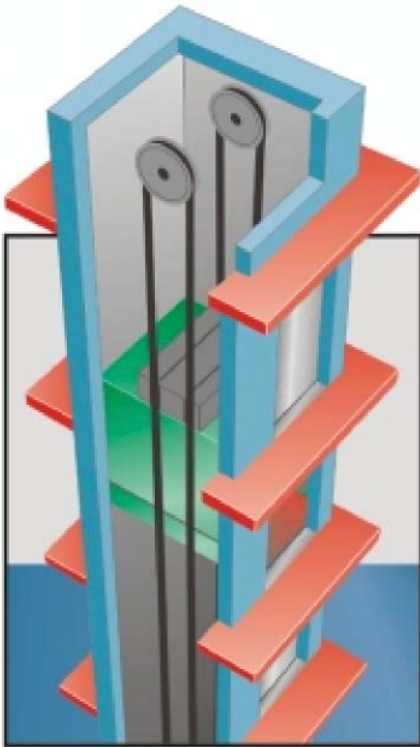


# REO

## REO-USA

Soft-start units

VAREOSOFT SAG



- Symmetrical current draw on all of the three phases during motor run-up
- Integral by-pass contactor
- Adjustable start-up torque setting
- Soft run up/down functions
- Start from contact enable signal

VAREOSOFT

## Soft-start units

### VAREOSOFT SAG

Soft-start units offer the following advantages over direct-on-line starters. The reduced starting torque is better for the motor and mechanical system; motor temperature is reduced and there is less tendency to "snatch".

Not only are mains surges (transients) prevented but the accompanying sags are also reduced.

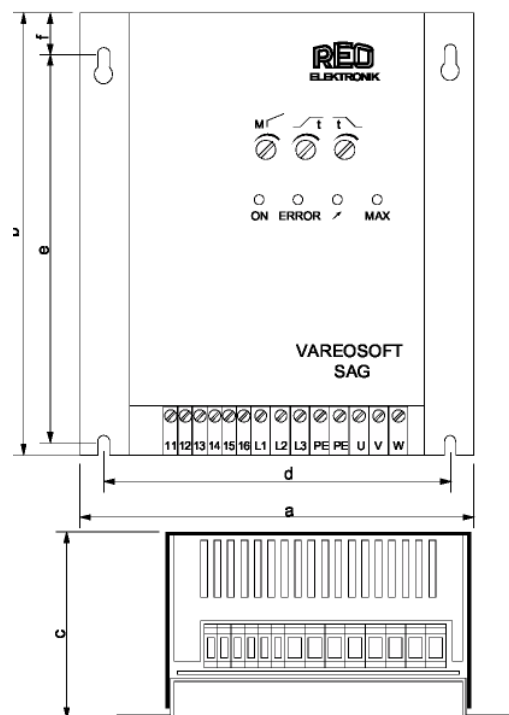
It is simple matter to replace the standard star-delta connection with a soft-start unit, and many problems can be solved such as "water hammer" when a pump starts, for example.

VAREOSOFT SAG soft-start units control all three phases and so there is a balanced current during motor run-up and run-down.

The ramp-up and down times can be adjusted with trimmers. To ensure a reliable start-up the starting voltage can also be set (0...50% of supply voltage). During the run-up phase the voltage is increased from zero (or the starting voltage) up to the supply voltage level, at which point the semiconductors are bypassed with a mains contactor. During the run-down phase the voltage is reduced, over the preset time, from mains level to zero.

Relay contacts are provided for interlocking with other equipment. These are used to indicate "top-of-ramp" or "fault" (e.g. over-temperature) conditions. The units are designed for panel mounting and all connections are brought out to terminals.

Type SAG	9 16 23 32 45 63 75 100 140 200 290										
Supply voltage:	380...400 V $\pm$ 10 %; 50/60 Hz										
Motor power max. [kW]:	4	7,5	11	15	22	30	37	55	75	110	160
Motor current rating: [A] $U_N = 400$ V:	8,5	15,5	22,5	30	43	58	72	104	142	204	292
Starts / h:	60 x 15...20 secs. (33 % ED)										
Soft-Start/Stop time:	0...10 secs. (adjustable)										
Start-up torque (adjustable):	0...50%										
Start signal:	Contact (potential free)										
Relay: By-pass and Fault:	Normally Open 250 V, 1 A										
Ambient temp.:	0...+45 °C										
Construction:	IP 20										



Dimensions	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]	f [mm]	Hole-Ø Clearance
SAG 09	222	270	120	200	240	22	6.5 M6
SAG 16	222	270	120	200	240	22	6.5 M6
SAG 23	252	270	140	230	240	22	6.5 M6
SAG 32	252	270	140	230	240	22	6.5 M6
SAG 45	252	270	140	230	240	22	6.5 M6
SAG 63	282	270	170	260	240	22	6.5 M6
SAG 75	282	270	170	260	240	22	6.5 M6
SAG 100	362	400	185	334	320	71	8.5 M8
SAG 140	362	400	195	334	320	71	8.5 M8
SAG 200	362	400	300	334	320	71	8.5 M8
SAG 290	362	400	300	334	320	71	8.5 M8

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