MC Series Hoist Controller

Setup and Operation Instructions
Three Phase Configuration

General

Applied Electronics MC Series Hoist Controller provides hoist control for up to 12 motors. The system is comprised of a Main Console which performs all power input, output, and up/down switching functions, and a Remote Control Unit which allows for remote control of the motor up/down functions. The system is provided in a variety of configurations based on user needs.

Main Console

Each Hoist Controller Main Console is factory-configured to control a preset number of motors (up to 12) utilizing standard industrial 120/208 three-phase power, consisting of three HOT inputs and an earth GROUND input. Physical input power connectors are provided in accordance with the customer's needs.

All consoles are provided with individual circuit breakers for each output. Output connectors are provided in accordance with customer requirements, and supply all necessary power and up/down control signals.

All system motor movement and power control functions are performed by a Control Panel installed in the Main Console (see Figure 1). The following connectors, switches and indicators are provided on the Control Panel:

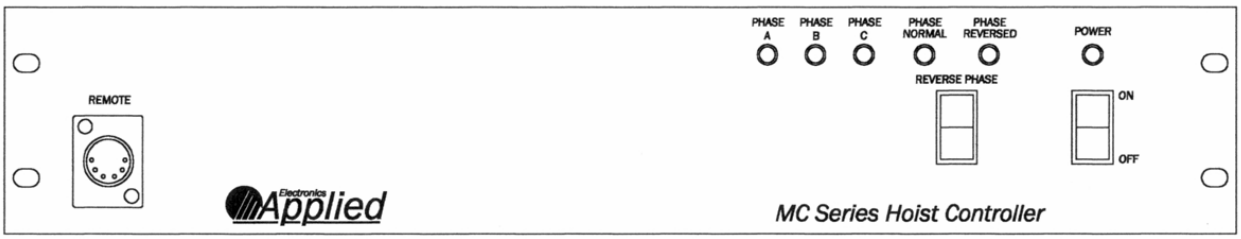

Figure 1

REMOTE Connector – This 6-pin XLR connector is used to interface the Remote Control Unit to the Main Console. All up/down control lines remain in the inactive (no movement) state if the Remote is not connected to the Console.

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PHASE A, PHASE B, PHASE C Indicators – These yellow LEDs indicate the presence of power on the three 120/208 VAC input power lines.

POWER Indictor – This green LED indicates the presence of DC power on the Control Panel printed circuit board.

PHASE NORMAL, PHASE REVERSED Indicators – These LED indicators are display the phase relationship of the three input power lines. When the green PHASE NORMAL indicator is lit, the phase relationship of the three signals is A/B/C; that is, the Phase B signal follows Phase A, and Phase C follows Phase B. When the red PHASE REVERSED indicator is lit, the system has detected a reversal in two of the phase (any arrangement other than A/B/C). NOTE: This condition can cause three-phase motors to run in reverse.

PHASE REVERSE Switch – This switch is used to reverse the phase configuration of the input power lines if the system is not wired to the source power correctly.

POWER Switch – This switch turns the Hoist Control unit on and off.

Remote Control Unit

The Remote Control Unit is provided in a variety of configurations, depending upon the number of motors to be controlled. Hoist Controllers outfitted for the control of 1 to 8 motors utilize the configuration depicted in Figures 2 and 3 (for 4 and 8 motor control, respectively). Controllers outfitted for 9 to 12 motors are provided with Remotes configured as shown in Figure 4. Controls and indicators operate similarly in either configuration, as outlined below.

UP/DOWN Indicators – These two-color LEDs are Green when the corresponding UP/DOWN switch is set in the UP position, and Red when the UP/DOWN switch is in the DOWN position.

UP/DOWN Switches – These three-position toggle switches assign the corresponding motor to move UP (in the up position) or DOWN (in the down position), or No Movement (in the center position). Note that the corresponding motors do not move until either the corresponding BUMP switch or the GO switch is pressed.

BUMP Switches – These momentary pushbutton switches cause the corresponding motor to move in the direction specified by the corresponding UP/DOWN switch. Note that the BUMP switches have no effect if the corresponding UP/DOWN switch is set to the center (No Movement) position.

GO Switch – This momentary pushbutton switch causes all motors to move as indicated by the UP/DOWN toggle switches. Note that the GO switch has no effect on those motors whose corresponding UP/DOWN switches are set to the center (No Movement) position.

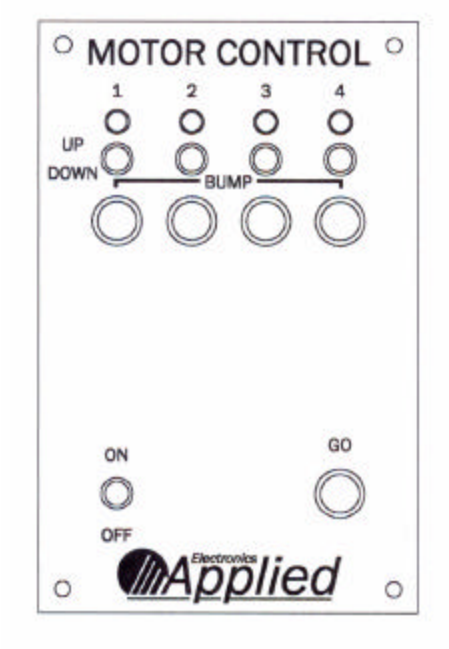

Figure 2

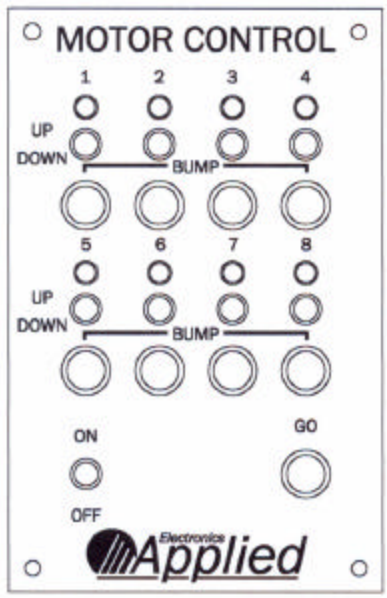

Figure 3

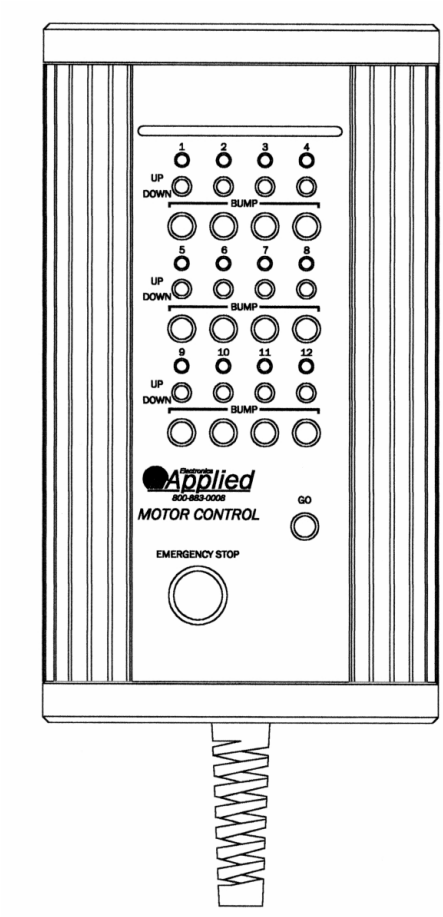

Figure 4

ON/OFF Switch (1 to 8 motor systems only) – This toggle switch turns the Hoist Control system On and Off.

EMERGENCY STOP Switch (9 to 12 motor systems only) – This latching pushbutton switch turns the Hoist Control system Off when depressed. Once the EMERGENCY STOP button has been depressed, it locks into the Off position and must be rotated clockwise and released before disengaging.

Preparation for Use –

1. Verify that the Main Console is properly connected to both input power and the motor(s) to be controlled. Note that an output connector pinout is provided with each Hoist Control system.

2. Turn ON the Main Console POWER switch.

3. If the Hoist Control system has been provided with a Remote Control Unit that controls 1 to 8 motors, set the ON/OFF Switch on the Remote Control Unit to ON. If the system is configured for 9-12 motors, turn the EMERGENCY STOP button clockwise until it stops, then release.

To Move a Single Motor –

1. Set the UP/DOWN toggle switch for that motor to the desired direction. The associated LED should light Green for UP, or Red for DOWN.

2. Press the corresponding BUMP button until the motor has moved the desired distance, then release.

To Move Several Motors at Once –

1. Set the UP/DOWN toggle switches for each motor to the desired direction. Each associated LED should light Green for UP, or Red for DOWN.

2. Either press the corresponding BUMP buttons OR press the GO button until the motors have moved the desired distance.