Soft Starter
Three-Phase Scroll Compressor Soft Starter
Types RSBD, RSBT



- **Soft starting of 3-phase scroll compressors up to 45Amp**
- **Patented auto-adaptive algorithm for optimum inrush current reduction (No user settings required)**
- **2- (RSBD) and 3-Phase (RSBT) controlled solutions**
- **Current balancing strategy (RSBD models)**
- **Integrated bypass relays**
- **Internally supplied**
- **Short ramp up time: <600ms**
- **Rated operational voltage: 220VAC, 400VACrms, 50/60Hz**
- **Rated operational current: 12[1], 16, 25, 32, 37[1], 45[1] AAC**
- **Over-temperature, Overcurrent, Locked Rotor protection**
- **cULus, CE, RoHS compliant, CCC[1]**
- **HP version for multi-compressor systems**
- **VDE approved (Up to 32AAC) - for RSBT...HPV models**

Note: Other models (RSBT) only VDE approved up to 15Arms

Product Description

RSBD and RSBT are easy to use soft starters for scroll compressors up to 45Amp (RSBD) and 32Amp (RSBT) nominal current. The units are equipped with a patented auto-adaptive algorithm that automatically adapts itself to the specific compressor it is controlling ensuring that an optimum inrush current reduction is achieved.

RSBD is a 2-phase controlled solution and RSBT is a 3-phase controlled solution. RSBD and RSBT are internally bypassed resulting in less heat dissipation inside the panel.

Short Circuit and Overload protection are not provided with the controller and must be procured separately.

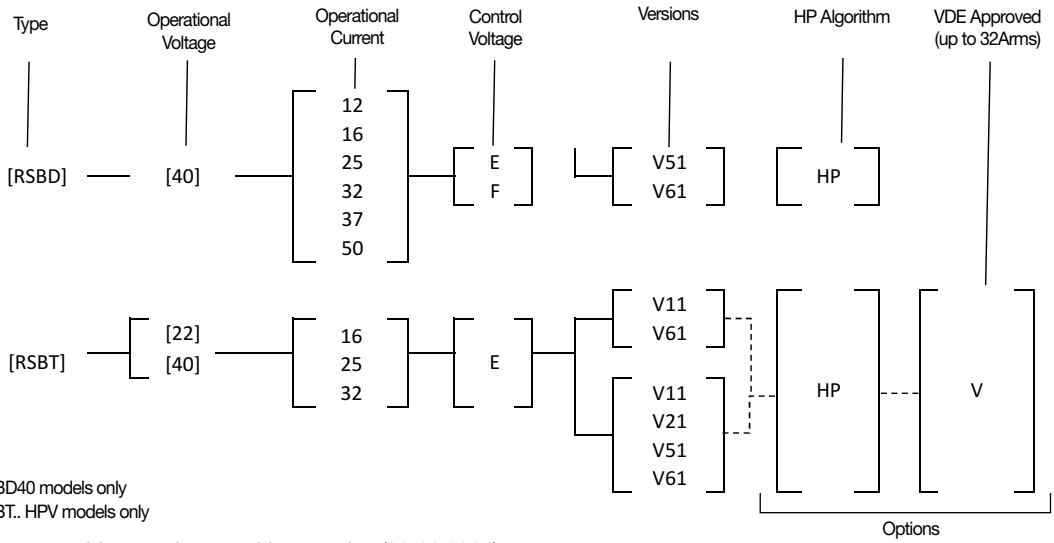
Ordering Key

RSB T 40 16 E V 11 H P V

- RSB: Compressor Soft Starter
- T: Controlled Phases
- 40: Operational Voltage
- 16: Rated Operational Current
- E: Control Voltage
- V 11: Version
- H: Optimised algorithm for multi-compressor systems and high pressure starts
- P: HP Algorithm
- V: VDE approved versions (up to 32Arms)[2]

Type Selection

Type	Operational Voltage Ue	Rated Operational Current Ie @ 40°C	Control Voltage Uc	Version
RSBD 2-Controlled phases	40: 220 – 400 VAC +10% -15%	12: 12 Arms[1] 16: 16 Arms 25: 25 Arms 32: 32 Arms 37: 37 Arms[1] 50: 45 Arms[1]	E: 110 – 400 VAC +10% -15% F[1]: 24VAC/DC +10% -15%	V11: DIN Mount[2] V21: DIN Mount & RFPMV00 module ready mounted[2] V51: DIN Mount (UL approved)[2] V61: DIN Mount & RFPMV00 module ready mounted (UL approved)[2] V..HP: Optimised algorithm for multi-compressor systems & high pressure starts V.HPV: VDE approved (up to 32AAC)
RSBT 3-Controlled phases	22: 220VAC, +10% -15% 40: 400VAC, +10% -15%			



[1] Applies to RSBD40 models only
[2] Applies to RSBT.. HPV models only

Selection Guide: RSBD (2-phase controlled)

Control Voltage	Version	Rated Operational Current					
		12 Arms	16 Arms	25 Arms	32 Arms	37 Arms	45 Arms
110 – 400 VAC	V51HP V61HP	RSBD4012EV51HP RSBD4012EV61HP	RSBD4016EV51HP RSBD4016EV61HP	RSBD4025EV51HP RSBD4025EV61HP	RSBD4032EV51HP RSBD4032EV61HP	RSBD4037EV51HP RSBD4037EV61HP	RSBD4050EV51HP RSBD4050EV61HP
24VAC/DC		RSBD4012FV51HP RSBD4012FV61HP	RSBD4016FV51HP RSBD4016FV61HP	RSBD4025FV51HP RSBD4025FV61HP	RSBD4032FV51HP RSBD4032FV61HP	RSBD4037FV51HP RSBD4037FV61HP	RSBD4050FV51HP RSBD4050FV61HP

Selection Guide: RSBT (3-Phase Controlled)

Operational Voltage	Approvals	Version	Rated Operational Current		
			16 Arms	25 Arms	32 Arms
220 VAC	CE	V11/V11HP V21HP	RSBT2216EV11HP	RSBT2225EV11HP	RSBT2232EV11HP
400 VAC			RSBT4016EV11 RSBT4016EV11HP RSBT4016EV21HP	RSBT4025EV11 RSBT4025EV11HP RSBT4025EV21HP	RSBT4032EV11 RSBT4032EV11HP RSBT4032EV21HP
220 VAC	CE, cULus	V51HP V61HP	RSBT2216EV61HP	RSBT2225EV61HP	RSBT2232EV61HP
400 VAC			RSBT4016EV51HP RSBT4016EV61HP	RSBT4025EV51HP RSBT4025EV61HP	RSBT4032EV51HP RSBT4032EV61HP
220 VAC	CE	V11/V11HP V21HP	RSBT2216EV11HPV	RSBT2225EV11HPV	RSBT2232EV11HPV
400 VAC			RSBT4016EV11HPV RSBT4016EV21HPV	RSBT4025EV11HPV RSBT4025EV21HPV	RSBT4032EV11HPV RSBT4032EV21HPV
220 VAC	CE, cULus	V51HP V61HP	RSBT2216EV61HPV	RSBT2225EV61HPV	RSBT2232EV61HPV
400 VAC			RSBT4016EV51HPV RSBT4016EV61HPV	RSBT4025EV51HPV RSBT4025EV61HPV	RSBT4032EV51HPV RSBT4032EV61HPV

General Specifications

Starting Method	Current limit, auto-adaptive
Ramp-up time	< 600 msec
Ramp-down time	0 sec
Initial Torque	Initial torque will vary indirectly through the variation of the current limit through the auto-adaptive algorithm
Undervoltage/Overvoltage protection	
Recovery from Undervoltage	
RSBD40…	174 VAC
RSBT22…	190 VAC
RSBT40…	330 VAC
Recovery from Overvoltage	
RSBD40…	470 VAC
RSBT22…	250 VAC
RSBT40…	470 VAC

Status Indication LEDs	
Power Supply ON	Green LED
Recovery Mode (alarm condition)	Flashing Red LED
Alarm	Red LED
Special alarm[3]	Green LED OFF and Red LED ON
Form Designation	1
Vibration	Acc. To IEC60068-2-26
Frequency 1	2 [+3/-0]Hz to 25Hz
	Displacement +/- 1.6mm
Frequency 2	Acc. To IEC60068-2-26 25Hz to 100Hz @ 2g (19.96m/s^2)

[1] Applies to RSBD models only
[2] Applies to RSBT models only
[3] Applies to RSBT...HPV models only

Specifications are subject to change without notice (20.11.2014)

Input Specifications

	RSBD40..FV..	RSBD40..EV..	RSBT..EV..
Control Voltage Uc, A1-A2[1]	21.6 - 26.4 VAC/DC	93.5 - 440 VAC	93.5 - 440 VAC
Max. Pick Up Voltage	20.4 VAC/DC	80 VAC	80 VAC
Min. Drop Out Voltage	5 VAC/DC	20 VAC	20 VAC
Rated AC frequency	50/60Hz +/-10%	50/60Hz +/-10%	50/60Hz +/-10%
Rated Insulation Voltage Ui	500 VAC	500 VAC	630 VAC
Dielectric Strength **Dielectric withstand voltage** **Rated Impulse** **Withstand Voltage**	 2 kVrms 4 kVrms	 2 kVrms 4 kVrms	 2 kVrms 4 kVrms
Control Input Current	0.4 ... 1 mAAC	0.5 ... 5 mAAC	3…6 mAAC
Input to Output response time	< 100 msec*	< 100 msec*	< 100 msec*
Integrated varistor	Yes	Yes	Yes

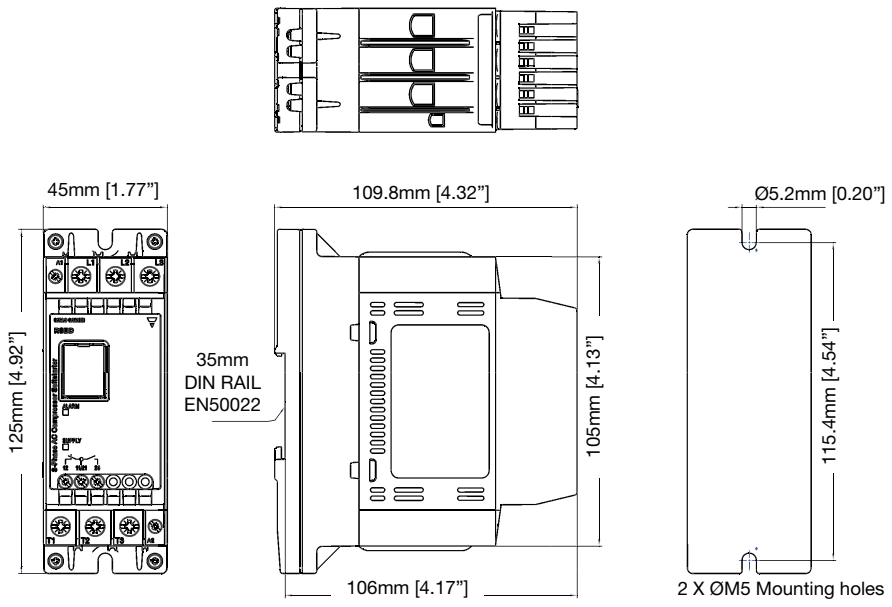
* If supply is not already present, when control is applied, Response time is 1500msec

Output Specifications

		RSBD	RSBT
IEC rated operational current Ie			
(AC-53b) @ 40ºC	12 AACrms	RSBD4012.	-
	16 AACrms	RSBD4016..	RSBT..16..
	25 AACrms	RSBD4025..	RSBT..25..
	32 AACrms	RSBD4032..	RSBT..32..
	37 AACrms	RSBD4037..	-
	45 AACrms	RSBD4050..	-
Overload Cycle **acc. to EN/IEC 60947-4-2** **@ 40ºC surrounding temperature**		AC53b: 3.5-1:299	16:AC53b:2.5-1:60 25:AC53b:3.6-1:60 32:AC53b:3.4-1:60
Max. Number of starts per hour @ 40ºC		12	12
Minimum time between stop and start		1 sec.	60 sec.
Minimum time between starts		300 sec.	300 sec.
Minimum load current		1AAC (RSBD4012... - RSBD4016) 5AAC (RSBD4025... - RSBD4050)	2AAC

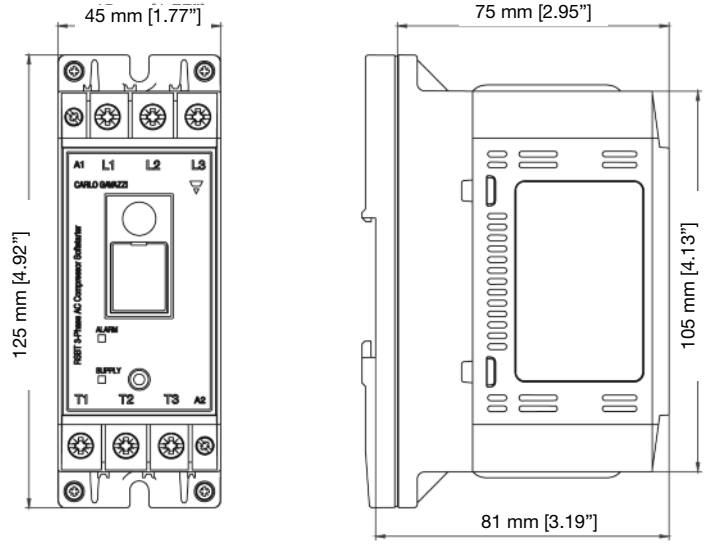
Dimensions

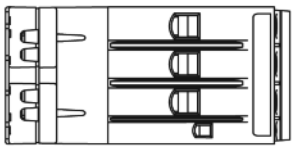
RSBD



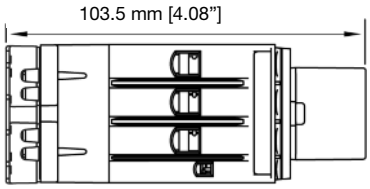
Dimensions

RSBT





RSBT...V11...
RSBT...V51...



RSBT...V51...
RSBT...V61...

Environmental Specifications

Operating Temperature		
	RSBD..	-20ºC to +60ºC (-4ºF to +140ºF) Note: For operating temp. >40ºC derating applies*
RSBT..16EV..	Ie<=16 AAC	-20ºC to +60ºC (-4ºF to +140ºF)
RSBT..25EV..	Ie<=25 AAC	-20ºC to +55ºC (-4ºF to +131ºF)
	Ie<=16 AAC	-20ºC to +60ºC (-4ºF to +140ºF)
RSBT..32EV..	Ie<=32 AAC	-20ºC to +50ºC (-4ºF to +122ºF)
	Ie<=25 AAC	-20ºC to +55ºC (-4ºF to +131ºF)
	Ie<=16 AAC	-20ºC to +60ºC (-4ºF to +140ºF)
Storage Temperature		-40ºC to +80ºC (-40ºF to 176ºF)
Relative Humidity		<95% non-condensing @ 40ºC
Pollution Degree		2
Degree of Protection		IP20 (EN/IEC 60529)
Installation Category		III
Installation Altitude		1000 m

* RSBD4012/16/25/37 - 0.8% per ˚C
RSBD4032/50 - 1.2% per ˚C up to a maximum of 60˚C

Supply Specifications

Operational Voltage Range L1 – L3		
	RSBD40…	187 – 440 VACrms 50/60 Hz
	RSBT22…	187 – 253 VACrms 50/60 Hz
	RSBT40…	340 – 440 VACrms 50/60 Hz
Supply Current at standby		<30 mAAC
Blocking voltage		
	RSBD	1200 Vp
	RSBT22..EV..	800Vp
	RSBT40..EV..	1200Vp
Rated AC frequency		50/60 Hz +/- 10%
Rated insulation voltage		
	RSBD	500VAC
	RSBT	630VAC
Dielectric strength		
Dielectric withstand voltage		
Supply to input		2.5 kVms
Supply to heatsink		2.5kVms
Integrated varistor		Yes (across controlled phases)

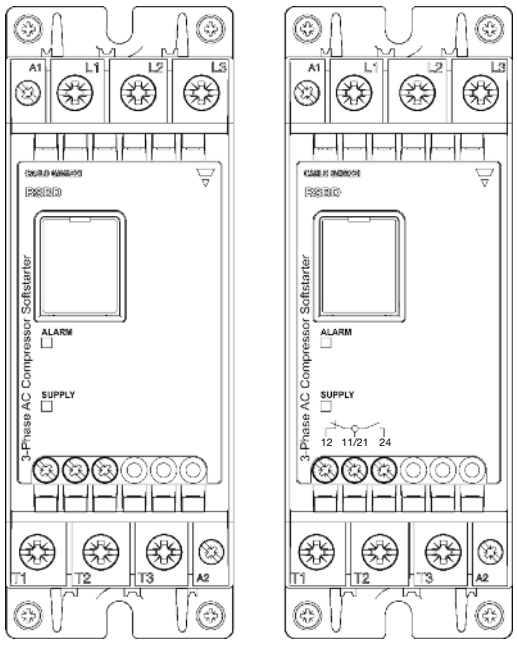
Connection Specifications

Line conductors	
L1, L2, L3. T1, T2, T3	
Acc. to EN60947-1	
flexible	2.5 ..... 10 mm^2
	2.5 ..... 2 x 4 mm^2
rigid (solid or stranded)	2.5 ..... 10 mm^2
flexible with end sleeve (ferrule)	2.5 ..... 10 mm^2
UL/cUL rated data	
Rigid (stranded)	AWG 6...14
Rigid (solid)	AWG 10...14
Rigid (solid or stranded)	AWG 2 x 10...2 x 14
Terminal screws	6 x M4
Max. tightening torque	2.5 Nm (22 lb.in) with Posidrive bit 2
Stripping length	8.0 mm
Secondary conductors	
A1, A2	
Acc. to EN60998	
flexible	0.5 ..... 1.5 mm^2
rigid (solid or stranded)	0.5 ..... 2.5 mm^2
flexible with end sleeve (ferrule)	0.5 ..... 1.5 mm^2
UL/cUL rated data	
rigid (solid or stranded)	AWG 10...18

Terminal screws	9 x M3
Max. tightening torque	0.6Nm (5.3lb.in) with Posidrive bit 0
Stripping length	6.0 mm
Auxiliary conductors	
RSBD: 11, 12, 21 ,24	
rigid (solid or stranded)	0.05...2.5mm^2
flexible with end sleeve (ferrule)	0.05...1.5mm^2
RSBT...V2.../V6...: 11, 12, 14	
rigid (solid or stranded)	0.2...4mm^2
flexible with end sleeve (ferrule)	0.2...2.5mm^2
UL/cUL rated data	
RSBD: 11, 12, 21, 24	
rigid (solid or stranded)	AWG30...12
RSBT...V2.../V6...: 11, 12, 14	
rigid (solid or stranded)	AWG24...12
Terminal screws	
RSBD: 11, 12, 21, 24	M3
RSBT...V2.../V6...: 11, 12, 14	M2.5
Max. tightening torque	
RSBD: 11, 12, 21, 24	0.45 Nm (4.0 lb.in)
RSBT: ...V2.../V6...: 11, 12, 14	0.8 Nm (7.0 lb.in)
Stripping length	6 mm

Terminal Markings

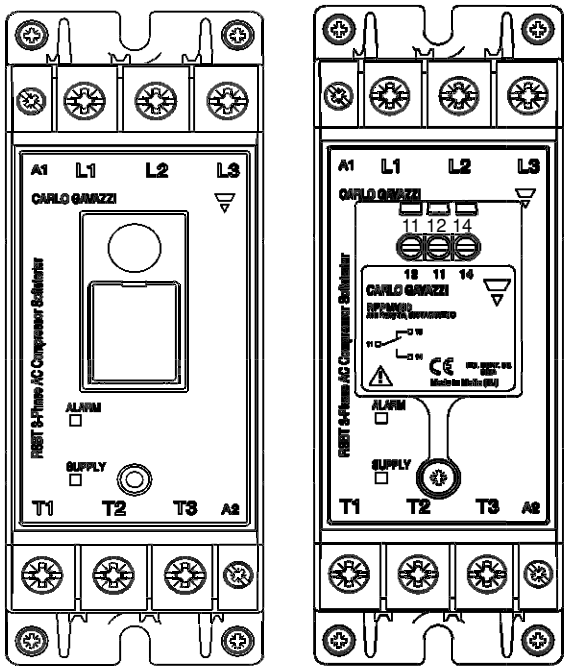
RSBD40...V51HP **RSBD40...V61HP**



L1, L2, L3: Line connections
T1, T2, T3: Load connections
A1, A2: Control voltage
11, 12: Alarm indication (Normally Closed, NC)
21, 24: Top of Ramp indication (Normally Open, NO)

RSBT...V11...
RSBT...V51...

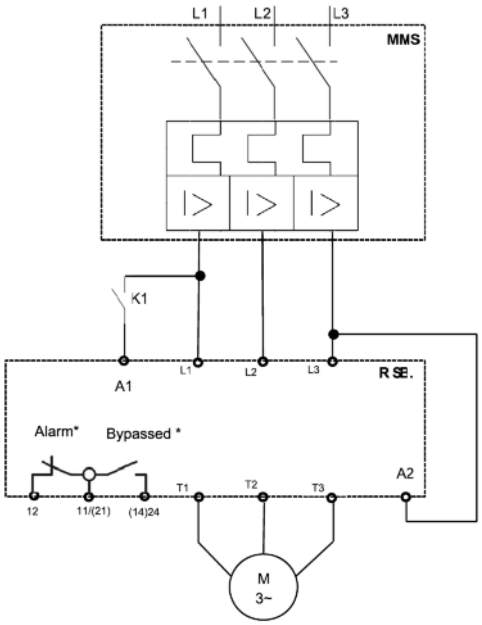
RSBT...V21...
RSBT...V61...



L1, L2, L3: Line connections
T1, T2, T3: Load connections
A1, A2: Control voltage
11, 12, 14: Alarm indication (Normally Open, Normally Closed, Changeover contact)

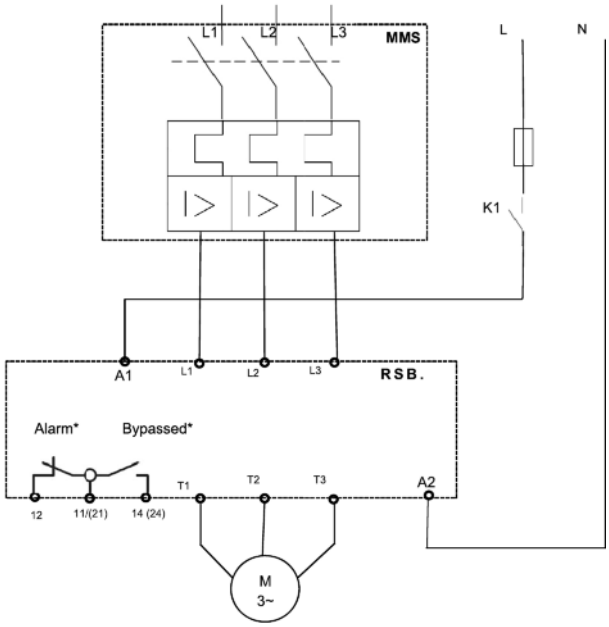
Wiring Diagram

RSBD and RSBT models with Control Voltage Option “E”



Note: Control signal may be applied across any of the three supply lines (L1, L2, L3) as long as the control voltage range is respected.
* RSBD aux. relay connections: 11,12,21,24 (Alarm and Bypass status indication)
* RSBT aux. relay connections: 11,12,14 (Alarm indication only)

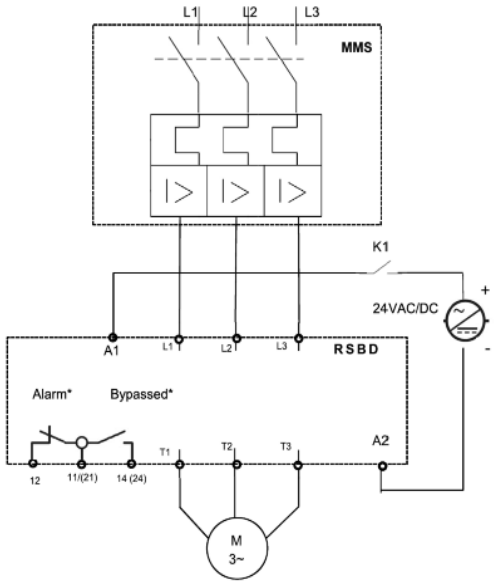
RSBD and RSBT models with Control Voltage Option “E”



Note:
* RSBD aux. relay connections: 11,12,21,24 (Alarm and Bypass status indication)
* RSBT aux. relay connections: 11,12,14 (Alarm indication only)

Wiring Diagram

RSBD models with Control Voltage Option "F"



Note: In case of 24VDC control, apply the 24VDC signal to A1 and the 0V to A2. An incorrect connection may damage the soft starter.
* RSBD aux. relay connections: 11,12,21,24 (Alarm and Bypass status indication)
* RSBT aux. relay connections: 11,12,14 (Alarm indication only)

Auxiliary Relays

Auxiliary relays contact rating	3A, 250 VAC 3A, 30VDC
Bypassed[1] (21,24)	Normally Open (NO)
Alarm **RSBD (11,12)** **RSBT…..EV2.../6... (11, 12, 14)**	Normally Closed (NC) Normally Open (NO)/Normally Closed (NC) – Changeover relay contact

[1] Applies to RSBD models only

Housing Specifications

Weight	
RSBD…..V51HP	430 g
RSBD…..V61HP	430 g
RSBT.…V11../V51..	425 g
RSBT…..V21../V61..	460 g
Material	PA66
Material colour	RAL7035
Terminal colour	RAL7040
Mounting	DIN or Panel

Electromagnetic Compatibility

Immunity	IEC/EN 60947-4-2
Electrostatic discharge (ESD) Immunity	EC/EN 61000-4-2
Air discharge: 8kV	Performance Criteria 2
Contact: 4kV	Performance Criteria 2
Electrical Fast Transient (Burst) Immunity	IEC/EN 61000-4-4
Output: 2kV	Performance Criteria 2
Input: 1kV	Performance Criteria 2
Electrical surge immunity	IEC/EN 61000-4-5
Output, line to line, 1kV	Performance Criteria 2
Output, line to earth, 2kV	Performance Criteria 2
Input, line to line, 1kV	Performance Criteria 2
Input, line to earth, 2kV	Performance Criteria 2

Rated radio frequency Immunity	IEC/EN 61000-4-3
3V/m, 0.15 - 80 MHz	Performance Criteria 1
Conducted Radio Frequency Immunity	IEC/EN 61000-4-6
10V/m, 0.15 - 80 MHz	Performance Criteria 1
Emission	IEC/EN 60947-4-2
Radio interference field emissions (radiated)	
RSBT	CISPR 11 IEC/EN 55011, Class B
RSBD	CISPR 11 IEC/EN 55011, Class A (Industrial)
Radio interference voltage emissions (conducted)	
RSBT	CISPR 11 IEC/EN 55011, Class B
RSBD	CISPR 11 IEC/EN 55011, Class A (Industrial)

Voltage dips & interruptions	**RSBD/T**	**RSBT..HPV**
0% Ue & Uc, 5000 ms	PC2	PC 3
40% Ue & Uc, 100/1000 ms	PC2 / PC2	PC2 / PC3
70% Ue & Uc, 10 ms	PC2	PC 2

Harmonics	IEC/EN 61000-3-2[2]
Flicker*	IEC/EN 61000-3-3[2]

*Applies to RSBT..16EV ... models only
[1] Applies to RSBD40 models only
[2] Applies to RSBT.. models only

Agency Approvals and Conformances

RSBD..	RSBT..
EN/IEC60947-4-2 UL508 Listed (E172877) cUL Listed (E172877)	EN/IEC60947-4-2 UL508 Listed (E172877)* cUL Listed (E172877) * VDE (EN60335-1, EN60335-2-40)**/***
c UL us CE	VDE c UL us CE

* Applies to RSBT…EV5…/EV6… versions only
** Applicable up to operational current of 15Arms
*** Applicable up to operational current of 32Arms (for RSBT..HPV versions only)

Mode of Operation

Auto Adaptive Algorithm (Patented)
RSBD and RSBT series of soft starters includes an innovative auto-adaptive algorithm (Patented) such that an optimum starting current performance is achieved at every compressor start. This feature is active at every compressor start. Appropriate parameters are automatically set by the soft starter in order to achieve an optimum inrush current reduction whilst maintaining a ramp-up time < 1sec.

In case of Locked rotor/ramp-up time alarm, default parameter settings are restored automatically. During the subsequent compressor starts, the auto-adaptive function will start optimising such parameters automatically once again.

RSB….V..HP Specific Mode of Operation
The RSB….V..HP shall try to start the compressor at the set current limit. Depending on the load requirement, the current limit will be gradually increased up to a maximum of the default current limit, after which the RSB..HP will switch in bypass mode.

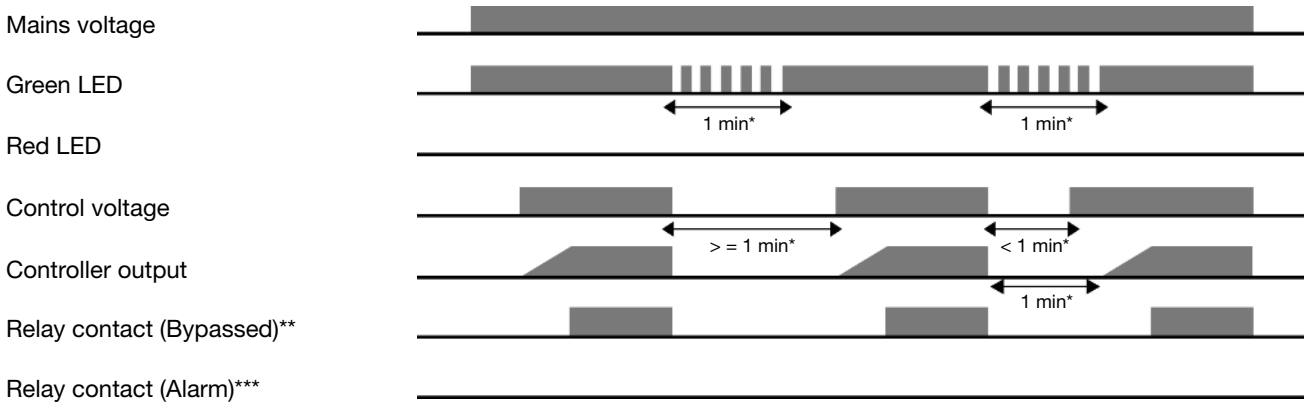
If ramping is not achieved after a maximum of 1 second, the Incomplete Ramp alarm (5 flashes on red LED) will be triggered and the RSB….HP will enter into a recovery mode for 5mins. If, at the second consecutive attempt the RSB….HP raises again the Incompete Ramp alarm, then a manual user intervention to reset power on the RSB…HP shall be required, as this might indicate a real locked rotor condition.

Auto-adaptive current balancing (applies to RSBD models)
RSBD soft starters use a two-phase control strategy with two anti-parallel thyristors across L1-T1 and L3-T3. Phase L2-T2 is the uncontrolled phase.

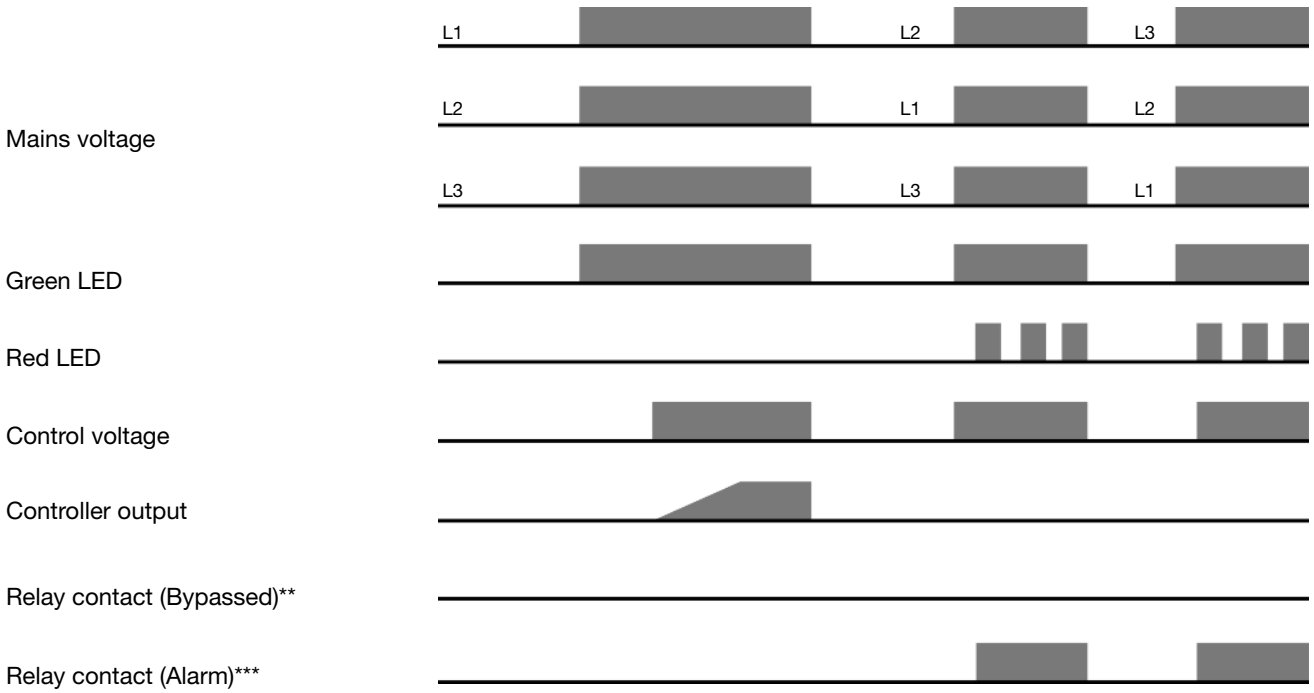
During every start, the RSBD soft starter measures a number of parameters and dynamically adjusts the starting parameters to minimise the current unbalance in the phase L2-T2 resulting in a smoother starting performance of the motor.

Mode of Operation

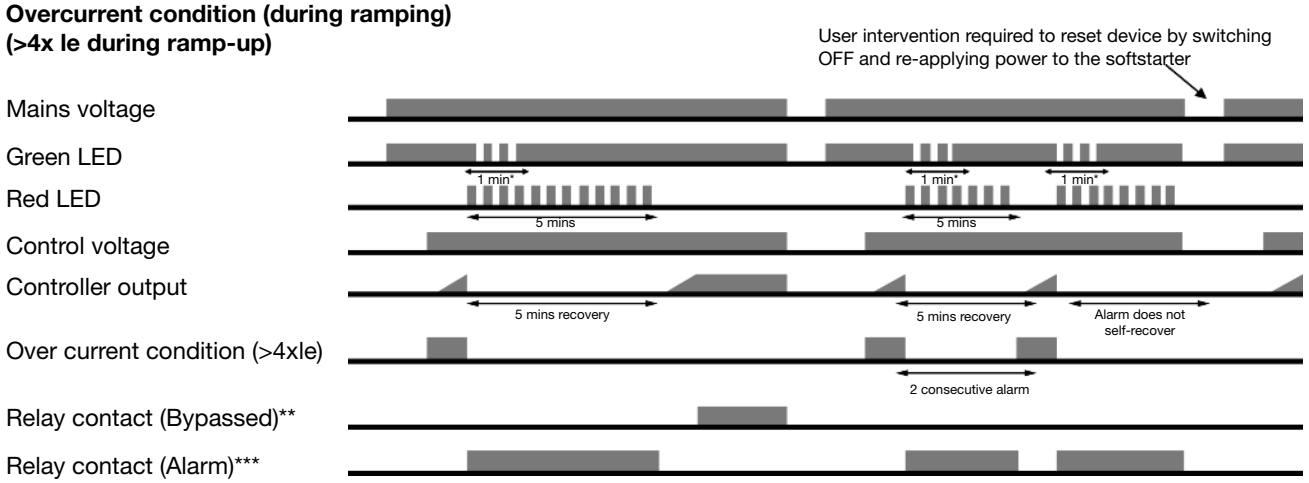
Normal condition



Wrong Phases sequence

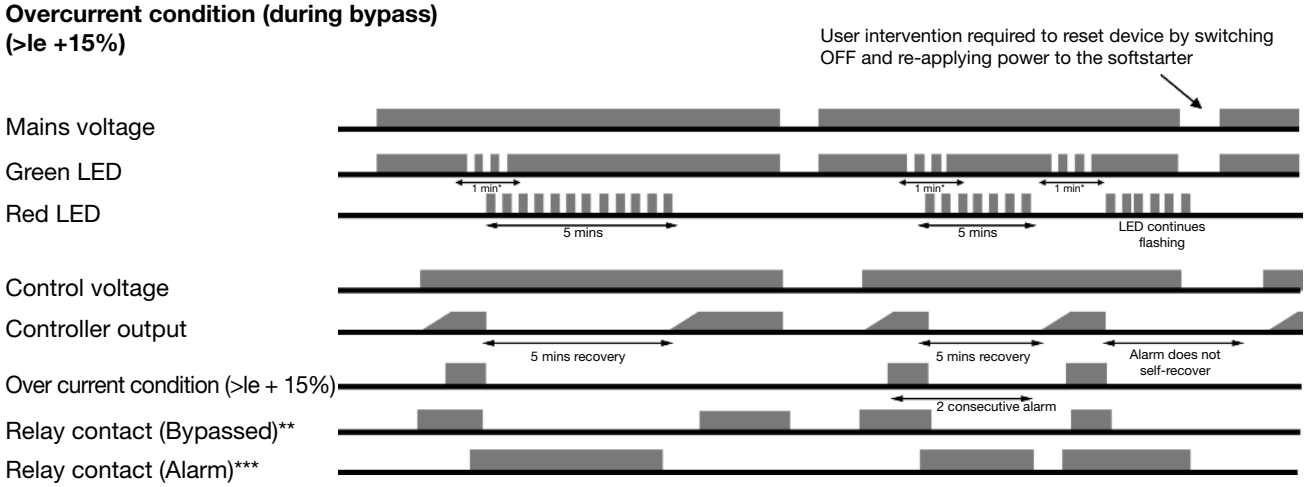


Overcurrent condition (during ramping) (>4x Ie during ramp-up)

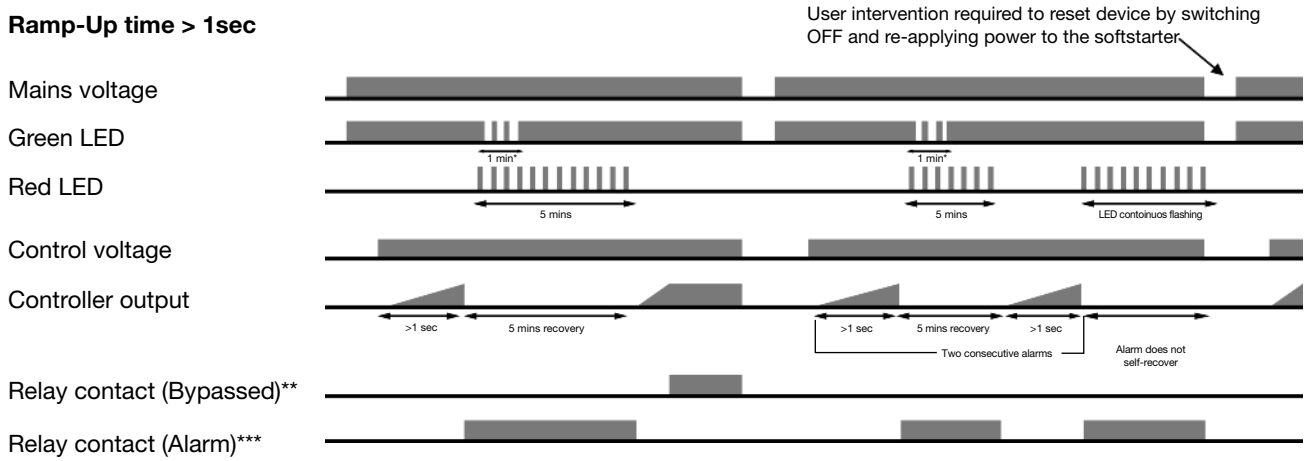


Mode of Operation

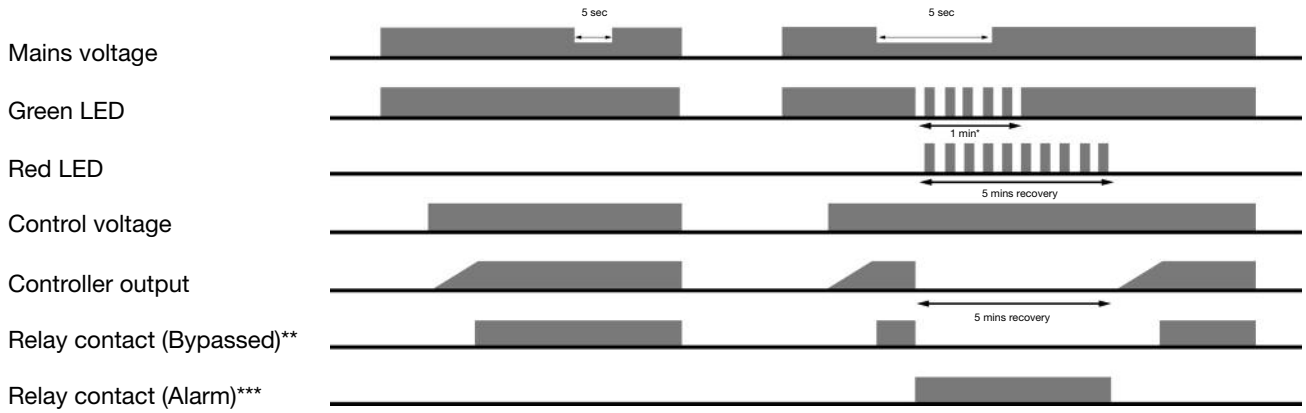
Overcurrent condition (during bypass) (>Ie +15%)



Ramp-Up time > 1sec



Undervoltage Condition



** Applies to RSBD40… models only
*** Applies to RSBD40…V61HP and RSBT..EV2…./EV6…. Models only and when RSBT is used with RSPMV120 accessory

Alarm LED Indications (Red LED)

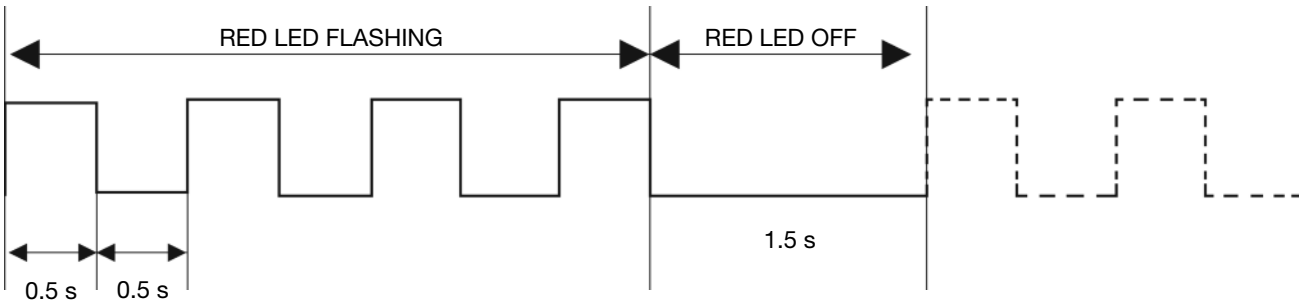
Flashes	Description of Fault	Relay Contact Position			Action
		RSBD (11, 12)	RSBT	RSBT...HP.	
2	Wrong Phase Sequence	Open	11/12	11/12	Physical Change
3	Line Voltage Out of Range	Open	11/12	11/12	Auto reset with 5mins recovery
4	Frequency Out of Range	Open	11/12	11/12	Auto reset with 5mins recovery
5	Over Current (during RAMPING)	Open	11/12	11/12	Auto reset with 5mins recovery
6	Ramp Up Time > 1 sec	Open	11/12	11/12	Auto reset with 5mins recovery
7	Over Temperature	Open	11/12	11/12	Auto reset with 5mins recovery
8	Over Current (during BYPASS)	Open	11/12	11/12	Auto reset with 5mins recovery
9	Supply Voltage Unbalance	Open	11/12	11/12	Auto reset with 5mins recovery assuming all phases (L1, L2, L3) are connected
Fully ON (Green LED OFF)	Special (Internal) alarm	N/A	N/A	11/12	Reset power (L1-L3). If fault is not cleared upon reset, please contact your CG representative.

LED Status Indications (Green LED)

Status	Condition	Relay Contact Position				Action
		RSBD (11, 12)	RSBD (21, 24)	RSBT	RSBT...HP	
Flashing	Recovery time between starts	Closed	Open	11/14	11/14	N/A
Fully ON	Idle State	Closed	Open	11/14	11/14	N/A
Fully ON	Ramping	Closed	Open	11/12	11/14	N/A
Fully ON	Bypassed	Closed	Closed	11/14	11/14	N/A

Flashing Sequence

Alarm Condition



Note: For RSBT...HPV models - if a safety-related alarm is triggered in bypass mode, the RSBT will keep the load/output ON. It is up to the system controller/ safety device to switch OFF the load.

Short Circuit Protection

Protection Co-ordination, Type 1 vs Type 2

Type 1 protection implies that after a short circuit, the device under test will no longer be in a functioning state.

In Type 2 co-ordination the device under test will still be functional after the short circuit. In both cases, however the short circuit has to be interrupted. The fuse between enclosure and supply shall not open. The door or cover of the enclosure shall not be blown open. There shall be no damage to conductors or terminals and the conductors shall not separate from terminals. There shall be no breakage or cracking of insulating bases to the extent that the integrity of the mounting of live parts is impaired. Discharge of parts or any risk of fire shall not occur.

The product variants listed in the table hereunder are suitable for use on a circuit capable of delivering not more than 5,000A rms Symmetrical Amperes,400 Volts maximum when protected by fuses. Tests at 5,000A were performed with Class RK5 fuses, fast acting; please refer to the table below for maximum allowed ampere rating of the fuse. Use fuses only.

Products rated 12A and 16A, protected with manual motor starters must be wired with a minimum length of 15m of Cu wire conductor with a minimum cross sectional area of 2.5mm². Products rated 25A or higher, protected with manual motor starters must be wired with a minimum length of 10m of Cu wire conductor. *

*The length includes the conductors from the voltage source to the manual manual starter, from the manual motor starter to the soft starter and from the soft starter to the load.

Co-ordination Type 1 (UL508) – RSBD				
Part. No.	**Max. Fuse Size [A]**	**Class**	**Current [kA]**	**Max. Voltage [VAC]**
RSBD4012.V….	20	RK5	5	400
RSBD4016.V….	20	RK5	5	400
RSBD4025.V….	25	RK5	5	400
RSBD4032.V….	35	RK5	5	400
RSBD4037.V….	50	RK5	5	400
RSBD4050.V….	50	RK5	5	400
Co-ordination Type 1 Manual Motor Starters - RSBD				
	Model No.		**Current [kA]**	**Max. Voltage [VAC]**
RSBD4012.V….	GMS32S-17 / GMS32H-17		10	400
RSBD4016.V….	GMS32S-17 / GMS32H-17		10	400
RSBD4025.V….	GMS32H-32		10	400
RSBD4032.V….	GMS32H-32		10	400
RSBD4037.V….	GMS63S-50 / GMS63H-50		10	400
RSBD4050.V….	GMS63S-50 / GMS63H-50		10	400
Co-ordination Type 1 (UL508) - RSBT				
Part. No.	**Max. Size [A]**	**Class**	**Current [kA]**	**Max. Voltage [VAC]**
RSBT..16EV5… RSBT..16EV6…	40	RK5	5	400
RSBT..25EV5… RSBT..25EV6…	40	RK5	5	400
RSBT..32EV5… RSBT..32EV6…	40	RK5	5	400
Co-ordination Type 2 (IEC/EN 60947-4-2) – RSBD				
	Max. Size [A]	**Class**	**Current [kA]**	**Max. Voltage [VAC]**
RSBD4012.V….	35	A70 QS 35-4	5	400
RSBD4016.V….	35	A70 QS 35-4	5	400
RSBD4025.V….	50 / 63	A70 QS 60-4 / 6.9xx CP URD 22 x 58/63 (xx = 00 or 21)	5	400
RSBD4032.V….	60	A70 QS 60-4	5	400
RSBD4037.V….,	125	A70 QS 125-4	5	400
RSBD4050.V….	125	A70 QS 125-4	5	400
Co-ordination Type 2 (IEC/EN 60947-4-2) – RSBT				
	Ferraz Shawmut/ MERSEN		**Current [kA]**	**Max. Voltage [VAC]**
	Max. Size [A]	**Part Number**	5	400
RSBT..16EV….	50	6.9xx CP gRC 14.51 50 (xx = 00 or 231)	5	400
RSBT..25EV….	50	6.9xx CP gRC 14.51 50 (xx = 00 or 21)	5	400
RSBT..32EV….	50	6.9xx CP gRC 14.51 50 (xx = 00 or 21)	5	400

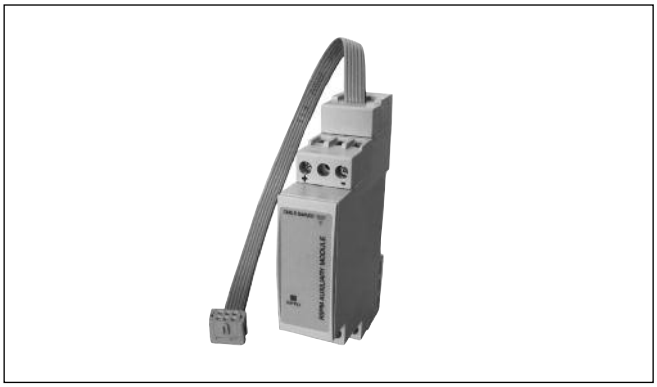
Current / Power Ratings

Current / Power Ratings - RSBD			
Assigned compressor rating @ 40ºC UL rating @ 40ºC	220V	400V	Max. Current limit level Irms
RSBD4012.V….	3 kW (3 HP)	5.5 kW (5 HP)	42 Arms
RSBD4016.V….	4 kW (5 HP)	7.5 kW (7.5 HP)	56 Arms
RSBD4025.V….	5.5 kW (7.5 HP)	11 kW (10 HP)	87.5 Arms
RSBD4032.V….	9 kW (10 HP)	15 kW (15 HP)	112 Arms
RSBD4037.V….	9 kW (10 HP)	18.5 kW (20 HP)	129.5 Arms
RSBD4050.V….	11 kW (15 HP)	22 kW (25 HP)	175 Arms
Current / Power Ratings - RSBT			
Assigned compressor rating @ 40ºC UL rating @ 40ºC	220V	400V	Max. Current limit level Irms
RSBT2216EV….	4.0 kW (5.0 HP)	-	40 Arms
RSBT2225EV….	5.5 kW (7.5 HP)	-	90 Arms
RSBT2232EV….	9.0 kW (10.0 HP)	-	110 Arms
RSBT4016EV….	-	7.5 kW (7.5 HP)	40 Arms
RSBT4025EV….	-	11.0 kW (10.0 HP)	90 Arms
RSBT4032EV….	-	15.0 kW (15.0 HP)	110 Arms

Note: Motor kW ratings are provided as a reference. User shall always ensure that compressor operational current and overload current of the compressor during starting does not exceed the rating of the softstarter being used.

Accessories

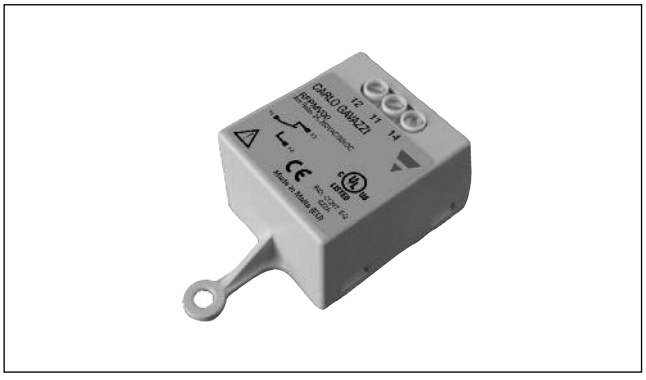
Auxiliary Output Module



- 17.5mm DIN rail housing
- LED indication for supply ON
- Plug'n'play design
- Output (1):100mA, Open collector, Normally Open (NO)
  Output (2): 3A SPDT relay *
- RoHs compliant
- Ordering code: RSPMV110 (1-output) / RSPMV120 (2-output)
- CE, cULus (Accessory of listed RSBT)

* Only applicable to RSPMV120

Auxiliary Relay Alarm Output



- Normally open (NO) or Normally Closed (NC) configuration
- Contact rating: 3A, 250 VAC / 3A, 30VDC
- 1-Relay Output for alarms generated by softstarter
- Ordering code: RFPMV00
- UL, cUL Listed (Accessory of Listed RSBT)

Accessories

EMC/ RFI Filter



- Insertion loss 5dB
- Lightweight and compact design
- Operational current: Max. 32A @ 60˚C
- Rated operational voltage: 220/ 440 VAC ± 15%
- Ordering code: RFILT4032V00
- UL, cUL Listed (Accessory of Listed RSBT)

RTPM (Interconnecting Clip)



Ordering Key

Interconnecting clip for GMS-32-H motor starter **RTPMGMS32HL**

- Qty: 10pcs per bag

Interconnecting clip for GMS-32-S motor starter **RTPMGMS32SL**

- Qty: 10pcs per bag

GMS (Manual Motor Starter)



GMS32H



GMS32S



GMS63H/ GMS63S

Ordering Key **GMS-32S-13**

Type
S: Standard, H: High breaking capacity
Rated operational current

- Overload and short-circuit protection
- Operational current range: 0.16 up to 32AAC
- Magnetic release 13xIe max
- Adjustable thermal release
- Ambient temperature compensation
- Trip Class 10
- CE, cULus

Ordering Key **GMS-63H-13**

Type
S: Standard, H: High breaking capacity
Rated operational current

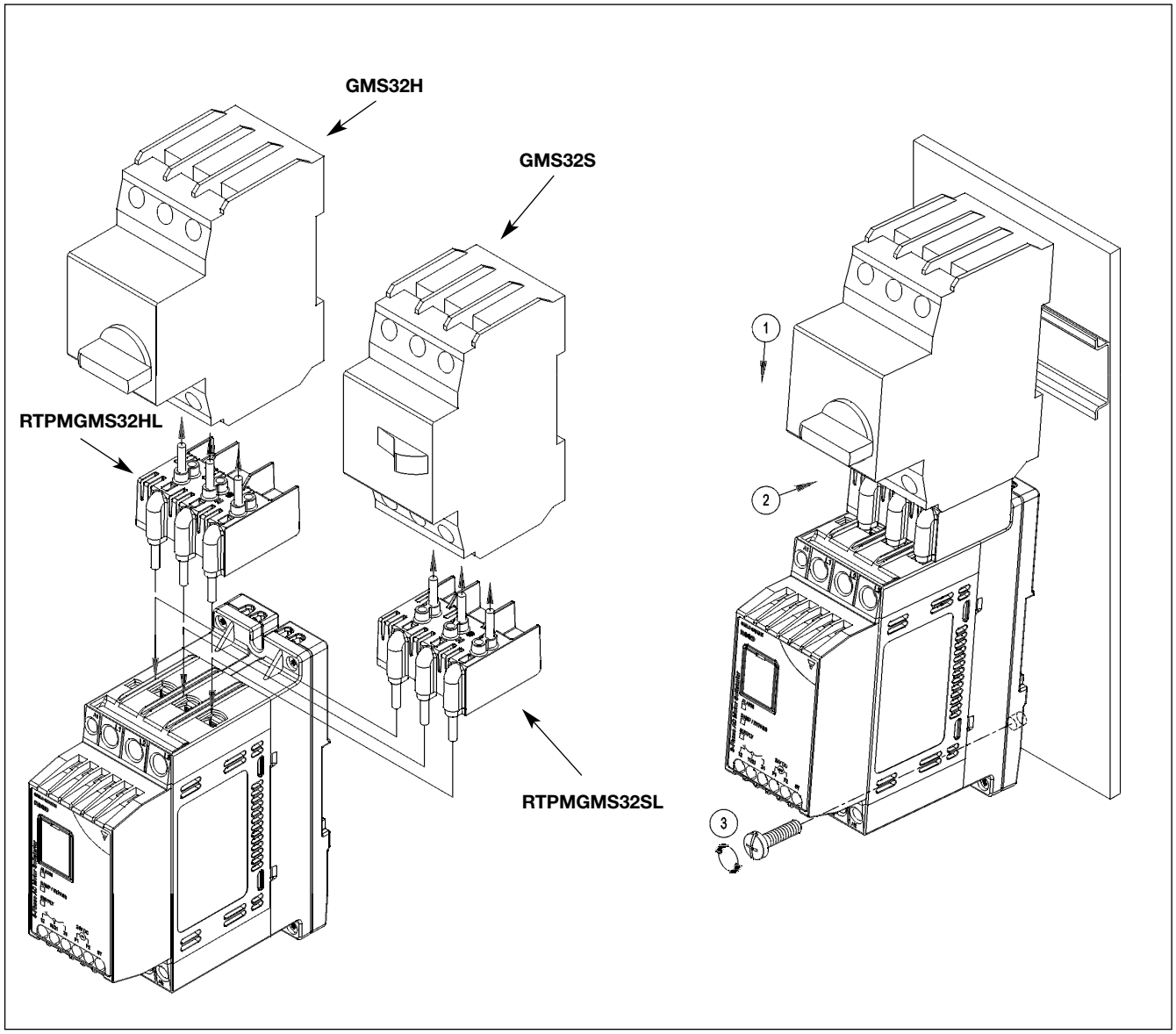
- Overload and short-circuit protection
- Operational current range: 10 up to 63AAC
- Magnetic release 13xIe max
- Adjustable thermal release
- Ambient temperature compensation
- Trip Class 10
- CE, cULus

Note: For higher trip classes please contact your Carlo Gavazzi representative

Specifications are subject to change without notice (20.11.2014)

Accessories

GMS Mounting Instructions



The following procedure should be followed when mounting the GMS motor starter onto the RSB. soft starter:-
Step 1: Unscrew the terminals on the RSB. and GMS units and insert the proper RTPM clip in the respective terminals.
Step 2: Tighten the screws on the GMS and RSB. units respecting the maximum torque specified.
Step 3: Mount the complete assembly to the DIN rail and screw the RSB. to the panel as shown in the diagram.

Note: Always mount the GMS motor starter on the supply side (L1, L2, L3) of the RSB. soft starter.

Important: Make sure that the handle on the GMS starter is in the OFF position before installing and uninstalling.