Issue v2.1

Actisense®

Connect without limits



PRO-NDC-1E2K

NMEA 0183 INTELLIGENT MULTIPLEXER NMEA 2000 GATEWAY

The Actisense NMEA 0183 Multiplexer/NMEA 2000 Gateway (PRO-NDC-1E2K) is a type approved, intelligent and robust platform that cures many interconnectivity headaches.

Introducing the Actisense® PRO-NDC-1E2K, the new, intelligent, type approved PRO range multiplexer with NMEA 2000 Gateway capability.

The PRO-NDC-1E2K is reliable, robust and provides industry leading isolation on all inputs and outputs as standard, so that connected devices safely avoid hazardous ground loops, the number one cause of product failure in NMEA 0183 networks.

All five NMEA 0183 inputs can be routed to any of the NMEA 0183, NMEA 2000 or Ethernet outputs, providing a highly customisable and flexible solution.

The NMEA 2000 data can be converted bidirectionally into different formats including NMEA 0183, N2K ASCII and N2K Actisense (proprietary formats) and NGT Actisense (compatible with our NGT/NGX products). The Ethernet Port enables all NMEA data to be sent and received at high speed to connected networks.

A bi-directional serial port allows for communication between the PRO-NDC-1E2K and a PC using the Actisense USB-serial converter: USBKIT-PRO (supplied seperately),

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 set up the routing table, finely tune the exact data available on each output, see detailed statistics (providing feedback on data loading) and configure alarms. Actisense-i network health checker provides valuable feedback on the status of the NMEA 2000 network.

2-part pluggable connectors on the PRO-NDC-1E2K means that new devices can be easily connected without the need to remove the unit from its mounted location.

The PRO-NDC-1E2K has the option to either mount directly to the bulkhead (with screws provided), or be DIN rail mountable with the addition of professional DIN rail brackets (sold seperately).

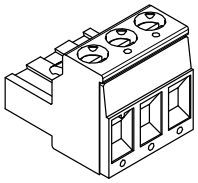
Helpful LEDs indicate power, status, data in & data out to aid diagnostics.

Features:

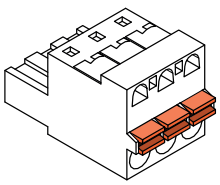
- Type-approved (RINA).
- NMEA 0183 Ethernet streaming
- NMEA 2000 Ethernet streaming
- 5x Configurable Opto-isolated NMEA 0183 inputs.
- 2x Configurable ISO-Drive isolated NMEA 0183 outputs.
- 1x Bi-directional, configurable, isolated serial port.
- 1 x Ethernet Port with auto crossover detection
- 1 x NMEA 2000 Port, M12 Male
- Automatic baud rate matching on inputs.
- Advanced data filtering / routing.
- Free firmware updates making the device future-proof.
- Diagnostic LEDs on all inputs and outputs.
- Bi-colour status LED.
- Panel or DIN Rail mountable
- Stainless Steel housing for added durability.

Features may change without notice.

Connector types:



Screw Terminals



A-CONPACK-PNDC1E - Screwless Terminals available as an accessory.



Easy USB connection with a USB-serial adapter kit (sold seperately).

RINA

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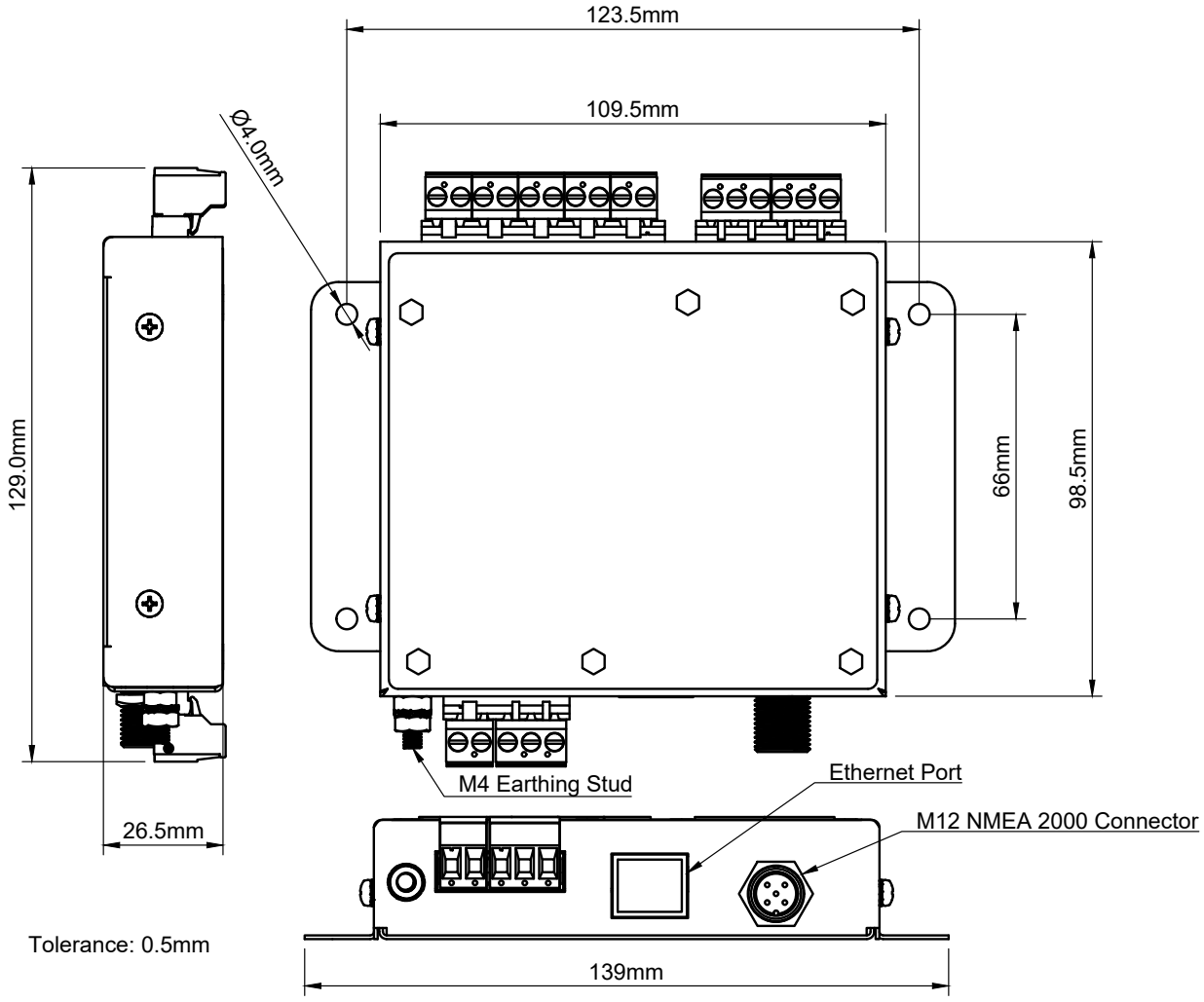
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PRO-NDC-1E2K Specifications

Power Supply	
Input supply voltage	9 to 35 V DC
Input supply current	150mA max @ 12V DC (all outputs @ full drive into 100 ohm loads)
Input protection	Continuous reverse polarity, transient overvoltage and ESD protection
Power indicator	LED, Blue - indicates unit is functioning correctly
Input Supply connector	Pluggable 2-way screw terminal, 5.08mm pitch (12 to 30 AWG)
NMEA 0183 Port - Listener & Talker	
Number of Listener / Input Ports	5 isolated NMEA 0183 Listeners
Number of Talker / Output Ports	2 isolated NMEA 0183 Talkers
Compatibility	Fully NMEA 0183, RS422 & RS232 compatible. RS485 Listener compatible
Speed / baud rate	4800 to 38400 bps
Talker Output Voltage Drive	>= 2.2V (differential) into 100 ohm
Talker Output Current Drive	20 mA maximum per output
Talker Output Protection	Short circuit and ESD
Talker Data Indicator	LED, Orange (Flashes with data rate)
Listener Input Voltage Tolerance	-15 V to +15 V continuous, -35 V to +35 V short term (< 1 second)
Listener Input Protection	Current limited, overdrive protection to 40 VDC and ESD protection
Listener Data Indicator	LED, Green (Flashes with data rate)
Connectors	Pluggable 2/3 way screw terminals, 5.08mm pitch (12 to 30 AWG)
Serial Port	
Compatibility	RS422 & RS232 compatible. RS485 Listener compatible
Speed / baud rate	115200 bps
Output voltage drive	>= 2.1V (differential) into 100 ohm
Output current drive	20 mA max.
Output protection	Short circuit and ESD
Input voltage tolerance	-15 V to +15 V continuous, -35 V to +35 V short term (< 1 second)
Input protection	Current limited, overdrive protection to 40 VDC and ESD protection
Data Indicators	LED's: Green = Receive, Orange = Transmit
Connectors	Pluggable 3-way screw terminals, 5.08mm pitch (12 to 30 AWG)
Ethernet Port	
Host interface	10/100BaseT, automatic polarity detection
Supported protocols	TCP/IP for configuration and firmware updating
	TCP/IP and UDP for NMEA 0183 comms
Connector	RJ45
Indicators	Green - Link, Yellow - 100 Mbps
NMEA 2000 Port	
Compatibility	NMEA 2000 Certified
Speed / baud rate	250 kbps
Connectivity	M12 male (A-coded) connector
Isolation	
NMEA 0183 Listener	Uses IsoDriveTM, Hi-Pot tested to 1000V
NMEA 0183 Talker	Uses IsoDriveTM, Hi-Pot tested to 1000V
Serial Port	Uses IsoDriveTM, Hi-Pot tested to 1000V
Ethernet Port	2kv for 60s
NMEA 2000 Port	OPTO-Isolated, Hi-Pot tested to 1000V
Mechanical	
Housing Material	316L Stainless Steel
Dimensions	139mm (W) x 129mm (H) x 26.5mm (D)
Weight	360g
Mounting	Bulkhead mount or DIN rail mount (DIN kit 1)
Approvals and Certifications	
EMC	IEC 60945:2002-08, DNVGL-CG-0339:2019 & IACS UR E10 Rev7
Compass Safe Distance	300mm
Type Approval Certificate	RINA
Operating Temperature	-25 to +70°C
Storage Temperature	-40 to +85°C
Relative Humidity (RH)	95% @ 55°C
Environmental Protection	IP40
Guarantee	5 years

All specifications are taken with reference to an ambient temperature of 25°C unless otherwise specified.
All specifications correct at time of print

PRO-NDC-1E2K Dimensions



Accessories	Description
DIN-KIT-1	Kit of 2 clips & 4 screws. Use with top-hat (EN 50 022) or G section (EN 50 035) rails
A-CONPACK-PNDC1E	Pluggable screwless terminal pack for PRO-NDC-1E2K
SRB-90	90mm stainless steel strain relief brackets with screws (x2)
USBKIT-PRO	USB to Serial Adapter for use with PRO range products