

AutomationDirect » Stellar SR55 Soft Starters

Overview

SR55 full-featured solid-state Soft Starters provide many advantages when used instead of electromechanical contactors to control 3-phase AC induction motors. The SR55 Soft Starters are fully digital, and use thyristors in all three motor phases for controlled reduced voltage motor starting and stopping. SR55s have an Automatic Application Setup that fully configures the starter for a specific application with one entry. SR55s also have a built-in internal bypass and patented iERS (intelligent Energy Recovery System) that reduces energy costs when used on lightly loaded and oversized motors.

Advantages

Mechanical Advantages

- Smaller physical size than equivalent SR44 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
- iERS (intelligent Energy Recovery System) reduces electrical power costs

Automatic Application setup feature speeds installation by configuring the SR55 for a specific application with one setting

Features

- 17–477A @ 200–480VAC
- 24VDC, 110VAC, or 230VAC selectable control voltage
- Internally bypassed during run
- Full three-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
- iERS (intelligent Energy Recovery System) saves energy on lightly-loaded motors
- Can be connected 'in-the-delta', allowing use of a smaller Soft Starter (no iERS optimizing

with in-delta connections)

- Can be used for motor reversing (with external contactors)
- Suitable for a wide variety of motor loads
- Touchscreen with easy-to-navigate menu structure and quick automatic application set up
- Can be used with local or remote control
- Integrated Modbus RTU, or optional Modbus TCP or EtherNet/IP communication
- Optional remote touchscreen available
- Programmable analog I/O, digital inputs, and relay outputs for remote control
- Fault record history of last 10 trips (using the download fault log will give faults and running data for the life of the SR55)
- IP20, panel mount with optional finger guards for frame sizes 1 and 2 soft starters
- Two-year warranty
- CE, ETL (CSA C22.2 No.14 and UL 508), REACH, RoHS



SR55 Soft Starters
O/L Trip Classes 1

Application	Trip Class
Default	10
Heavy	20
Agitator	10
Compressor - Centrifugal	20
Compressor - Reciprocating	20
Compressor - Rotary Screw	20
Compressor - Rotary Vane	10
Compressor - Scroll	10
Ball mill	20
Centrifuge*	30
Bow Thruster - Zero Pitch	10
Bow Thruster - Loaded	20
Conveyor - Unloaded	10
Conveyor - Loaded	20
Crusher	30
Fan - Low Inertia <85A	10
Fan - High Inertia <85A	30
Feeder - screw	10
Grinder	20
Hammer mill	20
Lathe machines	10
Mills - Flour, etc.	20
Mixer - Unloaded	10
Mixer - Loaded	20
Molding Machine	10
Pelletizers	20
Plastic and textile machines	10
Press, flywheel	20
Pump - Submersible Centrifugal	10

SR55 Soft Starters Selection Table 2
(per IEC 60947-4-1:2009 Table 6.1)

Motor Size					Soft Starter Size							
In-Line Connection					In-Delta Connection							
1(A)	HP @				1(A)	HP @				Application Trip Class		
	200V	208V	230V	460V		200V	208V	230V	460V	Class 10	Class 20	Class 30
17	3	5	5	10	29	7.5	7.5	10	20	SR55-017	SR55-021	SR55-027
21	5	5	5	15	36	10	10	10	25	SR55-021	SR55-027	SR55-034
27	7.5	7.5	7.5	20	47	10	15	15	30	SR55-027	SR55-034	SR55-040
34	10	10	10	25	59	15	15	20	40	SR55-034	SR55-040	SR55-052
40	10	10	10	30	69	20	20	25	50	SR55-040	SR55-052	SR55-065
52	15	15	15	40	90	25	30	30	60	SR55-052	SR55-065	SR55-077
65	20	20	20	50	113	30	30	40	75	SR55-065	SR55-077	SR55-096
77	20	25	25	60	133	40	40	50	100	SR55-077	SR55-096	SR55-124
96	30	30	30	75	166	50	50	60	125	SR55-096	SR55-124	SR55-156
124	40	40	40	100	215	60	75	75	150	SR55-124	SR55-156	SR55-180
156	50	50	60	125	270	75	75	100	200	SR55-156	SR55-180	SR55-242
180	60	60	60	150	312	100	100	125	250	SR55-180	SR55-242	SR55-302
242	75	75	75	200	419	150	150	150	300	SR55-242	SR55-302	SR55-361
302	100	100	100	250	523	150	150	200	450	SR55-302	SR55-361	SR55-414
361	125	125	150	300	625	200	200	250	500	SR55-361	SR55-414	SR55-477
414	150	150	350	717	250	250	250	250	500	SR55-414	SR55-477	n/a
477	150	150	150	400	826	250	300	300	600	SR55-477	n/a	n/a

* For In-Delta connections, all six motor wires must be available for connection, and it is critical to exactly follow the In-Delta wiring diagram in the SR55 User Manual or Quick-start Guide. Nine-lead motors **CANNOT** be connected in the delta. The Soft Starter will only sense the Phase Current, which is about 58% of the Line Current.

* For In-Delta connections, a main contactor that is controlled by the Run relay of the SR55 must be used in the incoming power circuit for isolation. Circuit breaker isolation alone is not sufficient.

* iERS energy optimizing feature is not available for In-Delta connections.

SR55 Optional Accessories

Part Number	Description
SR55-CM-ENETIP	EtherNet/IP communication module, optional, for Stellar SR55 series soft starters, dual RJ45 communication ports, complete EtherNet/IP adapter, TCP/IP socket interface, CIP parameter object support, implicit and explicit messaging, transformer isolated Ethernet interface, 10/100 Mbps full duplex.
SR55-CM-MODTCP	Modbus TCP communication module, optional, for Stellar SR55 series soft starters, dual RJ45 communication ports, complete Modbus TCP server, up to 256 bytes of I/O data in each direction, transformer isolated interface, 100 Mbps full duplex, TCP/IP socket interface, supports 4 simultaneous (master) connections.
SR55-FG-1	Finger guards, replacement, for size 1 Stellar SR55 series soft starter power terminals. Provides IP20 protection rating. Package of 2.
SR55-FG-2	Finger guards, replacement, for size 2 Stellar SR55 series soft starter power terminals, Provides IP20 protection rating. Package of 2.
SR55-KPD-REM	Touchscreen, optional remote, for Stellar SR55 series soft starters. Used to remotely monitor, configure, and control SR55 series units without opening enclosures. Rated for NEMA 4/4X enclosures, no external power wiring required. Includes 3m RJ45 cable and SR55-RJ45-RJ12 adapter.
SR55-SPLT	Serial Modbus communication splitter, optional, for Stellar SR55 series soft starters. Used for creating a Modbus network with multiple SR55 series soft starters. Uses 3 serial RJ45 connectors for upstream/downstream connectivity and connection to the starter.
SR55-RJ45-RJ12	RJ45 female to RJ12 male adapter, optional, for Stellar SR55 series soft starters.
USB-FLASH	USB Flash drive, SanDisk, 4GB (SanDisk P/N SDCZ50-004G-A46).

Pump - Submersible Rotodynamic	10
Pump - Positive displacement Reciprocating	20
Pump - Positive displacement Rotary	20
Pump Jack	20
Rolling mill	20
Roots Blower	20
Saw - Band	10
Saw - Circular	20
Screen - Vibrating	20
Shredder	30
Transformers, voltage regulators	10
Tumblers	10
Wood chipper	30

* Size centrifuge starter at I(A) = (motor FLA x 2.3). Trip Class 30.