



# ECM-A04D

## Analog Output Module

### Quick Reference Guide (revision 1.20)

## OVERVIEW

The analog output module ECM-A04D is designed to control different equipment with 0-10V interface.

The module has open collector terminals to control the external power relays or as an additional source of digital ON and OFF signal.

The device has 8 digital inputs to control 4 analog outputs. Every output channel has a pair of digital inputs for manual control - to support one-button and two-button control modes.

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

## SPECIFICATIONS

Number of channels	4
Number of digital inputs	8 (4 pairs)
Maximum power of 0-10V output	10 mA
Isolation of 0-10V outputs	Yes
Continuous short circuit current of 0-10V output	20 mA
Open collectors rating	Max. 200 mA, up to +24 VDC
Supply voltage (power terminals and PoE)	+12 ... 48 VDC
Consumption current	200 mA at +12 VDC

Network interface	Ethernet (10/100)
Operating temperature	-20°C ... +45°C (-5°F ... +115°F)
Operating humidity	5 ... 80% RH non-condensing
Dimensions	90 x 88 x 58 mm (3.54" x 3.46" x 2.28")
Weight	180 g (0.396 lbs)
Supported data exchange protocols	NetString ModBus TCP ModBus RTU over TCP

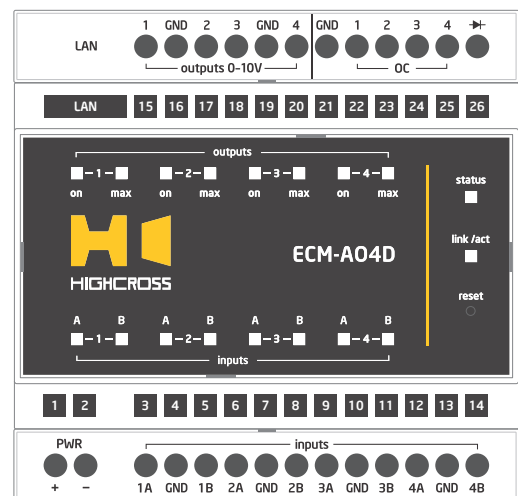
## DEVICE CONTROL COMPONENTS

### FACE PANEL COMPONENTS

<b>outputs 1...4</b>	Indicators of output status
<b>inputs 1...4</b>	Indicators of input status
<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, bootloader)

### TERMINAL PANELS

<b>LAN</b>	Ethernet network and PoE power connector
<b>PWR</b>	Power supply terminals (+12...48 VDC)
<b>outputs 0-10V 1...4</b>	0-10V output terminals
<b>OC 1...4</b>	Open collector terminals
<b>inputs 1A...4B</b>	Digital input terminals
<b>GND</b>	Ground contact for 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 "1...4 on" display status of output	
Off	The output is off
On	The output is on

LEDs "1...4 max" indicate 100% output power	
Off	The output power is less than 100%
On	The output power is maximal (100%)

### 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.

## 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>	Direct control of output channels
<b>Status</b>	Displays current TCP/IP connections and device uptime info

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