

PRODUCT SPECIFICATION
UNISOFT 1

Unisoft 1 is a compact low cost soft starter for single-phase motors up to 1,1kW, replacing usual DOL (direct-on-line) starting.

The DOL starter uses an electromechanical switch (contactor or manually operated isolator) to switch the supply directly to the motor. This is a simple and inexpensive approach, but produces high current and torque surges in the motor, accelerating it from rest to full speed very quickly. The peak starting current can be many times the rated motor full load current (FLC), and the starting torque is also much greater than rated full load torque. The rapid increase in speed causes stresses in the motor and transmission which can result in mechanical failure, while the high starting current entails heavier cabling, higher capacity supplies and risk of supply voltage dips.

Unisoft uses a semiconductor switching device to control the voltage to the motor, gradually increasing to a maximum. Starting current and torque are correspondingly reduced, and the acceleration time extended.

UNISOFT 1 provides full-wave control for 115/230V single-phase motors, and is rated at 10A continuous. It is housed in a EN35 rail mounting enclosure with three adjustments to optimise starting performance, plus supply and run indicators.

Terminal functions

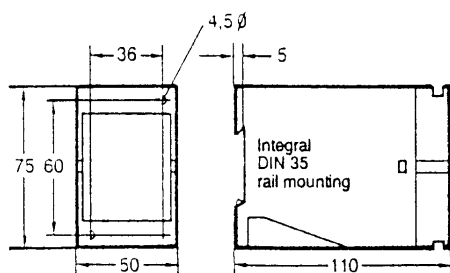
UNISOFT 1

A1	} Supply voltage Link a1 and a2 for 230V operation	}	Run contact
A2			
Lm	} Single -phase motor	}	
Nm			
15	common	}	
16	n.c. (open when relay is energised)		
18	n.o. (closed when relay is energised)		

Order reference

UNISOFT 1 115/230V US 001

Dimensions (mm)



Technical specification

Supply UNISOFT 1: } +10% -15%
voltage: 110...120/220...240V } 50-60Hz
3VA

Current rating: 10A continuous
50A for 5s } 12 starts/h
30A for 20s }
20A for 3s @ 40 starts/h

Starting profile: Pedestal plus 2-segment ramp

Adjustments: Pedestal voltage 10-50%
Ramp time 2-20s
Break point 50-90%

Indicators: Green-Power On.
Amber-Bypass (full voltage to motor)

Bypass relay: An internal relay operates when full voltage is applied to the motor, bypassing the semiconductor switching device and minimising power losses in normal operation. A second SPCO contact is available for remote signalling or interlocking.

Ratings (n.c. and n.o. contacts)
Resistive load: 10A max.

A.C. inductive load switching (B600): 120V 240V 415V max.
Make: 3600VA Break: 360VA

D.C. inductive load switching (Q300): 120V & 240V
Make: 69VA Break: 69VA

Starts/h: 40 max., evenly spaced (subject to starting current and motor capacity)

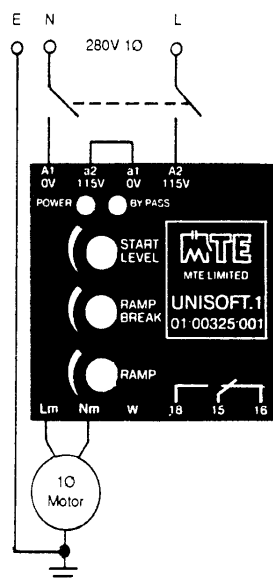
Ambient temperature: -10°C to +50°C

Terminal cable capacity: 2,5mm²

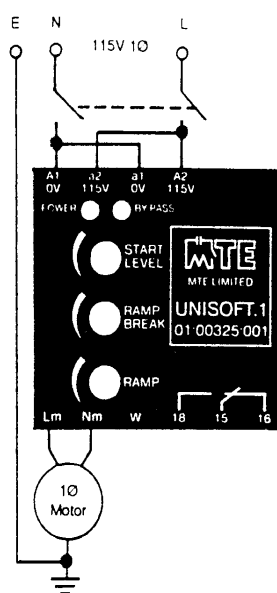
Weight: 0,31kg

Installation and operation

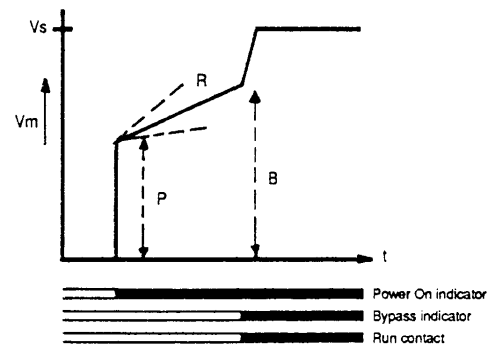
UNISOFT 1
230V
Single-phase motor



UNISOFT 1
115V
Single-phase motor



The three adjustments which control the starting sequence are P, the start (pedestal) level; B, the break point; and R, the ramp rate.



P should be set at minimum initially (fully anticlockwise). After the supply is turned on, P can be turned slowly clockwise until the motor commences rotating with the maximum shaft loading expected.

R is then set as short as possible (anticlockwise) while avoiding sudden acceleration and current surges.

B will normally be set fully clockwise, but can be useful in avoiding instability in a lightly loaded motor as it approaches full speed; this is achieved by turning B anticlockwise until the break point coincides with the onset of the unstable period.

WARNING:
Semiconductor devices transmit leakage current. Before installing or attempting maintenance on starter or motor, the supply must be disconnected. Suitable circuit isolation and protection devices must be provided.

Whilst every care has been taken in the preparation of this leaflet, no liability is accepted for any consequence of its use. No licence to use any patent should be assumed. All dimensions quoted are approximate only and subject to change without notice, as are other technical features resulting from continual development and improvement.