POWERMONITOR

MONITORING, SENSING AND LOGGING

INTELLIGENT EFFICIENCY

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The POWER MONITOR from Clearwater Controls combines power monitoring, sensing and logging in one compact device. With the ability to display full power information on its display and sensing when the power goes out of limits. With built in hot swappable SD card that logs around 20 years of power information.

Technical Characteristics In Brief

Size:
Width 35mm
Height 100mm
Depth 115mm

Mounting:
TS35 Din rail

Protection Degrees:
IP20

Supply Voltage:
110Vac – 230Vac

Control Voltage:
110 – 230Vac

Logging:
20 years at 5s intervals

Outputs:
1 x N/C
1 x kW per pulse SSR
3 x N/O fault outputs

Inputs:
Pulse Flow meter
Reset
Trip

Current Ratings :
0 – 800A

Communications:
Modbus

- **Phase Monitoring**
  All alarm monitors can be individually assigned to specific outputs or communed up to available outputs.
- **Over/under Voltage Protection**
  Customisable over and under voltage sensing. User can enter setpoints and debounce times.
- **Phase Loss Detection**
  Detects when a phase has dropped.
- **Current Imbalance**
  Detects when current is not balanced across each phase. The level of deviation and debounce can be set.
- **Over/under Current Protection**
  Customisable over and under current sensing. User can enter setpoints and debounce times.
- **Frequency Monitoring**
  Detects if the frequency goes out of range. Deviation and debounce can be set.
- **Thermal Overload**
  Built in IEC 60947 thermal overload when used to protect an individual motor. User can set this to trip the motor and change state of N/O and N/C contacts.

Optional Motor Diagnostics

The POWER MONITOR can monitor main incomers or individual motors.

With 365 days of downloadable performance data, you can conveniently determine maintenance and replacement schedules for motors or pumps.

170 timestamp events, alarms and trips are stored on the device.

Diagnostic counters include:

- **No. of starts**
- **No. of trips**
- **Last run time**
- **Under / over current trips**
- **Under / over voltage trips**
- **Phase loss trips**
- **Motor run hours**
- **KW/Hrs**
- **Average daily KW/hrs**
- **Average daily run time**
- **Average daily current consumptions**
- **Average daily KW/pumped flow (4-20mA input)**

Remote Pump Data Analysis

The **POWER MONITOR** locally logs 365 days of average performance data. In addition, Clearwater Controls can provide enhanced pump analysis through our remote monitoring service. Our secure server can read the data from site and provide either a daily, weekly or monthly detailed report on the performance of each pump. This is emailed directly to the plant/asset manager.

This service can also be used to send specific alarm data to the responsible person for the site, as well as create a maintenance predictor.

X3				X4								
N Vref	L1 Vref	L2 Vref	L3 Vref	L1 CTa	L1 CTb	L2 CTa	L2 CTb	L3 CTa	L3 CTb	L (+)	N (-)	E

X2					X1											
AI1 V+	AI1 SIG	AI1 GND	AI2 +VE	AI2 -VE	DI1 FLOW	DI2 RST	DI3 TRIP	DI COM	DO1 ALARM	I+2 COM	DO2 ALARM	DO3 COM	DO3 FLT	DO4 N/C	DO4 COM	DO4 N/O
485 GND	485 B	485 A	05 kW/Hr	05 kW/Hr												

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CLEARWATER
CONTROLS

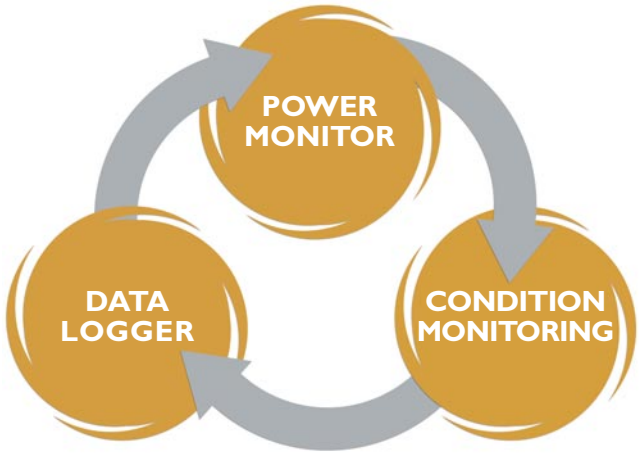
Clearwater Controls,
Morley House, West Mains Industrial Estate,
West Mains Road, Grangemouth, Scotland FK3 8YE

t. 01324 485 557
e. info@clearwatercontrols.co.uk

www.clearwatercontrols.co.uk

Power Monitor

Description	Value	Tolerance
Protection Degree	IP20	
Mounting Description	TS35 Din Rail	
Operating Condition	0-50C (Non Condensing)	
Power Consumption	4.5W Typical	
Digital Input Voltage	3 x 110-230Vac Optically isolated	+/-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	10LEDS and operator keypad	
Internal Fuse	1A	
Terminals	Torque 0.5Nm Conductor CSA 0.5-2.5mm²	
Communications	2 wire RS485 Modbus RTU	



Operator Keypad

Description	Value	Tolerance
Protection Degree	IP20	
Mounting Arrangement	M3 screws	
Operating Conditions	0 - 40C (Non condensing)	
Supply Voltage	15-25Vdc	
Power Consumption	0.75W typical	
Display	2 line LCD Display	
Mounting Screws	Torque 0.5Nm	
Communications	2 wire Modbus RTU	
Storage	SD Card 2.6Million entries	
Connectivity	USB Mini