

Conzerv EM6400 Series Power Meters

User Manual

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Hazard Categories and Special Symbols

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

SAFETY SYMBOLS



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

SAFETY MESSAGES

DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **could result in** minor or moderate injury.

CAUTION

CAUTION used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, **can result in** property damage.

NOTICE

NOTICE is used to address practices not related to physical injury.


Technical Specifications

The EM6400 series power meters are high-accuracy, low cost, ultra-compact, power, and energy meter. It offers ISO 9001 quality, accuracy, and functional flexibility. Selective models of this series have Modbus RTU communications capability. The standard unit flush-mounts in a DIN 96 cutout and conforms to UL product standards.

The power meters are designed for retrofit applications such as replacement of analog meters. Each can be used as a standalone meter in electrical control panels, power distribution units (PDU), switch boards, uninterrupted power supplies (UPS), generator sets, and motor control center (MCC) systems. It also provides easy communication to program logic controls (PLC), distributed control systems (DCS), building management systems (BMS), and other systems.

The following table gives the technical specifications of the power meters. Refer to “Technical Data” on page 75 for more information.

Table 1-6: Technical specifications

Description	Specification
Sensing/Measurement	True RMS, one second update time, four quadrant power and energy
Accuracy	Class 1.0 as per IEC 62052-11 and IEC 62053-21; Class 0.5S (Optional) as per IEC 62052-11, 62053-22; Class 0.2* (optional) ;
Auxiliary supply (Control power)	44 to 300 VAC/DC CAT III 50/60 Hz
Burden	Voltage and current input < 0.2 VA per phase Auxiliary supply (control power) < 3 VA at 240 V, 5 VA Max < 2 W at 300 V DC
Display	Alphanumeric bright LED
Resolution	RMS four digits, INTG eight digits
Input voltage	Four voltage inputs (V1, V2, V3, VN) IEC: 80 to 480 V-LL (50 to 277 V-LN) CAT III 80 to 600 V-LL (50 to 350 V-LN) CAT II UL: 80 to 600 V-LL
Input current** (Energy measurement)	Current inputs (A1, A2, A3); 5 A Class 1.0/0.5S: 5 mA (starting) to 6 A 5 A Class 0.5S/0.2: 5 mA (starting) to 6 A 1 A Class 0.5S/0.2: 1 mA (starting) to 1.2 A
Frequency	45 to 65 Hz
Overload	5 A meter: 10 A max continuous, 50 A for 5 sec/hr, 120 A for 1 sec/hr 1 A meter: 2 A max continuous, 10 A for 5 sec/hr, 24 A for 1 sec/hr
Environmental	Operating temperature: -10 °C to 60 °C (14 °F to 140 °F) Storage temperature: -25 °C to +70 °C (-13 °F to 158 °F) Humidity 5% to 95% non condensing Altitude ≤ 2000m
Standard	CAT III - Measurement category III, Pollution Degree 2,  - Double insulation at user-accessible area
Weight	400 gms approx, unpacked 500 gms approx, shipping
Communication (optional)	RS-485 serial channel connection Industry standard Modbus RTU protocol
EM6400 series	Emission : CISPR22 Class A; Fast Transient: 4kV IEC

conforms to	61000-4-4; Surge withstand: IEC 61000-4-5; Damped Oscillatory: IEC 61000-4-12; ESD: IEC 61000-4- 2; Impulse voltage: 6 kV, IEC 60060, 1.2/50 μ s
IP degree of protection	Front display – IP 51; Meter body – IP 40 Excluding terminals

NOTE: Universal CT range is applicable for Class 1 & Class 0.5 meters where CT secondary of 1 A or 5 A is field-programmable.
For Class 0.5S & Class 0.2 meters, CT secondary rating (1 A or 5 A) should be specified while ordering.

** Class 0.2 is applicable when the voltage (line-neutral) is above 120 V.*

*** Additional error of 0.05% of full scale, for power meter input current below 100 mA for 5A and below 20 mA for 1A.*