



# EPM-BS3D

## Motor Control Module

### Quick Reference Guide (revision 1.11)

## OVERVIEW

The Highcross EPM-BS3D is a motor control module designed to control high-voltage (220V AC) and low-voltage (12-48V DC) motors with bidirectional movement for drapes, shades and skylights as well as projection screens, lifts and gates via interlocked high-voltage relays.

The module has 6 digital inputs allowing to control motors directly via standard wall buttons without an external controller.

The device automatically turns a load off after preconfigured timeout.

The control, data exchange and configuration are all handled via TCP/IP protocol.

The module is designed to be installed on a standard 35 mm DIN rail.

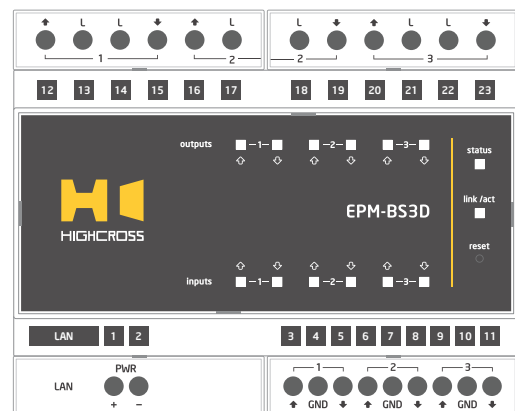
## SPECIFICATIONS

Number of channels	3 pairs
Maximum current of every relay output	8 A
Maximum voltage of relay output	250 VAC
Number of digital inputs	3 pairs
Type of digital inputs	TTL, reference voltage +5 V, Short Circuit Current ~ 1 mA
Supply voltage (power terminals and PoE)	+12 ... 48 VDC
Consumption current	200 mA at +12 VDC

Operating temperature	-20°C ... +45°C (-5°F ... +115°F)
Operating humidity	5 ... 80% RH non-condensing
Enclosure	6M DIN rail box, UL94-V0 flame retardant PC
Dimensions	90 x 106 x 58 mm (3.54" x 4.17" x 2.28")
Weight	275 g (0.606 lbs)
Supported data exchange protocols	NetString ModBus TCP ModBus RTU over TCP

## DEVICE CONTROL COMPONENTS

FACE PANEL COMPONENTS	
<b>outputs 1...3</b>	Activity indicators of outputs 1...3 Up/Down
<b>inputs 1...3</b>	Activity indicators of inputs 1...3 Up/Down
<b>status</b>	Indicates power status and connection to controllers
<b>link/act</b>	Ethernet link and activity indicator
<b>reset</b>	Multifunctional button (reboot, reset, boot-loader)
TERMINAL PANELS	
<b>outputs 1...3</b>	Terminals of relay contacts
<b>LAN</b>	Ethernet network and PoE power connector
<b>PWR</b>	Power supply terminals (+12...48 VDC)
<b>inputs 1...3</b>	Terminals of digital inputs
<b>GND</b>	Ground contact of digital inputs, electrically connected to <b>PWR</b> "-" contact



LED "status" indicates the power connection and connection status with controllers	
Off	No power connected
Blink (1 Hz)	No connection with external controllers
Fast blink (4 Hz)	The device is in bootloader mode
On	Connected to external controllers

LED "link" indicates Ethernet network link and activity	
Off	No connection to Ethernet network
Blink	Connected to Ethernet network Receiving Ethernet data packets
On	Connected to Ethernet network No network activity

LEDs "outputs 1...3" display status of relay outputs	
Off	Relay is open
On	Relay is closed

LEDs "inputs 1...3" display status of digital inputs	
Off	Input is not activated
On	Input is activated

### Multifunctional button "reset"

**To reboot the device** push the button for 1 second

**To reset the device to factory defaults** push and hold the button for 5 seconds.

IP-address will be set to 10.0.1.101, subnet mask - to 255.255.255.0. All other settings will be set to default values

**For firmware update**, power off the device, push and hold the button and power the device on. Release the button after the LED "status" will start to blink fast.

The network settings of the device started in bootloader mode are: IP-address - **10.0.1.101**, subnet mask - **255.255.255.0**

The **PWR "+"** and **"-"** terminals are designed to power the device +12...48 VDC if connected Ethernet switch has no PoE support.

Outputs 1...3 (↑, L, ↓) are pair contacts of interlocking normally-open relays.

Inputs 1...3 (↑, GND, ↓) are designed to connect dry-contact buttons to control outputs without external controller.

For connections diagram refer to the connection sheet.

## SETUP AND CONFIGURATION

The configuration of the module is handled via web-interface.

To start working with the device:

- Connect the device to the Ethernet switch. If the switch has no PoE support, connect the power +12...48 VDC to the **PWR** terminal
- Ensure that your computer can connect to the network address 10.0.1.101 or set the TCP/IP settings of active network adaptor to: IP address - **10.0.1.100**, subnet mask - **255.255.255.0**
- Enter **10.0.1.101** in address bar of your web-browser
- Enter: login - **root**, password - **root**
- Configure the device settings

The web-interface contains the next web-pages:

<b>Home</b>	Displays the hardware revision and the firmware version
<b>Settings</b>	Network settings, type of data exchange protocol, outputs and digital inputs settings
<b>Control</b>	Displays current state of inputs and outputs. Direct control of relay outputs
<b>Status</b>	Displays current TCP/IP connections and device uptime info

For further information refer to [www.highcross.com](http://www.highcross.com)