

Stellar® SR35 Basic Soft Starters

Overview

SR35 full-featured solid-state Soft Starters provide many advantages when used instead of electromechanical contactors to control both 1-phase and 3-phase AC induction motors. The SR35 Soft Starters are fully digital, and use thyristors on the A and C phases for controlled reduced voltage motor starting and stopping. SR35s have an Automatic Application Setup that fully configures the starter for a specific application with one entry.

Features

- 17–361 A @ 110-240 VAC, 1PH or 200–600 VAC, 3PH
- 24VDC control voltage, 110-230 VAC with optional power supply, [SR35-PSU](#)
- Internally bypassed during run
- Two-phase motor control
- Built-in SCR failure protection
- Full motor overload protection
- Full data logging (fault records, motor current, operational status, etc.)
- Fully programmable
- Easily and separately adjustable motor start and stop times
- Can be used for motor reversing (with external contactors)
- Suitable for a wide variety of motor loads
- Easy-to-navigate menu structure and quick automatic application set up
- Can be used with local or remote control
- Integrated Modbus RTU communication
- Optional remote keypad available
- Programmable digital inputs, and relay outputs for remote control
- Fault record history of last 9 trips (using the download fault log will give faults and running data for the life of the SR35)
- IP20, panel mount with optional finger guards for frame sizes 1 and 2 soft starters
- Two-year warranty
- CE, cULus, REACH, RoHS
- Suitable for soft starting, split phase, cap run or cap start / cap run motors



WARNING: NOT FOR USE WITH SINGLE PHASE, SHADED POLE MOTOR



Advantages

Mechanical Advantages

- Smaller physical size than equivalent SR55 models (even with the built-in bypass contactors)
- Smooth acceleration; reduced mechanical shock and starting stress
- Extend lifespan of mechanical drive-train components
- Fluid couplings and some clutches can be eliminated

Electrical Advantages

- Reduced starting currents and spikes
- More motors or larger motors can be started from lower-capacity power sources
- Allows motors to be started more frequently

Economic Advantages

- Lower overall costs for new installations
- Bypass relays built in
- Reduced maintenance and replacement of mechanical drive-train components
- Reduced starting current lowers demand charges
- Automatic Application setup feature speeds installation by configuring the SR35 for a specific application with one setting

Optional Accessories

- Power terminal IP20 finger guards
- Power terminal covers (Size 3)
- Remote keypad
- 110-230 VAC Power supply
- I/O Expansion module
- Cooling fans increase starts per hour

Applications

- General purpose applications where traditional across-the-line starting or wye-delta starting would typically be appropriate
- Applications with oversized or lightly loaded motors.
- Applications requiring lower inrush currents



STELLAR[®]
soft starters



Stellar[®] SR35 Basic Soft Starters

SR35 Soft Starter General Specifications

General Specification					
Product standard		En 60947-4-2: 2012			
Rated operational voltages U_e		110 – 240 VAC 1Ph; 200 – 600 VAC 3Ph			
Rated operational current I_e		See Rating Table on page tSST-18			
Rating index		See Rating Table on page tSST-18			
Rated frequencies		50 – 60 Hz \pm 5hz			
Rated duty		Uninterrupted			
Form designation		Form 1, internally bypassed			
Method of operation		Symmetrically controlled starter			
Method of control		Semi-automatic			
Method of connecting		Thyristors connected between motor windings and supply			
Number of poles		3 Main poles (2 main poles controlled by semiconductor switching element)			
Rated insulation voltage	U_i	Main circuit	See key to part numbers		
		Control supply circuit	230VAC r.m.s ¹		
Rated impulse withstand voltage	U_{imp}	Main circuit	6 kV		
		Control supply circuit	4 kV ¹		
Ip code	Main circuit		IP00 (IP20 with finger guards ⁵)		
	Supply and control circuit		IP20		
Overvoltage category / pollution degree		III/3			
Rated conditional short-circuit current and type of coordination with associated short circuit protective device (SCPD)		Type 1 coordination See Short Circuit Protection tables on page tSST-15 for rated conditional short-circuit current and required current rating and characteristics of the associated SCPD			
Protect with 4A UL listed fuse	As standard	Control supply ²	Supply input	0, 24V	
			Kind of current, rated frequency	DC	
			Rated voltage U_s	24VDC	
		Control circuit ²	Maximum power consumption	12Va (SR35-017 – SR35-065) 48va (SR35-077 – SR35-361)	
			Programmable opto-isolated inputs	D1, D2	
			Common input, marking	COM	
	With SR35-PSU module	Control supply	Kind of current, rated frequency	DC	
			Rated voltage U_c	24VDC	
			Supply input	L, n	
		Control circuit	Kind of current, rated frequency	AC, 50 – 60 Hz \pm 5hz	
			Rated voltage u_s	110 – 230 VAC	
			Rated input current	1A	
	Auxiliary Circuit ³	Control supply	Programmable opto-isolated inputs	D1, D2	
			Common input	COM	
			Kind of current, rated frequency	AC, 50 - 60 Hz \pm 5hz	
		Form a – single gap make -contact (normally open)	Rated voltage U_c	Rated voltage U_c	110V – 230 VAC
				Form b – single gap break-contact (normally closed)	13, 14
				Utilization category, voltage rating, current rating	21, 22
Electronic overload relay with manual reset and thermal memory	Trip class		10 (Factory default), 20 or 30 (selectable)		
	Current setting		See electronic overload relay current settings		
	Rated frequency		50 – 60 Hz \pm 5hz		
	Time-current characteristics		See Motor Overload Protection on page tSST-15 For trip curves (trip time $T_p \pm 20\%$)		

1. With optional SR35-PSU power supply module.

2. Must be supplied by class 2, limited voltage current or protected by a 4A UL 248 listed fuse.

3. Compliant with Annex S of IEC 60947-1:2007 at 24VDC

4. Not applicable for UL

5. For models SR35-017 – SR35-192 the main circuit IP20 rating only applies when the finger guards as supplied are fitted

The safety functions were not evaluated by UL. Listing is accomplished according to requirements of Standard UL 508 and CSA14-13, general use applications

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SR35 Soft Starter Technical Specifications

Technical Specifications														
Model (SR35-)	Price	Frame Size	Heat Output (W)	Weight kg [lb]	Ambient Operating Temperature	Transportation and Storage Temperature	Humidity	Maximum Altitude	Environmental Rating	Drawing Links				
017	\$387.00	1	9	1.97 [4.2]	-20°C [-4°F] to 40°C [104°F]; above 40°C de-rate linearly by 2% of SR35 le per °C to a maximum of 60°C (140°F)	-20°C to 70°C [-4°F to 158°F] continuous	Max 85% non-condensing, not exceeding 50% @ 40°C [104°F]	1,000m [3281ft]; above 1000m derate by 1% of SR35 le per 100m (328ft) to a maximum altitude of 2,000m (6562ft)	Main circuit: IP00 (Ip20 with optional finger guards); Control circuit: Ip20; no corrosive gases permitted	PDF				
022	\$412.00		12							PDF				
027	\$448.00		14							PDF				
034	\$469.00		16							PDF				
041	\$524.00		20							PDF				
052	\$595.00		25							PDF				
065	\$632.00	30	PDF											
077	\$750.00	2	37	6.0 [13.23]					-20°C [-4°F] to 40°C [104°F]; above 40°C de-rate linearly by 2% of SR35 le per °C to a maximum of 60°C (140°F)	-20°C to 70°C [-4°F to 158°F] continuous	Max 85% non-condensing, not exceeding 50% @ 40°C [104°F]	1,000m [3281ft]; above 1000m derate by 1% of SR35 le per 100m (328ft) to a maximum altitude of 2,000m (6562ft)	Main circuit: IP00 (Ip20 with optional finger guards); Control circuit: Ip20; no corrosive gases permitted	PDF
100	\$850.00		49											PDF
125	\$1,143.00		61											PDF
156	\$1,813.00		74											PDF
192	\$1,911.00	90	PDF											
242	\$2,200.00	3	111	15 [33.1]	-20°C [-4°F] to 40°C [104°F]; above 40°C de-rate linearly by 2% of SR35 le per °C to a maximum of 60°C (140°F)	-20°C to 70°C [-4°F to 158°F] continuous	Max 85% non-condensing, not exceeding 50% @ 40°C [104°F]	1,000m [3281ft]; above 1000m derate by 1% of SR35 le per 100m (328ft) to a maximum altitude of 2,000m (6562ft)					Main circuit: IP00; Control circuit: IP20; no corrosive gases permitted	PDF
302	\$2,546.00		139											PDF
361	\$2,719.00		166											PDF



Ventilation for Enclosures

SR35 Minimum Clearance Distances * (in [mm])					
SR35 Soft Starter Model	Top	Bottom	Left	Right	Front
Size 1: SR35-017 to SR35-065	3 [75]		1 [25]		
Size 2: SR35-77 to SR35-192	3.9 [100]		1.6 [40]	1 [25]	
Size 3: SR35-242 to SR35-361	4.9 [125]		2.4 [60]	1 [25]	

* For heat dissipation, the SR35 must not be mounted any closer to another object than these distances.



THE ADDITION OF OPTIONAL FINGER GUARDS TO SIZE 1 AND SIZE 2 SR35 SOFT STARTERS ADDS APPROXIMATELY 14MM [0.5IN] TO THE SOFT STARTER VERTICAL DIMENSION, BUT DOES NOT CHANGE THE CLEARANCE DISTANCE.



WHEN INSTALLING THE SR35 STARTER IN AN ENCLOSURE, VENTILATION MUST BE PROVIDED IF THE HEAT OUTPUT OF THE UNIT IS GREATER THAN WHAT THE ENCLOSURE WILL DISSIPATE. USE THE FORMULA AT RIGHT TO DETERMINE THE FAN REQUIREMENT. AN ALLOWANCE HAS BEEN INCORPORATED INTO THE FORMULA SO THAT THE FIGURE FOR Q IS THE AIR DELIVERY IN THE FAN SUPPLIERS DATA. HEAT DISSIPATED CAN BE APPROXIMATED WITH THE FORMULA:
WATTS (SR35) = 1/2 X (SR35 CURRENT RATING) X 3

$$Q = (4xWt) / (T_{max} - T_{amb})$$

Q = Volume of air (cubic meters per hour - m³/h)

Wt = Heat produced by the unit and all other heat sources within the enclosure (Watts)

T_{max} = Maximum permissible temperature within the enclosure (50°C for a fully rated SR35)

T_{amb} = Temperature of the air entering the enclosure (°C) (If you prefer to work in CFM, substitute °F for °C. Q is now in CFM)

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SR35 Soft Starter Overcurrent Protection



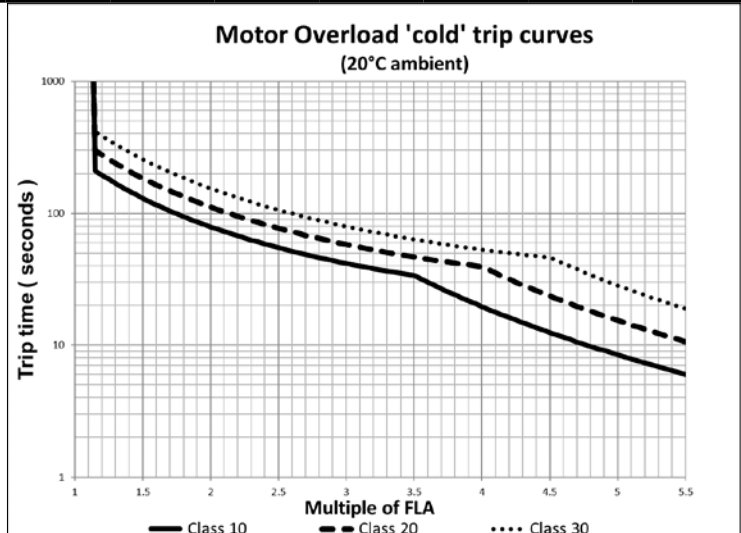
CUSTOMER-SUPPLIED EXTERNAL POWER-CIRCUIT ISOLATION DEVICES (CONTACTORS, DISCONNECT SWITCHES, FUSIBLE DISCONNECTS, SHUNT-TRIP CIRCUIT BREAKERS, ETC.) AND SHORT-CIRCUIT PROTECTION DEVICES (CIRCUIT BREAKERS, FUSES, ETC.) ARE REQUIRED FOR USE WITH SR35 SOFT STARTERS.

Short Circuit Protection – SR35 Frame Size 1										
Type designation (SR35-)			017	022	027	034	041	052	065	
Rated operational current	I_e	A	17	22	29	35	41	55	66	
Rated conditional short circuit current	I_q	kA	5	5	5	5	5	5	5	
Class J time-delay fuse #1	Maximum rating Z1	A	30	40	50	60	70	100	125	
UL Listed inverse-time delay circuit breaker #1	Maximum rating Z2	A	60	60	60	60	60	150	150	
Semiconductor fuse (class aR) #2	Type		Mersen 6,9 URD 30 _				Mersen 6,9 URD 31 _			
			Bussmann 170M30 _				Bussmann 170M40 _			
			Bussmann 170M31 _				Bussmann 170M41 _			
			Bussmann 170M32 _				Bussmann 170M42 _			
			SIBA 20 61 _				SIBA 20 61 _			
	Fuse rating	A	160A	160A	200A	200A	250A	250A	250A	
1. Suitable For Use On A Circuit Capable Of Delivering Not More Than I_q r.m.s. Symmetrical Amperes, 600V Maximum, When Protected by Class J Time Delay Fuses with a Maximum Rating of Z1 or by a Circuit Breaker with a Maximum Rating of Z2. 2. Correctly selected semiconductor fuses can provide additional protection against damage to the SR35 unit (this is sometimes referred to as type 2 coordination). These semiconductor fuses are recommended to provide this increased protection.										

Short Circuit Protection – SR35 Frame Size 2 & 3										
Type designation (SR35-)			077	100	125	156	192	242	302	361
Rated operational current	I_e	A	80	106	132	160	195	242	302	361
Rated conditional short circuit current	I_q	kA	10	10	10	10	10	18	18	18
Class J time-delay fuse #1	Maximum rating Z1	A	150	200	250	300	400	450	600	600
UL Listed inverse-time delay circuit breaker #1	Maximum rating Z2	A	250	300	350	450	500	700	800	800
Semiconductor fuse (class aR) #2	Type		Mersen 6,9 URD 31 _				Mersen 6,9 URD 33 _			
			Bussmann 170M40 _				Bussmann 170M60 _			
			Bussmann 170M41 _				Bussmann 170M61 _			
			Bussmann 170M42 _				Bussmann 170M62 _			
			SIBA 20 61 _				SIBA 20 63 _			
	Fuse rating	A	400A	400A	550A	550A	550A	800A	900A	1000 A
1. Suitable For Use On A Circuit Capable Of Delivering Not More Than I_q r.m.s. Symmetrical Amperes, 600Volts Maximum, When Protected by Class J Time Delay Fuses with a Maximum Rating of Z1 or by a Circuit Breaker with a Maximum Rating of Z2. 2. Correctly selected semiconductor fuses can provide additional protection against damage to the SR35 Soft Starter (this is sometimes referred to as type 2 coordination). These semiconductor fuses are recommended to provide this increased protection.										

SR35 Soft Starter Overload Trip

The SR35 soft starter provides motor overload protection, which can be configured through the keypad. Overload trip settings are determined by the Motor Current setting and the Trip Class setting. Trip class choices are class 10, class 20, and class 30. The SR35 soft starters are protected using full I²T motor overload with memory.



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SR35 Soft Starter Selection

An Online Product Selection Tool is available on our website:
<https://www.automationdirect.com/selectors/softstarters>

SR35 Soft Starter Selection													
Step 1 - Select the application from the list and follow that column down													
Typical Applications	Standard Duty			Medium Duty			Heavy Duty						
		Agitator			Compressor - Centrifugal			Crusher					
		Compressor - Rotary Vane			Compressor - Reciprocating			Shredder					
		Compressor - Unloaded			Compressor - Rotary Screw			Wood Chipper					
		Bow Thruster - Zero Pitch			Ball Mill			Fan - High Inertia or >85A					
		Fan - Low Inertia or <85A			Bow Thruster - Loaded			-					
		Feeder - Screw			Conveyor - Loaded			-					
		Lathe Machines			Grinder			-					
		Mixer - Unloaded			Hammer Mill			-					
		Molding Machine			Mills - Flour etc.			-					
		Plastic and Textile Machines			Mixer - Loaded			-					
		Pump - Submersible; Centrifugal			Pelletizers			-					
		Pump - Submersible; Rotodynamic			Press, Flywheel			-					
		Saw - Band			Positive Displacement Pump; Reciprocating			-					
		Transformers			Positive Displacement Pump; Rotary			-					
		Voltage Regulators			Pump Jack			-					
		-			Rolling Mill			-					
	-			Roots Blower			-						
	-			Saw - Circular			-						
	-			Screen - Vibrating			-						
	-			Tumblers			-						
Step 2 - Confirm the rated starting capability of the soft starter against the application													
Trip Class				Trip Class 10			Trip Class 20			Trip Class 30			
Rated Starting Capability				3x Motor Current - 23s 3.5x Motor Current - 17s			4x Motor Current - 19s			4x Motor Current - 29s			
Max Starts per Hour				5 starts/hour			5 starts/hour			5 starts/hour			
Max Starts per Hour w/Optional Cooling Fan				40 starts/hour			40 starts/hour			40 starts/hour			
Step 3 - Consider the operating environment and make the model selection on a higher amp rating													
Height Above Sea Level				Standard operating height is 1000m, for every 100m increase motor Amps/kW by 1% up to 2000m. Example: For a 20A motor at 1500m, make model selection based on 21A (5% higher).									
Operating Temperatures				Standard operating temperature is 40degC, for every 1°C above, increase motor Amps/kW by 2%, up to 60°C. Example: For a 20A motor at 50°C make model selection based on 24A (20% higher).									
Increased Starts per Hour				Fit optional fan to increase maximum up to 40 starts per hour.									
Step 4 (Three Phase) - Select your motor Voltage and Horsepower/kW and select model													
I _e A	kW			FLA A	Hp (3Ph)					Select Model 5 starts/hour @ 40°C	Select Model 5 starts/hour @ 40°C	Select Model 5 starts/hour @ 40°C	
	230V	400V	500V		200V	208V	220-240V	440-480V	550-600V				
17	4	7.5	7.5	17	3	5	5	10	15	SR35-017	SR35-022	SR35-027	
22	5.5	11	11	22	5	5	7.5	15	20	SR35-022	SR35-027	SR35-034	
29	7.5	15	15	27	7.5	7.5	7.5	20	25	SR35-027	SR35-034	SR35-041	
35	7.5	18.5	22	34	10	10	10	25	30	SR35-034	SR35-041	SR35-052	
41	11	22	22	41	10	10	10	30	40	SR35-041	SR35-052	SR35-065	
55	15	30	37	52	15	15	15	40	50	SR35-052	SR35-065	SR35-077	
66	18.5	37	45	65	20	20	20	50	60	SR35-065	SR35-077	SR35-100	
80	22	45	55	77	20	25	25	60	75	SR35-077	SR35-100	SR35-125	
106	30	55	75	100	30	30	30	75	100	SR35-100	SR35-125	SR35-156	
132	37	75	90	125	40	40	40	100	125	SR35-125	SR35-156	SR35-192	
160	45	90	110	156	50	50	60	125	150	SR35-156	SR35-192	SR35-242*	
195	55	110	132	192	60	60	60	150	200	SR35-192	SR35-242*	SR35-302*	
242	75	132	160	242	75	75	75	200	250	SR35-242*	SR35-302*	SR35-361*	
302	90	160	200	302	100	100	100	250	300	SR35-302*	SR35-361*	-	
361	110	200	250	361	125	125	150	300	350	SR35-361*	-	-	

*SR35-242, 302 and 361, 3 starts/hour @ 40°C

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SR35 Soft Starter Selection

SR35 Soft Starter Selection (1Ph)										
Step 4 (Single Phase) - Select your motor Voltage and Horsepower/kW and select model										
Motor Rating								Select Model 5 starts/hour @ 40°C	Select Model 5 starts/hour @ 40°C	Select Model 5 starts/hour @ 40°C
110 – 120 V (1Ph)				220 – 240 V (1Ph)						
HP	FLA	kW	I _e (A)	HP	FLA	kW	I _e (A)			
-	-	-	-	-	-	0.07	1.2	SR35-017	SR35-017	SR35-017
-	-	-	-	0.1	1.5	0.1	1.6	SR35-017	SR35-017	SR35-017
-	-	-	-	0.12	1.9	0.12	1.9	SR35-017	SR35-017	SR35-017
-	-	0.07	2.4	0.16	2.2	0.18	2.3	SR35-017	SR35-017	SR35-017
0.1	3	0.1	3.3	0.25	2.9	0.25	2.9	SR35-017	SR35-017	SR35-017
0.12	3.8	0.12	3.8	0.33	3.6	0.37	3.9	SR35-017	SR35-017	SR35-017
0.16	4.4	0.18	4.5	0.5	4.9	-	-	SR35-017	SR35-017	SR35-017
0.25	5.8	0.25	5.8	-	-	0.56	5.5	SR35-017	SR35-017	SR35-017
-	-	-	-	0.75	6.9	-	-	SR35-017	SR35-017	SR35-017
0.33	7.2	0.37	7.9	1	8	0.75	7.3	SR35-017	SR35-017	SR35-017
0.5	9.8	0.56	11	1.5	10	1.1	10	SR35-017	SR35-017	SR35-017
0.75	13.8	-	-	2	12	1.5	13	SR35-017	SR35-017	SR35-022
1	16	0.75	15	3	17	-	-	SR35-017	SR35-022	SR35-027
1.5	20	1.1	21	-	-	2.2	19	SR35-022	SR35-027	SR35-034
2	24	1.5	26	-	-	3	24	SR35-027	SR35-034	SR35-041
-	-	-	-	5	28	3.7	27	SR35-027	SR35-034	SR35-041
-	-	-	-	-	-	4	30	SR35-034	SR35-041	SR35-052
3	34	2.2	37	-	-	-	-	SR35-041	SR35-052	SR35-065
-	-	-	-	7.5	40	5.5	41	SR35-041	SR35-052	SR35-065
-	-	3	49	10	50	-	-	SR35-052	SR35-065	SR35-077
5	56	3.7	54	-	-	7.5	55	SR35-065	SR35-077	SR35-100
-	-	4	60	-	-	-	-	SR35-065	SR35-077	SR35-100
-	-	-	-	15	68	9.2	67	SR35-077	SR35-100	SR35-125
7.5	80	5.5	85	20	88	11	80	SR35-100	SR35-125	SR35-156
-	106	-	106	-	106	-	106	SR35-100	SR35-125	SR35-156
10	100	7.5	110	25	110	-	132	SR35-125	SR35-156	SR35-192
15	135	-	160	30	136	-	160	SR35-156	SR35-192	SR35-242*
-	195	-	195	40	176	-	195	SR35-192	SR35-242*	SR35-302*
-	242	-	242	50	216	-	242	SR35-242*	SR35-302*	SR35-361*
-	302	-	302	-	302	-	302	SR35-302*	SR35-361*	-
-	361	-	361	-	361	-	361	SR35-361*	-	-

*SR35-242, 302 and 361, 3 starts/hour @ 40°C

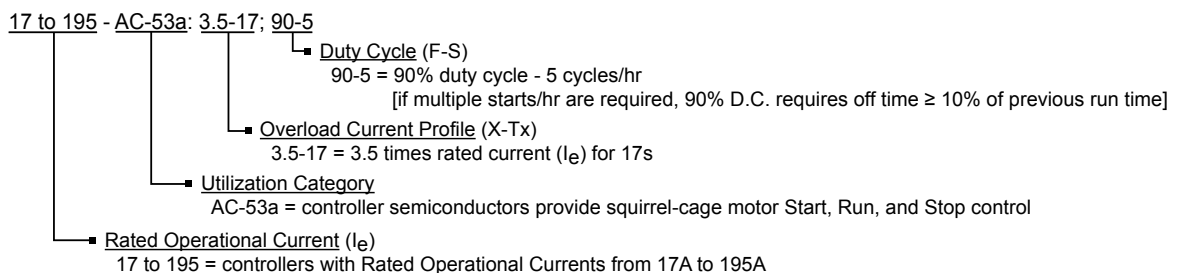
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SR35 Index Ratings (per IEC 60947-4-2)

Rating Table – Vertically Mounted (3Ph)												
I_e	kW^1			FLA	Hp^2					Trip Class 10	Trip Class 20	Trip Class 30
	A^3	230V	400V		500V ⁴	A^3	200V	208V	220-240V	440-480V	550-600V ⁴	I_e : AC-53a: 3.5-17: F-S ⁵
17	4	7.5	7.5	17	3	5	5	10	15	SR35-017	SR35-022	SR35-027
22	5.5	11	11	22	5	5	7.5	15	20	SR35-022	SR35-027	SR35-034
29	7.5	15	15	27	7.5	7.5	7.5	20	25	SR35-027	SR35-034	SR35-041
35	7.5	18.5	22	34	10	10	10	25	30	SR35-034	SR35-041	SR35-052
41	11	22	22	41	10	10	10	30	40	SR35-041	SR35-052	SR35-065
55	15	30	37	52	15	15	15	40	50	SR35-052	SR35-065	SR35-077
66	18.5	37	45	65	20	20	20	50	60	SR35-065	SR35-077	SR35-100
80	22	45	55	77	20	25	25	60	75	SR35-077	SR35-100	SR35-125
106	30	55	75	100	30	30	30	75	100	SR35-100	SR35-125	SR35-156
132	37	75	90	125	40	40	40	100	125	SR35-125	SR35-156	SR35-192
160	45	90	110	156	50	50	60	125	150	SR35-156	SR35-192	SR35-242
195	55	110	132	192	60	60	60	150	200	SR35-192	SR35-242	SR35-302
242	75	132	160	242	75	75	75	200	250	SR35-242	SR35-302	SR35-361
302	90	160	200	302	100	100	100	250	300	SR35-302	SR35-361	-
361	110	200	250	361	125	125	150	300	350	SR35-361	-	-
Rating Table – Horizontally Mounted (3Ph)												
17	4	7.5	7.5	17	3	5	5	10	15	SR35-022	SR35-027	SR35-034
22	5.5	11	11	22	5	5	7.5	15	20	SR35-027	SR35-034	SR35-041
29	7.5	15	15	27	7.5	7.5	7.5	20	25	SR35-034	SR35-041	SR35-052
35	7.5	18.5	22	34	10	10	10	25	30	SR35-041	SR35-052	SR35-065
41	11	22	22	41	10	10	10	30	40	SR35-052	SR35-065	SR35-077
55	15	30	37	52	15	15	15	40	50	SR35-065	SR35-077	SR35-100
66	18.5	37	45	65	20	20	20	50	60	SR35-077	SR35-100	SR35-125
80	22	45	55	77	20	25	25	60	75	SR35-100	SR35-125	SR35-156
106	30	55	75	100	30	30	30	75	100	SR35-125	SR35-156	SR35-192
132	37	75	90	125	40	40	40	100	125	SR35-156	SR35-192	SR35-242
160	45	90	110	156	50	50	60	125	150	SR35-192	SR35-242	SR35-302
195	55	110	132	192	60	60	60	150	200	SR35-242	SR35-302	SR35-361
242	75	132	160	242	75	75	75	200	250	SR35-302	SR35-361	-
302	90	160	200	302	100	100	100	250	300	SR35-361	-	-

- Rated operational powers in kW as per IEC 60072-1 (primary series) corresponding to IEC current rating.
- Rated operational powers in hp as per UL508 corresponding to FLA current rating.
- The I_e and FLA rating applies for a maximum surrounding air temperature of 40°C. Above 40°C de-rate linearly by 2% of I_e or FLA per °C to a maximum of 60°C.
- kW and Hp ratings applicable for SR35-017 – SR35-361 models only.
- For SR35-017 – SR35-192 models, a higher duty cycle F-S is possible with optional fan fitted as indicated in Fan option table. For SR35-242 – SR35-361 models, fans fitted as standard. Reference page tSST-19 for duty cycle.

Index Rating Example – Standard Operation (AC-53a Utilization Category per IEC 60947-4-2)



Stellar[®] SR35 Basic Soft Starters

Standard Overload Current Profile and Duty Cycle








The SR35 has been designed for a specific Overload Current Profile and Duty Cycle as shown above in the SR35 Index Ratings. The Overload Current Profile is expressed by two symbols, X and Tx. X denotes the overload current as a multiple of I_e and represents the maximum value of operating current due to starting, operating, or maneuvering under overload conditions. For example, X = 3.5 means that the maximum overload start current allowed is 3.5 times FLC. Tx denotes the duration of the controlled overload currents during starting, stopping, operating, or maneuvering. For example, Tx = 17 means that the maximum allowed overload current is permitted for up to 17 seconds only.

The Duty Cycle is expressed by two symbols, F and S which describe the duty and also set the time that must be allowed for cooling. F is the ratio of the on-load period to the total period expressed as a percentage. For example, F = 90 means that the soft starter is ON for 90% of the time and then OFF for 10% of the time between each start. If there are not multiple starts per hour, then the Duty Cycle is continuous. S is the number of starts or operating cycles per hour. For example, S = 5 means that the soft starter is capable of 5 equally spaced starts per hour. These characteristics are summarized in the table below:

Model	Rated Current (A)"	Class 10 O/L Multiple (X)"	Class 10 O/L Time (Tx)"	Starts/Hour (S)	Duty (F)
SR35-017	17	3.5	17	5	90%
SR35-022	22				
SR35-027	27				
SR35-034	34				
SR35-041	41				
SR35-052	52				
SR35-065	65				
SR35-077	77				
SR35-100	100				
SR35-125	125				
SR35-156	156				
SR35-192	192				
SR35-242	242			3	
SR35-302	302				
SR35-361	361				


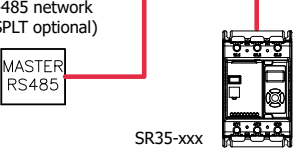
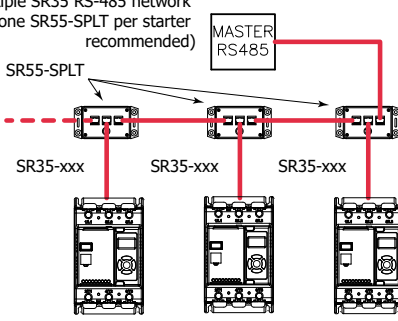


Stellar[®] SR35 Basic Soft Starters

SR35 Accessories

SR35 Optional Accessories					
Part Number	Price	Description	Image	For SR35 Models	Drawing Link
<u>SR35-FG-1</u>	\$24.00	Stellar SR35 series finger guards, replacement. Package of 2. For use with size 1 Stellar SR35 series soft starters. Provides IP20 protection rating.		-017 thru -065	PDF
<u>SR35-FG-2</u>	\$24.00	Stellar SR35 series finger guards, replacement. Package of 2. For use with size 2 Stellar SR35 series soft starters. Provides IP20 protection rating.		-077 thru -192	PDF
<u>SR35-TC-3</u>	\$202.00	Stellar SR35 series finger guards, package of 6. For use with size 3 Stellar SR35 series soft starters.		-242 thru -361	PDF
<u>SR35-FAN-1</u>	\$54.00	Stellar SR35 series main cooling fan, 36 x 222 x 90mm, 24 VDC. For use with size 1 Stellar SR35 series soft starters. Electrical connector included.		-017 thru -065	PDF
<u>SR35-FAN-2</u>	\$57.00	Stellar SR35 series main cooling fan, 68 x 297 x 102mm, 12 VDC. For use with size 2 Stellar SR35 series soft starters. Electrical connector included.		-077 thru -192	PDF
<u>SR35-KPD-REM</u>	\$172.00	Stellar SR35 series remote keypad, for use with Stellar SR35 series soft starters.		All	PDF
<u>SR35-AUX-IO</u>	\$84.00	Stellar SR35 series temperature combo module, thermistor, 1-channel input, 2-point input, 110-230 VAC/24 VDC, 2-point output, 250 VAC, (2) Form A (SPST) relays. For use with Stellar SR35 series soft starters. (1) 500mm ribbon cable included.		All	PDF

Stellar[®] SR35 Basic Soft Starters

SR35 Accessories

SR35 Optional Accessories					
Part Number	Price	Description	Image	For SR35 Models	Drawing Link
SR35-PSU	\$90.00	Stellar SR35 series switching power supply, 24 VDC output, 1A, 120W, 120/240 VAC nominal input, automatic selectable, 1-phase, enclosed, plastic housing, direct mount.		All	PDF
SR55-SPLT	\$114.00	<p>Stellar SR55 series communication splitter, 3 ports, (3) RS-485 (RJ45) female port(s). For use with Stellar SR55 series soft starters. (1) SR55-RJ45-RJ12 adapter and (1) 9.8ft/3m Cat5e cable included.</p> <p>Single SR35 RS-485 network (SR55-SPLT optional)</p>  <p>Multiple SR35 RS-485 network (one SR55-SPLT per starter recommended)</p>  <p>RS-485 Network Examples</p>		All	PDF
USB-FLASH	\$21.50	SanDisk USB Flash drive, 32GB.		All	PDF