

MECHANICAL INSTALLATION



CHAPTER

1

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USER MANUAL OVERVIEW

OVERVIEW OF THIS PUBLICATION

The SR55 Soft Starter User Manual describes the installation, configuration, and methods of operation of the SR55 Soft Starter.

WHO SHOULD READ THIS MANUAL

This manual contains important information for those who will install, maintain, and/or operate any of the SR55 Soft Starters.

SUPPLEMENTAL PUBLICATIONS

The National Electrical Manufacturers Association (NEMA) publishes many different documents that discuss standards for industrial control equipment. Global Engineering Documents handles the sale of NEMA documents. For more information, you can contact Global Engineering Documents at:

**15 Inverness Way East
Englewood, CO 80112-5776
1-800-854-7179 (within the U.S.)
303-397-7956 (international)
www.global.ihs.com**

TECHNICAL SUPPORT

**By Telephone: 770-844-4200
(Mon.–Fri., 9:00 a.m.–6:00 p.m. E.T.)**

On the Web: www.automationdirect.com

Our technical support group is glad to work with you in answering your questions. If you cannot find the solution to your particular application, or, if for any reason you need additional technical assistance, please call technical support at **770-844-4200**. We are available weekdays from 9:00 a.m. to 6:00 p.m. Eastern Time.

We also encourage you to visit our web site where you can find technical and non-technical information about our products and our company. Visit us at www.automationdirect.com.

SPECIAL SYMBOLS



When you see the “notepad” icon in the left-hand margin, the paragraph to its immediate right will be a special note.



WHEN YOU SEE THE “EXCLAMATION MARK” ICON IN THE LEFT-HAND MARGIN, THE PARAGRAPH TO ITS IMMEDIATE RIGHT WILL BE A WARNING. THIS INFORMATION COULD PREVENT INJURY, LOSS OF PROPERTY, OR EVEN DEATH (IN EXTREME CASES).

MECHANICAL INSTALLATION

MOUNTING

Mount the soft starter to a flat, vertical surface using the mounting holes (or slots) on its base plate. The dimension drawings, shown in the “Dimensions” subsection of this chapter, give mounting hole positions and overall dimensions for each SR55 model. Ensure that:

- The orientation of the unit has the “TOP” uppermost, and within the vertical range shown on the dimension drawings. (Mount the unit within 30° of vertical, for both side-to-side and front-to-back dimensions.)
- The location allows adequate front access.
- You can view and access the touchscreen.



SR55 soft starters are not intended for mounting in environments containing corrosive gases.

REQUIREMENTS FOR AN ENCLOSURE

For a typical industrial environment, an enclosure should provide the following:

- A single location for the unit and its protection/isolation switch gear.
- The safe termination of cabling and/or bus bars.
- Allow minimum clearance distances around soft starters as specified in the tables shown with the dimension drawings.
- Means to effect proper air flow through the enclosure and maintain temperature and humidity within the ranges specified in the Mechanical Specifications table.

ENCLOSURE VENTILATION

Enclosure Ventilation

When fitting SR55 into an enclosure, ventilation must be provided if the heat output of the unit is greater than the enclosure will dissipate. Use the following formula to determine the enclosure 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.



The power dissipation of the thyristors are at their peak when the SR55 is in energy-saving mode (iERS), therefore causing the most heat generated from the starter.

Heat dissipated can be approximated with the formula:

Watts (SR55) = 1/2 x (SR55 current rating) x 3

$$Q = (4 \times W_t) / (T_{max} - T_{amb})$$

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

W_t = 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 SR55)

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)

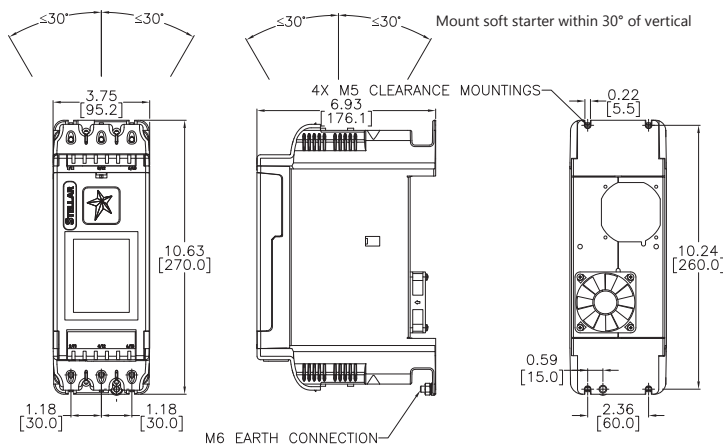
MECHANICAL SPECIFICATIONS

MECHANICAL SPECIFICATIONS – SR55 Series Full-Featured Soft Starters									
Model	SR55-017	SR55-021	SR55-027	SR55-034	SR55-040	SR55-052	SR55-065	SR55-077	SR55-096
Frame Size	1								
Heat Output (W)	25.5	31.5	40.5	51.0	60.0	78.0	97.5	116	144
Weight (lb [kg])	6.6 [3.0]				7.7 [3.5]				
Model	SR55-124	SR55-156	SR55-180	SR55-242	SR55-302	SR55-361	SR55-414	SR55-477	–
Frame Size	2				3				–
Heat Output (W)	186	234	270	363	453	542	621	716	–
Weight (lb [kg])	12.1 [5.5]	14.3 [6.5]		35.3 [16.0]			46.7 [21.2]		–
Model	All SR55 models								
Ambient Operating Temperature	-20°C [-4°F] to 50°C [122°F] ; above 50°C derate linearly by 4% of SR55 I _e per °C to a maximum of 60°C (140°F)								
Transportation and Storage Temperature	-20°C to 60°C [-4°F to 140°F] continuous								
Humidity	max 85% non-condensing, not exceeding 50% @ 40°C [104°F]								
Maximum Altitude	1,000m [3281ft] ; above 1000m derate by 1% of SR55 I _e per 100m (328ft) to a maximum altitude of 2,000m (6562ft)								
Environmental Rating	Main Circuit: IP00 (IP20 with optional finger guards for sizes 1&2 only); Control Circuit: IP20; No corrosive gases permitted								

DIMENSIONS

(in [mm])

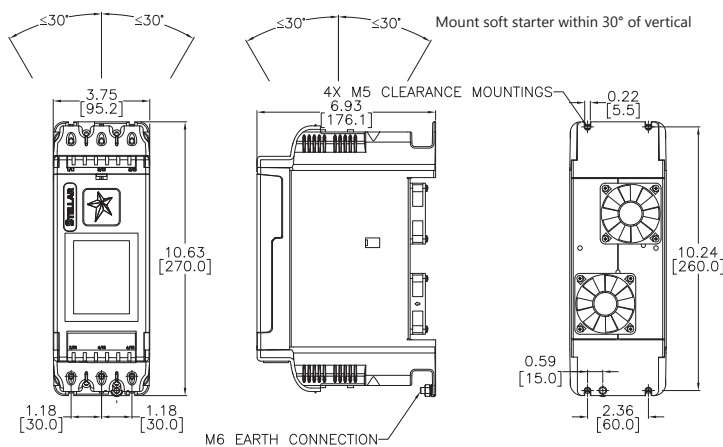
FRAME SIZE 1: SR55-017 – SR55-027



Minimum Clearance Distance	
Top	3in [75mm]
Bottom	3in [75mm]
Left	1in [25mm]
Right	
Front	

NOTE: The addition of optional finger guards to size 1 and size 2 SR55 soft starters adds approximately 14mm [0.5in] to the vertical dimension, but does NOT change the clearance distance.

FRAME SIZE 1: SR55-034 – SR55-096

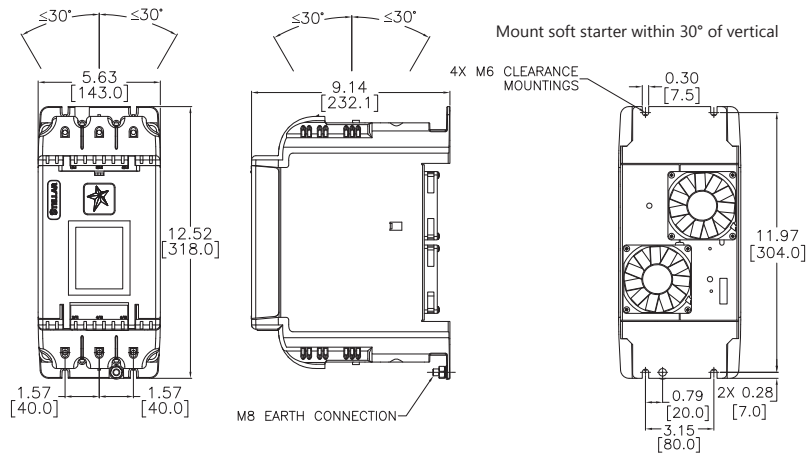


Minimum Clearance Distance	
Top	3in [75mm]
Bottom	3in [75mm]
Left	1in [25mm]
Right	
Front	

NOTE: The addition of optional finger guards to size 1 and size 2 SR55 soft starters adds approximately 14mm [0.5in] to the vertical dimension, but does NOT change the clearance distance.

DIMENSIONS (in [mm]) (CONTINUED)

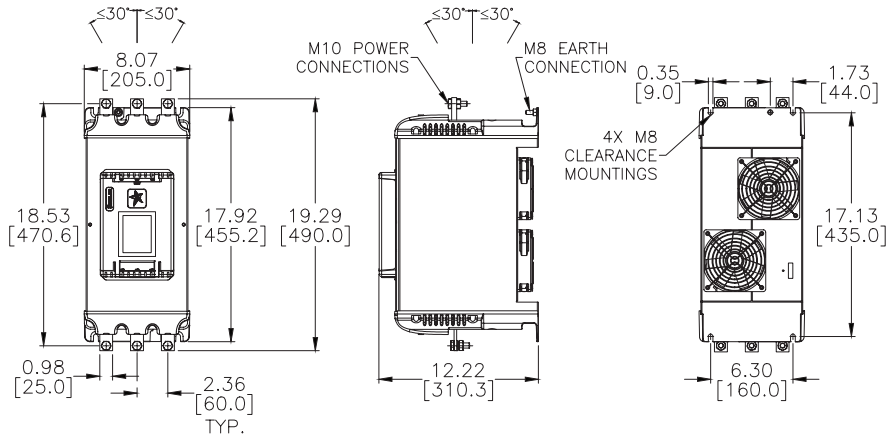
FRAME SIZE 2: SR55-124 – SR55-180



Minimum Clearance Distance	
Top	3.9 in [100mm]
Bottom	
Left	1.6 in [40mm]
Right	
Front	1in [25mm]

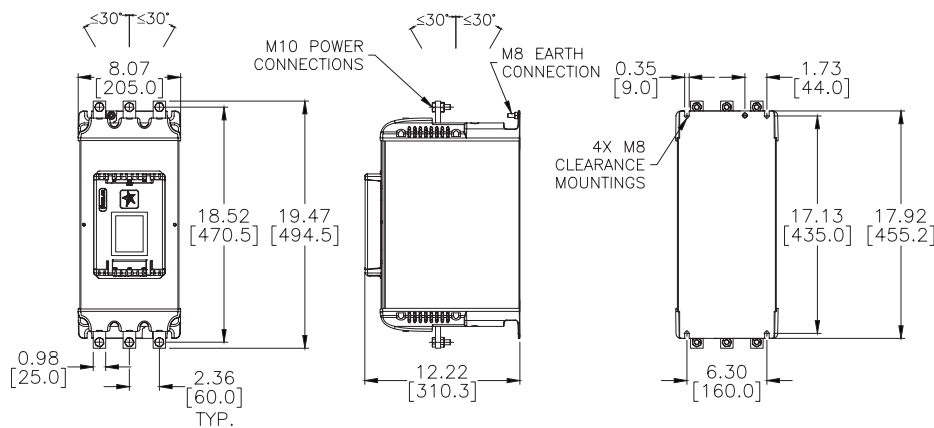
NOTE: The addition of optional finger guards to size 1 and size 2 SR55 soft starters adds approximately 14mm [0.5in] to the vertical dimension, but does NOT change the clearance distance.

FRAME SIZE 3: SR55-242 – SR55-361



Minimum Clearance Distance	
Top	4.9 in [125mm]
Bottom	
Left	2.4 in [60mm]
Right	
Front	1in [25mm]

FRAME SIZE 3: SR55-414 – SR55-477



Minimum Clearance Distance	
Top	4.9 in [125mm]
Bottom	
Left	2.4 in [60mm]
Right	
Front	1in [25mm]

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