

**DESCRIPTION**

The A2000 Multifunction Power Meter is a powerful, four-quadrant programmable energy meter that features a bright LED display, two freely-configurable analog outputs and serial communication ports.

The A2000 can be programmed either through software or the push-buttons on the front panel. The A2000 can be programmed for any three-phase electrical system with transformer-rated inputs of 5A and up to 550V. Programmable transformer ratios allow the A2000 to show primary values on the display and read through the serial ports. The analog outputs can be assigned to any instantaneous quantity.

Quantities measured by the A2000 include current, voltage, active reactive and apparent power, power factor, line frequency and energy. Other available options include two additional analog outputs (total of four), two pulse outputs with one sync input, data logger for load profile or event recording, and LON and Profibus protocol ports.

**Pulse Outputs**

- Up to 2 programmable pulse outputs.
- Can be assigned to either import or export quantities, active or reactive.
- Can be assigned to either total system or per-phase energy.
- Pulse rates can be assigned from 1 to 5000 pulses per kWh or MWh.
- Can be programmed as threshold alarms.
- High-going and low-going with hysteresis.

**Analog Outputs**

- 2 or 4 programmable analog outputs.
- $\pm 20\text{mA}$  standard
- Dip-switch selectable  $\pm 10\text{Vdc}$
- Programmable for any real-time measured quantity.

**Display**

- 7-segment red LED.
- 13.2mm character height.
- Display primary or secondary quantities.
- Sealed front panel can be used to configure meter.
- Display current, voltage, real, reactive and apparent power, real and reactive energy, power factor and frequency. System and per-phase quantities for most.

**Metrology**

- Can be configured for any electrical system.
  - 3-Phase, 4-Wire
  - 3-Phase, 3-Wire
  - 3-Phase, 1 Current Transformer
- Programmable transformer ratios for current and voltage.
- True four-quadrant measurements.
- THD measurements for current and voltage up to 15th harmonic.
- Measure natural current.
- Instrument power options for either AC or DC power.

**Communications**

- Comes standard with RS232 and RS485 communications for programming and data retrieval.
- Addressable from 0 to 254.
- Baud rates up to 19200.
- Profibus DP or LonWorks interface available.

**Load Profile**

- Memory storage for up to 63,000 values.
- Select up to 12 measurement values to be stored.
- Select memory storage intervals from 300ms to 30 minutes.
- Use triggering events and pre-trigger levels to capture disturbances.

**METRAwin10 Data Retrieval Software**

- Read and display real-time values using graphic display interfaces.
- Read and store load profile data from A2000.
- Configure all parameters of A2000 operation.
- Export readings for use with Windows software packages.

## SPECIFICATIONS

**DISPLAY** ..... 7-segment red LED  
 Character Height..... 0.5in/13.2mm  
 Display Range..... Max. 9999  
 Energy..... Max. 999999999

**INPUT**  
 Voltage..... 500Vphase-phase, 289Vphase-neutral  
 Overload..... 1.2 X continuous  
 Current..... 0-6A  
 Overload..... 1.4 X continuous,  
 30A for 10 seconds,  
 100A for 3 seconds  
 Frequency..... 40-70Hz

**ACCURACY**  
 Current..... 0.25% F.S.  
 Voltage..... 0.25% F.S.  
 Power..... 0.5% F.S.  
 Power Factor..... 0.02 P.F.  
 Frequency..... 0.02 Hz  
 Energy..... 0.5% F.S.

**SYNCHRONIZATION PULSE**

The synchronization input recognizes floating contact  
 ON..... <10Ω  
 OFF..... >10MΩ

**RELAY OUTPUTS** One relay-changeover contact per limit value  
 Switching Capacity..... ac/dc, 250V, 2A, 500VA/50W  
 Service Life..... >500,000 switching cycles  
 Hysteresis adjustable for each relay..... ±100 digits

**ANALOG OUTPUTS**

Standard..... 0/4-20mA or ±20mA  
 Selectable..... ±10Vdc  
 Output Load, Current (max.)..... 500Ω  
 Output Load, Voltage..... <20mA  
 Load Impedance Effect  
 Current Output..... <0.8 μA/Ω (0-500Ω)  
 Voltage Output..... No effect to >10kΩ

**PULSE OUTPUTS**

Open Emitter..... ON..... 10mA-27mA  
 OFF..... <2mA  
 External Voltage..... 8-30V  
 Pulse Duration..... 100ms  
 Interpulse period..... 10ms

**PROTOCOLS FOR RS232 AND RS485**

Selectable GMC Device Bus (DIN Draft 19244), EN 60870 or Modbus (RTU)

**INSTRUMENT POWER**

Standard..... 230V, 115Vac, ±10%, 45-65Hz  
 Optional..... 20V-69Vac, 45-450Hz, 20V-72Vdc or  
 73V-264Vac, 45-450Hz, 73V-276Vdc  
 Power Consumption..... Max. 15VA

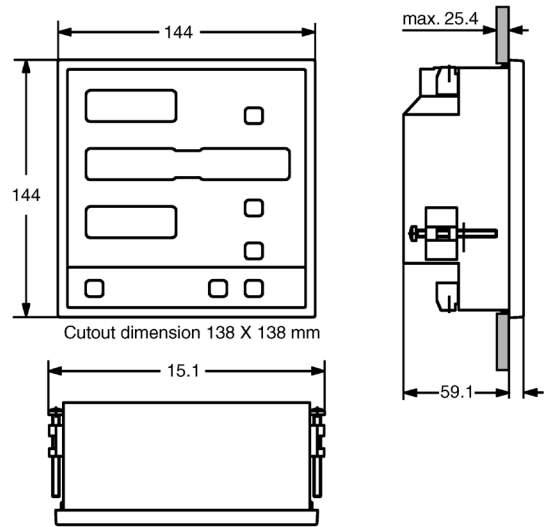
**PHYSICAL**

Mechanical Dimensions..... 5.7" X 5.7" X 2.6"  
 Panel Cutout..... 5.4" X 5.4"  
 Installation Depth Max. .... 2.3"  
 Net Weight..... 2.2 lb

**PROTECTION**

Front Panel..... IP 52  
 Housing..... IP 30  
 Terminals..... IP 20  
 Protection Class II

## DIMENSIONS



All Dimensions in mm

## AVAILABLE CONFIGURATIONS

- A2000-0\*1..... 2 Analog Outputs, No Pulse Outputs, No Data Logger, RS-232 & RS-485
- A2000-0\*2..... 2 Analog Outputs, 2 Pulse Outputs, No Data Logger, LON & RS-232
- A2000-0\*3..... 2 Analog Outputs, 2 Pulse Outputs, Data Logger, LON & RS-232
- A2000-0\*4..... 4 Analog Outputs, 2 Pulse Outputs, No Data Logger, RS-232 & RS485
- A2000-0\*5..... 4 Analog Outputs, 2 Pulse Outputs, Data Logger, RS-232 & RS485
- A2000-0\*6..... No Analog Outputs, No Pulse Outputs, No Data Logger, Profibus-DP & RS-232
- A2000-0\*7..... No Analog Outputs, 2 Pulse Outputs, No Data Logger, Profibus-DP & RS-232
- A2000-0\*8..... No Analog Outputs, 2 Pulse Outputs, Data Logger, Profibus-DP & RS-232

\* Instrument Power Specifications:

0 = 115/230V, 45-65Hz      1 = 20-69V, 45-450Hz, 20-72Vdc      2 = 73-264V, 45-450Hz, 73-276Vdc