

Soft starters

Scroll Compressor soft starters

Types	RSBS	RSBD 45 & 75 mm	RSBT 45 & 120 mm
Soft starting of 1-Phase (RSBS) and 3-phase (RSBD, RSBT) scroll compressors			
Dimensions (mm)	60.4* x 137 x 81.4	12A to 45A: 106 x 45 x 125 55A to 95A: 150 x 75 x 170	16A to 32A (no relay output): 81 x 45 x 125 16A to 32A (with relay output): 97.5 x 45 x 125 55A to 95A: 150 x 120 x 170
Features	Internally bypassed, Current Limit start Optional auxiliary relay output (Option V22), HP algorithm for high pressure starts	Compact 2- (RSBD) controlled soft starter for scroll compressors. Patented auto-adapt function for reduction of inrush current and for current balancing. No user settings required with HP algorithm optimised for multi-compressor systems	Three phase (RSBT) Controlled solution with internal bypass. Patented self-learning algorithm for optimal current reduction. Compliant to Class B (residential limits) for EMC emissions (16A to 32A). Optional serial communication for energy variables, alarms, start/stop.
Control specifications			
Control input range	230 VAC	Option E: 110 - 400 VAC Option F: 24 VAC / DC	Option E: 110 - 400VAC [RSBT 45mm] Option C: 24 VAC/DC & 110-400 VAC [RSBT 120mm]
Controlled phases	1	2	3
Output specifications			
Rated operational current (Ie)	RSBS2325...: 25 A RSBS2332...: 32 A	RSBD 45mm: 12/16/25/32/37/45A RSBD 75mm: 55/70/95 A	RSBT 45mm: 16/25/32A RSBT 120mm: 55/70/95A
Operational voltage	230 VAC (-15%, +10%)	RSBD 45mm: 220 - 400 VAC (-15%, +10%) RSBD 75mm: 220 - 600 VAC (-15%, +10%)	RSBT 45mm: 220/400 VAC (-15%, +10%) RSBT 120mm: 220 - 480 VAC (-15%, +10%)
Number of starts per hour	12 (evenly distributed)	12 (evenly distributed)	12 (evenly distributed)
Assigned compressor rating @400 V	RSBS2325... / RSBS2332...**** 3.7 kW (5 HP) / 4 kW (5 HP)	RSBD 45mm: 5.5 kW (5 HP) to 22 kW (25 HP) RSBD 75mm: 30 kW (30 HP) to 55 kW (50 HP)	RSBT 45mm: 7.5 kW (7.5 HP) to 15 kW (15 HP) RSBT 120mm: 22 kW (30 HP) to 45 kW (50 HP)
General specifications			
Internally bypassed	Yes	Yes	Yes
Operational frequency	50/60 Hz ±10%	50/60 Hz +/- 10 Hz	50/60 Hz +/- 10 Hz
Ramp up/Ramp down	< 600ms/0s	<1s/0s	<1s/0s
Default Current limit	RSBS2325...V2...: 40 Arms RSBS2332...V2...: 45 Arms	3.5xIe	RSBT 45mm RSBT..16: 40A, RSBT..25:90A, RSBT..32:110A RSBT 120mm: 3.5xIe
Operating temperature	-20°C to +65°C (-4°F to +149°F)	-20°C to +60°C (-4°F to +140°F)	RSBT..16: -20°C to 60°C (-4°F to +140°F) RSBT..25: -20°C to 55°C (-4°F to +131°F) RSBT..32: -20°C to 50°C (-4°F to +122°F)
Storage temperature	-30°C to +70°C (-22°F to +158°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +85°C (-40°F to +185°F)
Wrong Phase sequence indication	N/A	Yes	Yes
Degree of Protection	IP 20	RSBD 45mm: IP20 RSBD 75mm: IP 20 (Housing) / IP 10 (Terminals)	RSBT 45mm: IP20 RSBT 120mm: IP 20 (Housing) / IP 10 (Terminals)
Approvals	CE - UL - cUL	RSBD 45mm: CE - cULus - CCC RSBD 75mm: CE - cULus - CCC (pending)	RSBT 45mm: CE - cULus** - VDE*** RSBT 120mm: CE - cULus

* For RSBS23...V22..., auxiliary terminal is 10.5mm protruding

** For options V50/ V51/ V61

*** Up to 15 AAC (Up to 32 AAC for RSBT..HPV models only)

**** Assigned compressor rating @ 230 V

Soft starters

Centrifugal pump soft starters

Types	RSWT 45mm	RSWT 75 & 120 mm
Soft-starters with dedicated, self-learning algorithm for centrifugal pumps.		
Dimensions (mm)	RSWT4012/RSWT4016: 130 x 45 x 125 RSWT4025: 157 x 45 x 125	RSWT 75mm : 177 x 75 x 206 RSWT 120mm: 177 x 120 x 206
Features	Three phase controlled, internally bypassed. Self-learning algorithm dedicated to centrifugal pumps. RSWT..V00 version - 1-knob adjustment for ramp-up and ramp-down. RSWT..V10 version - Integrated overload protection (Class 10). RSWT40 versions - internally supplied.	Three phase controlled and internally bypassed. RSWT..V01. versions with PTC input protection. RSWT...V11.versions with integrated overload protection, PTC i/p, remote alarm reset. RSWT40 versions - internally supplied. 3 output relays for alarm, top of ramp and run indication.
Control specifications		
Control input range	Option E: 110 - 400 VAC Option F: 24 VAC/DC Option G: 100 - 240 VAC [RSWT60..]	Option E: 110 - 400 VAC [RSWT40..] Option F: 24 VAC/DC [RSWT40....] Option G: 100 - 240 VAC [RSWT60..]
Controlled phases	3	3
Output specifications		
Rated operational current AC 53b	12/16/25 A	32/37/45/55/70/90 A
Operational voltage	RSWT40: 220 - 400 VAC (-15%, +10%) RSWT60: 220 - 600 VAC (-15%, +10%)	RSWT40: 220 - 400 VAC (-15%, +10%) RSWT60: 220 - 600 VAC (-15%, +10%)
Number of starts per hour @40°C	20	20
Assigned motor rating @ 400 V	RSWTxx12: 5.5 kW (5HP) RSWTxx16: 7.5 kW (7.5HP) RSWTxx25: 11 kW (10HP)	RSWTxx32: 15kW (20HP) RSWTxx37: 18.5kW (25HP) RSWTxx45: 22kW (30HP) RSWTxx55: 25kW (35HP) RSWTxx70: 37kW (40HP) RSWTxx90: 45kW (50HP)
General specifications		
Internally bypassed	Yes	Yes
Operational frequency	50/60 Hz +/- 10%	50/60 Hz +/- 10%
Ramp up/Ramp down	RSWT40....V00: 1 - 20s RSWTxx....V10: 1-20s/0-20s	RSWT40....V010/V011: 1 - 20s RSWTxx....V110/V111: 1-20s/0-20s
Initial torque	Self-adjusted by RSWT	Self-adjusted by RSWT
Operating temperature	-20°C to 60°C (-4°F to +140°F)	-20°C to 60°C (-4°F to +140°F)
Storage temperature	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)
Integrated overload protection	RSWT40....V00: No RSWTxx....V10: Yes	RSWT40....V010/V011: No RSWTxx....V110/V111: Yes
Degree of Protection	IP 20	IP 20 (control circuit) IP 10 (power terminals)
Approvals	CE - cULus - (CCC - pending)	CE - cULus - (CCC - pending)

xx = 40 or 60

Soft starters

Motor control - Soft start and stop

Types

RSHR 3-Phase

RSGD 45mm

Soft starting and stopping of 3-phase motors. Starting / stopping time and initial torque can be independently adjusted



Dimensions (mm)

158.5 x 90 x 90

106 x 45 x 125 [RSGD..12.. - RSGD..32..]
150 x 45 x 132 [RSGD..37.. - RSGD..45..]

Features

Three phase controlled. In Line or In Delta (6-wire) connection. Wrong Phase sequence detection. Motor PTC protection. Phase Loss Detection

Compact two phase controlled general purpose soft starter. Self-learning algorithm for better current balancing. Improved current reduction capability. Optional alarm and top of ramp relay output

Control specifications

Control input range

24-550 VAC/DC (Option "C")
24-600 VAC/DC (Option "D")

Option E: 110 - 400 VAC [RSGD40..]
Option F: 24 VAC/DC [RSGD40..]
Option G: 100 - 240 VAC [RSGD60..]

Controlled phases

3

2

Output specifications

Rated operational current
AC 53b

25 A [RSHR..25...]
32 A [RSHR..32...]

12/16/25/32/37/45 A

Operational voltage

127/220 VAC [RSHR22..]
230/400 VAC [RSHR40..]
277/480 VAC [RSHR48..]
346/600 VAC [RSHR60..]
220-480 VAC [RSHRM]
400-480 VAC [RSHRM]

RSGD40: 220 - 400 VAC (-15%, +10%)
RSGD60: 220 - 600 VAC (-15%, +10%)

Number of starts per hour
@40°C

7 [RSHR2225.../RSHR4025...]
3 [RSHR4825.../RSHR6025.../RSHRM]
50 [RSHR..32...]

20: [RSGD..12/RSGD..16/RSGD..25]
10: [RSGD..32/RSGD..37/RSGD..45]

Assigned motor rating
@ 400 V

In Line Connection/In Delta Connection
RSHR4025CV..
11 kW [10 HP] / 20 kW [20 HP]
RSHR4032CV..
15 kW [20 HP] / 22kW [30 HP]

RSGDxx12/RSGDxx16/RSGDxx25
3 kW (3 HP) / 4 kW (5 HP) / 5.5 kW (7.5 HP)
5.5 kW (5.0 HP) / 7.5 kW (7.5 HP) / 11 kW (10 HP)
RSGDxx32/RSGDxx37/RSGDxx45
9 kW (10 HP) / 9kW (10 HP) / 11 kW (15 HP)
15 kW (15 HP) / 18.5 kW (20 HP) / 22 kW (25 HP)

General specifications

Internally bypassed

No

Yes

Operational frequency

50/60 Hz ±10%

50/60 Hz ± 10%

Ramp up/Ramp down

1-10s / 0-30s; 0-1s / 0-1s [RSHR...V38]

1 - 20s/0 - 20s

Initial torque

0-70%

0 - 85%

Operating temperature

-20°C to +60°C (-4°F to +140°F)

-20°C to 60°C (-4°F to +140°F)

Storage temperature

-50°C to +85°C (-58°F to +185°F)

-40°C to +80°C (-40°F to +176°F)

Wrong Phase sequence
indication

Yes

Yes

Degree of Protection

IP 20

IP 20

Approvals

CE - UL - cUL - CCC

CE - cULus - CCC

Soft starters		
	Proportional controller	Motor reversing
Types	RSC..AA..+RSO...	RR2A
Phase angle control of 3-phase motors (AC53a) and heaters (AC51a). Reversing motor relay (RR..)		
Dimensions (mm)	65 x 103 x 74	41 x 103 x 74
Features	Proportional output for motor/heater control according to user controlled analogue input	Reversing with interlock, optoisolation 2-pole change-over, built-in transient overvoltage protection, interlocking reversing, LED status indication
Control specifications		
Control input range	0-20 mA (A-input) 4-20 mA (B-input)	10-40 VDC
Max. input current	20 mA	20 mA
Control supply	10 - 32 VDC	-
Max. supply current	180 mA	-
Output specifications		
Rated operational current		
AC 51a	16 Arms [RSO..10] 25 Arms [RSO..25] 50 Arms [RSO..50] 90 Arms [RSO..90] 110 Arms [RSO..110]	-
AC 53a	5 Arms [RSO..25] 15 Arms [RSO..50] 30 Arms [RSO..90] 40 Arms [RSO..110]	5 Arms [RR2A40D150/RR2A48D220] 11 Arms [RR2A40D400/RR2A48D550]
Operational voltage	150-250 Vrms [RSO22..] 220-420 Vrms [RSO40..] 400-510 Vrms [RSO48..] 400-625 Vrms [RSO60..]	400 Vrms [RR2A40D...] 480 Vrms [RR2A48D...]
General specifications		
Connections	Screw type with clamp	Screw type with clamp
Operating temperature	-20°C to +70°C	-20°C to +80°C
Storage temperature	-40°C to +100°C	-40°C to +100°C
Approvals/Marks	CE - UL - CSA - CCC	CE - UL - cUL - CCC
Reference		
	Control module	5 A
	RSC-AAM60	RR2A40D150 (1.5 kW)
	Output module: 400 VAC	RR2A40D400 (4.0 kW)
	25 A: RSO4025 (4 kW*)	11 A
	50 A: RSO4050 (11 kW*)	RR2A48D220 (2.2 kW)
	90 A: RSO4090 (15 kW*)	RR2A48D550 (5.5 kW)
	110 A: RSO40110 (22 kW*)	

* Output module can be 200, 400, 480, 600 VAC
 * Correct heatsink assembly required. For further details please consult datasheet.
 ** Applicable when device is mounted to heatsink type RHS301