

# Minilec - At the forefront of technology

Minilec offers reliable, easy-to-install products of international standards for use in switchboards and control panels. Systems using Minilec relays, controllers, provide higher reliability, flexibility in product features, and require no maintenance.

Minilec manufactures motor and pump protection relays, water level controllers, and Pump automation systems for control applications.

## The Real Hallmark of Quality

Quality is a way of life at Minilec. Accreditation to ISO 9001 (2000) standard with a Quality Objective - Timely supply of reliable products with innovative features for customer satisfaction. All products are type tested as per International standards at recognized test houses. Select products have CE & CSA (C-US) marking.

A dedicated team of over 200 well trained employees and a cutting edge designing, manufacturing and testing facility at our 40,000 sq. ft premises are the Hallmark.

## Customer Support

Customer support engineers are located at major cities to ensure speedy redressal of customer complaints.

## Flying beyond Frontiers

Minilec products are widely distributed not only in India but in the overseas markets as well.

Distributors and customers are located in Singapore, Hong Kong, Malaysia, Indonesia, Thailand, Philippines, Taiwan, Srilanka and Bangladesh in Asia. UAE, Qatar, Oman, Bahrain, Saudi Arabia & Egypt in Middle East.

Our presence in Europe, South America, Australia & New Zealand make us stand apart.

## New challenges ... New solutions

We believe that "Nothing is so good that it cannot be made better". This attitude & the resourceful R&D, has given us the edge & strength to offer new solutions to compete with national & international brands.

With latest communication techniques we are within the reach of all worldwide customers for our products & services.

## Patronizing users...

\* Indian Railways \* Department of Telecommunications \* CPWD \* MIDC, GIDC \* Public Health Engineering Department \* Water Supply and Sewerage Departments \* Irrigation Department \* Ordnance Factories \* Thermal and Hydel Power Generation Plants \* Sugar Factories \* Process and Petrochemical Plants \* Steel Plants

## Approved by Pump Manufacturers / Water Supply Project Consultants :

KSB Pumps \* Kishor Pumps \* Grundfoss Pumps \* Kiroskar Brothers \* CRI Pumps \* Jacob H&G \* MN Dastur & Co. \* Mecon \* Development Consultants \* Tata Consulting Engineers \* Other Engineering Project Consultants



**minilec**

**Minilec (India) Pvt. Ltd.**

S. No. 1073/1-2-3, At Post : Pirangoot 412 111

Tal - Mulshi, Dist. Pune (India)

Tel.: (020) 22922354 - 57

Fax: (020) 22922134

E-mail: pmpm04@minilecgroup.com

Mailer No. PMP - M 04

This is a sales promotional literature. Call for detailed catalogue.

# AVOID PUMP & MOTOR FAILURES

**minilec**

**Phase Reverse, Phase unbalance & Phase Failure**



**Under Voltage & Over Voltage**



**Locked Rotor or Stalling**



**Earth Fault**



**Overload protection with IDMTL Curves**



**Dry running or No Load or Belt Failure**



**Winding Overheat**



**Use Minilec relays**

Most often, the reasons for failure of pumps and motors are somewhere else rather than with the pumps or motors. This can be improper selection of pump, improper selection of protective devices or abuse of the Pump control system.  
The protective device for the pump is the heart of the total

system. Great care is needed while making the appropriate selection of the protective devices during control engineering design. Most users have an adverse impression regarding the performance and reliability of electronic devices because of which they tend to be reluctant to use them for the relevant applications.

## Advantages of Current Sensing Relays over Voltage Sensing Relays

It is commonly observed that a Voltage sensing Single Phasing Preventor is used for motor protection. But if the current sensing safety device is used, it is advantageous & effectiveness of protective relay increased.

### Voltage Sensing Relays

1. Sense Voltage up to sensing points only.
2. Get affected by induced back emf.
3. PF capacitors delay the tripping time



### Current Sensing Relays

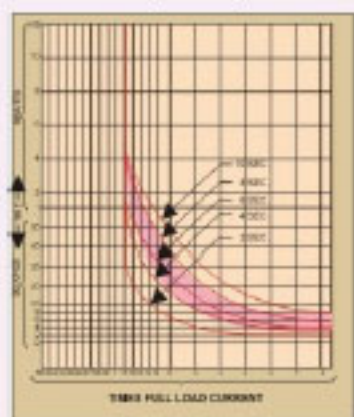
1. Offers protection irrespective of CT location.
2. Does not get affected by Back emf.
3. PF capacitors have no influence on motor current and the tripping time



## Minilec Overload Relay... a better option to Thermal Overload Relay

### Electronic Overload Relay

- Directly sense & measures the motor current (CTS)
- Measure the negative sequence components for effective Phase Failure and Phase sequence protection



- Fixed trip delay for Phase Loss or Wrong sequence & is Load independent (min 30%)
- Electronic Current Setting facility with high accuracy
- Choice of IDMTL curves for Overload faults
- Not affected by high ambient temperature variations
- Measures actual overload current & reacts as per IDMTL intelligence.
- Use separate sensing circuits for Phase failure & Overload faults

### Thermal Overload Relay

- Sense temperature rise and actuate bi-metal strip.
- Does not sense negative sequence components for Phase failure protection and cannot sense Reverse Phase Sequence to the motor.
- Trips with Inverse Time delay & is Load dependant
- Mechanical setting facility with poor accuracy
- Fixed IDMTL curve for Overload faults
- Directly affected by ambient temperature variations
- Does not measure actual current but reacts to temperature rise due to over current conditions.
- Use same bimetal for Phase failure & Overload faults

Function associated with the Pump & Motor protection	Application	Model
Incoming protection in Pump starter panel	Phase Failure, Phase sequence & Unbalance Relay with Under / Over Voltage cutout	VSP D1, VSP D2, AIND2, F3 PFV1
Motor or Pump Overload	Current Sensing Over Load Relay with SPP	MPR D2 + CTS 05
Dry Running or No Load protection (Current Sensing /PF Sensing /Power Sensing)	Pump protection Relay for 3 phase Pumps For single Phase pumps	SPG D2, COS D2, PMR D2+PTSD1 PGS D2
Protection of Large Motors & Pumps	Microprocessor Based protection Relay for LT & HT Pumps & Motors	MBMPR+ CTS
Water level Controller for Pump Automation	Water Level Control	WLC D1, P1 LCW1, P2 LCW 1
Oil Seal Leak Monitoring in Submersible pumps	Moisture Protection Relay	IIM D1
Motor winding overheat protection	Winding Protection Relay (Thermistors Relay)	WTR D1, P1MPT1 + PTC Sensor
Earth Fault Protection	Earth Fault Relay	D2 EFR1
Pump Automation - Remote Monitoring on PC & Control.	Daily time based operation & pump protection PC based Remote Monitoring SCADA	Dedicated customised SCADA hardware & PC software
Pump Automation -Pump Alternating for use of Stand by pumps (1+1)	Pump Alternating relay	P2 ALT1
Pump Automation -Pump Alternating for use of Stand by pumps (1+ 2,3,4,5)	Booster Pump Controller	BPC 2, BPC 3, BPC 4, BPC 5, SMD 2000
Pump Automation - Monitoring & Unmanned Control of Pumps.	Pump Management System	COMMANDER-M
Minimising energy losses in Pumps & Motors	Electronic Soft starter	EMS 2000

\* Other than the above focused products, Minilec offers a wide range of monitoring and control relays, power line transducers, micro processor based annunciators, etc , for Pumps and Motor applications. Send your specific enquiries to seek our advice for your pump and motor safety.