EPM-RL6D

Power Relay Module

Quick Reference Guide (revision 1.50 for H/W Rev.B)

OVERVIEW

The Highcross EPM-RL6D is a module designed to switch lighting, motors and other high voltage loads via relays.

The module features digital inputs allowing to control outputs via standard buttons or switches without an external control system.

The device supports 220-250 VAC applications. All channels are normally open and are disconnected when the power is off.

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 relay outputs	6	Operating temperature	-20° C to 45° C -5° F to 115° F
Maximum switching current of relay output	8 A	Operating humidity	5 to 80% RH non-condensing
Maximum switching voltage of relay output	250 VAC	Enclosure	6M DIN rail box, UL94-V0 flame retardant PC
Number of digital inputs	6	Dimensions (HWD)	90 mm x 106 mm x 58 mm 3.54" x 4.17" x 2.28"
Type of digital inputs	TTL, reference voltage 5 VDC, short circuit current ~ 1 mA	Weight	285 g 0.63 lbs
Supply voltage range	12–24 VDC via power terminals 48 VDC via PoE port	Supported data exchange protocols	NetString ModBus TCP ModBus RTU over TCP
Consumption current	250 mA @ 12 VDC		

DEVICE CONTROL COMPONENTS

FACE PANEL COMPONENTS	
outputs 1–6	Activity indicators of relay outputs 1–6
inputs 1–6	Activity indicators of digital inputs 1–6
status	Indicates power status and connection to controllers
link/act	Ethernet link and activity indicator
reset	Multifunctional button (reboot, reset, boot-loader)
TERMINAL PANELS	
relays 1–6	Terminals of relay contacts
LAN	Ethernet network and PoE power connector
PWR	Power supply terminals (12–24 VDC)
inputs 1–6	Terminals of digital inputs
GND	Ground contact of digital inputs, electrically connected to **PWR "–"** contact
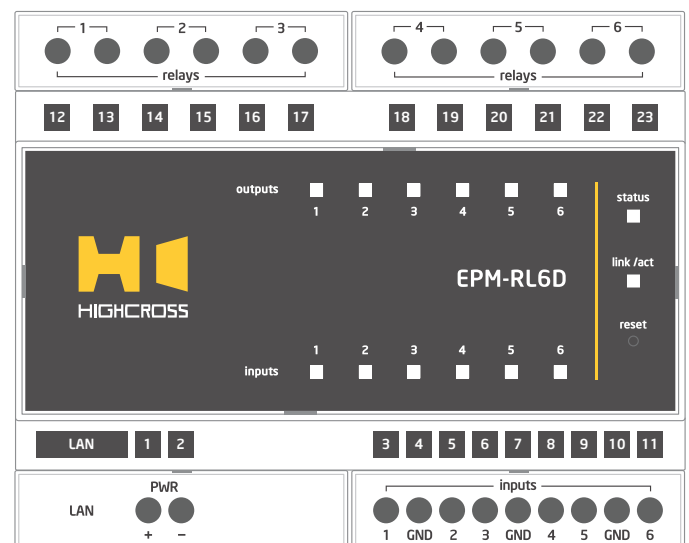
LED "status" indicates the power connection and connection status with controllers	
Off	No power connected
Blink (1 Hz)	No connection with external controllers
Fast blink (4 Hz)	The device is in bootloader mode
On	Connected to external controllers

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 1–6" display status of relay outputs	
Off	Output is off
On	Output is on

LEDs "inputs 1–6" 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 1–6** (pairs of K1A-K1B to K6A-K6B) are contacts of normally-open relays.

Terminals of **inputs 1–6** and GND are designed to connect dry-contact buttons and switches to control outputs without control system. Every input can be configured either to control of relay or to be an independent digital input for external controllers.

Warning: To prevent damaging of the relay outputs be sure that cos φ of switched load is bigger than 0.6.

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