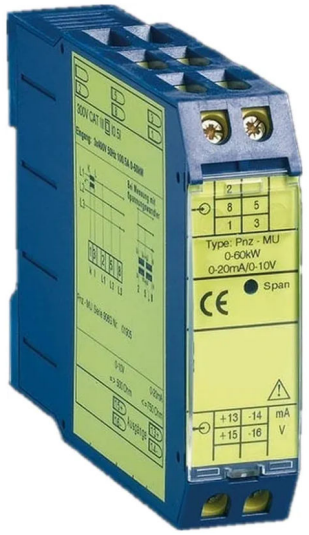
Pnz-MU



Application

The Pw-MU, Pnz-MU, Pz-MU, Pd-MU and Pdr-MU measuring transducers are used to convert and separate the active power in AC or three-phase networks into an impressed DC current and DC voltage signal.

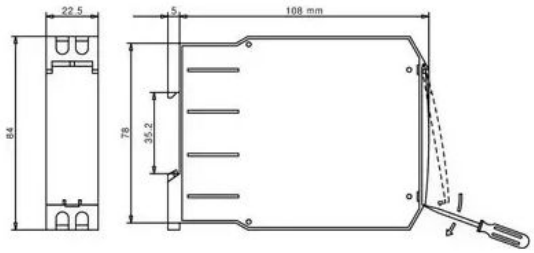
Function

The quantities to be measured reach the analog multiplier via internal current transformers and voltage dividers. Here, the instantaneous values of current and voltage are multiplied and, in a subsequent integration stage, formed as the mean value of a DC voltage corresponding to the active power. Sinusoidal as well as non-sinusoidal AC quantities of any waveform can be measured. The galvanic isolation between the input and output signals is achieved by means of optocouplers. The downstream amplifiers supply the impressed DC current and DC voltage signals. Both outputs are open-circuit and short-circuit proof.

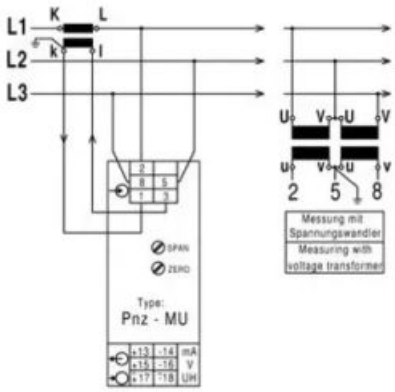
A connection between both outputs is not allowed. An auxiliary voltage is required for "live zero" or fluctuating nominal voltage of >± 20%.

Technical data	
Measuring type	3-wire three-phase current
Load	Equal load

Drawings and views



Dimensional drawing 1



Wiring diagram 1

Types

Article no.	Description
70005-1294-9	Pnz-MU @/5A A: 0-20mA und 0-10V @kW @V (ohne Hilfsspannung)
70005-1295-9	Pnz-MU @/1A A: 0-20mA und 0-10V @kW @V (ohne Hilfsspannung)
70005-1296-9	Pnz-MU @/5A A: 4-20mA und 2-10V @kW @V UH: 230V AC
70005-1297-9	Pnz-MU @/1A A: 4-20mA und 2-10V @kW @V UH: 230V AC
70005-1298-9	Pnz-MU @/5A A: 4-20mA und 2-10V @kW @V UH: 24V DC
70005-1299-9	Pnz-MU @/1A A: 4-20mA und 2-10V @kW @V UH: 24V DC
70005-1312-9	Pnz-MU @/1A A: 4-20mA und 2-10V @kW @V UH: 36-265 V AC + DC
70005-1316-9	Pnz-MU @/5A A: 0-20mA und 0-10V @kW @V UH: 230V AC

General data	
Dimensions	
<= 500 V	Housing A, (22.5 mm wide) Side A1
> 500 V	Housing B, (45 mm wide) Side A1
Weight	
<= 500 V	250 g
> 500 V	340 g

Input	
Input variable	**active power with alternating or three-phase current**
Nominal values	
- apparent power	50-150 % of apparent power
- alternating current	S = U x I
- three-phase current	S = U x I x 1,732
Rated voltage	100 V, 110 V, 230 V, 400 V, 500 V oder 600 V ± 20 %, max. 3,5 VA
Rated current	1 A oder 5 A, 0,3 VA
Rated frequency	50 Hz, 60 Hz or 400 Hz
Overload continuous	
- Current	2-fold
- Voltage	1.2-fold
Surge overload	
- Current	20-fold, 1 sec
- Voltage	2-fold, 1 sec

Output	
Output variables	**double output**
Nominal values	0-20 mA / 500 load and 0-10 V / max. 10 mA loadable
Option	"live zero" 4-20 mA / 500 load and 2-10 V max. 10 mA loadable (auxiliary voltage required)
Bipolar output	e.g. -20 ... 0 ... +20 mA / 500 load and - 0 ... 0 ... +10 V / max. 10 mA loadable
Zero point boost	e.g. 0-10-20 mA / 500 load and 0-5-10 V / max. 10 mA loadable

Transmission behavior	
Accuracy	**± 0,5 %**
Voltage influence	< 0.1 % at ± 10 % of nominal voltage
Frequency influence	< 0.3 % at 10 Hz frequency change
Phase angle influence	< 0.5 % at ± 90 °
Temperature range	-15 °C to +20 °C to +30 °C to +55 °C
Temperature influence	< 0.3 % at 10 K
Auxiliary voltage influence	no
Load influence	no
External field influence	no
Residual ripple	< 30 mVpp
Response time	< 300 ms
Open circuit voltage	max. 24 V
Current limitation	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	
(only for "live zero", fluctuating nominal voltage and voltages > 500 V)	
Standard	**230 V AC ± 20 %, 45-65 Hz, 2.5 VA**
Options	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

Installation	
Mounting	**Snap-on mounting on top hat rail TH 35 according to DIN EN 60 715**
Electrical connection	Screw connection max. 4mm²