

BMMS Series

# Building Management Motor Starter

LIT-1901076

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.

### Designed for ease of integration with automation systems

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

### SMARTSTART<sup>®</sup> 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 Technology behind

#### SMARTSTART<sup>®</sup>

**Smart** - Start safely even without calibration!  
 SMARTSTART<sup>®</sup> patented technology predicts a safe operating range for your motor based on the measured in-rush current

**Intelligent** - SMARTSTART<sup>®</sup> 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

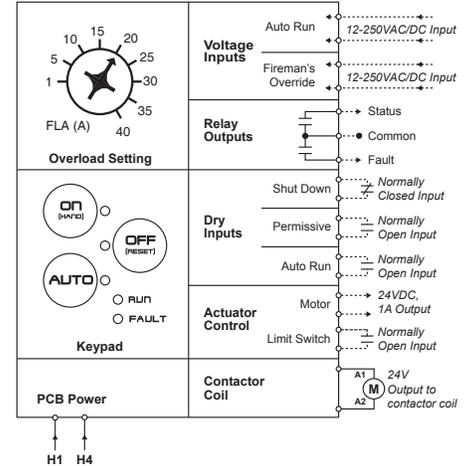
**Active** - SMARTSTART<sup>®</sup> detects harmful extended starting conditions with maximum time to start. Monitors motor inrush current conditions and trips if the motor doesn't start within 10 seconds (class 10 overload) regardless of FLA setting.

**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!

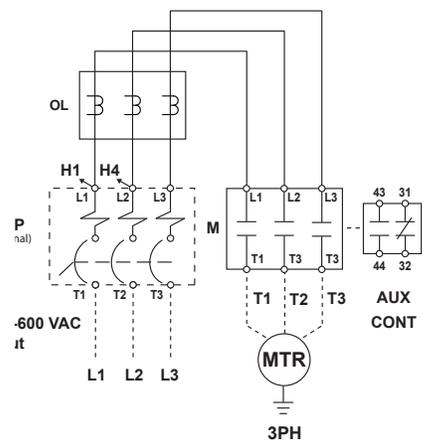
**Thoughtful** - "Blackbox" recording feature retains critical information on last ten faults and starts (factory retrievable only).

## BMMS Wiring Diagrams

### BMMS CONTROL WIRING



### BMMS STARTER POWER WIRING







Date

Project  
JCI Partner

Contractor  
Engineering

**BMMS Series Motor Starter (Continued)**

**Technical Specifications**

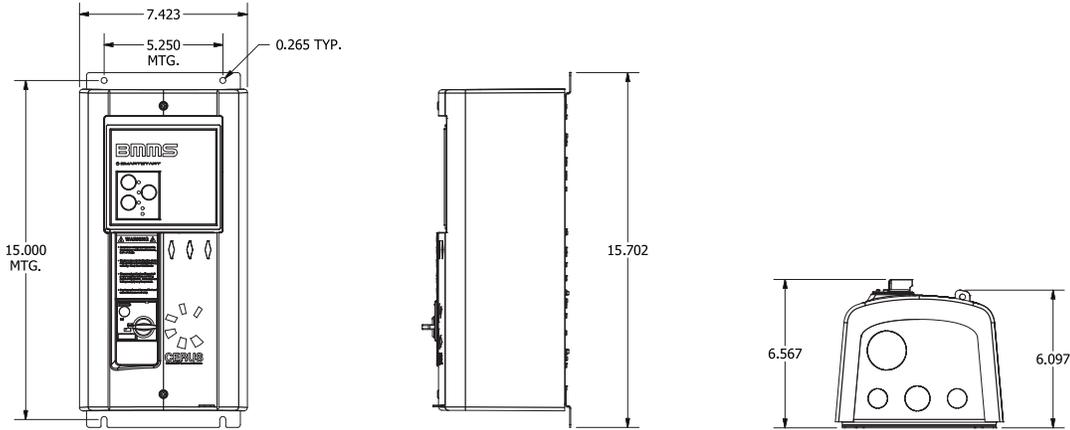
<b>BMMS-X-X Series Motor Starter</b>			
200-600VAC, 3-Phase, 50/60Hz input, Across the line, full-voltage non-reversing			
NEMA Type 1 or 3R Enclosed			
<b>User Interface</b>			
Hand/Off/Auto Keypad with LED mode indication			
<b>Standard Control Operations</b>			
<b>Inputs</b>	<b>Voltage Auto-Run</b>	Accepts 12-250VAC/DC. Applying voltage will send a run command to the starter when in Auto mode.	
	<b>Dry Contact Auto-Run</b>	Normally Open dry contact. When closed, the starter will be commanded to run when in Auto mode.	
	<b>Fireman's Override</b>	Accepts 12-250VAC/DC. Applying voltage will cause the starter to run in all modes and all LEDs will flash.	
	<b>Shutdown</b>	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.	
	<b>Permissive Auto</b>	Normally Closed dry contact. When closed, the starter will not accept run commands in Auto mode (except Fireman's Override)	
	<b>Damper Limit Switch</b>	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.	
<b>Outputs</b>	<b>Status Relay</b>	Normally Open relay contacts. Status Relay will close when the motor draws 60% of the FLA dial setting.	
	<b>Fault Relay</b>	Fault Relay will close in the event of a fault trip.	
	<b>Damper/Actuator</b>	24VDC, 1A max.	
<b>Operational</b>	<b>Overload Type</b>	Electronic I <sup>2</sup> t trip curve	
	<b>Fault Reset</b>	Manual (default) or Automatic	
	<b>Power Fail Modes</b>	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)			
<b>Environmental</b>			
<b>Ambient Operating Temp</b>	-5° to 140° F (-20° to 60° C)		
<b>Ambient Storage Temp</b>	-5° to 185° F (-20° to 85° C)		
<b>Relative Humidity</b>	5% to 95% non-condensing		
<b>Motor Protection</b>	<b>Adjustment / Description</b>	<b>Default Setting</b>	
<b>Overload Current Setting Range</b>	1-40A	Per FLA	
<b>Overload Trip Class</b>	Adjustable: Class 10 or 20, Trip current = 115% of FLA setting	Class 10	
<b>Cycle Fault</b>	Trip if cycle rate exceeds 20 starts/minute	Always On	
<b>Stall</b>	Trips within 0.5 seconds (disabled during startup)	Always On	
<b>Protection</b>	<b>Adjustment / Description</b>	<b>Default Setting</b>	
<b>Current Phase Unbalance</b>	On/Off	On	
<b>Locked Rotor</b>			Trips within 3 sec @ 25% current unbalance. *Trip threshold changes to 80% unbalance when switched to Off
<b>Out of Calibration</b>			Trips within 0.5 seconds
<b>Max Time to Start</b>			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).
	Regardless of FLA or I <sup>2</sup> t curve, always trip at start if starting current is outside of an acceptable range (inrush / 5) and still decreasing after 10 seconds.		

**BMMS Series Motor Starter (Continued)**

**Starter Enclosure Dimensions**

**UL Type 1 Dimensions**

All dimensions are in inches



**UL Type 3R Dimensions**

All dimensions are in inches

