Quick Start Guide

PRO-MUX-1

Professional
NMEA 0183 Multiplexer

Actisense®

Award Winning NMEA Specialists

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Important Notices

The device to which this manual relates complies with the Electromagnetic Compatibility requirements according to EN60945. The unit should always be used in conjunction with appropriately approved, shielded cable and connectors as per NMEA 0400 to ensure compliance. A declaration of conformity is available for download at www.actisense.com.
If the device to which this manual relates is to be installed within five metres of a compass, please refer to the 'Compass Safe Distance' section in the 'Technical Specifications' table.

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Product Disposal

Please dispose of this product in accordance with the WEEE Directive. The product should be taken to a registered establishment for the disposal of electronic equipment. Product Registration

Product Registration

Please register your product via the online form at:
http://www.actisense.com/product-registration/
Your product package includes a unit serial number. The serial number is six digits long and can be found below the barcode on the label. Your registration will assist Actisense Support to link your product to your details, simplifying any future assistance you may require.

Product Guarantee

All Actisense products are provided with a 3 year guarantee as standard.
To activate the 5-year guarantee offered with this product please complete product registration either online at www.actisense.com/support/prodreg or by completing and returning the warranty card supplied in the box with the product.

If you suspect that the unit is faulty please refer to the Troubleshooting Section of the User Manual before contacting support.

It is a requirement of the guarantee that all installations of electronic equipment follow the NMEA 0400 specification. Any connection to a battery or power supply must meet the mandatory essential safety requirements that may be imposed by local regulatory agencies.
Actisense products are intended for use in a marine environment, primarily for below deck use. If a product is to be used in a more severe environment, such use may be considered misuse under the Active Research Ltd guarantee.

Introduction & Features

The PRO-MUX-1 is reliable, robust and provides industry leading isolation on all inputs and outputs as standard. This means that devices can be safely connected whilst avoiding hazardous ground loops, the number 1 cause of product failure in NMEA 0183 networks.

The Eight NMEA 0183 inputs, can be routed to any of the six NMEA 0183 outputs which provides a highly customisable NMEA 0183. A bi-directional serial port and an Ethernet port allow for simple configuration and diagnostics using Actisense software.

The configuration tool is accessible via any popular web browser (using the Ethernet port) so there are no PC operating system compatibility issues to contend with. Using the web based configuration tool will allow the user to finely tune the exact data available on each output. The default setup is for all data to go to all outputs.

Before getting started

The wire colours used in this quick start guide are in accordance with the NMEA 0183 specification (v.4.10, June 2014) and are for illustration purposes only. Please check the wiring colours in the installation instructions for the devices you wish to interface to the PRO-MUX-1.

Powering the PRO-MUX-1

The PRO-MUX-1 can operate between 9 and 35 VDC and will typically use 325mA at 12 VDC.

RF Ground

The shield from each Listener should be connected to the ⏚ terminal on the PRO-MUX-1 'Isolated Talkers' ports. All ⏚ terminals are connected internally and form a common bonding point at the RF ground stud.

The RF ground stud should be connected to the vessels RF ground plate using a minimum conductor size of 8 AWG (10mm2) in accordance with NMEA 0400 (in version 3.1, this is in section 3.2).
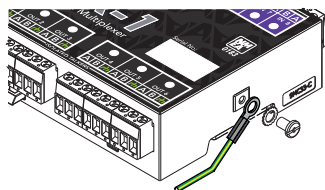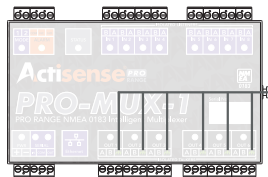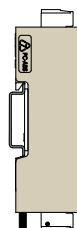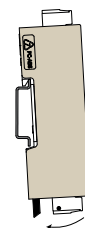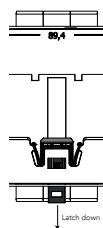

DIN rail fixing

Install the DIN rail in the desired location.
Fully retract the black securing latch in to the down position.
Attach the PRO-MUX-1 to the DIN rail as shown in the diagrams below.
Ensure the PRO-MUX-1 sits flush against the DIN rail, then push the securing latch back in to position to hold the PRO-MUX-1 in place.

Compass safe distance = 250mm

Web browser configuration tool

The Configuration Tool for the PRO-MUX-1 is built-in and can be accessed via the Ethernet connection. An internet connection is not required to access the Configuration Tool. The factory default log-in for both username and password is "admin".

Standard Ethernet networks

If the PRO-MUX-1 is connected to an Ethernet network containing both DHCP and DNS servers, launch any popular web browser and enter 'http://promux-xxxxxx' in to the address bar (replacing 'xxxxxx' with the product's serial number).

Direct connections or basic Ethernet networks

If the PRO-MUX-1 is connected directly to a PC (or the Ethernet network does not have a DHCP server), the PRO-MUX-1 will communicate using auto-IP by default. The auto-IP process can take up to 60 seconds to complete. Afterwards, enter the details in to the address bar as above.

Baud rate settings

Port	Default baud rate	Configurable	Options
'SERIAL'	115200	No	N/A
'IN1' to 'IN4'	4800	Yes	4800, 9600, 19200, 38400 or Auto
'IN5' to 'IN8'	4800	No	N/A
'OUT1'	4800	Yes	4800, 9600, 19200, 38400, 115200

LED functions

LED	Colour	State	Description	User action
PWR	Blue	Pulsing	Indicates presence of power	None required
IN (INCLUDING 'SERIAL IN')	Green	Flashing	Data available on input indicated by LED.	No action required
	-	Off	No data available on this input or autobaud detection in progress (up to 20 seconds)	Check if connected Talker is sending data. If it is, review configuration.
OUT (INCLUDING 'SERIAL OUT')	Orange	Flashing/ solid	Flashes at a rate determined by baud rate and data length. If available bandwidth is nearly full, LED may appear solid instead of flashing	None required
STATUS	Red	Flashing / solid	Buffer Full – Overload condition, sentences are being dropped.	Use a web browser to review configuration and correct overload condition.
	Yellow	Flashing / solid	Warning, buffer is filling. Duplicate deletion is managing to maintain output capacity by deleting older copies of sentences	Review configuration to understand the required rates of sentences which is acceptable to any connected device
	Green	Flashing / solid	Normal operation. No data issues.	No action required
	-	Off	No data passing through outputs. Either no input data, or if IN LED is active it means all data is blocked.	Check if the connected Talker is sending data. If it is, review configuration.
Ethernet	Green	Flashing	Data activity on the Ethernet port	No action required
	Yellow	On	Indicates line speed at 100Mbps	No action required
		Off	Indicates line speed at 10Mbps	
	-	Off	No data available	Check that the Ethernet network is operational.
ALARM	Red	On	Indicates alarm conditions have been met.	Review status page in browser to understand alarm source.
MODE	Green	Pulsing / Flashing	**Pulsing** - User defined mode selected, **Flashing** - Pre-defined operating mode selected according to mode pins. Number of flashes = operating mode number	No action required
PWR and STATUS (Combined)	Power = blue Status = red	Power = on (solid) Status = on (solid)	Critical HW Error Both Power & Status LEDs are solid	Return to manufacturer if this persists after a power reset