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## SOFT STARTER

### Motor Soft Start/ Soft Stop (Microcontroller Based)

#### Features:

- Power range up to 150 kW at 400 V
- Compact and Efficient Design and startup
- Choice of startup functions: breakaway pulse, voltage ramp, voltage or current limiting
- Adjustable Torque i.e. Pedestal voltage
- Adjustable Ramp up start time.
- System Run, fault, Power On, Start/Ramp Up, Bypass LED on front Panel.



#### Electrical Specification:

|                  |                                   |
|------------------|-----------------------------------|
| Supply Voltage   | 240-460 V                         |
| Frequency        | 47/63 Hz                          |
| Pedestal Voltage | 20%, 30%, 50%, 70% of I/P Voltage |

#### Environmental Specification:

|                   |   |
|-------------------|---|
| Operating Temp.   | 0° To 40°C  |
| Storage Temp.     | -10 °C to 40 °C   |
| Cooling           | Cooling with heatsink.                                      |
| Relative humidity | < 95 % no condensation allowed                              |
| Altitude          | Maximum 1000 m reduce kW Rating by 1 % per additional 100 M |

#### **SATRONIX (INDIA) Pvt.Ltd.**

OFFICE: 412, Laxmi Plaza, Laxmi Indl. Est., Link Rd, Andheri (W), Mumbai- 400 053.INDIA  
 Works:Unit No. 1,Electronic Sadan 1,Unit No.12, Electronic Sadan 3,Bhosari MIDC, PUNE -411026,INDIA  
 Tele: 9122 26325242, 9820143488, 91(020) 27122758 FAX: 91(020) 27122758

Web Site : [www.satronixindia.com](http://www.satronixindia.com) Email: [satronix@bom3.vsnl.net.in](mailto:satronix@bom3.vsnl.net.in)

#### Control Specification:

|                      |   |
|----------------------|---|
| Ramp Up Time         | 0.5 Sec To 120 sec  |
| Ramp Down Time       | 0.5 to Sec To 120 Sec   |
| Starting Duty        | 2.5 X unit rating in amperes for 60 Sec<br>3 X unit rating in amperes for 30 Sec<br>4 X unit rating in amperes for 10 Sec<br>4.5 X unit rating in amperes for 5 Sec |
| Starts Per Hour      | 12 evenly spaced starts per hour at the Starting Duty   |
| Starting Torque      | 9-49 % of the DOL starting torque   |
| Current Limit        | 30 % DOL current for 60 Sec<br>40 % DOL current for 30 Sec<br>50 % DOL current for 10 Sec<br>70 % DOL current for 5 Sec   |
| Semiconductor Fuses  | Standard on units > 132 amp   |
| Fault Detection      | Shut down for loss of phase and short-circuit of Thyristors, indication on LED  |
| Cooling              | Naturally cooled < 39 amps, force cooled > 53 amps  |
| Relays               | Run, fault/top of ramp  |
| Relay Contact Rating | 1.2 KVA, 250 C AX Max   |
| LED Indication       | System Run, fault, Power On, Start/Ramp Up, Bypass  |
| Control Circuitry    | High frequency Microcontroller for controller   |
|                      |   |

### Block Diagram

