IoT Digital Solutions from Clearwater Controls

Microsoft Azure Certified

POWERMONITOR
MONITORING, SENSING AND LOGGING

ADVANCEDKEYPAD

The POWER MONITOR and ADVANCED KEYPAD combine to provide motor protection, sensing and power analytics that deliver the ultimate cloud based control solution.

Smart technology:
- Comprehensive intelligent power analytics device

Full connectivity to Microsoft Azure, with support for:
- All security configurations (X509 etc.)
- Auto & configurable enrolments
- Pre-defined data profiles & direct methods
- Configurable periodic data

Built-in LAN interface:
- Modbus TCP/IP
- Local web server
- Cloud connectivity

Capability for LoRa radio technology:
- LoRa WAN radio networks
- Ad-hoc connections for exchange / sync

Compact units:
- Keypad door mounted
- POWER MONITOR Din Rail mounted

Ease of integration:
- Easy to retro fit
- Quick to set-up

Full connectivity to MQTT, with support for:
- All security configurations
- Predefined data profiles & direct
- Configurable periodic data

Support for LTE expansion module:
- GPS asset tracking
- Wireless cloud connectivity

Plus:
- Isolated RS485 interface
- Bluetooth LE

APPLICABLE TO ALL ELECTRICAL ASSETS AND SUB ASSETS.

CLEARWATER CONTROLS

INTELLIGENT EFFICIENCY

POWERMONITOR ADVANCEDKEYPAD

Key Benefits:

- **Advanced motor protection:** current imbalance, over/under voltage, over/under current, phase loss detection and thermal overload can all be monitored, alarmed or tripped in real time to ensure a motor does not suffer an unnecessary or preventable failure leading to expensive repair or replacement.
- **Cloud-based control:** allows motors to be automatically controlled and operated in real-time via the Cloud. Control can be based upon data from the motor itself, data from the asset(s) or from other third party data sources (such as weather data or energy tariffs). This maximises the performance and efficiency of the motor and the asset(s).
- **Local intelligence:** allows motors to be automatically controlled and operated in real-time at a local level (without the need for Cloud input) based upon data from the motor itself or data from the asset(s). This maximises the performance and efficiency of the motor and the asset(s) while reducing bandwidth and cloud computational demands.
- **Power analytics:** collects data on the performance of a motor and compares in real-time to optimal bench-mark performance data, highlighting operating deficiencies and maintenance requirements. This allows potential catastrophic failures to be avoided and maintenance to be delivered on a predictive as required basis.

Power Monitor Unit:

Description	Value
Protection Degree	IP20
Mounting Description	TS35 Din Rail
Dimensions	35mmW x 100mmH x 110mmD
Operating Condition	0-50C (Non Condensing)
Power Consumption	4.5W Typical
Digital Input Voltage	3 x 110-230Vac Optically isolated (Tolerance: +/-10%)
Insulation	2.5kV
Relays	3 x Volt Free SPNO (250V, 3A max.) 1 x Volt Free SPDT (250V, 10A max.)
Solid State Relay	1 x SPNO (250V, 100mA max.)
Voltage Measurement	Up to 600Vac
Analogue Inputs (0-20mA)	1 x Passive, 1 x Active/Passive 15Vdc for Loop power
Status Feedback	10 LEDS and operator keypad
Terminals	Torque 0.5Nm Conductor CSA 0.5-2.5mm^2
Internal Fuse	1A
Communications	2 wire RS485 Modbus RTU

Advanced Keypad:

Description	Value
Protection Degree	IP65
Mounting Description	Door Mount (3 screws)
Dimensions	95mmW x 144mmH x 25mmD
Operating Condition	0-40C (Non Condensing)
Power Consumption	5W Typical, 10W Max
Supply Voltage	15-25Vdc
Display	3" 160x160 monochrome LCD Display
Communication	2 x 2 Wire Modbus 485 RTU Modbus TCP/IP
Storage Card	5 million entries
Option cards	M.2. LTE Expansion
Connectivity	Bluetooth Low Energy, USB Mini
Wireless	LoRa, LoRaWAN

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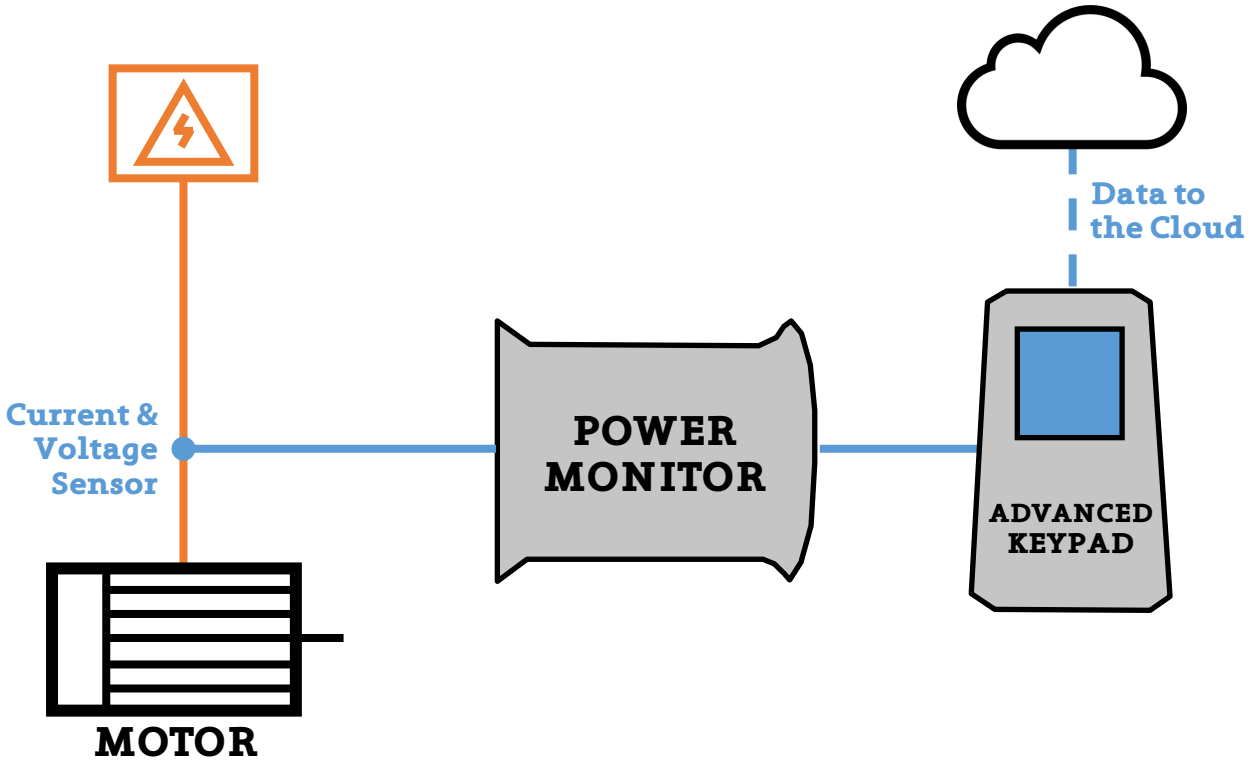
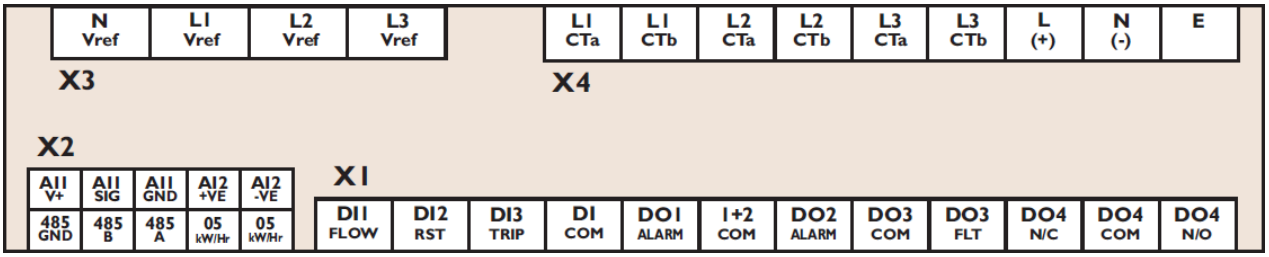
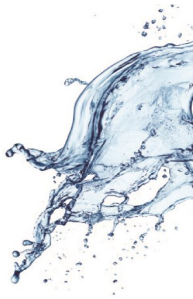


Wiring Terminals:



About us:

Founded in 2009 as the research and development division of a large industrial controls company based in Central Scotland, Clearwater Controls developed a range of products to monitor and control rotating equipment built around our unique and patented technology. With the subsequent growth in IoT and digital systems, Clearwater Controls now provide data gathering devices to a wide variety of companies from large utility firms through to global engineering companies.



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