



**Technical Specification**

Auxiliars Supply		90 - 450 VAC
Consumption		3VA
Displaytype		7 Segment 4 Digit
Resolution (45-65Hz)		Resolution 2 decimal point
Input Voltage	Input Type	1 Phase / 3 Phase 3 Wire
	Frequency Range	45-55 Hz
Measurement	PF Accuracy	± 0.05
	Current Accuracy	± 2%
	Input Current	0.1- 40 A (Direct) 2% of Primary - 9999 A (With External CT)
Delay Timer	Externalinput (DI)	0-10 Sec.
	OFF Delay Time (DT)	0...9999 Sec.
	Start Time (ST)	0...9999 Sec.
	Recovery Time (RT)	0...9999 Sec.
Relay Output	Maximum Rating	2 Relay 5 A. 250 VAC / 5 A. 30 VDC
	External Input ( Start & Stop Motor )	Dry Contact
Digital Input	Reset Input ( Push Switch )	Dry Contact
	IP Protection Class	IP 30
Environment	Operating Temperature	0...60 °C
	Operating Humidity	10...85 % RH
Enclosure		DIN Rail mounting ABS - VO (UL -94 V)
Size		95 x 80 x 50 mm.

**Description**

- PM-007N is an load protection of motor or such as the pump operates without water or protect gear of motor when it has loads more than usual.
- Can choose to display PF (Cos $\phi$ ) or current Amp.
- Main 7-Segment 4 LED Display.
- Able to use 1 phase and 3 phase motor.
- Start Delay Timer delay time when start and Off Delay Timer 0-9999 Sec. assist during start.
- Input to receive Start-Stop, Reset Alarm command from devices.
- Can use Direct CT maximum current at 40 A and can use external CT by setting CT Ratio as CT is used.

**Operation**

Wiring follow diagram to supply electrical PM-007N. Relay Output will start motor operation and Start Delay Timer start operation. PM-007N will start to check irregular condition when Start Delay Timer is out of time. User can choose to check irregular condition 2 types

1. Check irregular condition of PF(Cos $\phi$ ). It is suitable to use with 3 Phase motor because when load operation is changed. PF(Cos $\phi$ ) will have changed value more than current such as Water pump which has low load (Water run out or without water) or motor's gear has high ratio, low round. Loads have to support burdens so when there are irregular condition current of motor is almost not change but PF(Cos $\phi$ ) will change obviously.

2. Check irregular condition from Amp is suitable for 1 phase motor because 1 phase motor is Capacitor Motor in mostly. If device check PF(Cos $\phi$ ) will be unstable because Capacitor in circuit.

PM-007N can choose the operation of Relay Output in 3 Function are

1. Under protection is measured value lower than Setpoint low (SP.Lo) from setting. Relay Output will command motor to stop working within OFF Delay Time(DT) from setting use with water pump work to prevent dry water in system which is a cause of Dry Run. Pump will be damaged.

2. Over protection is if value from measure higher than Setpoint High (SP.Hi) from setting value. Relay Output will command motor to stop operation after complete OFF Delay Time (DT) from setting. This function use with an high rate gear and low round protection when gear support load more than usual.

3. Range Limit protection is measured value more than Setpoint High (SP.Hi) or lower than Setpoint Low (SP.Lo) from setting. Relay Output will command motor stop operating after complete OFF Delay Time (DT) use with application that need to protect both Under and Over.

**Operation (Continue)**

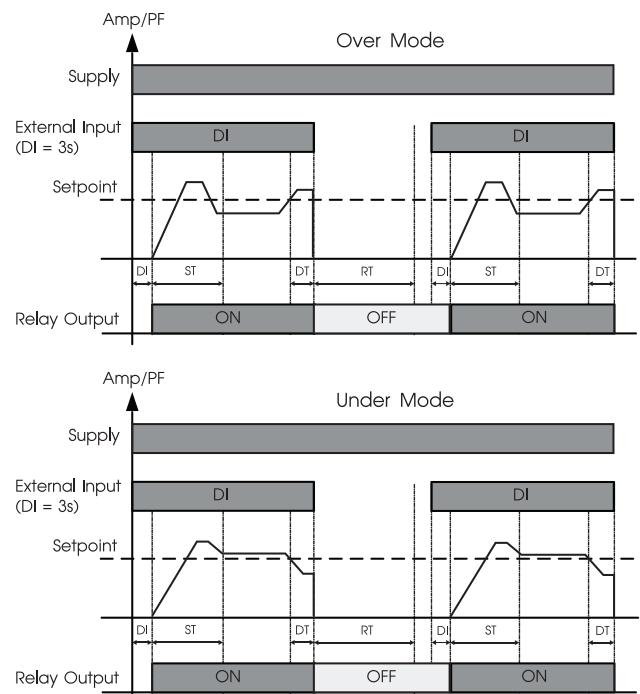
Ext. Input for connect to Start & Stop Motor, Level Switch or other switches for command PM-007N. It will operate when Ext. Input connect close circuit. It will made relay output operate after complete delay time(DI) then pump/motor operate and PM-007N will stop when Ext.Input connect Open Circuit will make relay output stop operation pump/moter will stop too because it does not have operation.

Recovery time(RT) range 0-9999 Sec. is time for set time in PM-007N to operate again after Dry Run happens such as groundwater pump when it was working for awhile then groundwater is ran out and a ground pump has dry run. It made PM-007N stop pump operation.if user set (RT) at 30 minute pump to back to operate automatic because groundwater will have more volume after pump stop operation. This function has benefit because it no need start by manual but if user set RT at 0 minute. This function will not operate and user have to reset by keypad and and hold for 3 sec. or Reset by Ext. Reset Input

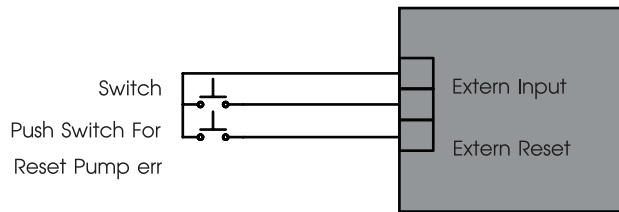
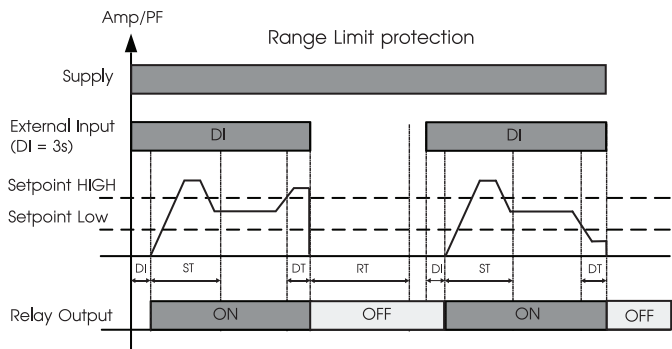
Ext. Reset Input is made for connecting with keypad switch to reset PM-007N start operation again in case user does not need Auto Mode Start by Function (RT).

External Input Time (DI) is made to delay time before the output will operate again from Ext.Input to protect output ON-OFF is swing when level switch has command in unstable.

PM-007N has Pump Test operation by pressing Test and hold it for 3 sec. PM-007N will show - $\epsilon P$ - and output will operate all the time and no alarm check. when press test again PM-007N will back operate as normal and message - $\epsilon P$ - gone. User can use this function to command Manual in case other Input do not operate.



Operation (Continue)



Wiring Diagram

Diagram PM-007N ( 1 Phase Direct )

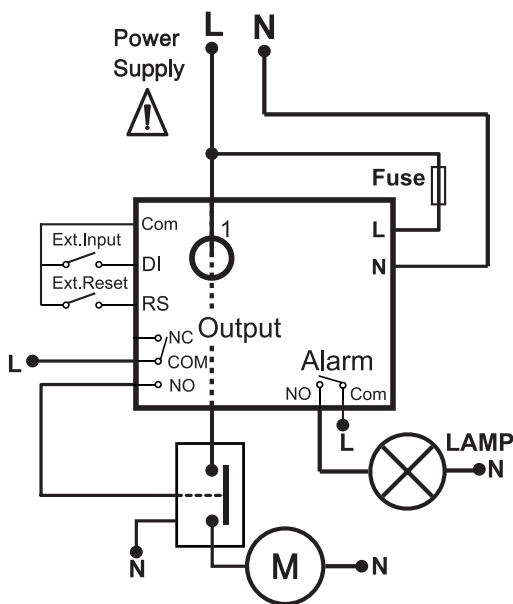


Diagram PM-007N ( 3 Phase Direct )

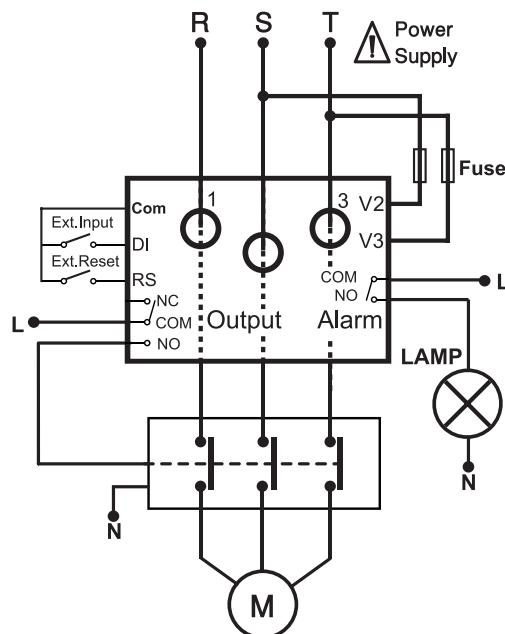


Diagram PM-007N ( 1 Phase With CT )

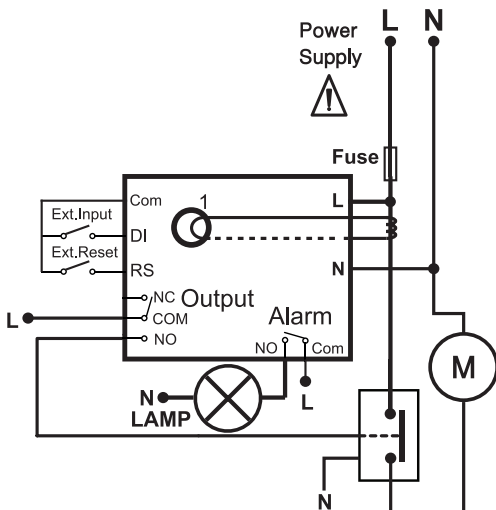
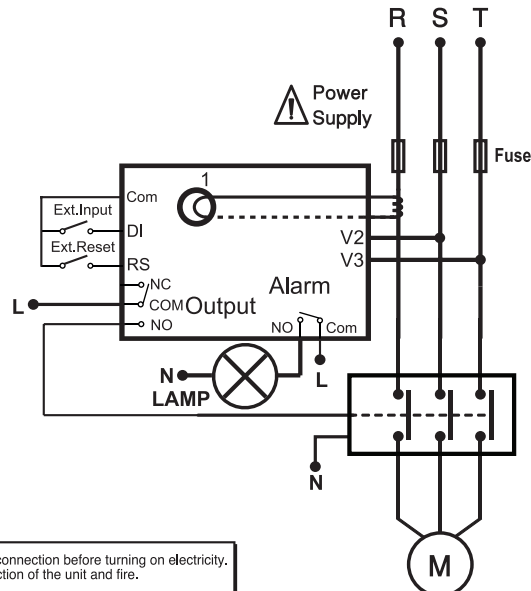


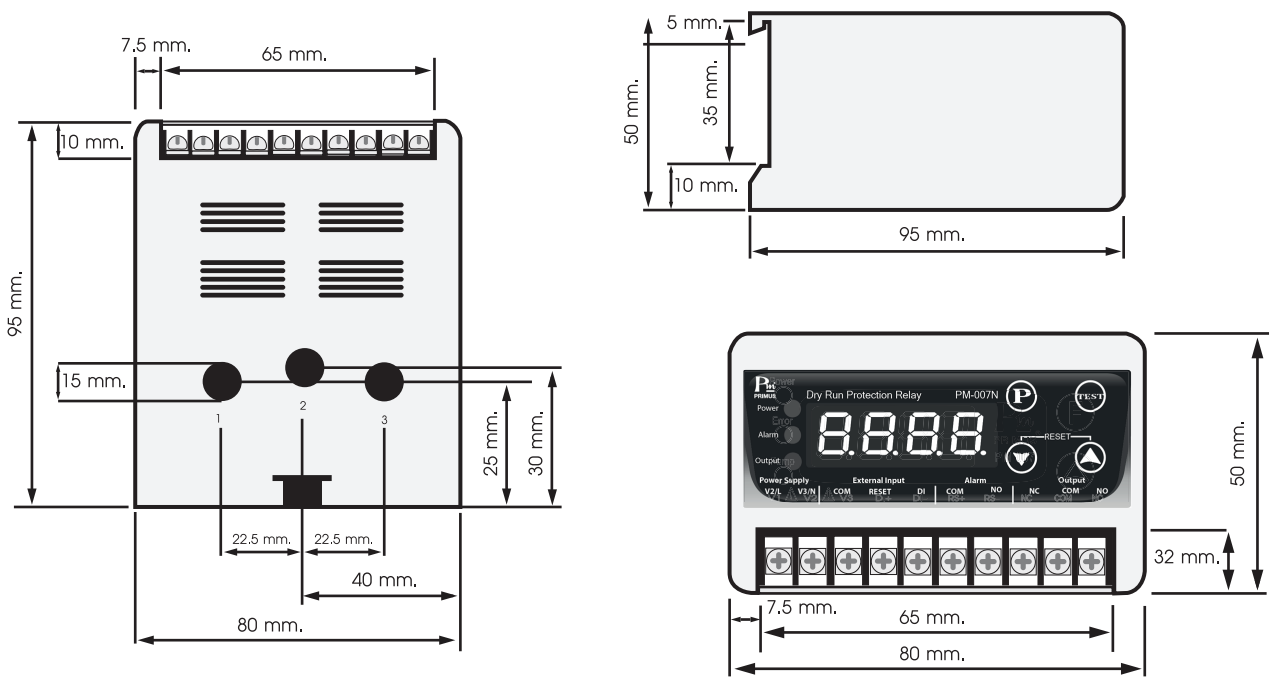
Diagram PM-007N ( 3 Phase With CT )



**WARNING**

- Make sure the correct wiring connection before turning on electricity. Mis-wiring may cause malfunction of the unit and fire.
- Never modify the unit to prevent damage or incident such as malfunction and fire etc.

**Dimension**



**Order Code**

PM-007N