

**DIGITAL LOAD MONITOR
MOTOR/LOAD PROTECTION
OVER OR UNDER LOAD CONDITIONS**



Emerson Motor's DLM is a digital load monitor that directly measures the load on an asynchronous motor by using the motor as a sensor. By using a patented VIP method of calculating the motor's shaft power, the DLM is able to discount the losses of the motor and monitor the working load only.

By measuring shaft power, the DLM can determine the **working load** exerted by the equipment on the motor. Typical applications include a conveyor, stone crusher, pump, fan, lifting device and most other equipment driven by an asynchronous motor.

The DLM "Auto Set" feature ensures operational simplicity. On pressing the Auto Set, the DLM will automatically measure the working load, determine the correct protection parameters and set them - all within 3 seconds. The DLM can detect, a motor overload or underload, due to jamming, belt and chain breakage, dry running, pump cavitation and seized bearings.

Programmable functions are accessible via the key pad and LCD window. Functions are set using a menu-driven command structure and include motor start delay timer, alarm delay timer, alarm functionality and security protection of set parameters.

Other standard features include phase current and phase voltage measurement, each of which is displayed on the LCD. The DLM is supplied with factoryfitted load represent-ative analogue outputs of 1-10V, 0-5V or 4-20mA, 0-20mA.

MAIN BENEFITS

Auto Set

Measures the actual motor load for a three second interval then automatically sets the alarm level.

Three Monitors in One

Overload Monitor (Max alarm with pre-alarm)
Underload Monitor (Min alarm with pre-alarm)
Over- and Underload monitor (Max- and Min alarm)

Pre-alarm

Provides an alarm before the main alarm activates, thereby preventing unnecessary process interruption.

Connection

Quick and easy connection with minimal wiring. The motor is used as the sensor.

Meter

Measures the motor's rotor shaft power through a patented VIP method.

Protection

Protects the motor-driven equipment or process.

Alarms

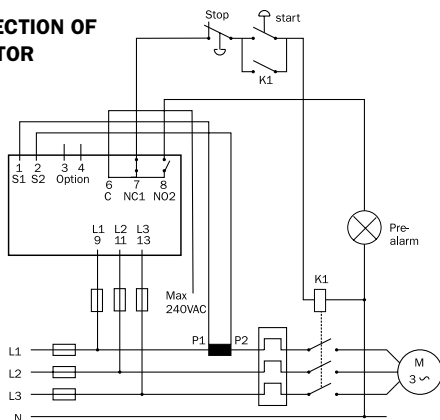
An alarm is triggered by over- or under-loading of, e.g. conveyor systems, cranes/lifting devices, agitators, scrapers, drilling/milling/grinding machines, compressors, stone grinding/crushing machines, saws, pumps, fans etc.

TECHNICAL DATA

Supply voltage:	1x100-115, 1x190-215, 1x220-240, 3x100-115, 3x190-215, 3x220-240, 3x380-420, 3x440-500, 3x525-600 ¹ VAC (±10 %)
Frequency:	45-65 Hz
Current input:	Current transformer CTM10, 25 or 50. (If rated current >50 A CTM10 and extra transformer)
Power consumption:	Max 6 VA
Start-up delay:	1-999 s
Hysteresis:	0-50% of the rated motor power
Response delay:	0.1-90 s
Relay output:	5 A 240 VAC Resistive. 1.5 A 240 VAC Pilot duty/AC12
Fuse:	Max. 10 A
Terminal wire size:	Use 75°C copper (CU) wire only. 0.2-4.0 mm ² single core (AWG 12), 0.2-2.5 mm ² flexible core (AWG 14), stripped length 8 mm (0.32").
The terminal tightening torque:	0.56 - 0.79Nm (5-7 lbs-in)
Accuracy:	±2 %, ±1 unit (cos ϕ >0.5; excl. current transformer; +20 °C (+68°F))
Repeatability:	±1 unit (24 h; +20 °C (+68°F))
Temperature tolerance:	Max. 0.1 % / °C
Operating temperature range:	-20 °C to +50 °C (+122°F)
Storage temperature range:	-30 °C to +80 °C (+176°F)
Protection class:	IP20
Dimensions (WxHxD):	45 x 90 x 115 mm (1.77" x 3.54 x 4.53")
Weight:	0.3 kg (10.5oz)
EMC:	EN50081-1, EN50082-2, FCC Class A
Electrical safety:	IEC 947-5-1:1990 + A1:1994
Approved for:	CE,UL

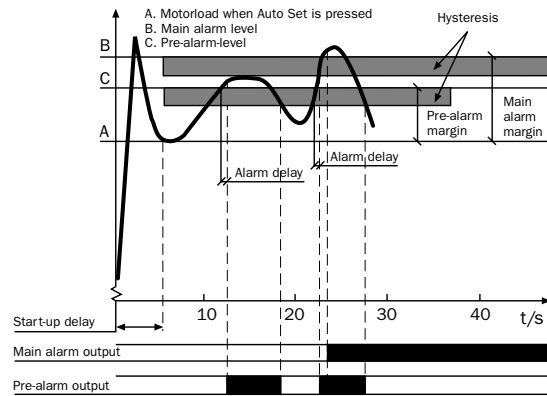
¹⁾ Only for delivery outside EU

TYPICAL CONNECTION OF THE DLM MONITOR

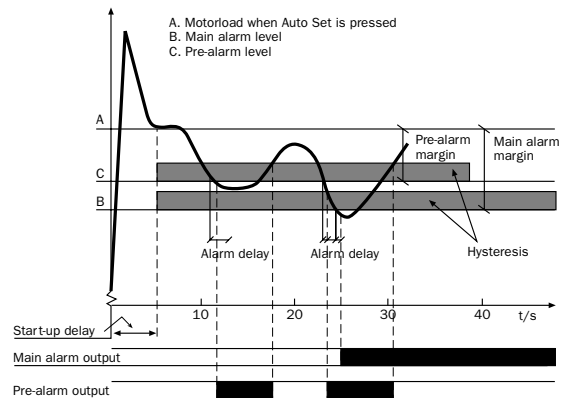


Emerson Motors
8100 West Florissant
St. Louis, MO 63136
USA
Phone: 888 637 7333

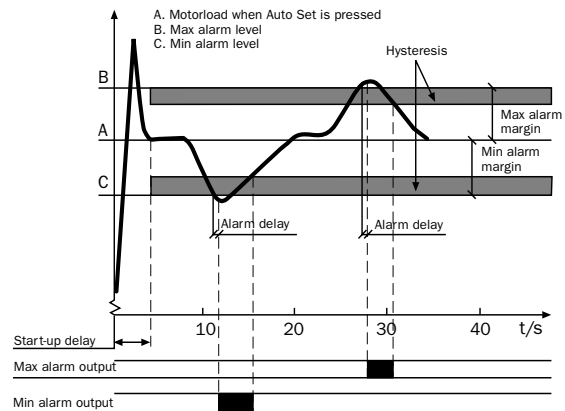
www.usmotors.com



The DLM is programmed as overload monitor (Max alarm with pre-alarm). The alarm levels are programmed with help of "AUTO SET", the alarm delay is 0.5 sec, latched alarm is chosen.



The DLM is programmed as underload monitor (Min alarm with pre-alarm). The alarm levels are programmed with help of "AUTO SET", the alarm delay is 0.5 sec, latched alarm is chosen.



The DLM is programmed as over- and underload monitor (Max- with Min alarm). The alarm levels are programmed with help of "AUTO SET", the alarm delay is 0.5 sec, latched alarm is not chosen.