

ELECTRONIC LOAD MONITOR

Series ELM 931/ELM 936

INTRODUCTION

Motor-Machine combination needs instant protection against unforeseen overloads. The JAYASHREE Load Monitor performs this duty admirably. It can actuate as soon as the preset power level of an Induction Motor exceeds. It can also actuate instantly as an **Electronic Shear Pin** to switch OFF the motor-driven machines like Mechanical Presses, Ball Mills, Crushers and Mixers that are subject to frequent and sudden jamming.

In addition, the monitor can detect Under-Load condition of an Induction Motor, which may occur when driving Deep well pumps and issue a signal warning and / or stopping command.

APPLICATIONS

"Productivity Aid" for a skilled machine tool operator. Safety monitor for small / medium / large Induction Motors driving a variety of loads such as Pumps, Compressors, Machines Tools, Crushers, Ball Mills and so on.

FEATURES

- Monitors under/over load.
- Monitors true kW load on Induction Motor drives.
- Display facility.
- PLC Compatible.
- Provides 4-20 mA / RS-485 output.
- Instantaneous or delayed actuation possible.

WORKING PRINCIPLE

It senses the power of an Induction Motor by sensing and combining the motor current, voltage and power factor and actuates an output relay, either instantly or after preset time delay. This is in sharp contrast with the action of thermal O/L relay which is sluggish, inaccurate and comparatively crude device and hence incapable of providing "Complete Protection".

CONSTRUCTION

These are available in MS / Plastic enclosure to suit IP-30 grade of protection for mounting either inside panel or flush on panel front. Enclosures with IP-65 grade are also available.

OPERATION

The output relay is initially OFF and remains OFF during start-up. The signal current amplitude is continuously monitored. The relay actuates in case of over load. Manual reset facility can be provided if desired.



- The closest best guard of motor driven machines.
- Protects the motor against burning due to overload.
- Protects the machine against mechanical jamming.
- Detects overload as well as under-load.
- Simple to connect-Easy to set.

STANDARD SPECIFICATIONS

Supply Voltage : 415V AC, 50 Hz (Across R-Y Phase)
 Signal Current : Max. 5A (Burden 5VA Max.) from B-Phase
 Initial Delay : 1-20 s
 Nuisance Delay : 1-20 s
 Sensing Range : This is calibrated as per motor kW.
 Output Contacts : 1NO+1NC, 1C/O, 2C/O
 Contact Rating : 6A resistive @ 240V AC.
 Operating Temp.: 55°C Max.

STANDARD MODELS

BASIC TYPE	DUTY	CIRCUIT TYPE
ELM 9311	Over-load	Analog
ELM 9313	Under-Over Load	Analog
ELM 9361	Over-load	µC based
ELM 9363	Under-Over Load	µC based

SELECTION CHART



ELECTRONIC CURRENT MONITOR

Series ECM 921/ECM 926

- Single Phase / Three Phase models.
- Protection against over/under current.
- Micro-processor based models.
- Single unit to monitor multiple motors.
- 4-20 mA output for remote metering.
- Simple to connect-Easy to set.



INTRODUCTION

Induction motor is the heart of any industry. Failure of motor due to over-current can lead to non-productive down time. Motors are generally provided with over temperature protection but the same is not useful for protecting motors from high currents of short duration. The JAYASHREE Electronic Current Monitor protects motor reliably.

APPLICATION

Conveyors, Crushers, Bucket Elevators, Fans, Blowers and similar heavy inertia machines.

WORKING PRINCIPLE

Current from any phase or all three phases is sensed by external CT's and a maximum of 5 A signal is given as input to the unit. This signal amplitude is compared with an internal reference and output relay is actuated at desired value. Initial by-pass delay is provided to take care of transient conditions during motor start-up.

CONSTRUCTION

These are available in MS / Plastic enclosure to suit IP-30 grade of protection for mounting either inside panel or flush on panel front. Enclosures with IP-65 grade are also available.

OPERATION

The output relay is initially OFF and remains OFF during start-up. The signal current amplitude is continuously monitored. The relay actuates in case of over current. Manual reset facility can be provided if desired.

STANDARD SPECIFICATIONS

Supply Voltage : 240 / 110 / 24 V AC/DC
 Signal Current : Max. 5 A
 Initial Delay : 1-20 s
 Nuisance Delay : 0.5-20 s
 Setting Range : 0-120% of input signal
 Output Contacts : 1NO+1NC, 1C/O, 2C/O
 Contact Rating : 6 A resistive at 240 V AC.
 Working Temp : 55°C
 Indication : Supply ON Red
 Relay ON Green

STANDARD MODELS

BASIC TYPE	DUTY	CBASIC TYPE
ECM 9211	Over-load	Analog
ECM 9213	Under-Over Load	Analog
ECM 9611	Over-load	µC based
ECM 9913	Under-Over Load	µC based

OPTIONAL FEATURES

- Digital / Analog Display
- 4-20 ma output
- Manual Reset

SELECTION CHART

ECM - 92	1	1	MS	11
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Circuit Technique

- 1 : Discrete Electronics
- 6 : Micro controller based

Operation / Duty

- 1 : Over-Load
- 2 : Under-Load
- 3 : Under-Over Load

Contact Combination

- 11 : 1NO+1NC
- 22 : 2NO+2NC
- 1C : 1C/O
- 2C : 2C/O

Enclosure

- MS : MS Fabricated IP-30
- CA : Cast Al IP-65
- PL : Plastic-ABS IP-65
- PC : Polycarbonate IP-65

JAYASHREE ELECTRON PVT. LTD.

Works : EL-34, 'J' Block, M.I.D.C. Bhosari, Pune - 411 026. INDIA. Tel : +91-20 - 27121295, 27121529. Fax : 020 - 25437253

E-mail : jayashree_electron@vsnl.net Web : www.jayashree.co.in