

MECHANICAL INSTALLATION



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USER MANUAL OVERVIEW

OVERVIEW OF THIS PUBLICATION

The SR35 Soft Starter User Manual describes the installation, configuration, and methods of operation of the SR35 Soft Starter.

WHO SHOULD READ THIS MANUAL

This manual contains important information for those who will install, maintain, and/or operate any of the SR35 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. EST)

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).

MOUNTING

Mount the unit to a flat, vertical surface using the mounting holes (or slots) on its base-plate. The mechanical outline diagrams, shown on Page 8, give the dimensions and mounting hole positions for each model. Ensure that:

- The orientation of the unit has the 'TOP' uppermost (unless horizontally mounted – see page 9).
- The location allows adequate front access.
- The screen can be viewed.

Do not install other equipment that generates significant heat close to the soft starter.

REQUIREMENTS FOR AN ENCLOSURE

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

- A single location for the unit and its protection/isolation switch-gear
- The safe termination of cabling and/or bus-bars
- Means to effect proper air flow through the enclosure



WARNING: ENCLOSURE VENTILATION

WHEN INSTALLING THE SR35 SOFT STARTER INTO A CABINET, VENTILATION MUST BE PROVIDED. THE HEAT DISSIPATED CAN BE APPROXIMATED WITH THE FORMULA SHOWN BELOW.

STARTING

Watts (SR35 Soft Starter) = start current(A) x start time(s) x number of starts per hour/1800

Running Watts (SR35 Soft Starter) = 0.4 x running amps

Use the following formula 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.

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

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 (40°C for a fully rated SR35)

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

ALTITUDE DERATE

Altitude above sea level 1000m (3281ft). Above 1000m derate by 1% of SR35 Ie per 100m (328ft) to a maximum altitude of 2000m (6562ft).

AMBIENT TEMPERATURE DERATE

-20°C (-4°F) to 40°C (104°F). Above 40°C derate linearly by 2% of SR35 Ie per °C to a maximum of 60°C (140°F).

HANDLING

The SR35 soft start range comprises 3 frame sizes, with various weights and dimensions.

Prior to installing the SR35 soft starter, the installer should carry-out a risk assessment. If considered appropriate, a suitable handling device should be used.

Do not lift the SR35 soft starter by attachment to the 3-phase terminal connections or busbars.



WARNING: HANDLING AND LIFTING HAZARD

ENSURE THE AREA BELOW ANY EQUIPMENT IS CLEAR OF ALL PERSONNEL AND PROPERTY.

FAILURE TO FOLLOW THIS PRACTICE MAY RESULT IN DEATH, SERIOUS INJURY, OR DAMAGE TO EQUIPMENT.

ACCESSORIES

The following accessories have been developed and tested for use with the SR35 range of soft starts:

SR35-KPD-REM: Remote keypad for SR35-17 to SR35-361. Provides remote functionality for up to 32 soft starter units.

SR35-PSU: 100VAC – 240VAC power supply. Provides mains voltage control power and digital control functionality. For use with SR35-017 to SR35-361.

SR35-AUX-IO: The SR35-AUX-IO expansion module can be used to provide additional I/O to the SR35 family of soft starters. The module is self-powered, so there is no need for an additional supply to power it.

SR35-FAN-1: Cooling fan accessory for SR35-017 to SR35-065 only. Increases the number of starts per hour.

SR35-FAN-2: Cooling fan accessory for SR35-077 to SR35-192 only. Increases the number of starts per hour.

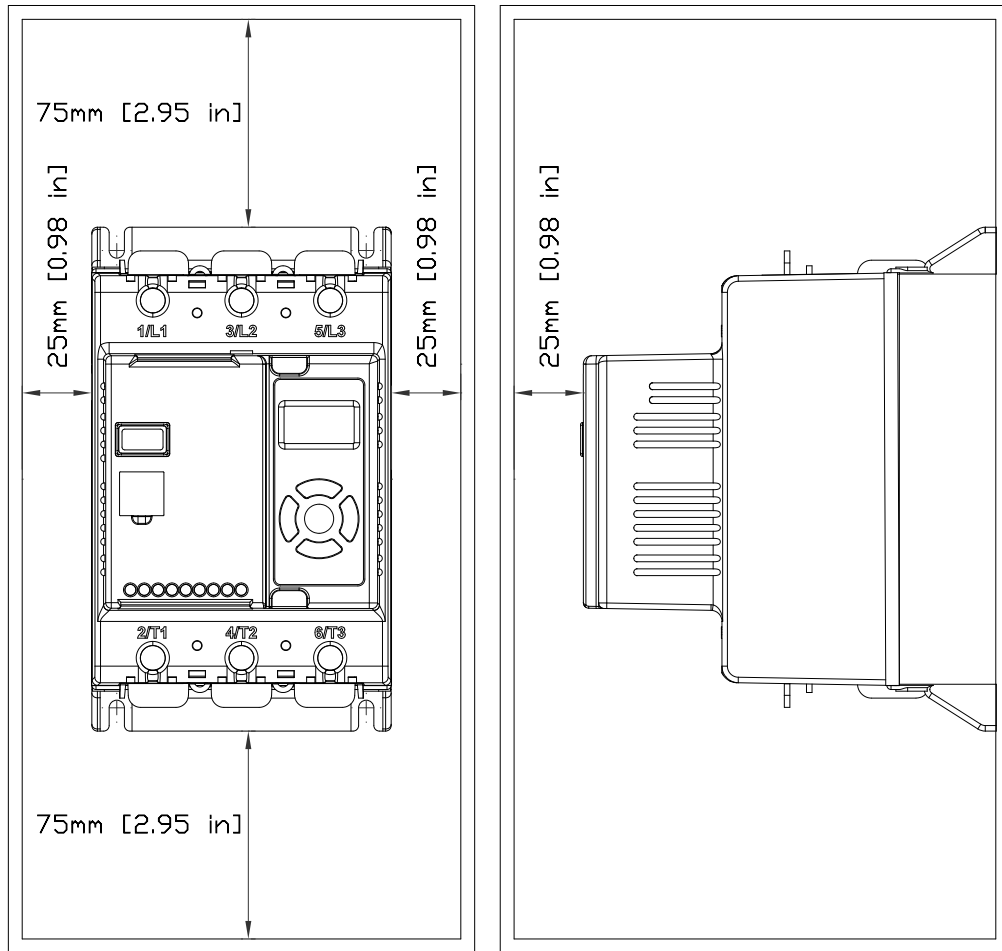
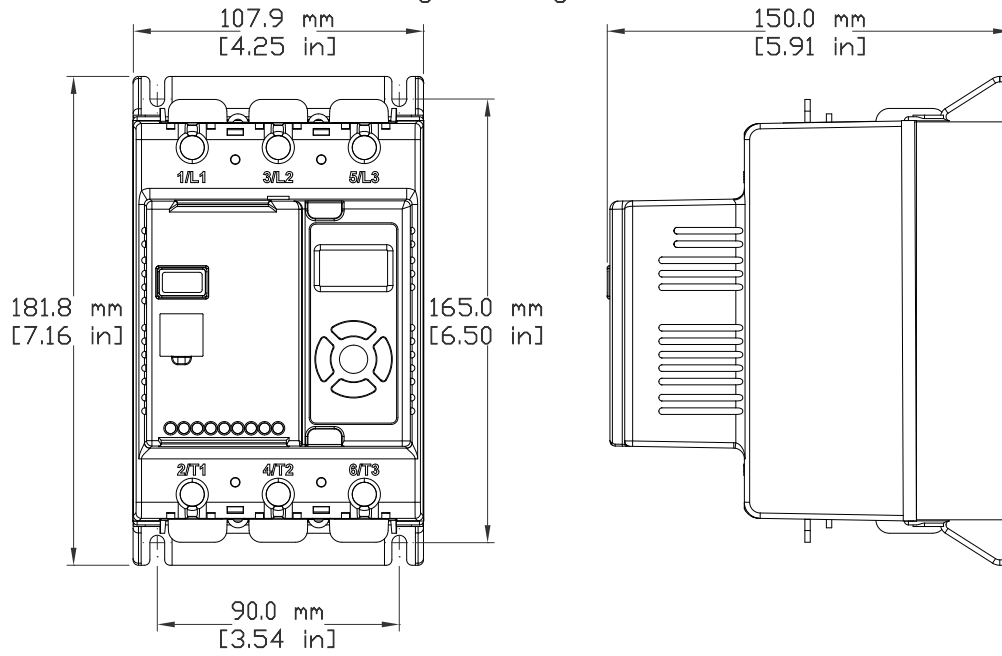
SR35-FG-1: Finger Guard attachment for SR35-017 to SR35-065.

SR35-FG-2: Finger Guard attachment for SR35-077 to SR35-192.

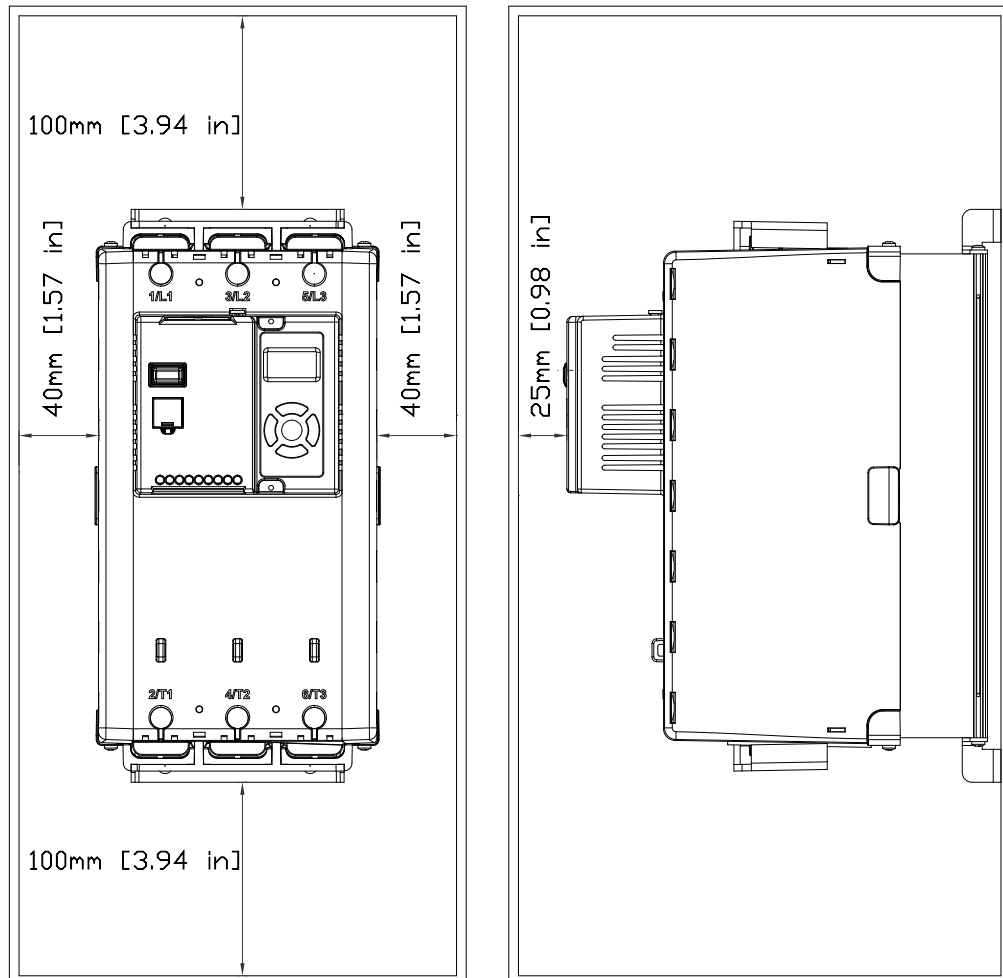
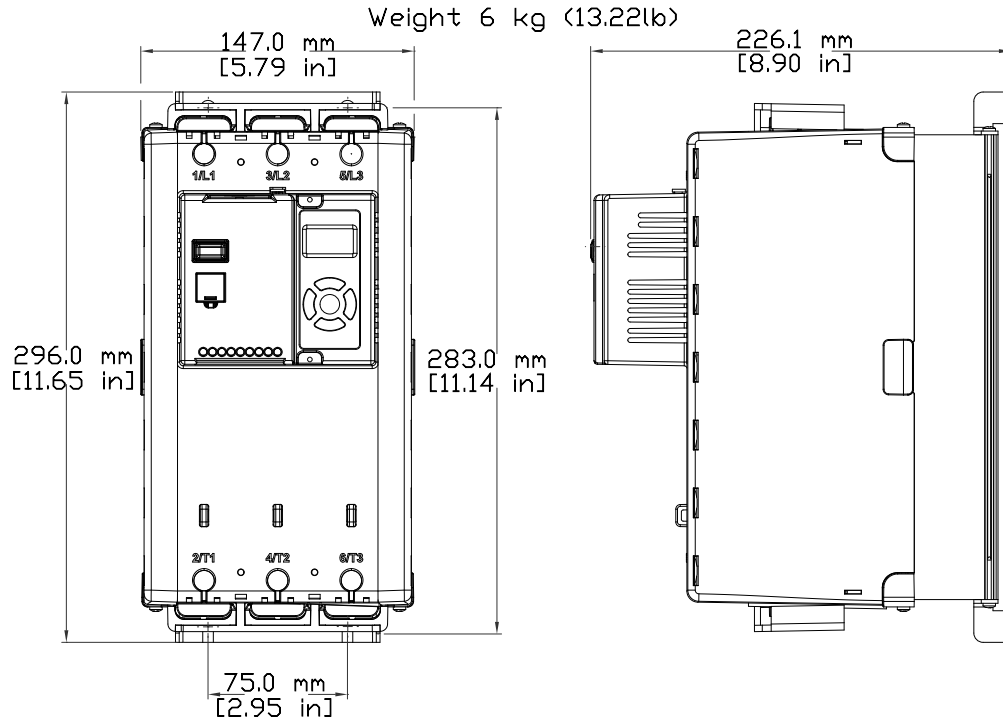
SR35-TC-3: Terminal Cover attachment for SR35-242 to SR35-361.

DIMENSIONS AND CLEARANCE - SR35-017-SR35-065

Weight 1.97kg (3.75lb)

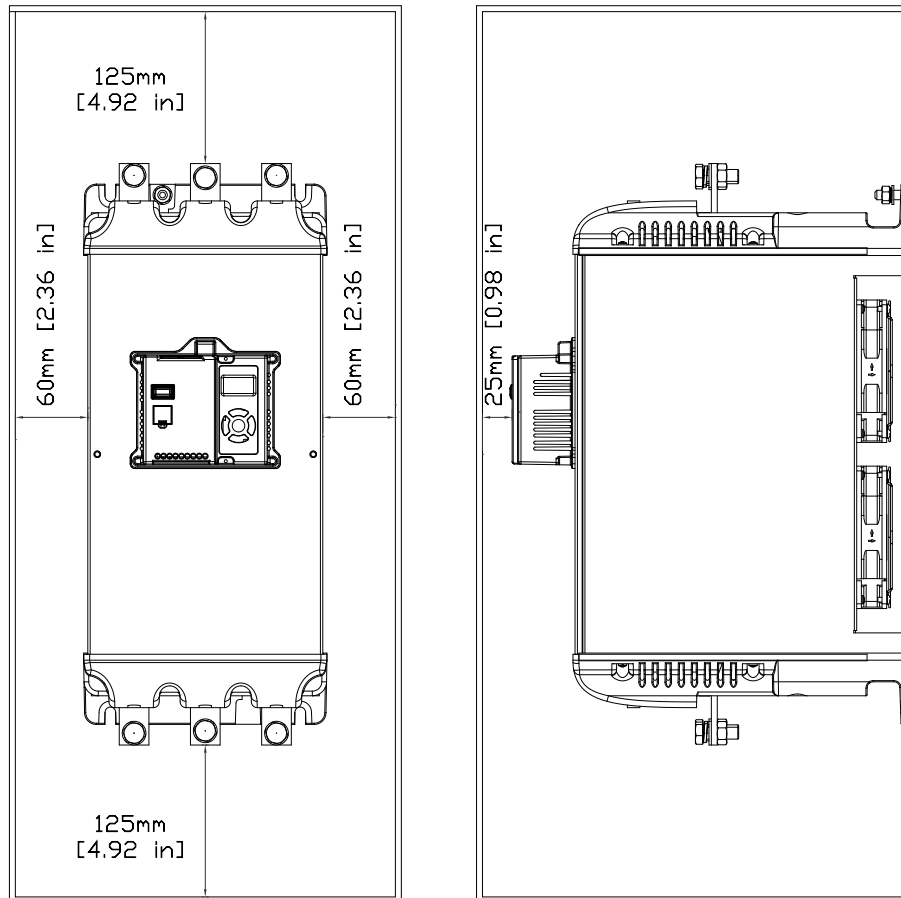
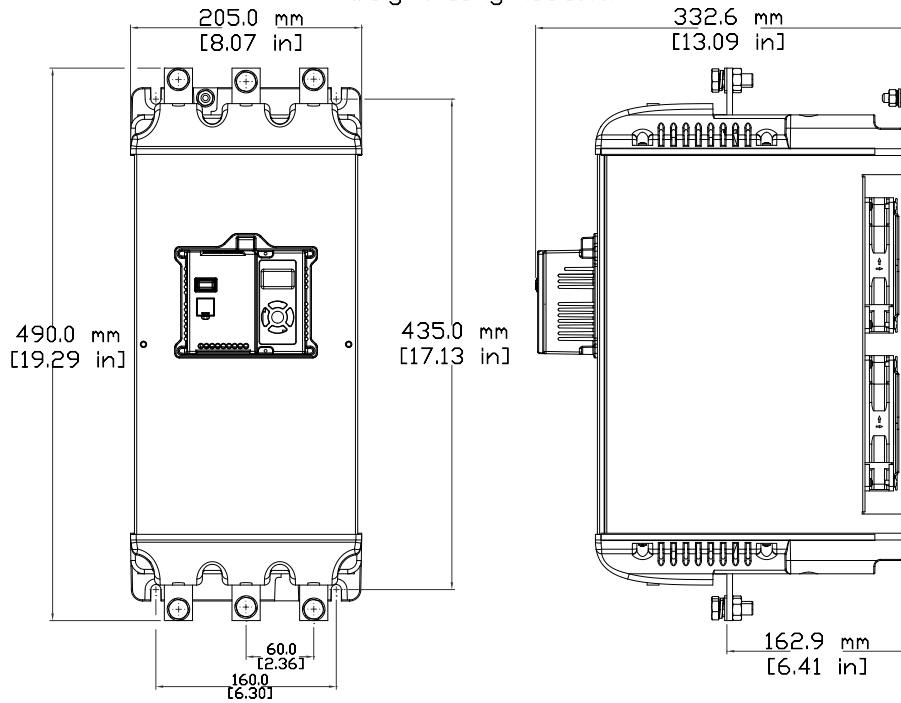


DIMENSIONS AND CLEARANCE - SR35-077-SR35-192



DIMENSIONS AND CLEARANCE - SR35-242-SR35-361

Weight 15kg (33.10lb)



ENVIRONMENTAL SPECIFICATIONS

Environmental Specifications																	
Model (SR35-)	017	022	027	034	041	052	065	077	100	125	156	192	242	302	361		
Frame Size	1							2					3				
Heat Output (W)	9	12	14	16	20	25	30	37	49	61	74	90	111	139	166		
Weight kg [lb]	1.97 [4.2]							6.0 [13.23]					6.3 [13.89]	15 [33.1]			
Ambient Operating Temperature	-20°C [-4°F] to 40°C [104°F]; above 40°C derate linearly by 2% of SR35 Ie per °C to a maximum of 60°C (140°F)																
Transportation and Storage Temperature	-20°C to 70°C [-4°F to 158°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 SR35 Ie per 100m (328ft) to a maximum altitude of 2,000m (6562ft)																
Environmental Rating	Main circuit: Ip00 (Ip20 with optional finger guards); Control circuit: Ip20; no corrosive gases permitted																

HORIZONTAL MOUNTING

The SR35 Soft Starter unit may be mounted horizontally, on its side, if required. It will be necessary to apply a deration to the unit power in this instance – see Horizontal Mounting Table on page 2-6.