FRANKLIN CONTROL SYSTEMS

BAS

3Ø, 200 ~ 600V, 1/2-30HP

BUILDING AUTOMATION STARTER SMARTSTART™

SMARTER AND MORE VERSATILE THAN EVER

Equipped with advanced I/O including Fireman's Override and damper control, the BAS was designed from the ground up for easy integration with automation systems. With a 200 to 600V input and 1-40A adjustable overload, the BAS is the right starter for almost any job.

FEATURES

Designed for ease of integration with automation systems

- Comprehensive inputs/outputs for building automation systems
- Reduces installation costs
- High reliability

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

Advanced control inputs eliminate interposing relays

- Three dry inputs for auto-run, permissive auto and shutdown
- Two voltage inputs (12-250VAC) for auto run and fireman's override

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.

Universal application

- Automatically detects voltage (200 to 600VAC)
- Converts to 24V for control power

UL Type 1 and 3R enclosures

- Lockable enclosure
- 3R features lockable keypad cover
- Type 4 & 4X enclosure options available (consult factory)

Hand/Off/Auto keypad with LED status indicators

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

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

THE BAS IS AUTOMATION READY.

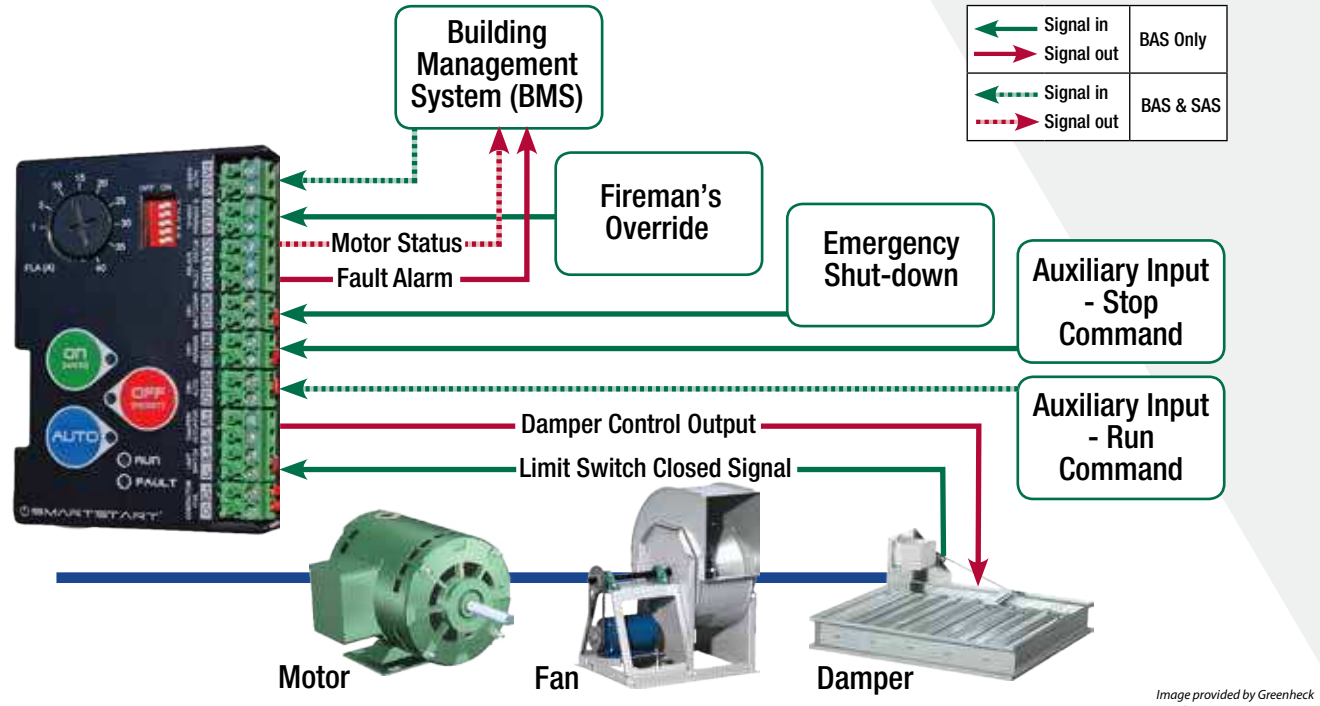


Image provided by Greenheck Fan Corporation

The Technology behind

SMARTSTART™

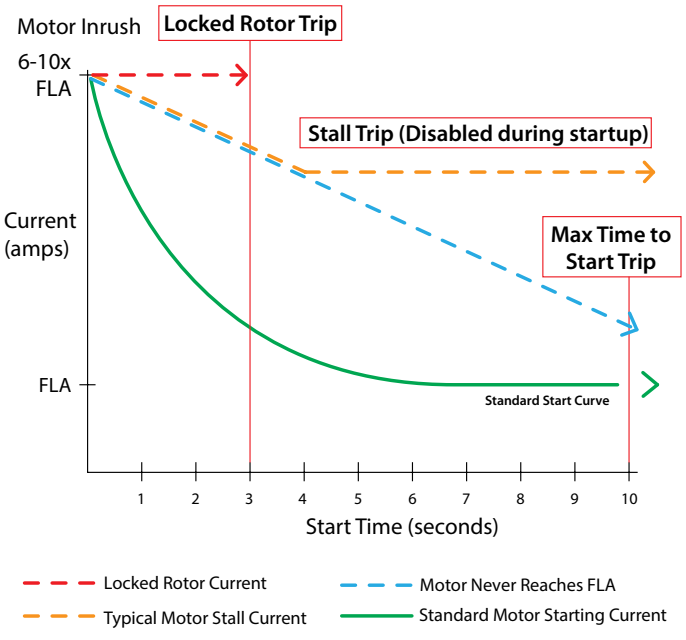
Smart - Start safely even without calibration! SMARTSTART™ patented technology predicts a safe operating range for your motor based on the measured inrush current

Intelligent - SMARTSTART™ detects if your starter needs to be calibrated, protecting you from operators trying to overcome motor jams or problems by over-setting the overload. With Smartstart enabled, if the starter isn't in range, it alarms and trips notifying you before damage occurs

Active - SMARTSTART™ detects harmful extended starting conditions with maximum time to start. Monitors motor inrush current conditions and trips if the motor doesn't start within 10 seconds (class 10 overload) regardless of FLA setting.

Ingenious - Active current monitoring provides superior protection against locked rotor and stall conditions, tripping faster than a standard inverse trip curve, regardless of the FLA setting!

Thoughtful - "Blackbox" recording feature retains critical information on last ten faults and starts (factory retrievable only).



BAS Specification

Starter Type			
BAS - Building 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.	
	Fireman's Override	Accepts 12-250VAC/DC. Applying voltage will cause the starter to run in all modes and all LEDs will flash.	
	Shutdown	Normally Closed dry contact. When closed, the starter will disengage the contactor and will not accept a run command (except Fireman's Override). Hand/Off/Auto LEDs will flash.	
	Permissive Auto	Normally Closed dry contact. When closed, the starter will not accept run commands in Auto mode (except Fireman's Override)	
	Damper Limit Switch	Normally Open dry contact. When used with the damper motor output, the contactor coil is in series with customer provided damper contacts which disable the motor starter until the damper is in position.	
Outputs	Status Relay	Normally Open relay contacts. Status Relay will close when the motor draws 60% of the FLA dial setting. Fault Relay will close in the event of a fault trip. 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	
	Fault Relay		
	Damper/Actuator	24VDC, 1A max.	
Operational	Overload Type	Electronic I^2t trip curve	
	Fault Reset	Manual (default) or Automatic	
	Power Fail Modes	Return to last mode the starter was placed in (Hand/Off/Auto) with no delay (default)	
		Return to last mode the starter was placed in (Hand/Off/Auto) with a 10 second delay	
		Return to Off mode (LED of last mode the starter was placed in will be flash)	
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	Adjustable: Class 10 or 20, 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	On/Off	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		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^2t 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							
		230V	208V	230V	460V	600V	240V	460V	600V	
Combination	BAS1-9/P-G1.6-40	1/10	-	-	3/4	3/4	100	65	25	00
	BAS1-9/P-G2.5-40	1/6	1/2	1/2	1	1.5	100	65	25	
	BAS1-9/P-G4-40	1/3	3/4	3/4	2	3	100	65	25	
	BAS1-9/P-G6-40	1/2	1	1.5	3	3	100	65	25	
	BAS1-9/P-G8-40	1	2	2	5	5	100	65	25	
	BAS1-18/P-G10-40	1.5	2	3	5	7.5	100	65	25	0
	BAS1-18/P-G13-40	2	3	3	7.5	10	100	65	25	
	BAS1-18/P-G17-40	3	3	5	10	15	100	30	10	
	BAS1-32/P-G22-40	3	5	7.5	15	20	100	30	10	1
	BAS1-32/P-G26-40	3	7.5	7.5	15	20	100	30	10	
	BAS1-32/P-G32-40	5	7.5	10	20	25	100	30	10	
	BAS1-40/P-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							
		230V	208V	230V	460V	600V	240V	460V	600V	
Standard	BAS1-9/P-40	1	2	2	5	7.5	5	5	5	00
	BAS1-18/P-40	3	5	5	10	15	5	5	5	0
	BAS1-32/P-40	5	7.5	10	20	25	5	5	5	1
	BAS1-40/P-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							
		230V	208V	230V	460V	600V	240V	460V	600V	
Combination	BAS3R-9/P-G1.6-40	1/10	-	-	3/4	3/4	100	65	25	00
	BAS3R-9/P-G2.5-40	1/6	1/2	1/2	1	1.5	100	65	25	
	BAS3R-9/P-G4-40	1/3	3/4	3/4	2	3	100	65	25	
	BAS3R-9/P-G6-40	1/2	1	1.5	3	3	100	65	25	
	BAS3R-9/P-G8-40	1	2	2	5	5	100	65	25	
	BAS3R-18/P-G10-40	1.5	2	3	5	7.5	100	65	25	0
	BAS3R-18/P-G13-40	2	3	3	7.5	10	100	65	25	
	BAS3R-18/P-G17-40	3	3	5	10	15	100	30	10	
	BAS3R-32/P-G22-40	3	5	7.5	15	20	100	30	10	1
	BAS3R-32/P-G26-40	3	7.5	7.5	15	20	100	30	10	
	BAS3R-32/P-G32-40	5	7.5	10	20	25	100	30	10	
	BAS3R-40/P-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

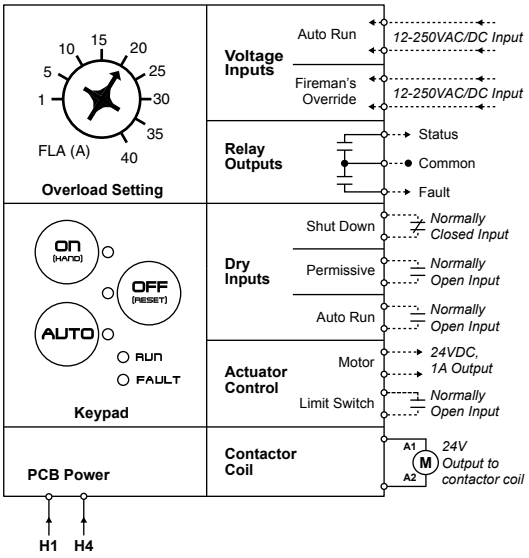
	Part Number	UL HP Ratings					SCIC KAIC @			Contactor NEMA Size
		1Ø	3Ø							
		230V	208V	230V	460V	600V	240V	460V	600V	
Standard	BAS3R-9/P-40	1	2	2	5	7.5	5	5	5	00
	BAS3R-18/P-40	3	5	5	10	15	5	5	5	0
	BAS3R-32/P-40	5	7.5	10	20	25	5	5	5	1
	BAS3R-40/P-40	7.5	10	10	30	30	5	5	5	2

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

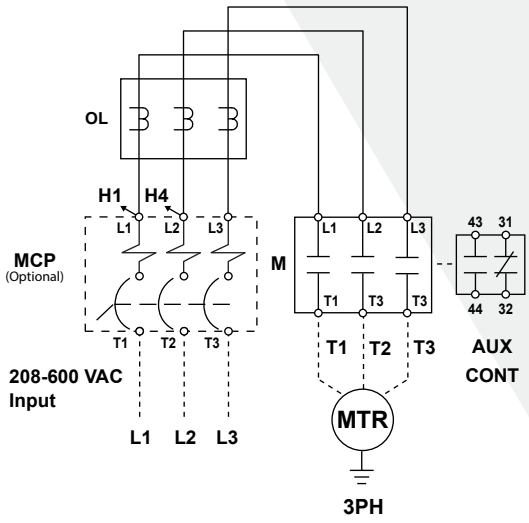
**NEMA 4X & 12 enclosures available upon request*

BAS WIRING DIAGRAM

BAS CONTROL WIRING

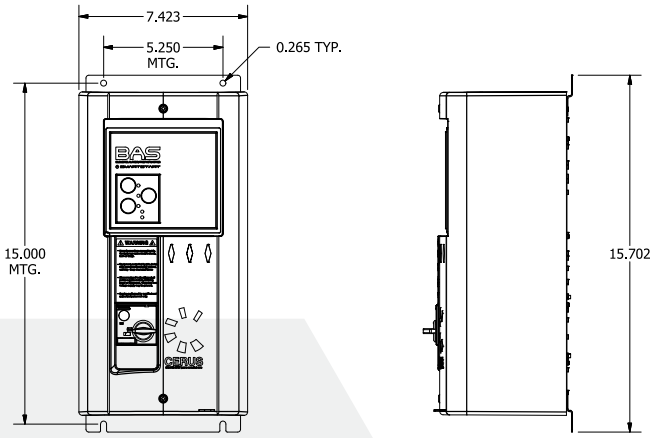


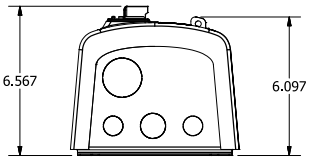
POWER WIRING



UL TYPE 1 DIMENSIONS

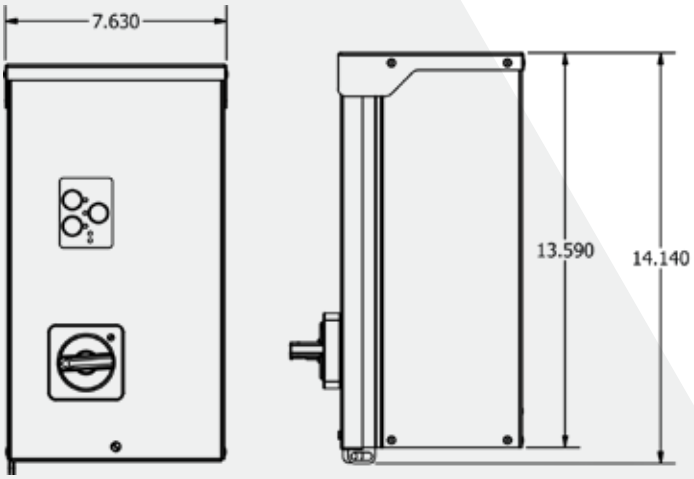
All dimensions are in inches

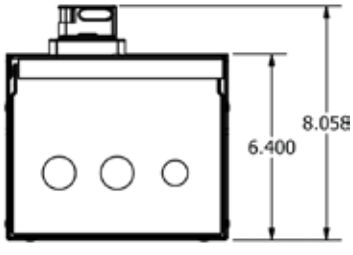




UL TYPE 3R DIMENSIONS

All dimensions are in inches





**NEMA 4X & 12 enclosures available upon request*