

# MICRO START

MICRO PROCESSOR BASED CONTROLLER FOR INDUCTION MOTORS

SOFT STARTER / ENERGY SAVER

*Analog Process Perfected by*  
**DIGITAL TECHNIQUE**

# JAYASHREE

CRUSHERS

COMPRESSURES

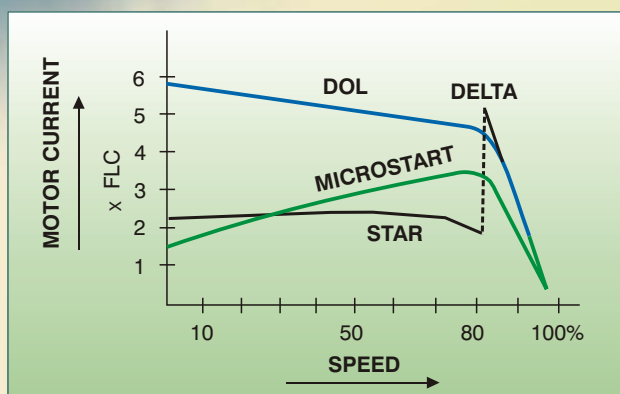
PUMPS



## INTRODUCTION

The complex process of starting an Induction motor is intelligently controlled by Jayashree's 'Micro start', a Micro-controller based soft starter. With more than 1500 units installed since the year 1990. We have wide experience on starting an Induction motor with Electronic soft starter. The heart of the system comes from the pioneers in this line **M/s. Fairford Electronics Ltd. U.K.**

With increasing shortage of power it is essential to use a Soft Starter unit for fixed speed motor drives, which can reduce the starting current burden on supply lines and help to reduce energy consumption during unloaded condition. The MICROSTART is much superior starting method compared to 'STAR DELTA', 'AUTO TRANSFORMER' or any other conventional starting method. The series MS Soft Starters are widely accepted by various Industry sectors for its simplicity, ease of operation and maintenance.



With Technical know-how from

**FAIRFORD ELECTRONICS LTD., U.K.**

# MICROSTART A perfect match for your motor

## ADVANTAGES

- ❑ Smooth jerkless starting of Induction motor.
- ❑ Available for 5 kw to 100 kw
- ❑ Starting current control from 1.5 x FLC to 4.5 x FLC
- ❑ Energy optimisation on partially loaded motors.
- ❑ Soft stop for pumps.
- ❑ Built in protections against over load and single phasing
- ❑ Compact in size, user friendly settings
- ❑ Easy to maintain
- ❑ Conforms to IEC 947-4-2.

## CONSTRUCTION

The Microstart contains only 3 basic components

- **Main control card** : This is a single sided compact board incorporating all the Electronic components.
- **Thyristors** : 6 Nos in anti-parallel configuration of Double the rating of FLC.
- **Heat sink** : Of appropriate size.

The control card is common for any size of rating up to 110 kW. The Thyristor and heat sink are selected as per the current (motor rating) and are housed in a IP 30 / IP 55 grade enclosure as per requirement. Suitable termination is provided for individual unit.

## FEATURES

Following settings are available to achieve a smooth starting & Stopping of the motor.

**Voltage Ramp up Time** : This can be selected from 0.5 sec. to 60 sec. by means of simple DIP switches in 8 steps.

**Starting Current** : The starting current can be controlled from 1.5 x FLC to 4.5 x FLC in a steepless manner. This option is very useful compared to 'Star Delta' starter. The current will remain constant at selected level up to maximum 25 sec. If the motor does not accelerate within this time, then the starting Ramp automatically changes to normal voltage ramp.

**Soft Stop** : The Microstart provides a Soft Stop option for using with pumps. This helps to reduce water hammer effect and enhances the pump system life. The soft stop time is automatically adjusted based on the starting characteristics.

**By Pass** : The starter is designed to use for continuous duty. For certain applications a separate built-in relay is provided to operate an External contactor to by-pass the starter.

**Indications** : Power ON Red LED  
Full Voltage (Run) Green LED.

## SPECIAL FEATURES

**Energy Saving** : The Microstart Soft Starter unit reduces motor terminal voltage to an optimized level when the motor is running under no load condition. The optimized value depends upon motor efficiency. The extent of energy savings can vary for different KW ratings and for different type of loads.

**Special Functions** : Special functions for specific loads like kick-start, super synchronous operation are also available for specific models. The starter can be configured for remote Start/Stop operation.

## BUILT-IN PROTECTIONS

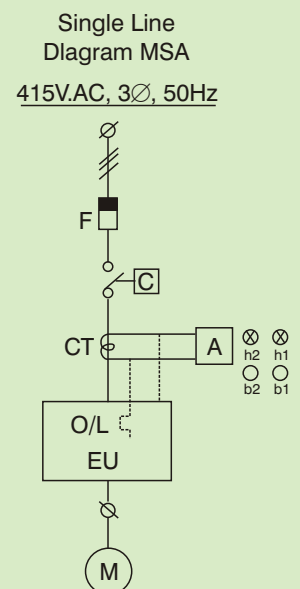
- MOV's for voltage surges.
- RC Snubber for protecting SCR's against dv/dt.
- Against open/short Thyristor.

## STANDARD SPECIFICATIONS :

- Supply : 415 V AC %, 3-Ph, +/-10, 50 Hz +/-2%
- Starting Duty : 10 equispaced starts per hour maximum. For higher no. of starts the unit has to be de-rated.
- Load Inertia : Less than 10 times Rotor moment of Inertia
- Ambient Temperature : 55°C Maximum
- Enclosure : a) MS fabricated for Electronic Unit (EU) - IP 30 Open Chassis (OC) - IP-00  
b) Complete Panel (CP) IP 41. MS fabricated panel complete with all necessary switchgear, fuses, meters etc..

Standard Models*			
Sr. No	Model No	Rating kW	FLC A
1	MSA 7.5	7.5	13
2	MSA 11	11	19
3	MSA 15	15	26
4	MSA 22	22	37
5	MSA 30	30	51
6	MSA 45	45	77
7	MSB 60	60	102
8	MSB 75	75	128
9	MSB 90	90	153
10	MSB 110	110	187

\*For other ratings please refer works



## JAYASHREE ELECTRON PVT. LTD.

Works :

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

E-mail : jayashree\_electron@vsnl.net

Web : www.jayashree.co.in

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