

SureStart 115V/230V Installation

SureStart M420X Series / Single Phase

This model of SureStart is a universal soft-starter suitable for both two- and three-wire motor applications. It can be installed on higher start-up torque applications such as well pumps and can be used in conjunction with a hard-start kit. The true benefit of this product is seen on off-grid applications where the soft-starter uses the motor's optimal starting current without tripping the overload protection of the generator or solar inverter.

Before installation, please ensure that the back-up power source is adequately rated for the required motor load.



Minimum Generator/Inverter Ratings*

Motor Size (HP)	Required Size Without SureStart (kW)	Required Size With SureStart (kW)
0.33	2.0	1.5
0.50	2.5	2.0
0.75	3.0	2.0
1.00	3.5	2.5
1.50	5.5	3.5
2.00	7.0	4.5
3.00	10.0	7.0
5.00	16.0	12.0

* Values subject to optimal cable sizing for a given motor type and service entrance length to the motor.

Warning:

Disconnect all mains or remote electric supply voltages before working on any equipment.
Allow two minutes for internal capacitors to discharge before installation.
Poor electrical connections can lead to heating and subsequent damage to the soft starter.
Opening of the soft starter unit will void the warranty!

Instructions:

- 1 Disconnect all voltage to the motor.
- 2 Identify a suitable surface to mount the SureStart. Ensure the wiring length is adequate to reach to the motor connections.
- 3 Using the supplied alcohol wipes, clean the surface where the SureStart will be placed.
- 4 Secure SureStart in place using the DS tape.
- 5 Remove the motor power wire from the contactor/relay.
- 6 Attach SureStart ACTIVE (red) wire to the contactor.
- 7 Terminate the free motor input wire to the SureStart MOTOR (blue) wire.
- 8 Attach the flagged end of the COMMON (black) wire on the return "T" side of the contactor.
- 9 Apply power to the equipment and cycle at least 2-3 starts to ensure proper operation.

There is no requirement to remove any existing PTC/Hard-Start kits from the motor circuit.



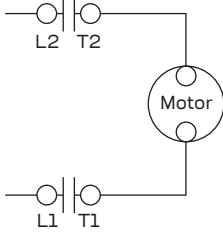
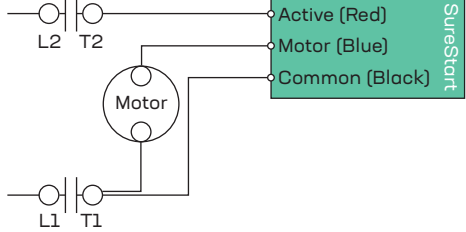
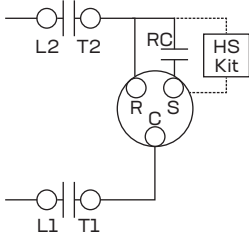
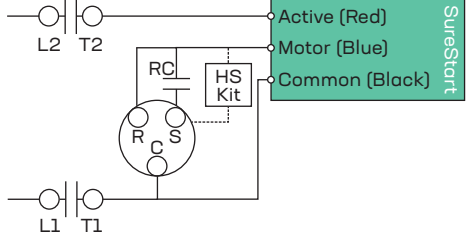
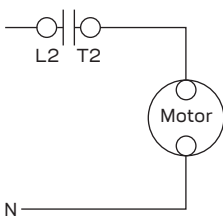
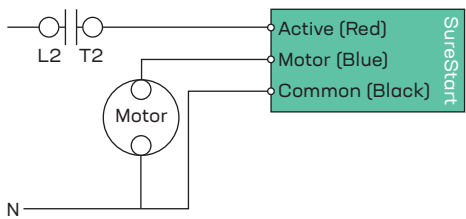
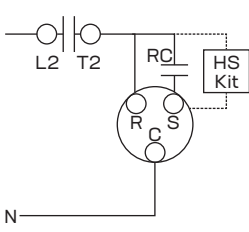
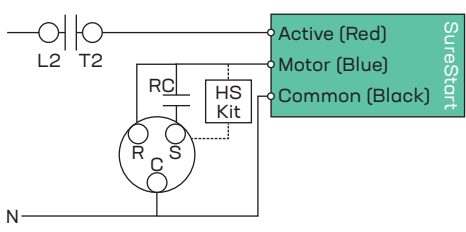
WARNING:

This product can expose you to chemicals including Bisphenol A, which are known to the State of California to cause cancer or birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov

Technical Contact: techsupport@eltwin-hyper.com

Wiring Options

Choose from one of the four options

Application	Before SureStart	With SureStart
230V / 2 wire		
230V / 3 wire		
115V / 2 wire		
115V / 3 wire		

Suitable for use on a circuit capable of delivering no more than 5000rms symmetrical amperes when protected by a non-time delay RK5 fuse or circuit breaker rated 80A, or a time delay fuse rated 70A.

The device does not provide current limiting control or equivalent.

SureStart is **NOT** an overcurrent protection device and must NOT be used as a replacement for any primary circuit overcurrent protection.

FAULT LED STATUS:

Cycle Delay/Failed Start: 1 / sec
Low Voltage: 10 / sec
Trip Detect: 1 / 3 sec

NOTE: LED fault indication is turned off in normal running mode.

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Specs

SureStart M420X Series / Single Phase

Type	Single Phase	
	M420BW	M420AW
Nominal Supply Voltage*		
115/50-60/1	-	●
208-230/50-60/1	●	-
Full Load Amperage, FLA (Typical)	4 - 20 A	
* - Voltage/Hz/Phase		
MECHANICAL DATA		
Storage Temperature, °F [°C]	-40 [-40] to 185 [85]	
Case Material	ABS Flameproof UL-94 V0	
IP Rating	IP65 / NEMA 4	
Weight, lbs [kg]	1 [0.45]	
Line Conductor, AWG	14 - 6	
ELECTRICAL DATA		
Rated Voltage, VAC	115	208-230
Maximum Allowable Voltage, VAC	130	250
Rated Phase	1	
Rated Frequency, Hz	50/60	
Operating Range of Full Load Current, Amps	4-20	
Control Input, VAC	Auto-Start at Power Up	
Number of Start/Hour (Evenly Distributed)	15	
Short Circuit Current Rating (SCCR), kA	5	
Shutdown on Low Voltage, VAC	90	180
Minimum Start-up Voltage, VAC	100	200
Maximum High Voltage, VAC	126	253
Operating Ambient, °F [°C]	-4 [-20] to 140 [60]	
Life Expectancy (At Maximum Rated Load)	Minimum 100,000 Operations	
SALIENT FEATURES		
Initial Power on Delay, seconds	1	
Power Loss Reset, milliseconds	200	
Software Fault Delay, minutes	5	
Positive Trip Detection	Yes	
Soft-Start after Reconnection	Yes	
Pre-load Function	Yes	

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