

STANDARD AUTOMATION STARTER **SMARTSTART™**

ADVANCED PROTECTION, INCREDIBLE VALUE

Like the BAS, the SAS accepts 200 to 600VAC incoming power, making it a plug and play device. The 1-40A electronic overload ensures you will have the right starter for the job, and Smartstart revolutionary technology protects motors from potentially harmful start-up conditions. The SAS is automation compatible.



FEATURES

Automation compatible

- Higher reliability
- Comprehensive inputs/outputs for energy management systems
- Reduces installation costs
- Increased energy savings

SMARTSTART™ patented superior motor protection

- Electronic overload protection including locked rotor, cycle fault and maximum time to start (due to mis-sized motor or overload)
- FLA out of calibration indication--ensures installer sets overload correctly based on calculated motor size

Wide range overload, universal application

- 1-40A electronic overload eliminates call backs due to mis-sized heaters
- Accepts 200 to 600VAC

Combination versions include disconnect

- Motor circuit protection disconnect provides short circuit protection
- High interrupting ratings for maximum electrical system compatibility
- No fuses required
- Lockable handle for safety

Control inputs eliminate interposing relays

- Wet & dry auto run inputs

UL Type 1 and 3R enclosures

- Lockable enclosure
- 3R features lockable keypad cover

Hand/Off/Auto keypad with LED status indicators

- Intuitive operation and control with Hand (manual run), Off, and Auto run modes

Logging retains critical information

- Logging information is obtainable for starter failure (**Factory retrievable only**)
- Last 10 start conditions, including FLA setting, max inrush, run current, time to start, and safety start mode.
- Last 10 fault conditions, including FLA setting, fault type, fault current, and run time.

SAS Specification

Starter Type

SAS - Standard Automation Starter

200-600VAC, 3-Phase, 50/60Hz input, Across the line, full-voltage non-reversing

NEMA Type 1 or 3R Enclosed

User Interface

Hand/Off/Auto Keypad with LED mode indication

Standard Control Operations

| | | |
|-------------|----------------------|--|
| Inputs | Voltage Auto-Run | Accepts 12-250VAC/DC. Applying voltage will send a run command to the starter when in Auto mode. |
| | Dry Contact Auto-Run | Normally Open dry contact. When closed, the starter will be commanded to run when in Auto mode. |
| Output | Status Relay | Normally Open relay contact. Status Relay will close when the motor draws 60% of the FLA dial setting. Contact Ratings: 110VDC, 0.3A Resistive 125VDC, 0.5A GP 30VDC, 2.0A Resistive 120VAC 50/60Hz, 0.5A Resistive 125VAC 50/60Hz, 1.0A GP 240VAC 50/60Hz, 0.25A Resistive |
| Operational | Overload Type | Electronic I ² t trip curve |
| | Fault Reset | Manual (default) or Automatic |
| | Power Fail Mode | Return to last mode the starter was placed in (Hand/Off/Auto) with no delay (default) |

Environmental

| | |
|------------------------|-------------------------------|
| Ambient Operating Temp | -5° to 140° F (-20° to 60° C) |
| Ambient Storage Temp | -5° to 185° F (-20° to 85° C) |
| Relative Humidity | 5% to 95% non-condensing |

| Motor Protection | Adjustment / Description | Default Setting |
|------------------------------------|--|-----------------|
| Overload Current Setting Range | 1-40A | Per FLA |
| Overload Trip Class | Class 10, Trip current = 115% of FLA setting | Class 10 |
| Cycle Fault | Trip if cycle rate exceeds 20 starts/minute | Always On |
| Stall | Trips within 0.5 seconds (disabled during startup) | Always On |
| SMARTSTART [™] Protection | Adjustment / Description | Default Setting |
| Current Phase Unbalance | Trips within 3 sec @ 25% current unbalance. *Trip threshold changes to 80% unbalance when switched to Off | On |
| Locked Rotor | Trips within 0.5 seconds | |
| Out of Calibration | On/Off Trips after 10 seconds if the FLA dial setting is incorrect (set above calculated FLA range), ie. Start current is outside of an acceptable range (fla setting * 5 < inrush < fla setting * 14). | |
| Max Time to Start | Regardless of FLA or I ² t curve, always trip at start if starting current is outside of an acceptable range (inrush / 5) and still decreasing after 10 seconds. | |

Ordering and Sizing Information (200~600 VAC)

UL Type 1 Enclosed

Building Automation Starter - 1 & 3-Phase, 50/60 Hz, 200~600 VAC

UL Type 1 Enclosed - Combination Starter, Electronic Overload

Includes MCP Disconnect

| Part Number | UL HP Ratings | | | | | SCIC KAIC @ | | | Contactor NEMA Size |
|------------------|---------------|------|------|------|------|-------------|------|------|---------------------|
| | 1Ø | 3Ø | | | | 240V | 460V | 600V | |
| | 230V | 208V | 230V | 460V | 600V | | | | |
| SAS1-9/L-G1.6-40 | 1/10 | - | - | 3/4 | 3/4 | 100 | 65 | 25 | 00 |
| SAS1-9/L-G2.5-40 | 1/6 | 1/2 | 1/2 | 1 | 1.5 | 100 | 65 | 25 | |
| SAS1-9/L-G4-40 | 1/3 | 3/4 | 3/4 | 2 | 3 | 100 | 65 | 25 | |
| SAS1-9/L-G6-40 | 1/2 | 1 | 1.5 | 3 | 3 | 100 | 65 | 25 | |
| SAS1-9/L-G8-40 | 1 | 2 | 2 | 5 | 5 | 100 | 65 | 25 | |
| SAS1-18/L-G10-40 | 1.5 | 2 | 3 | 5 | 7.5 | 100 | 65 | 25 | 0 |
| SAS1-18/L-G13-40 | 2 | 3 | 3 | 7.5 | 10 | 100 | 65 | 25 | |
| SAS1-18/L-G17-40 | 3 | 3 | 5 | 10 | 15 | 100 | 30 | 10 | |
| SAS1-32/L-G22-40 | 3 | 5 | 7.5 | 15 | 20 | 100 | 30 | 10 | 1 |
| SAS1-32/L-G26-40 | 3 | 7.5 | 7.5 | 15 | 20 | 100 | 30 | 10 | |
| SAS1-32/L-G32-40 | 5 | 7.5 | 10 | 20 | 25 | 100 | 30 | 10 | |
| SAS1-40/L-G40-40 | 7.5 | 10 | 10 | 30 | 30 | 100 | 30 | 10 | 1+ |

Building Automation Starter - 1 & 3-Phase, 50/60 Hz, 200~600 VAC

UL Type 1 Enclosed - Standard Starter, Electronic Overload

Disconnect Not Included

| Part Number | UL HP Ratings | | | | | SCIC KAIC @ | | | Contactor NEMA Size |
|--------------|---------------|------|------|------|------|-------------|------|------|---------------------|
| | 1Ø | 3Ø | | | | 240V | 460V | 600V | |
| | 230V | 208V | 230V | 460V | 600V | | | | |
| SAS1-9/L-40 | 1 | 2 | 2 | 5 | 7.5 | 5 | 5 | 5 | 00 |
| SAS1-18/L-40 | 3 | 5 | 5 | 10 | 15 | 5 | 5 | 5 | 0 |
| SAS1-32/L-40 | 5 | 7.5 | 10 | 20 | 25 | 5 | 5 | 5 | 1 |
| SAS1-40/L-40 | 7.5 | 10 | 10 | 30 | 30 | 5 | 5 | 5 | 2 |

Ordering and Sizing Information (200~600 VAC)

UL Type 3R Enclosed

Building Automation Starter - 1 & 3-Phase, 50/60 Hz, 200~600 VAC

UL Type 3R Enclosed - Combination Starter, Electronic Overload

Includes MCP Disconnect

| Part Number | UL HP Ratings | | | | | SCIC KAIC @ | | | Contactor NEMA Size |
|-------------------|---------------|------|------|------|------|-------------|------|------|---------------------|
| | 1Ø | 3Ø | | | | 240V | 460V | 600V | |
| | 230V | 208V | 230V | 460V | 600V | | | | |
| SAS3R-9/L-G1.6-40 | 1/10 | - | - | 3/4 | 3/4 | 100 | 65 | 25 | 00 |
| SAS3R-9/L-G2.5-40 | 1/6 | 1/2 | 1/2 | 1 | 1.5 | 100 | 65 | 25 | |
| SAS3R-9/L-G4-40 | 1/3 | 3/4 | 3/4 | 2 | 3 | 100 | 65 | 25 | |
| SAS3R-9/L-G6-40 | 1/2 | 1 | 1.5 | 3 | 3 | 100 | 65 | 25 | |
| SAS3R-9/L-G8-40 | 1 | 2 | 2 | 5 | 5 | 100 | 65 | 25 | |
| SAS3R-18/L-G10-40 | 1.5 | 2 | 3 | 5 | 7.5 | 100 | 65 | 25 | 0 |
| SAS3R-18/L-G13-40 | 2 | 3 | 3 | 7.5 | 10 | 100 | 65 | 25 | |
| SAS3R-18/L-G17-40 | 3 | 3 | 5 | 10 | 15 | 100 | 30 | 10 | |
| SAS3R-32/L-G22-40 | 3 | 5 | 7.5 | 15 | 20 | 100 | 30 | 10 | 1 |
| SAS3R-32/L-G26-40 | 3 | 7.5 | 7.5 | 15 | 20 | 100 | 30 | 10 | |
| SAS3R-32/L-G32-40 | 5 | 7.5 | 10 | 20 | 25 | 100 | 30 | 10 | |
| SAS3R-40/L-G40-40 | 7.5 | 10 | 10 | 30 | 30 | 100 | 30 | 10 | 1+ |

Building Automation Starter - 1 & 3-Phase, 50/60 Hz, 200~600 VAC

UL Type 3R Enclosed - Standard Starter, Electronic Overload

Disconnect Not Included

| Part Number | UL HP Ratings | | | | | SCIC KAIC @ | | | Contactor NEMA Size |
|---------------|---------------|------|------|------|------|-------------|------|------|---------------------|
| | 1Ø | 3Ø | | | | 240V | 460V | 600V | |
| | 230V | 208V | 230V | 460V | 600V | | | | |
| SAS3R-9/L-40 | 1 | 2 | 2 | 5 | 7.5 | 5 | 5 | 5 | 00 |
| SAS3R-18/L-40 | 3 | 5 | 5 | 10 | 15 | 5 | 5 | 5 | 0 |
| SAS3R-32/L-40 | 5 | 7.5 | 10 | 20 | 25 | 5 | 5 | 5 | 1 |
| SAS3R-40/L-40 | 7.5 | 10 | 10 | 30 | 30 | 5 | 5 | 5 | 2 |

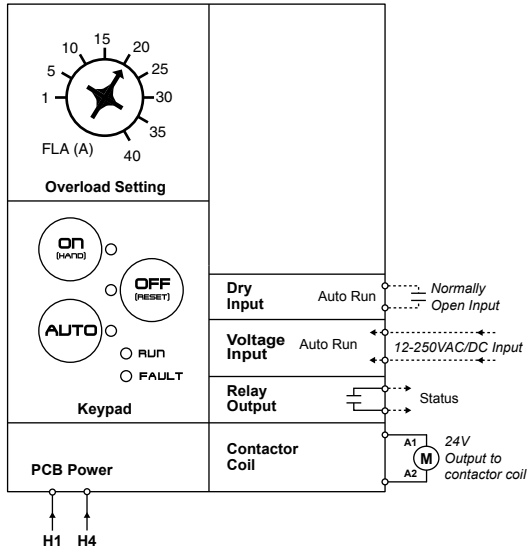


The new SAS 3R enclosure is significantly smaller and lighter than its predecessor

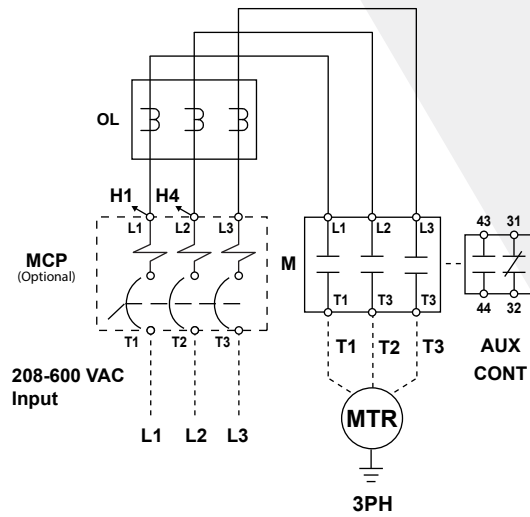
*For larger HP SAS starters, please consult factory (larger HP models not available with Smartstart™)

SAS WIRING DIAGRAM

SAS CONTROL WIRING

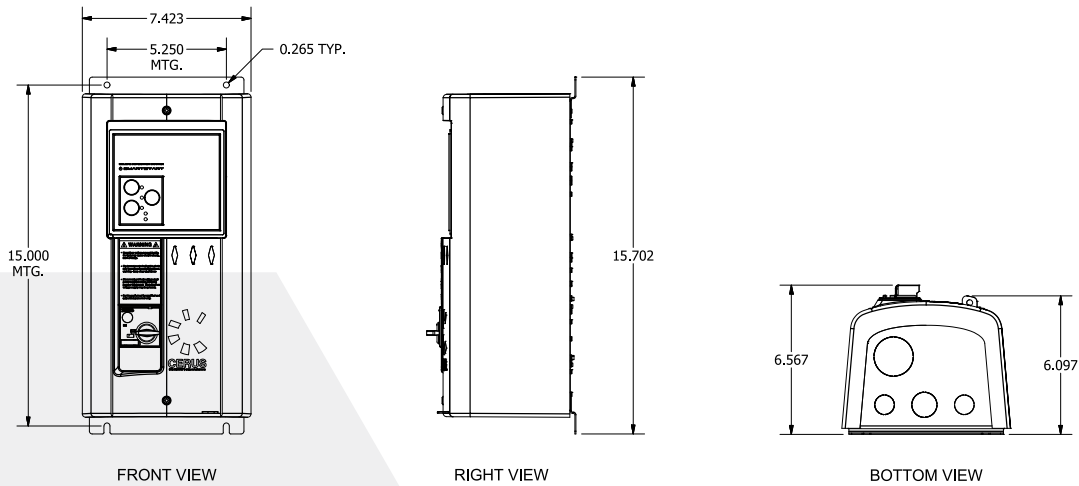


POWER WIRING



UL TYPE 1 DIMENSIONS

All dimensions are in inches



UL TYPE 3R DIMENSIONS

All dimensions are in inches

