 4(0) through 20 mA. There can further be galvanically isolated digital outputs (relay contacts, solid state relays) that can be preprogrammed as binary signal outputs (alarm or electric meter pulse output).

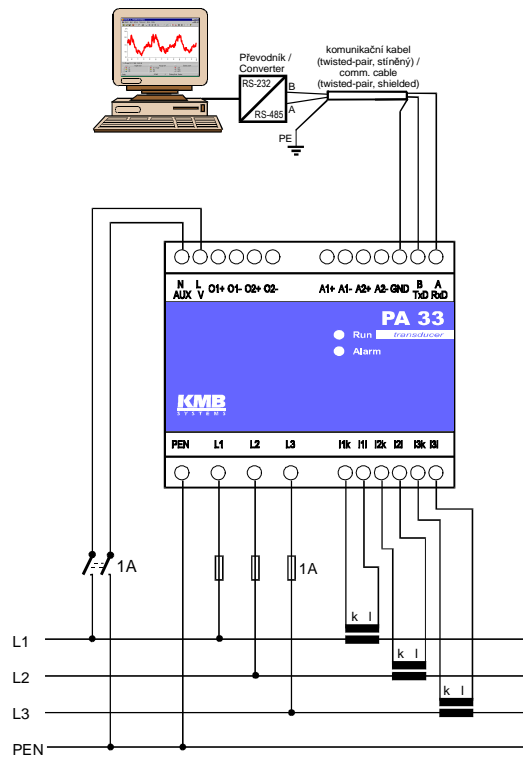
Another optional feature is an RS485 or RS232 communication port that can be used to set up the transducer and for a host system to remotely monitor the values measured.

The transducer's output signal can represent:

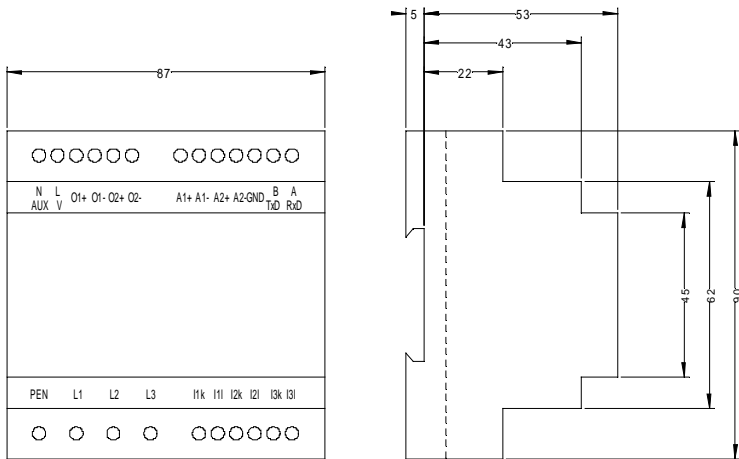
- phase or line voltage equivalent to three-phase value, voltage asymmetry
- any phase current equivalent to three-phase current value
- single-phase as well as three-phase power: active, reactive, apparent
- power factor (cos PF), single-phase and three-phase
- frequency, total harmonic distortion of voltage or current

Configuration and setup of a transducer that does not have the optional communication port must be specified in the purchase order. A transducer that has the optional communication port can be set up using dedicated software shipped with the instrument.

PA33 Transducer Connection Diagram



Physical Dimensions



Model's Parameters – Identification

PA 33 A2 RI 4 - 10.PQ

Transducer:	No. of Phases UI:	No. of current loops:	Digital outputs type:	Comm. interface:	model, other specs:
PA	33 – 3U+3I 11 – 1U+1I 30 – 3U+0I 03 – 0U+3I 10 – 1U+0I 01 – 0U+1I	A2 – 2 A1 – 1 A0 – 0	R – relay contact I – solid state (pulse) 0 – none	0 – none 4 – RS 485 2 – RS 232	current loop range, eval. window length etc.....

Technical Specifications

auxiliary supply voltage	230 V _{AC} ± 10% / 50 Hz , or 24 V _{DC} ± 25%
power	3 VA / 3 W
overvoltage class and pollution level	III / 2 – in compliance with IEC EN 61010-1
connection	galvanically isolated, polarity insensitive
measured voltage(U _{nom} =400/230V _{AC})	4 ÷ 500 V _{AC} / 2.3 ÷ 285 V _{AC} (line / phase), (or on request)
voltage measurement accuracy	± 1%
input impedance	660 kΩ (L _i – PEN)
connection	wye (star)
permanent overload (IEC 258)	2 times nominal (that is 1,000 / 570 V)
surge overload	4 times nominal for one second (that is 2,000 / 1,140 V)
frequency	45 ÷ 65 Hz
frequency measurement accuracy	± 0.1%
measured current (I _{nom} = 5 A _{AC})	0.02 ÷ 7 A _{AC} (or on request)
current measurement accuracy	± 1%
input power	< 0.25 VA (R _i < 10 mΩ)
input wiring	galvanically isolated
permanent overload (IEC 258)	14 A _{AC}
surge overload	70 A _{AC} for one second
active power (P _{nom} = 3*230*5 W)	range limited by measurement voltage and current ranges
active power measurement accuracy	± 1%
power factor(accuracy)	0.00 ÷ 1.00 (± 2%)
cos φ (accuracy)	-1.00 ÷ +1.00 L,C (± 2%)
analog output – range	programmable to 0 or 4 mA ÷ 20 mA
maximum load	500 Ω
conversion / settlement time	10 ms for error <1%
converted signal evaluation window length	10 ms ÷ 1 s
number, type	2, non-isolated, negative wire connected to PEN terminal
digital output - type	relay contact or solid state switch
max. load	5A/250V _{AC} /30V _{DC} /125VA or 100V/0,3A (or on request)
number, type	2, galvanically isolated
communication port (optional)	RS 485 or RS 232, non-isolated, common wire connected to PEN terminal
operating environment	class C1 in compliance with IEC 654-1
operating temperature	-25 to 60°C
storage temperature	-40 to 85°C
operating and storage humidity	< 95% – noncondensing conditions
EMC – emission	EN 50081-2 EN 55011, class A , EN 55022, class A (not for residential environments)
EMC – resistance	EN 61000-6-2
protection rating	IP 20
dimensions	DIN-rail mounted, 87 x 90 mm
mass	0.3 kg