Description

DC–Power Transducer PDM500
for Power measurements (kWh) in DC voltage systems up to 500V, intermediate voltage circuits and Photovoltaic installations, with S0 - Interface

Function
The transducer PDM500 measures the real power of a DC voltage source and transforms it to the output as pulse / kWh (terminals 3 / 6). The measuring voltage and current are connected to the input terminals of PDM500 on same potential, as printed on front of unit.

The measuring DC current flows through an external shunt resistor in solar plant with rated current amount, whose voltage drop of max. 60mV will be obtained in the current input. With the two measuring values a real analog multiplying will be done with a microcircuit. The power value will be changed into a pulse signal transporting to the output of PDM500. From here an electric meter can count the amount of working power.

Application
The unit is used for registration and monitoring of DC power i.e. of a solar energy plant. The available voltage range reach to 500VDC on terminals 7 / 9. The current range depends on external shunt resistor who delivers a maximum voltage of 60mV to the input terminals 8 / 9. The calibration of measuring range have to done by the manufacturer but also a fine calibration can be done by customer. The unit works with potentialfree supply voltage of 10 – 33VDC on terminals 11 / 12, optional 231VAC on terminals 10 / 12.

Technical Data

Type
DC Power Transducer PDM500

Housing
Plastic Housing on 35 mm DIN bar nach DIN EN 50022 bzw. DIN 46277

Material of Housing
ABS with fire protecting equipment UL 94 V-O

Dimensions, Weight
22.5 x 75 x 110,8mm (WxHxD), appr. 110 g

Potential Separation
None between input voltages, 500V between input, output and auxiliary supply

Auxiliary Supply
10 – 33VDC, 100mA max. Option 231VAC

Supply Connected
Green Frontside LED lights

Input Measuring Voltage
0 - 500V (maximum voltage value )

Input Measuring Current
0 - 60 mV DC ( to 10kOhm) from external shunt resistor

Measuring Delay
< 100 ms

Output Signal
Puls output with Photo-MOS-Relay 60V max, < 0,4A, 1A (100ms), < 2,5 Ohm, 40ms, Fmax. 12,5 Hz

S0-Interface
Acc. to DIN 43 864

Accuracy
Calibration of final value 0.5 %, Linearity about 1%

On Period
100 %

Terminals
Strand 2,5mm², Rigid 4mm², Torque 0,5Nm, Screw size M3

Type of protection
Housing IP 40 , Terminals IP 20

Environments
-10 °C bis +45°C, 95% Hum

Mains Isolation
EN 60 742 (Safety transformers)

General Regulations
EN 50 178 (Elektrical resources in power installations)

Noise Suppressions
EN 55 022/B

EMV acc. to
EN 61000 und EN V 50 140

Installation position
Any

Maintenance
Maintenancefree

Notes
For connecting of the input terminals right direction of poles be necessary, see printing on front label. The shunt resistor must be connected to the negative voltage terminals of photovoltaic string. The potentialfree puls output could be connected with any polarity. For the ordering of units PDM500 the following informations are necessary: Maximal operating voltage (V), maximal operating current (A on shunt 60mV) and for the output pulses the rate of pulses / kWh.
Example of using the measuring transducer of DSL-series PDM500 for pulse and analog output delivery of string power in solar plants.