

## TECHNICAL SPECIFICATION :

### Smartte Controller

Power Supply	120 VAC, Nominal 0.15 A, 50/60 Hz
Temperature	40°C – 75°C
Output Contact	120 VAC, 5 A
Current Transformer Input	0 – 5 A, Burden 0.25 VA
Voltage Transformer Input	120 VAC, Burden 1 VA
Analog Input	0 – 5 VDC (4 – 20 mA with 250 ohm resistor)
Communication Protocol	Modbus
Connection	DB-9 Female



### Smartte Display

Operating Temperature	0°C – 50°C
Storage Temperature	-20°C – 60°C
LCD Screen	20 Char x 16 Line 160 x 128 dot graphic display Viewing area 101(w) x 82(h)
Keypad	1 x 4 matrix (ENTER, ESCAPE, UP, DOWN)
Communication Protocol	Modbus
Connection	DB-9 Male (to Smartte Controller) DB-9 Female (to SCADA or Notebook)



**Smartte** provide protection and control for three phase induction motor. The display provide performance for Operation Personel. It's many features make it useful for application with Electrical Submersible Pump

**Smartte** consist of **Smartte** Controller & **Smartte** Display, together support for smart remote monitoring.

- Easy to operate and Maintenance
- Can be connected to iRMC/SCADA for remote monitoring & control
- Data transfer can be done by connecting **Smartte** to a notebook/pc
- Flexible installation because the controller and display can be located separately
- Easy Installation for a new or existing system replacement



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## FUNCTION

### Monitoring Parameter of Induction Motor :

- 3 Phase Induction Motor Voltage (Phase, Average, Unbalance) <
- 3 Phase Induction Motor Current (Phase, Average, Unbalance) <
- Switch Common, Relay Switch, Control Switch <
- Starting Current <
- Power Factor <
- Frequency <
- Supply Voltage <
- Rotation <
- Power (Kilowatt) <
- Ground Amp <
- SPIN Monitor <
- Leg Ground Monitor <
- Analog Input <
- Pressure and Auxiliary <
- SCADA Communication <

### Alarming Parameter :

Other function in **Smartte** is Alarming the monitored parameter

- > Average Voltage : OVERVOLT and UNDERLOAD
- > Voltage Unbalance : V UNBAL
- > Average Current : OVERLOAD and UNDERLOAD
- > Current Unbalance : C UNBAL
- > Start Current : STALL and SHORT CIRCUIT
- > AC Frequency : HI FREQ and LO FREQ
- > Supply Voltage : HI SUPPLY and LO SUPPLY
- > Rotation : ROTATION
- > Switch Common Err : CIRCUIT
- > Auxiliary Switch : AUXILIARY
- > Pressure Switch : PRESSURE
- > Power Factor : POWER FACTOR
- > Analog Input : HI AIN and LO AIN
- > Spin : SPIN
- > Leg Ground : LEG GROUND
- > Communication : SCADA



### CONTROL & ACTION can be set when alarm occurred :

- > Stop : Stop the Motor Immediately
- > Stop+ (Stop + Log) : Stop the Motor Immediately and Log Alarm
- > Bypass : Ignore Alarm
- > Log : Log Alarm

Contact :  
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### Historical :

**Smartte** can be connected to Notebook or PC for downloading historical data through it's serial link and **Smartte** software :  
Alarm if the action parameter set to LOG or STOP+ <  
Totals History <  
Shutdown History <

This feature is very useful for historical analysis and paper copy print out

### PRESTART :

Steps through parameter required before starting for the first time, the prestart routine sets up controller for newly equipment. This is the commissioning routine that ask for necessary information about site installation. The prestart routine can be entered when the motor is not running.



### DEVELOPMENT : REMOTE MONITOR & CONTROL

**Smartte** can be connected to iRMC / SCADA system via IPC device.  
By connecting **Smartte** to SCADA / RMC system user has other advantages, Those are :

- > Remote Real Time Monitoring
- > Remote Real Time Controlling
- > Multiple Motor Monitoring and Controlling at One Place
- > Multiple Viewer at the Same Time
- > Larger Historical Facility
- > Etc

