

MULTIFUNCTION POWER METER

PILOT PMAC770 5A CT Panel-mount power meter

Item code **M0018**

- › High accuracy real-time measurement
- › Self-testing phase sequence error
- › Power quality analysis
- › Multi-tariff billing
- › Programmable demand calculation



FEATURES



Real-time measurement

- › True-RMS measuring parameters includes:
 - › U, I, P, Q, S, PF, F, kWh, kvarh, demand, max./min. value

Power quality analysis

- › Harmonic analysis, crest and K factor, unbalance etc.

Programmable demand calculation

- › Programmable demand cycle: 5/ 10/ 15/ 30/ 60 mins
- › Programmable slip window: 1/ 2/ 3 mins

High accuracy

- › Active energy: according to IEC62053-22, class 0.5s
- › Reactive energy: according to IEC62053-23, class 2

Suitable for LV/ HV voltage systems

- › For low voltage systems, the PMAC770 / PMAC770-DR are direct connect up to 600VAC.
- › For high voltage systems, there is a model variant which connects with PTs. The PT ratio is programmable.

DESCRIPTION

The three-phase meter PMAC770 (M0018) measures a broad range of electrical parameters in low voltage (LV) to high (HV) voltage distribution/ automation systems.

The PMAC 770 is a highly configurable meter that provides highly accurate sub-metering and real-time measuring in commercial buildings, data centres and BMS. The blue back-lighted LCD screen displays true RMS measuring parameters like active energy (kWh), reactive energy (kVarh), U, I, P, Q, S, PF, F, kVAh, active power (W), reactive power (Var), apparent power (VA), voltage (V), current (A), power factor, demand and frequency.

The meter can be read by GoodMeasure directly, or 64MB memory and built-in web features allow real-time data inquiries and downloads of memory data by FTP.

RS485 communication is built-in and supports MODBUS-RTU, with options for BACnet MS/TP and Ethernet. The CO₂ (carbon dioxide) calculation for kWh turns the PMAC770 into a sustainable and environment-friendly metering option that enables any business to contribute positively to the reduction of climate change.

Module

Upgradeable with optional module for additional communication protocols, relays and pulse outputs



Optional module



Main unit

PMAC770-DR

35mm DIN rail mount option available



FUNCTIONS

Real-time Metering	<ul style="list-style-type: none"> › Voltage <ul style="list-style-type: none"> › Ua, Ub, Uc, Uab, Ubc, Uca, UL-L avg, UL-N avg › Current <ul style="list-style-type: none"> › Ia, Ib, Ic, In, Iavg › Power <ul style="list-style-type: none"> › Pa, Pb, Pc, ΣP, Qa, Qb, Qc, ΣQ, Sa, Sb, Sc, ΣS › Power factor <ul style="list-style-type: none"> › PFa, PFb, Pfc, ΣPF › Energy <ul style="list-style-type: none"> › kWh and kvarh (4 quadrant) › Frequency <ul style="list-style-type: none"> › Hz › Demand & Max. demand <ul style="list-style-type: none"> › Dmd_I, Dmd_P, Dmd_Q, Dmd_S › Max./ min. value <ul style="list-style-type: none"> › Max./ min. (U, I, P, Q) › Multi-tariff energy 	Power quality analysis	<ul style="list-style-type: none"> › Unbalance <ul style="list-style-type: none"> › U_unbl, I_unbl › Harmonic (31st) <ul style="list-style-type: none"> › THDu, THDi, TOHDu, TOHDi, TEHDu, TEHDI, HRU, RHI › Harmonic RMS (0-31st) <ul style="list-style-type: none"> › Harmonic RMS-U, Harmonic RMS-I › Harmonic energy (1st -13th) › Voltage crest factor, current K factor, Load rate, Voltage deviation, Frequency deviation
	Setpoint alarm		› Over/ under limit alarm
	3DI +2 DO		› 3 status input + 2 relay output
	RS485		› Modbus-RTU protocol
	Record function		<ul style="list-style-type: none"> › SOE (event log), Real-time clock (yyyy-mm-dd hh:mm:ss) › Voltage/ frequency deviation, Voltage unbalance record

OPTIONAL MODULE



S	› 2 status input	P	› Profibus communication
R	› 2 relay output	AI	› 2 analog input (4-20mA)
C	› The 2nd RS485	AO	› 2 analog output (4-20mA)
Ep	› 2 pulse output	BA	› BACnet protocol
E	› Ethernet	M	› 8 MB, 16 MB or 1GB memory

PARAMETERS

Parameter	Accuracy	Resolution	Measuring Range
Voltage	› 0.2%	› 0.01V	<ul style="list-style-type: none"> › Direct: 600Vph-ph › PT primary: 0~999.9kV › PT secondary: 100Vph-ph or 110V
Current	› 0.2%	› 0.001A	<ul style="list-style-type: none"> › CT primary: 0~49,999A › CT secondary: 1 A or 5A
Power	› 0.5%	› 0.1W/var/ VA	<ul style="list-style-type: none"> › each phase: 0~49994MW/ Mvar/ MVA › Total: 0~149982MW/ Mvar/ MVA
Power factor	› 0.5%	› 0.001	› -1.000~+1.000
Frequency	› 0.01	› 0.01Hz	› 45~ 65 Hz
Active energy	› 0.5%	› 0.1kWh	› 0~ 99,999,999.9 kWh
Reactive energy-1.000~+1.000	› 2.0%	› 0.1kvarh	› 0~ 99,999,999.9 kvarh
THD	› 1.0%	› 0.001	› 0~100.0%
Individual harmonic	› 1.0%	› 0.001	› 0~100.0%
Un-balance	› 1.0%	› 0.001	› 0~100.0%

SPECIFICATIONS

Metering	› True RMS, 1 sec refresh time	Power Supply	› 86 ~265VAC, 99~374VDC
Input	› Rated current: 5A › Rated voltage: direct 220 /300Vph-N › Frequency: 50Hz	Communication	› RS485 serial, support Modbus-RTU › Baud rate: 2400, 4800, 9600, 19200, 38400bps › Address: 1~247
Overload	› 120% of rated, continuously › Instantaneous current: 10 times/ sec › Instantaneous voltage: 2 times/ sec	Dimensions (L x W x H)	› Panel: 96 x 96 x 13.5 mm › Cut-out: 90 x 90 x 45.1 mm (basic) › 90 x 90 x 66.6 mm (optional module)
Status input	› Wet contact, external power supply 80~265VAC	Power Loss	› <2VA
Relay output	› Node capacity: 250VAC/5A	IP index	› IP52 (front panel) and IP30 (case)
Pulse Output	› Pulse constant: 1000~9999 programmable › Pulse width: 60~100ms programmable › Formula: 1 pulse = (1÷pulse constant ×PT ×CT) kWh	Environment	› Operating temperature: -10°C~ +55°C › Storage temperature: -40°C~ +70 °C › Humidity: 5%~95% non-condensing
Power-frequency withstand voltage	› AC 2KV/minute	Weight	› Basic unit: approx 400gr.
Insulation resistance	› ≥50MΩ	Impulse withstand voltage	› 4kV (peak), 1.2/50uS

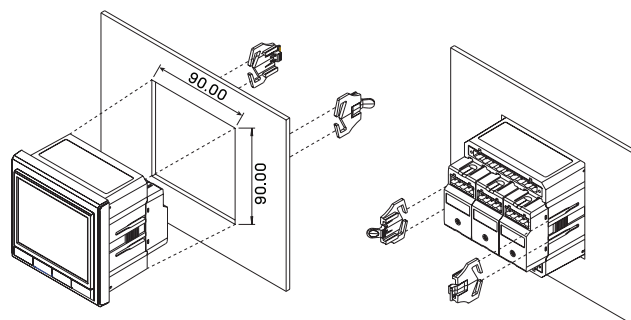
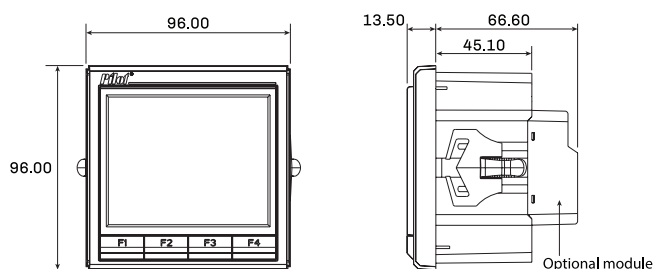
Standard (EMC)

Electrostatic discharge immunity test	IEC 61000-4-2,Level 4	Surge immunity test (1, 2/50μs~8/20μs)	IEC 61000-4-5,Level 3
Radiated immunity test	IEC 61000-4-3,Level 3	Conducted emissions	EN 55022,Class B
Electrical fast transient/burst immunity test	IEC 61000-4-4,Level 4	Radiated emissions	EN 55022,Class B

DIMENSIONS

Unit: mm

PMAC770 Panel mount
M0018



PMAC770-DR DIN rail mount

