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GROUP-M1-BP-B

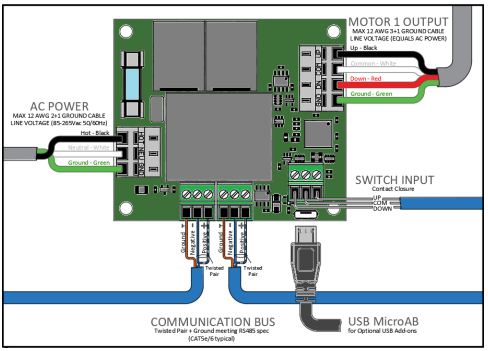
1-Motor Wired MS/TP Group Motor Controller with Isolating Backplate

Package Contents

- 1 x 1-Motor Wired MS/TP Group Motor Controller attached to an Isolating Backplate with the following removable components:
  - 1 x Pluggable Switch Terminal Block
  - 2 x Pluggable MS/TP Network Terminal Block
  - 1 x 10A Slow Blow Fuse

Overview

1-Motor Wired MS/TP Group Motor Controller.



Group Functionality

When multiple Group Motor Controllers are networked together, motors can be operated in configurable groups. Typical usage of these controllers is to group motors as follows:

1. Blackout and Sheer Shades
2. By Façade
3. By Room

Switches are typically used to control the defined groups with various USB add-ons that can be added to provide additional functionality. 1, 2, and 4-Motor controllers are available.

Before You Begin

You will need the following tools and accessories:

- Slotted Screwdriver for Power and Motor terminations
- 2-Gang Box, Square Electrical Box, or other Electrical Enclosure
- Wire Stripper
- 3-Wire Line Voltage Cable (Max 12 AWG) for Power
- 4-Wire Line Voltage Cable (Max 12 AWG) for Motor
- Optional
  - Precision Screwdriver for Switch and Network terminations
  - 3-Wire Low Voltage Cable (Max 16 AWG) for Contact Closure (CAT 5 will work)
  - 1-Twisted Pair + Ground Cable (Max 16 AWG) for Network (CAT 5 will work)
  - USBIF-WiFi Add-on and Embedia InSight App for Advanced Programming
  - One of the other available USBIF Add-ons for added functionality

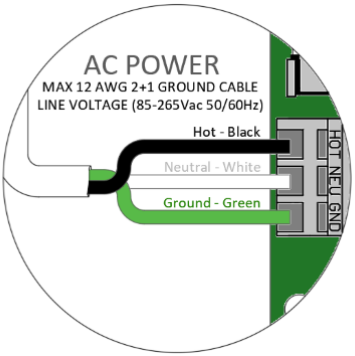
Mounting Details

The GROUP-M1-BP-B should be placed inside a 2-gang box, square electrical box, or some other type of enclosure compliant with local building and electrical codes. Switches (such as the SW7-CC or SW7-USB line of switches) can be mounted together with the GROUP-M1-BP-B if a deep (3") 2-gang box is used.

Wiring Details

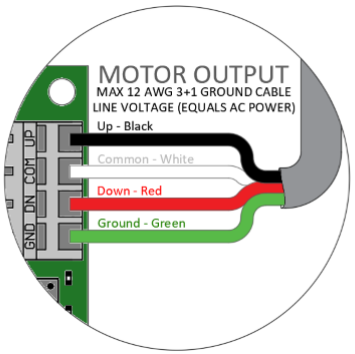
⚠ **All wiring and connections should be completed by licensed electricians, in compliance with Local and State Code**

Power Wiring



Motor Wiring

❗ **IMPORTANT**: Motor wiring (as drawn) assumes ALL motors are mounted in a "left-hand" or "right-hand" configuration which determines the direction of rotation when power is applied to each of the directional wires. When both configurations are used, the "UP" and "DOWN" wires may need to be swapped for individual motor controllers in order for the motors to operate synchronously in the same direction.



MS/TP Network Wiring (Optional)

MS/TP is an industry-standard protocol based on the EIA-485 (RS-485) physical specification under the BACnet™ standard (*BACnet™ is a trademark of ASHRAE.*).

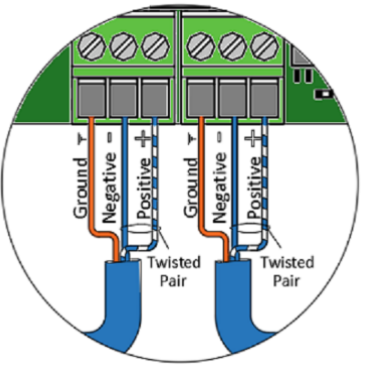
According to the standard:

> An MS/TP EIA-485 network shall use shielded, twisted-pair cable for data signaling with characteristic impedance between 100 and 130 ohms. Distributed capacitance between conductors shall be less than 100 pF per meter (30 pF per foot). Distributed capacitance between conductors and shield shall be less than 200 pF per meter (60 pF per foot). Foil or braided shields are acceptable.

Standard CAT-5 or above network cable meets this specification.

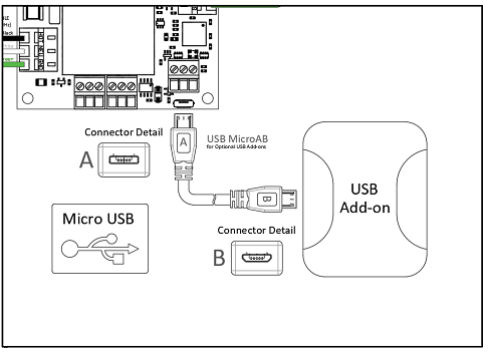
The EIA-485 transceiver used in this controller is a 1/8th Unit-Load device which allows 127 controllers to be connected together in a single chain.

The network terminal blocks can be unplugged from the board for ease of wiring. Ensure that a "twisted-pair" is used between the positive and negative terminals, otherwise communication problems may occur. A completely wired network should look like a single chain of devices with no "T" junctions or circular loops.



USB Add-on Wiring (Optional)

When plugging in a USB Add-on, ensure that the Micro-A (rectangular-shaped) host end of the cable is plugged into the controller. The Micro-B (trapezoidal-shaped) device end of the cable will fit into the controller's receptacle, but the unconnected end will not fit into the Add-on's receptacle.

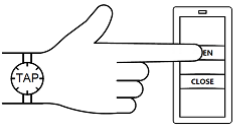


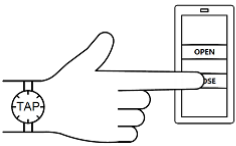
Default Switch Operation

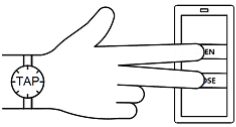
Out-of-the-Box, the 2 onboard contact closure (dry contact) inputs are set up to allow one (1) two-button contact closure (dry contact) switch to control motors 1 and 3 on any controllers that have that numbered motor output connected on the same network.

1	2	3	4
			

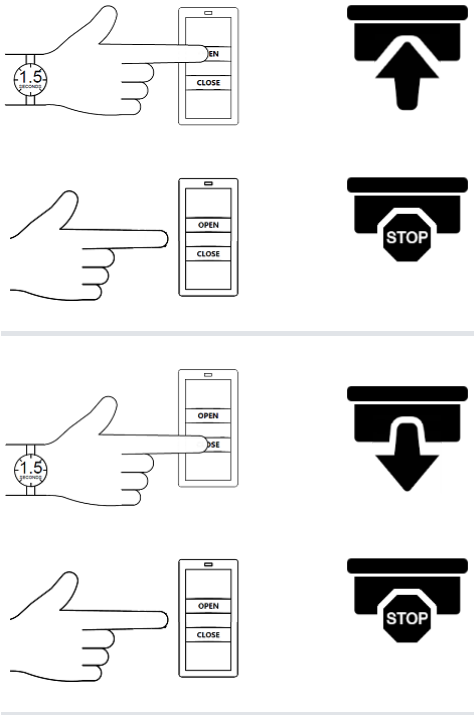
Closing a contact momentarily will start the motors moving in the corresponding direction. Closing both contacts will stop the motors.







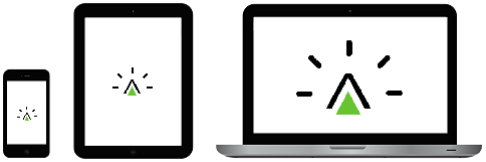
Holding a contact closed for more than 1.5 seconds will move the motors in the corresponding direction until the contact is released.



The onboard contact closure (dry contact) input(s) can be reconfigured to control any number of motors on the connected network using the Embedia InSight App (free download) in conjunction with the USBIF-WiFi Add-on (sold separately) plugged into the onboard USB port of any controller on the connected network. Contacts can also be regrouped to provide more advanced functionality like scenes.

USBIF-WiFi Add-on

Embedia InSight App



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LED Indicators

⚠ Unlike other GROUP controllers, this controller does not have a power indicator LED.

Indicator	Indication
Solid Green LED	Controller is powered and is communcating on the network
Fast Blinking Green LED	Controller is powered and is attempting to communicate with other controllers on the network
Solid Red LED	Either: 1) Controller is waiting for a firmware upgrade file, or 2) The motor controller stopped actuating the motor due to an abnormal current spike.
Red LED	The Red LED will momentarily flash when one of the onboard contacts is closed.
Blinking Red LED	Controller is processing a firmware upgrade file.

Technical Specifications

Parameter	Specification
Line Voltage Input	Universal 110-240 VAC at 50-60 Hz
Motor Outputs	1 Motor Output; 110-240 VAC (Matched to Line Voltage Input); Max. 10A
Low Voltage Inputs	2 Contact Closure Inputs (1 pair); Default: Up/Down for motor (channel 1)
Communication Network (optional)	BACnet MS/TP; Maximum 127 Devices per Segment; Expandable using BACnet/IP Routers such as ControlPoint MS/TP-IP
Network Wiring (optional)	1 x Twisted Pair + Ground suitable for RS485 Communication; 1200m / 4000ft absolute max bus Length (limiting to 600m / 2000ft recommended)
Dimensions	Controller Only —75.00mm (2.95") x 65.00mm (2.55") x 19.00mm (0.75")
Enclosure Options	Product designed to mount in a standard double gang or square electrical box.

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