



EPM-BS3D

Bidirectional Motor Control Module

Quick Reference Guide (revision 1.30 for H/W Rev.C)



OVERVIEW

The Highcross EPM-BS3D is a motor control module designed to provide control of bidirectional motors for drapes, shades and skylights as well as projection screens, lifts and gates via mutually exclusive high voltage relays.

The module features digital inputs allowing motor control via standard buttons without an external control system.

The device switches channels off automatically after individual channel's 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.

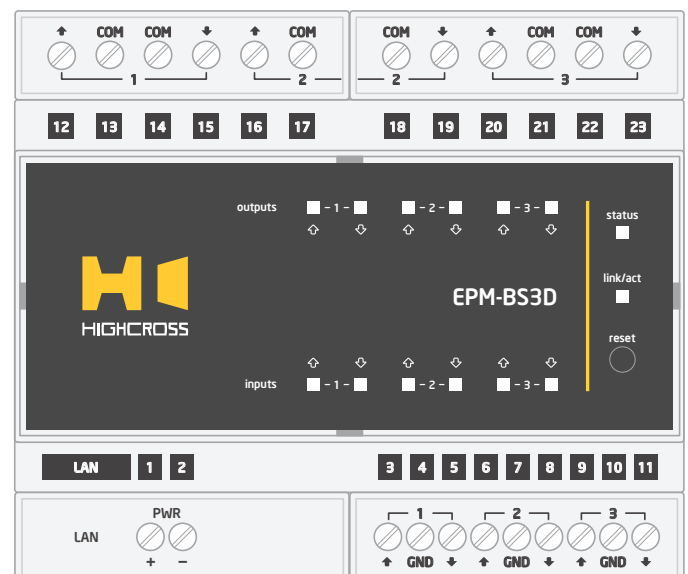
SPECIFICATIONS

Number of channels	3
Maximum switching current of relay output	8 A @ 250 VAC
Current overload protection	Yes, customizing for each channel
Number of digital inputs	3 pairs
Type of digital inputs	TTL, reference voltage 5 VDC, short circuit current ~ 1 mA
Supply voltage range	12-24 VDC via power terminals 48 VDC via PoE port
Consumption current	200 mA @ 12 VDC

Operating temperature	-20° C to 45° C -5° F to 115° F
Operating humidity	5 to 80% RH non-condensing
Enclosure	6M DIN rail box, UL94-V0 flame retardant PC
Dimensions (HWD)	90 mm x 106 mm x 58 mm 3.54" x 4.17" x 2.28"
Weight	275 g 0.60 lbs
Supported data exchange protocols	NetString ModBus TCP ModBus RTU over TCP

DEVICE CONTROL COMPONENTS

FACE PANEL COMPONENTS	
outputs 1-3	Activity indicators of outputs 1-3 Up/Down
inputs 1-3	Activity indicators of inputs 1-3 Up/Down
status	Indicates power status and connection to controllers
link/act	Ethernet link and activity indicator
reset	Multifunctional button (reboot, reset, boot-loader)
TERMINAL PANELS	
outputs 1-3	Terminals of relay contacts (↑, COM, ↓)
LAN	Ethernet network and PoE power connector
PWR	Power supply terminals (12-24 VDC)
inputs 1-3	Terminals of digital inputs (↑, GND, ↓)
GND	Ground contact of digital inputs, electrically connected to PWR "-" 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	Output is off
On	Output is on

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 12-24 VDC if connected Ethernet switch has no PoE support.

Terminals of outputs 1-3 (**↑, COM, ↓**) are contacts of pairs of mutually exclusive normally-open relays.

Terminals of inputs 1-3 (**↑, GND, ↓**) are designed to connect dry-contact buttons to control outputs without control system.

For connection diagrams refer to the Instruction manual.

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 12-24 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:

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

For further information refer to www.highcross.pro