

Description

The **PowerPlex®** AC Power Meter is a highly accurate multifunction measuring device for measuring electrical parameters in low-voltage systems up to 500VAC. It provides voltage, current, power and frequency readings for single, two and three-phase networks. The pushbuttons on the front of the device can be used to display measured values as well as configure the device. The X0649-AC-PM is equipped with an RS485 communication interface (MODBUS/JBUS) for connection to a higher-level control system. To increase the device's standard IP rating, the unit will be mounted into an IP65 rated enclosure. Its space-saving design supports the flexibility and modularity of the entire system. The device is designed for connection to various network types with symmetrical or asymmetrical load. Current measurement must be implemented using suitable current transformers.

Typical Applications

- Watercraft, e.g. recreational and workboats, special vehicles

Features and Benefits

- AC power monitoring and management
- RS485 cable with terminating resistor
- (2) current transformers
- IP65 rated enclosure

Ordering information

X0649-AC-PM **PowerPlex®** AC Power Meter

Approvals

E1 (pending)



X0649-AC-PM

Technical Data

Voltage rating	AC 120 V / AC 230 V
Operating voltage	110...277 V AC
Nominal power consumption	5 VA
Degree of protection	IP65 when mounted vertically with the connectors pointing downwards
Operating temperature range	-10...+55 °C (14...+131 °F)
Storage temperature range	-20...+70 °C (-4...+158 °F)
Humidity	≤ 95 %
Mass	approx. 921 g

Interfaces:

RS-485	Modbus RTU/JBUS
Connection method	Screw terminal blocks
Serial transmission speed	2,4...38.4 kbps
For MODBUS communication, an RS485 cable must be terminated at both ends of the bus with a 120 Ω resistor (supplied with the device).	
Input voltage range	28 V AC...300 V AC (Phase/neutral conductor)
Input current range	Via external transformers
Input current	9999 A (primary) 5 A (secondary)

General Data

Width	160 mm (6.3")
Height	160 mm (6.3")
Depth	90 mm (3.5")



Interfaces

CAN according to SAE J1939 250kBits/s,
The CAN terminals at each end of the bus have to be connected
with a 120 Ω terminating resistor.

Inputs

8 multifunctional inputs,

configurable as:

digital inputs (I1-I8): 0...50 Ω: ON; > 100 kΩ: OFF

analog inputs: ground switching

a) for voltage monitoring (I1-I8):

Measuring range 1: 0...32 V, Rin:40 kΩ

resolution: 10 bit

Measuring range 2: 0...10 V, Rin:40 kΩ

resolution: 10 bit

b) for battery monitoring:

Measuring range 1: 0...32 V; potential free
measurement of the battery
voltage (only I1 & I2, I3 & I4)

Measuring range 2: ± 60 mV; battery current
measurement with external
shunt (only I5 & I6, I7 & I8)
(shunt provided with device)

c) resistance measurement (I1-I8): for tank levels & temperature

Measuring range: 0...750 Ω; level measuring
with resistive tank sensors,
temperature measurement
with XPP-TS500R-HB

CANbus: (1) 5-Pin M12 A-Code

Outputs

Outputs:

8 outputs with 1.5 A max. continuous current

load output: Power MOSFET, high side
switching

max. current rating: 1.5 A

Ron at rated current (at 25 °C): 50 mΩ

tripping range at overload: $13.5 \leq x \leq 26.5$ A

trip time: typically 180 μs at 19 A

outputs are equipped with fail-safe elements

current limitation: typically 19 A at DC 12 V
(25° C)

typically 19 A at DC 24 V
(25° C)

leakage current in OFF condition: 2 μA

dimmer function: All load outputs can be
dimmed in 80 steps with
488 Hz PWM