



# SPECIFICATIONS



Each of our devices are inspected and approved by Intertek a Nationally Recognized Testing Laboratory (NRTL) and equivalent to UL or CSA approval.



Many devices use latching relays that can leave the controlled device in a "powered state" indefinitely if the controller fails. Our energy managers use fail-safe technology that leaves our devices in a powered off state and thus prevents this issue.

Our patented automatic load management system or EV energy management system (EVEMS / EMS) provides the ability to install up to an 11.5KW or 48A electric vehicle charger on an existing electrical service that would otherwise cause overloading issues. No need for an electrical panel or service upgrade. Compatible with all major EV manufacturers and charge rates.

### KEY FEATURES:

- Allows a 48A EV charger (60A breaker) or any 50A/40FLA end device on a 100A panel (other options available).
- Fast and easy to install: 30-45 min.
- Small size fits in tight areas around electrical panels (8" x 6" x 4").
- Approved for general use or as an EVEMS by Intertek (ETL)
- Longest charge times due to intelligent current monitoring.
- No need to disconnect the main service wires.
- No extra breakers needed.
- Solar grid tie installation compatible.
- Real-time reading of the total power consumption of the electrical panel.
- Bi-Directional capability
- Remote shutdown override equipped

\*This device does not need additional breakers to what is required to feed the 240-208VAC end device to be controlled. The service size and end device current is to be set by the installer. See installation manual. Designed and manufactured in Canada. Inspected and labeled by Intertek in Canada.

For more information email: [info@blackboxinnovations.com](mailto:info@blackboxinnovations.com) or go to [www.blackboxinnovations.com](http://www.blackboxinnovations.com)

<b>Electrical service to be monitored</b>	Main Breaker: 60 - 200 Amp. Volts: 208, 240VAC or 120/208, 120/240VAC
<b>Max power of device controlled</b>	Max Current: 40 FLA / 50 Amp Continuous Resistive Volts: 208, 240VAC or 120/208, 120/240VAC
<b>EV charger to be controlled</b>	240-208V, Single Phase 20, 24, 30/32, 40, 48 Amp Load

### Model numbers by type:

#### EVEMS240-100 and 3R

for 60-100 Amp Main Electrical Service Breaker Size

#### EVEMS240-200 and 3R

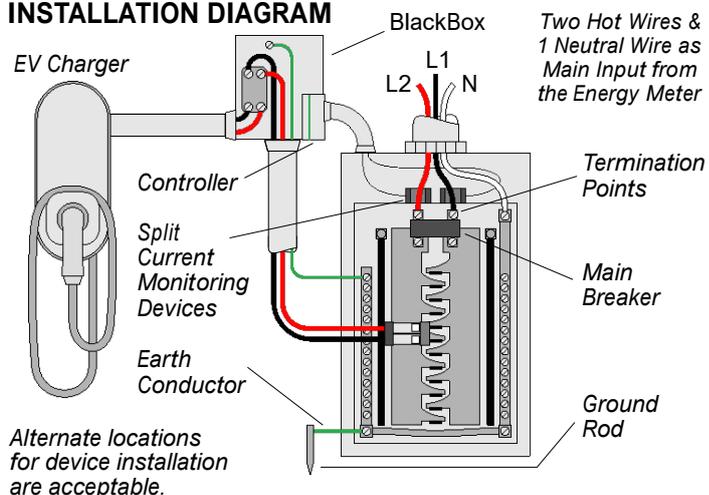
for 125, 150, 200 Amp Main Electrical Service Breaker Size

<b>Voltage</b>	240/208V or 120/240V AC single phase
<b>Main Lug Wire Size &amp; Torque</b>	14 - 4 AWG (Cu only) <i>Torque for Cu 75°C: 40-44 in-lbs (5 Nm)</i>
<b>Contactor Insulation System</b>	120°C, Class B
<b>Frequency</b>	50 or 60 Hz
<b>Operation Ambient Temp</b>	<b>NEMA 1:</b> 34°F to 104°F (1°C to 40°C) <b>NEMA 3R:</b> -22°F to 104°F (-30°C to 40°C)

**NEMA 1 Dimensions\*** L: 8" x W: 6" x D: 4" – 5lbs  
**NEMA 3R Dimensions\*** L: 8 ¼" x W: 6 ½" x D: 4 ¼" – 5.5 lbs

\*Dimensions and weight are approximate figures and subject to change without notice.

### INSTALLATION DIAGRAM



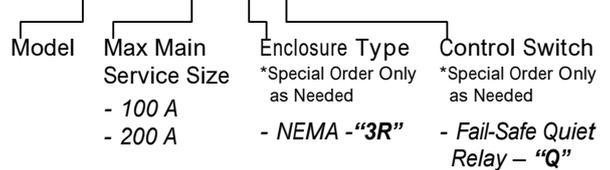


**INCLUDED**

- Electric Vehicle Energy Management System
- Split Core Current Monitoring Devices (CT)
- Installation Manual
- Device Controlled Label
- Parts Bag: Zip Ties, ALCUL Ground Connector, Wire Nut, 2 Steel Locknuts, Offset Nipple.

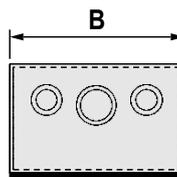
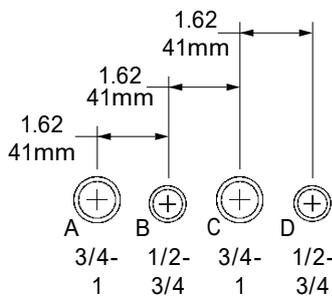
**MODEL NAMING CONVENTION:**

**EVEMS240-XXX-XX-X**

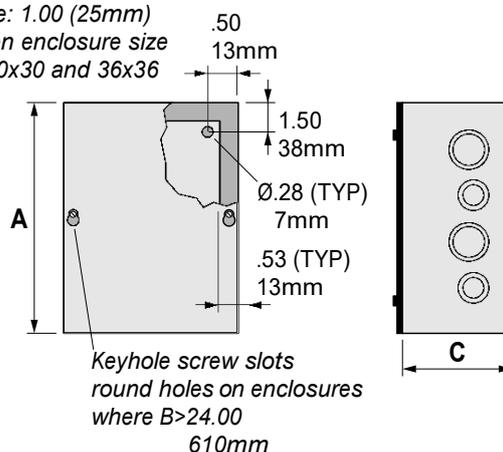


**ENCLOSURE DIMENSIONS \***

	Inches	mm
<b>A</b>	8	203.2
<b>B</b>	6	152.4
<b>C</b>	4	101.6



Note: 1.00 (25mm) when enclosure size is 30x30 and 36x36



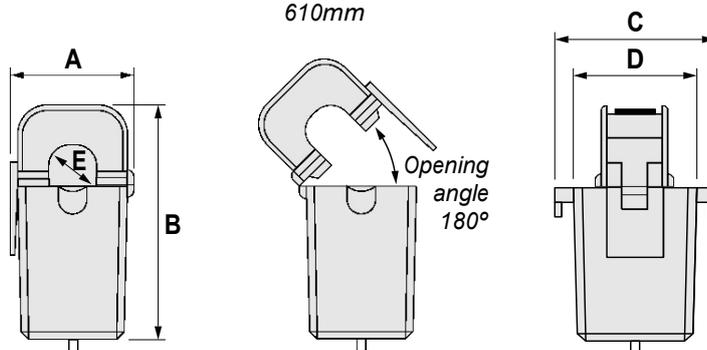
**CURRENT TRANSFORMERS (CT)**

**Model EVEMS240-100 DIMENSIONS \***

	Inches	mm
<b>A</b>	1.4	35.5
<b>B</b>	2.17	55
<b>C</b>	1.5	38
<b>D</b>	1.7	43.2
<b>E</b>	0.63	16

Lead length 20 feet or 6m

\* All measurements approximate

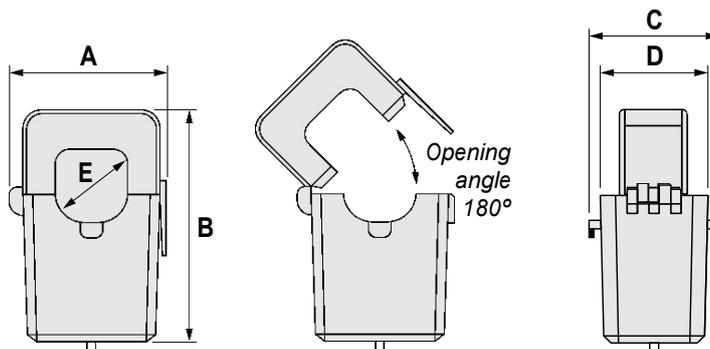


**Model EVEMS240-200 DIMENSIONS \***

	Inches	mm
<b>A</b>	2.09	53
<b>B</b>	2.95	75
<b>C</b>	1.63	41.4
<b>D</b>	1.35	34.2
<b>E</b>	0.94	24

Lead length 20 feet or 6m

\* All measurements approximate



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Energy Managers can be used to control general-purpose devices that can tolerate the power being shut off when necessary up to a max of 40FLA/50A, as indicated on the labeling for easy reference by inspections.

All settings are applicable for EV chargers or other loads that tolerate switching the power off when required. When using other loads that are not referred to in this chart use the next higher current setting than the device's current rating.



SCAN HERE FOR INSTALLATION MANUAL & INSTALLATION VIDEO

### EVEMS240-100 & EVEMS240-100-3R

Main Electrical Service Monitored Breaker Size	End Device Controlled Max Current Draw	EV Charger Suggested Breaker Size For 80% Load	DIP Switch 1	DIP Switch 2	DIP Switch 3	DIP Switch 4	DIP Switch 5
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Settings Below are for Main Breakers Rated at 80% Continuous Load Only

60	16	20	OFF	OFF	OFF	OFF	OFF
60	20	25	OFF	OFF	OFF	OFF	ON
60	24	30	OFF	OFF	OFF	ON	OFF
70	16	20	OFF	OFF	OFF	ON	ON
70	24	30	OFF	OFF	ON	OFF	OFF
70	30/32	40	OFF	OFF	ON	OFF	ON
80	16	20	OFF	OFF	ON	ON	OFF
80	24	30	OFF	OFF	ON	ON	ON
80	30-32	40	OFF	ON	OFF	OFF	OFF
80	40	50	OFF	ON	OFF	OFF	ON
90	24	30	OFF	ON	OFF	ON	OFF
90	30/32	40	OFF	ON	OFF	ON	ON
90	40	50	OFF	ON	ON	OFF	OFF
90	48/50	60	OFF	ON	ON	OFF	ON
100	16	20	OFF	ON	ON	ON	OFF
100	20	25	OFF	ON	ON	ON	ON
100	24	30	ON	OFF	OFF	OFF	OFF
100	30/32	40	ON	OFF	OFF	OFF	ON
100	40	50	ON	OFF	OFF	ON	OFF
100	48/50	60	ON	OFF	OFF	ON	ON

Settings Below are for Main Breakers Rated at 100% Continuous Load Only

60	16	20	ON	OFF	ON	OFF	OFF
60	20	25	ON	OFF	ON	OFF	ON
60	24	30	ON	OFF	ON	ON	OFF
70	30/32	40	ON	OFF	ON	ON	ON
80	40	50	ON	ON	OFF	OFF	OFF
100	16	20	ON	ON	OFF	OFF	ON
100	20	25	ON	ON	OFF	ON	OFF
100	24	30	ON	ON	OFF	ON	ON
100	30/32	40	ON	ON	ON	OFF	OFF
100	40	50	ON	ON	ON	OFF	ON
100	48/50	60	ON	ON	ON	ON	OFF

Single Circuit Load Sharing Operation	ON	ON	ON	ON	ON
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### EVEMS240-200 & EVEMS240-200-3R

Main Electrical Service Monitored Breaker Size	End Device Controlled Max Current Draw	EV Charger Suggested Breaker Size For 80% Load	DIP Switch 1	DIP Switch 2	DIP Switch 3	DIP Switch 4	DIP Switch 5
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Settings Below are for Main Breakers Rated at 80% Continuous Load Only

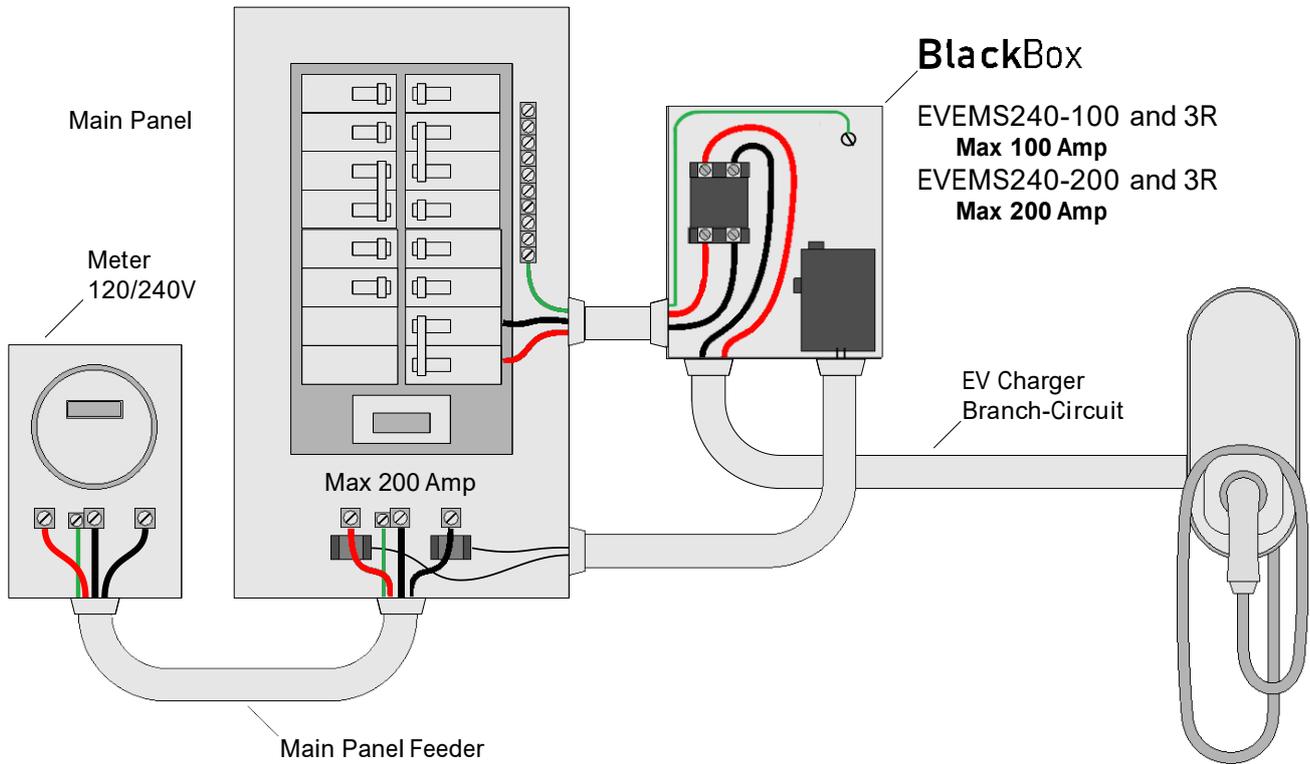
125	16	20	OFF	OFF	OFF	OFF	OFF
125	20	25	OFF	OFF	OFF	OFF	ON
125	24	30	OFF	OFF	OFF	ON	OFF
125	30/32	40	OFF	OFF	OFF	ON	ON
125	40	50	OFF	OFF	ON	OFF	OFF
125	48/50	60	OFF	OFF	ON	OFF	ON
150	16	20	OFF	OFF	ON	ON	OFF
150	20	25	OFF	OFF	ON	ON	ON
150	24	30	OFF	ON	OFF	OFF	OFF
150	30/32	40	OFF	ON	OFF	OFF	ON
150	40	50	OFF	ON	OFF	ON	OFF
150	48/50	60	OFF	ON	OFF	ON	ON
200	16	20	OFF	ON	ON	OFF	OFF
200	20	25	OFF	ON	ON	OFF	ON
200	24	30	OFF	ON	ON	ON	OFF
200	30/32	40	OFF	ON	ON	ON	ON
200	40	50	ON	OFF	OFF	OFF	OFF
200	48/50	60	ON	OFF	OFF	OFF	ON

Settings Below are for Main Breakers Rated at 100% Continuous Load Only

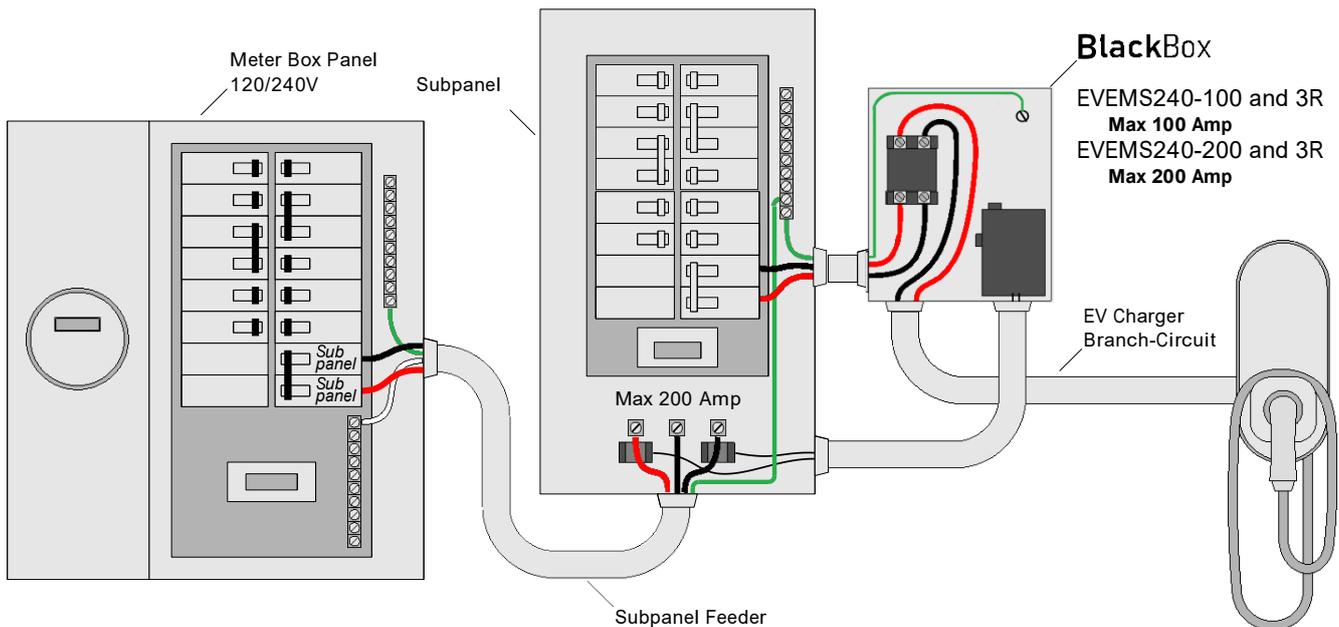
125	16	20	ON	OFF	OFF	ON	OFF
125	20	25	ON	OFF	OFF	ON	ON
125	24	30	ON	OFF	ON	OFF	OFF
125	30/32	40	ON	OFF	ON	OFF	ON
125	40	50	ON	OFF	ON	ON	OFF
125	48/50	60	ON	OFF	ON	ON	ON
150	48/50	60	ON	ON	OFF	OFF	OFF
200	16	20	ON	ON	OFF	OFF	ON
200	20	25	ON	ON	OFF	ON	OFF
200	24	30	ON	ON	OFF	ON	ON
200	30/32	40	ON	ON	ON	OFF	OFF
200	40	50	ON	ON	ON	OFF	ON
200	48/50	60	ON	ON	ON	ON	OFF

Single Circuit Load Sharing Operation	ON	ON	ON	ON	ON
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## WITH MAIN PANEL



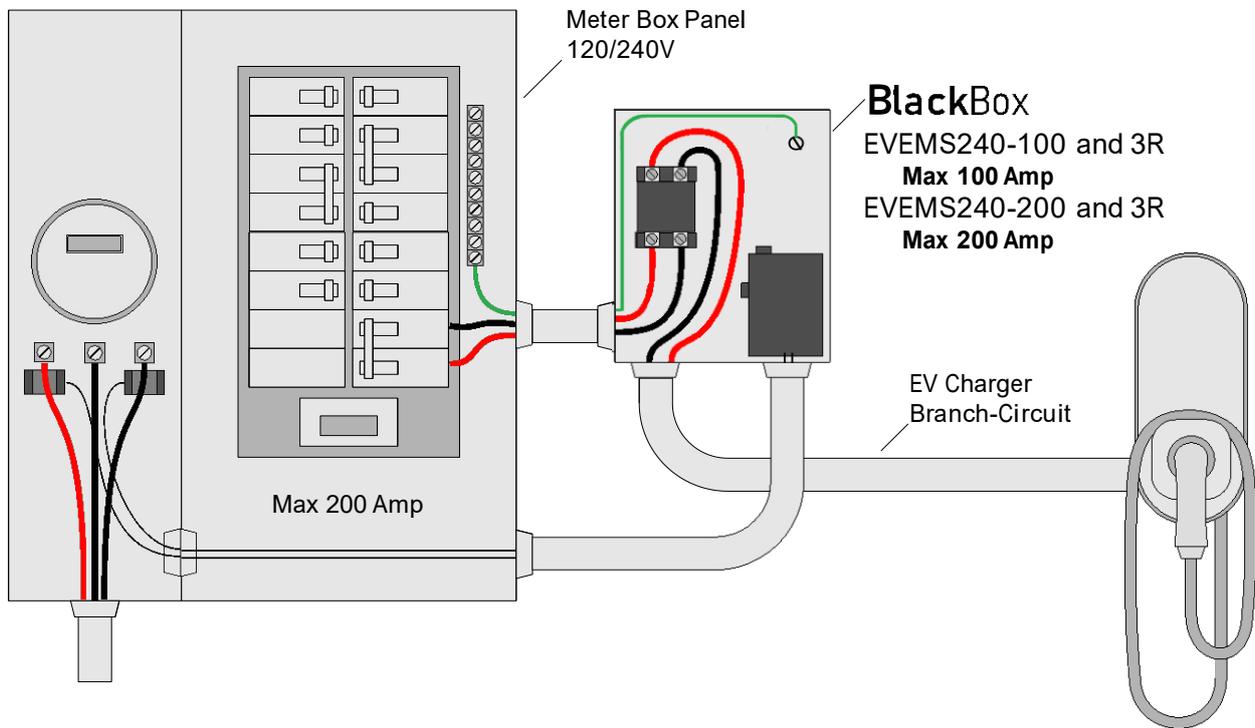
## WITH SUBPANEL



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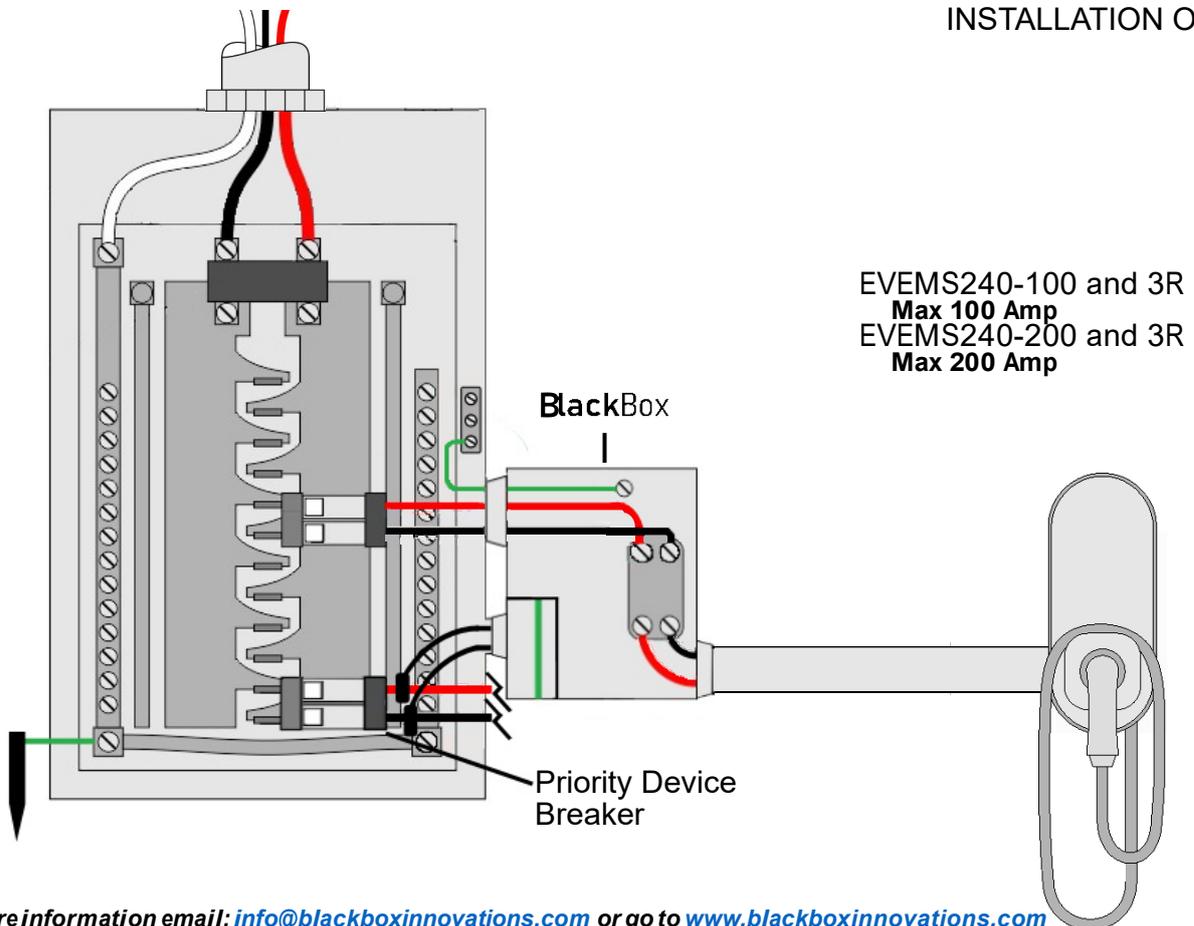


# WITH METER BOX PANEL



## SINGLE CIRCUIT LOAD SHARING

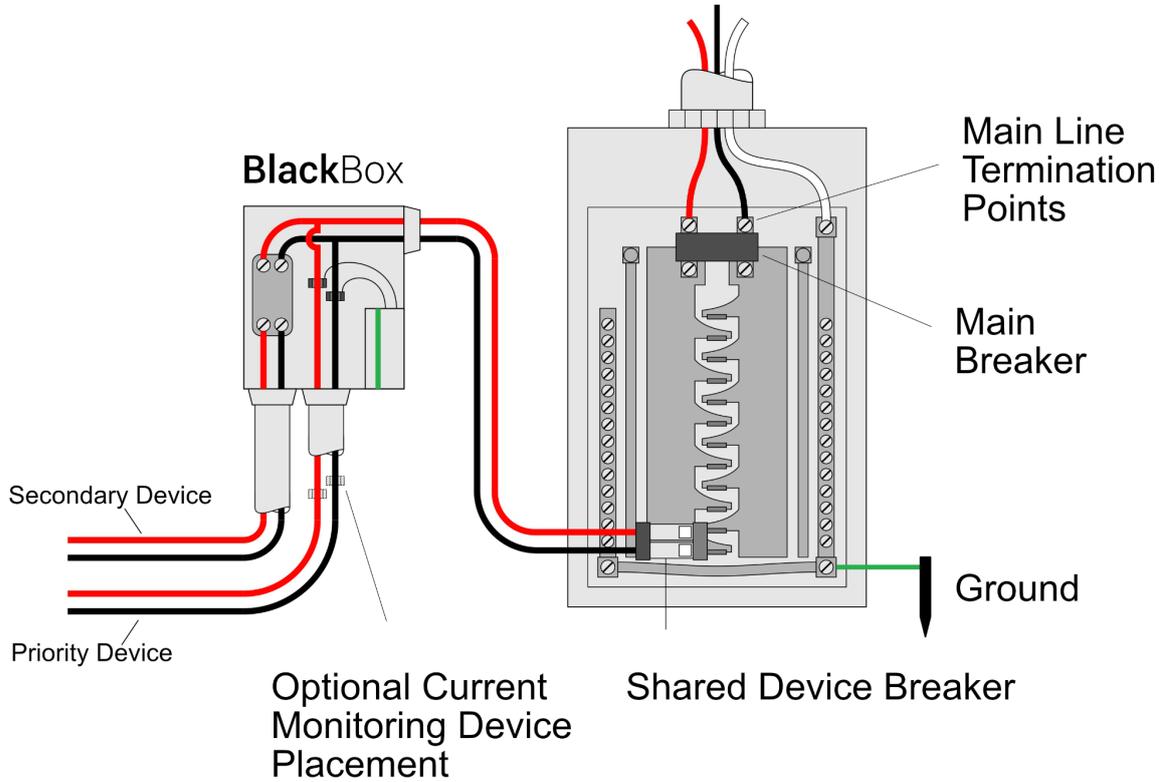
### INSTALLATION OPTION 1



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# SINGLE CIRCUIT LOAD SHARING

## INSTALLATION OPTION 2



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