ELKOR

ET3

ADVANCED POWER TRANSDUCER

The ET3 Advanced Power Transducer adds comprehensive and accurate power monitoring to Control and Energy Management Systems. It may be installed in single, split or three phase configurations. In addition to four analog outputs and one pulse output the transducer offers RS-485 (Modbus) digital communication for monitoring over 20 electrical parameters. An optional Remote Display Module further enhances the ET3 applications.

FEATURES:

- High Accuracy (0.5%), true RMS
- Optically isolated (up to 3250V) output signals
- Outputs compatible with any standard EMS system (DDC, PLCs)
- Digital communication via RS-485 (MODBUS RTU)
- Accepts voltages up to 600VAC directly
- Rolling Window demand calculations
- Optional four x 0-5 VDC or 4-20 mA outputs

PRODDUCT DESCRIPTION:

The ET3 is a precision true RMS power meter and transducer designed specifically for Energy Management applications and Digital Control Systems. It may be used in single, split and three phase installations. The unit may be used for accurate (0.5%) electrical measurements in most power systems, including single phase, split phase, and three phase installations configured in 'wye' or 'delta', with two or three CTs.

The transducer offers four independent analog outputs, either 0-5 VDC or 4-20 mA. In addition, energy consumption (Watt-hours) is available as EMS compatible slow pulses (change of state) or 100ms pulses through a solid state relay.

The ET3 is equipped with an RS-485 digital communication port that sends over 20 electrical parameters to a Modbus RTU unit.

The ET3 transducer accepts voltages up to 600 VAC directly, without the need for Potential Transformers (PTs). It supports standard 5A Current Transformers as well as Elkor's line of split core 'safe' CTs. Power line inputs to the transducer are optically isolated from the outputs and the display.
A remote LCD display module (ET3-RDM), may be optionally added to the unit. The display connects to a dedicated output terminal and is powered by the transducer. The display may be mounted in a close vicinity to the ET3 main enclosure or remotely, up to 100 ft (30 m) from the ET3. The display shows selected electrical parameters grouped in a number of screens. The screens may be selected by an easy to use interface.

Elkor offers an inexpensive interfacing solution for power line connections. Our i-block consists of a 'dead-front', ganged fuse holder (for 600 V systems) and CT termination blocks equipped with shorting shunts. All components are DIN rail mounted and ready to wire.

An OEM version is available without the external enclosure for greater cost savings.

	ET3-1100	ET3-1200	ET3-1250
Watt-hour Pulses	✓	✓	✓
RS485 Communications	✓	✓	✓
Remote Display Output (Display Extra)	✓	✓	
0-5VDC Analog Outputs		✓	
4-20mA Analog Outputs			✓

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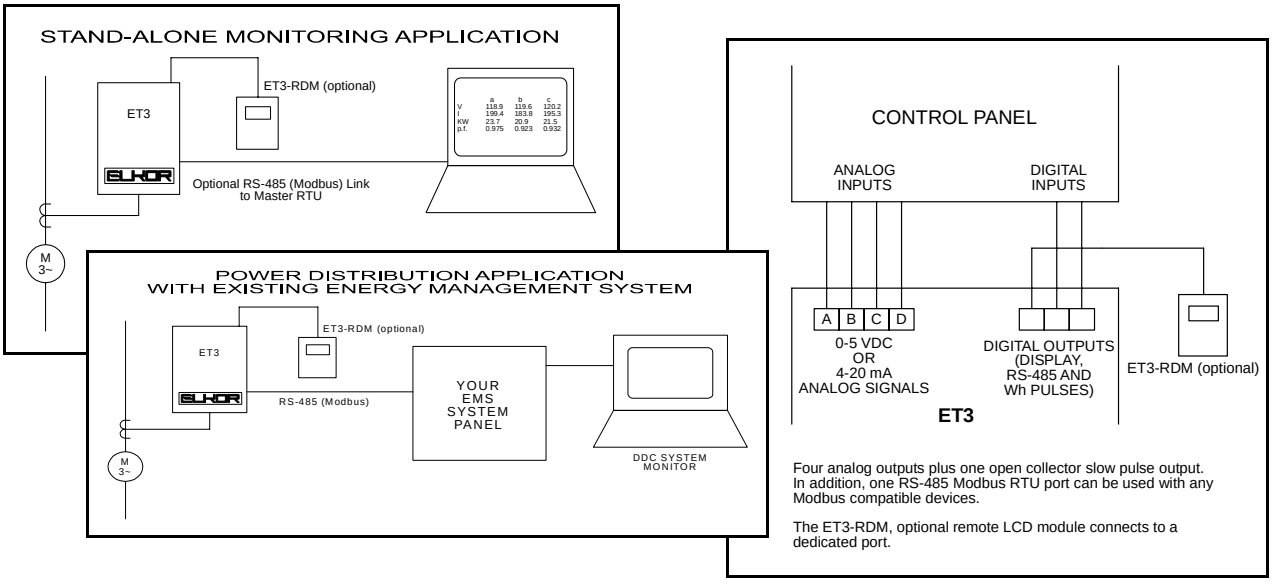
APPLICATION:

- The transducer provides building managers and electrical system maintenance personnel with all the data required for proper electrical system management (i.e. feeder load and balance, demand profile, PF correction)
- The ET3 can be used as a versatile transducer for complete power metering and monitoring in large and small distribution systems. It can be used to monitor specific electric loads such as chillers, pumps, fans etc. and/or the entire substation.
- The ET3 allows the EMS system to identify the electrical load profile and to control the peak demand. This will reduce electricity bills and maximize the benefits of the utility's Time-Of-Use rate schedules.
- The ET3 helps monitor and re-distribute utility cost for multi-user organizations. It will add an EMS based electrical sub-metering system for commercial and institutional buildings (campuses, multi-tenant offices, malls etc.).

TYPICAL SYSTEM CONFIGURATION:

The ET3 can be used as a transmitter for electrical load management applications or as a fully featured, stand alone multi-parameter kW-kWh meter.



SPECIFICATIONS:

INPUTS

Voltage 600 V or 600/347 V (50 or 60 Hz)
480 V or 480/277 V
208 V or 208/120 V

MAX: 700VAC

Single Phase, Split Phase, Three Phase

Current 5A from standard CTs or Elkor 'safe' CTs.

MAX: 2 x Rated Current

All line inputs are optically isolated from the outputs and the display.

DEVICE SPECIFICATIONS

Power Supply 120VAC or 240VAC, factory configured (6 VA max.)

Accuracy Better than 0.5% of reading (at 25°C, pf>=0.5) for all measured and calculated parameters.

Indoor; 0 to 60C, 10 to 90% RH non-condensing.

OUTPUTS:

Wh solid state relay (350V, 120mA MAX), change of state or 100ms pulse on every pre-defined Wh value

Analog Outputs The first three analog outputs may be factory configured to represent either:

- total real power (W); total apparent power (VA); total real power demand (WD)
- Line Voltages - Va; Vb; Vc
- Line Currents - Ia; Ib; Ic
- Line Real Power - Pa; Pb; Pc

The forth analog output may be configured to represent either:

- Avg. current (Iabc), Avg. voltage (Vabc), Power Factor, or Frequency (Hz).

RS-485 Modbus RTU; up to 64 units may be connected to one 'chain'.

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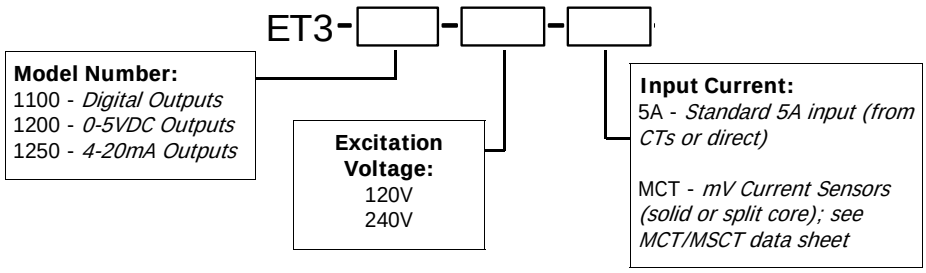
ORDERING INFORMATION:



Optional Parameters (to follow part number):
-[CT Ratio/Max Current]-[PT Ratio]-[Wh Pulse Type]-[Output A,B,C Type]-[Output D Type]-[OEM]

Descriptions:
CT Ratio/Max Current: If used with 5A CTs, specify the current ratio to be programmed by the factory (may be changed via Modbus later). If used with MCT sensors, specify the max current to be measured.

PT Ratio Specify the PT ratio if PTs are used. Specify 1:1 if no PTs are used.

Wh Pulse Type: PS = 100ms Pulses; CS = Change of state pulses

Output A,B,C Type: Valid choices are 0, 1 , 2, 3.

	Output A	Output B	Output C
0	Total Real Power (W)	Total Apparent Power (VA)	Total Real Power Demand (Wd)
1	Voltage Phase A (V)	Voltage Phase B (V)	Voltage Phase C (V)
2	Current Phase A (A)	Current Phase B (A)	Current Phase C (A)
3	Real Power Phase A (W)	Real Power Phase B (W)	Real Power Phase C (W)

Output D Type: Valid choices are 0,1,2,3.

	Output D
0	Average Current (Iabc)
1	Average Voltage (Vabc)
2	System Power Factor (pf)
3	Frequency (Hz)

OEM - Specifies OEM (no external enclosure) version.

If CT ratio/PT ratio not specified defined, 1:1 will be assumed (these may be changed via ModBus later)

If analog output version is ordered, but output signals are not specified, options "0,0" will be assumed. Analog outputs are configured at the factory and may *NOT* be changed in the field.