NGX-1

//EA 0183 <-> NMEA 2000

Available in both USB and ISO variants



Introducing the latest addition to the Actisense Gateway product range, the NGX-1 Gateway can act as an NMEA 2000 to PC Interface, or as a bi-directional NMEA 0183/2000 Converter

The NGX-1 is an intelligent gateway that converts NMEA 0183 data to NMEA 2000 (and vice versa), allowing you to share information between devices from the two standards. This creates the possibility of upgrading some of the vessel's electronics to NMEA 2000 and keeping the remaining NMEA 0183 devices. This can help spread the cost of transitioning to NMEA 2000, reducing the initial upgrade cost to accommodate a new NMEA 2000 device.

The ISO variant connects easily to NMEA 0183 devices with a dedicated pair of data wires for transmit and receive, allowing the NGX-1 to share data bi-directionally if required. OPTO-Isolation is included on the input and ground breaking ISO-Drive TM technology on the output to keep your devices safe from hazardous ground loops.

The USB Variant allows for quick and easy connectivity to a PC running software that requires NMEA 0183 data.

Thanks to the device being low power, it is powered directly from the NMEA 2000 network, removing the requirement for an independent power supply.

The Actisense NGX-1 also makes it possible to send and receive NMEA 2000 data safely between a PC and an NMEA 2000 network. This creates the possibility of feature rich software applications replacing or complementing dedicated hardware such as a Multifunction Display (MFD) or Chart Plotter.

Acting as an NMEA 2000 to PC Gateway allows the device to act as a rule enforcing firewall between the PC and the network, giving the user full control over what data is passed and blocked. The NGX is capable of transferring every currently available NMEA 2000 PGN from the network to a PC application.

Features:

USB version

- Vital NMEA 2000 diagnostic tool.
- USB version is fully isolated to prevent dangerous ground looops.
- Up to 230,400 baud rate data transfer rate.
- Integrated 1.8m USB cable.
- Diagnostic LED's on both input and output.

ISO version

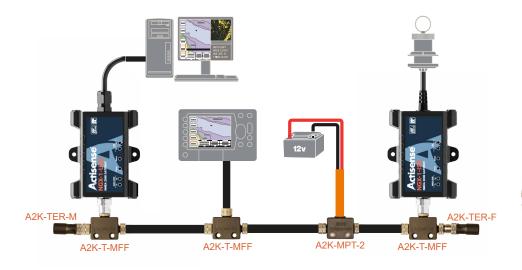
- ISO version has OPTO-isolated input and ISO-Drive output for safely interfacing with NMEA 0183 or RS232 / RS422
- Advanced configuration using Actisense Toolkit allows Tx / Rx lists and Tx rates to be set.
- Supports fast-heading at 10Hz.
- Up to 230,400 baud rate data transfer
- Integrated 0.75m ISO cable.
- Diagnostic LED's on both input and output.

Features may change without notice.

Integrate seamlessly with Raymarine® products

The STNG-A06045 adaptor cable enables users to integrate Raymarine SeaTalk^{NG} products into the standard configured NMEA 2000® bus and vice-versa. Currently only available when purchased with an Actisense NMEA 2000® Gateway product.







NGX-1 Specifications



Technical Specifications

Supply Voltage (NMEA 2000 Port) Supply Current (NMEA 2000 Port) Supply Current (NMEA 2000 Port) Load Equivalent Number (LEN) Power Supply (USB Variants) Supply Voltage (NMEA 2000 Port) Supply Current (USB Host Port) Supply Current (INMEA 2000 Port (INMEA 2000 Port) Supply Current (INMEA 2000 Port Supply Su	Power Supply (NGX-1-ISO / NGX-1-USB)	
Load Equivalent Number (LEN) 2 Power Supply (USB Variants)	Supply Voltage (NMEA 2000 Port)	9 to 30V DC
Power Supply (USB Variants) Supply Voltage (NMEA 2000 Port) 9 to 30V DC Supply Current (USB Host Port) 10mA @ 5V DC Supply Current (NMEA 2000 Port) 62mA @ 9V DC Load Equivalent Number (LEN) 2 NMEA 2000 Port (NGX-1-ISO / NGX-1-USB) Speed / Baud Rate 250kbps Connectivity M12 Male (A coded) ISO Port (NGX-1-ISO) Compatibility Full NMEA 0183, RS232 & RS422 compatibility, RS485 Listener compatible Speed/Baud Rate 4800 to 230400 Baud Output Voltage Drive >= 2.1V (differential) into 100Ω Output Current Drive 20mA max. Output Protection Short circuit and ESD Input Voltage Tolerance -15V to +15V continuous -35V to +35V short term (< 1 second) Input Protection Current limited and overdrive protection to 40VDC Connectivity 5mm stripped and tinned wire Cable Length 0.75m USB Port (USB Variant) Compatibility USB 1.1, 2.0 and 3.0 Speed / Baud Rate 4800 to 230400 Baud Connectivity Male type A plug moulded onto cable Cable Length 1.8m Isolation NMEA 2000 Port to ISO Port USB Port Galvanic Isolation, Hi-Pot tested to 1000V Mechanical Housing Material Body Flame retardant Polycarbonate Housing Material End Caps Flame retardant PBT Weight NGX-1-ISO 112g	Supply Current (NMEA 2000 Port)	62mA @ 9V DC
Supply Voltage (NMEA 2000 Port) 9 to 30V DC Supply Current (USB Host Port) 10mA @ 5V DC Supply Current (NMEA 2000 Port) 62mA @ 9V DC Load Equivalent Number (LEN) 2 NMEA 2000 Port (NGX-1-ISO / NGX-1-USB) Speed / Baud Rate 250kbps Connectivity M12 Male (A coded) ISO Port (NGX-1-ISO) Compatibility Full NMEA 0183, RS232 & RS422 compatibility. RS485 Listener compatible Speed/Baud Rate 4800 to 230400 Baud Output Voltage Drive >= 2.1V (differential) into 100Ω Output Current Drive 20mA max. Output Protection Short circuit and ESD Input Voltage Tolerance -15V to +15V continuous -35V to +35V short term (< 1 second) Input Protection Current limited and overdrive protection to 40VDC Connectivity 5mm stripped and tinned wire Cable Length 0.75m USB Port (USB Variant) Compatibility USB 1.1, 2.0 and 3.0 Speed / Baud Rate 4800 to 230400 Baud Connectivity Male type A plug moulded onto cable Cable Length 1.8m Isolation NMEA 2000 Port to ISO Port USB Port Galvanic Isolation, Hi-Pot tested to 1000V Mechanical Housing Material Body Flame retardant PBT Weight NGX-1-ISO 112g	Load Equivalent Number (LEN)	2
Supply Current (USB Host Port) Supply Current (NMEA 2000 Port) Supply Current (NMEA 2000 Port) Coad Equivalent Number (LEN) Speed / Baud Rate Speed / Baud Rate Speed / Baud Rate Speed/Baud	Power Supply (USB Variants)	
Supply Current (NMEA 2000 Port) Load Equivalent Number (LEN) NMEA 2000 Port (NGX-1-ISO / NGX-1-USB) Speed / Baud Rate Connectivity Speed / Baud Rate Pull NMEA 0183, RS232 & RS422 compatibility. RS485 Listener compatibile Speed/Baud Rate Output Voltage Drive Output Current Drive Output Protection Input Protection Input Protection Connectivity Smm stripped and tinned wire Cable Length Connectivity Cable Length Speed / Baud Rate A800 to 230400 Baud Current limited and overdrive protection to 40VDC Connectivity Smm stripped and tinned wire Cable Length O.75m USB Port (USB Variant) Compatibility USB 1.1, 2.0 and 3.0 Speed / Baud Rate A800 to 230400 Baud Connectivity USB 1.1, 2.0 and 3.0 Speed / Baud Rate Connectivity Cable Length 1.8m Isolation NMEA 2000 Port to ISO Port NMEA 2000 Port to USB Port Mechanical Housing Material Body Flame retardant Polycarbonate Flame retardant PBT Weight NGX-1-ISO Housing Material End Caps Flame retardant PBT Weight NGX-1-ISO ISONGTHER 250kbps A120kbps A120kbps A120kbps A200kbps A20	Supply Voltage (NMEA 2000 Port)	9 to 30V DC
Load Equivalent Number (LEN) 2 NMEA 2000 Port (NGX-1-ISO / NGX-1-USB) Speed / Baud Rate 250kbps Connectivity M12 Male (A coded) ISO Port (NGX-1-ISO) Full NMEA 0183, RS232 & RS422 compatibility. RS485 Listener compatible Speed/Baud Rate 4800 to 230400 Baud Output Voltage Drive >= 2.1V (differential) into 100Ω Output Current Drive 20mA max. Output Protection Short circuit and ESD Input Voltage Tolerance -15V to +15V continuous -35V to +35V short term (< 1 second)	Supply Current (USB Host Port)	10mA @ 5V DC
NMEA 2000 Port (NGX-1-ISO / NGX-1-USB) Speed / Baud Rate 250kbps Connectivity M12 Male (A coded) ISO Port (NGX-1-ISO) Compatibility Full NMEA 0183, RS232 & RS422 compatibility. RS485 Listener compatible Speed/Baud Rate 4800 to 230400 Baud Output Voltage Drive >= 2.1V (differential) into 100Ω Output Current Drive 20mA max. Output Protection Short circuit and ESD Input Voltage Tolerance -15V to +15V continuous -35V to +35V short term (< 1 second)	Supply Current (NMEA 2000 Port)	62mA @ 9V DC
Speed / Baud Rate 250kbps Connectivity M12 Male (A coded) ISO Port (NGX-1-ISO) Compatibility Full NMEA 0183, RS232 & RS422 compatibility. RS485 Listener compatible Speed/Baud Rate 4800 to 230400 Baud Output Voltage Drive >= 2.1V (differential) into 100Ω Output Current Drive 20mA max. Output Protection Short circuit and ESD Input Voltage Tolerance -15V to +15V continuous -35V to +35V short term (< 1 second)	Load Equivalent Number (LEN)	2
Connectivity M12 Male (A coded) ISO Port (NGX-1-ISO) Full NMEA 0183, RS232 & RS422 compatibility. RS485 Listener compatible Speed/Baud Rate 4800 to 230400 Baud Output Voltage Drive >= 2.1V (differential) into 100Ω Output Current Drive 20mA max. Output Protection Short circuit and ESD Input Voltage Tolerance -15V to +15V continuous -35V to +35V short term (< 1 second)	NMEA 2000 Port (NGX-1-ISO / NGX-1-USB)	
ISO Port (NGX-1-ISO) Compatibility Full NMEA 0183, RS232 & RS422 compatibility. RS485 Listener compatible Speed/Baud Rate 4800 to 230400 Baud Output Voltage Drive >= 2.1V (differential) into 100Ω Output Current Drive 20mA max. Output Protection Short circuit and ESD Input Voltage Tolerance -15V to +15V continuous -35V to +35V short term (< 1 second)	Speed / Baud Rate	250kbps
Compatibility Full NMEA 0183, RS232 & RS422 compatibility. RS485 Listener compatible Speed/Baud Rate 4800 to 230400 Baud Output Voltage Drive >= 2.1V (differential) into 100Ω Output Current Drive 20mA max. Output Protection Short circuit and ESD Input Voltage Tolerance -15V to +15V continuous -35V to +35V short term (< 1 second)	Connectivity	M12 Male (A coded)
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Output Voltage Drive >= 2.1V (differential) into 100Ω Output Current Drive 20mA max. Output Protection Short circuit and ESD Input Voltage Tolerance -15V to +15V continuous -35V to +35V short term (< 1 second)	Compatibility	
Output Current Drive 20mA max. Output Protection Short circuit and ESD Input Voltage Tolerance -15V to +15V continuous -35V to +35V short term (< 1 second) Input Protection Current limited and overdrive protection to 40VDC Connectivity 5mm stripped and tinned wire Cable Length 0.75m USB Port (USB Variant) Compatibility USB 1.1, 2.0 and 3.0 Speed / Baud Rate 4800 to 230400 Baud Connectivity Male type A plug moulded onto cable Cable Length 1.8m Isolation NMEA 2000 Port to ISO Port Uses IsoDrive™, Hi-Pot tested to 1000V NMEA 2000 Port to USB Port Galvanic Isolation, Hi-Pot tested to 1000V Mechanical Housing Material Body Flame retardant Polycarbonate Housing Material End Caps Flame retardant PBT Weight NGX-1-ISO 112g	Speed/Baud Rate	4800 to 230400 Baud
Output Protection Input Voltage Tolerance Input Voltage Tolerance Input Protection Current limited and overdrive protection to 40VDC Connectivity Smm stripped and tinned wire Cable Length USB Port (USB Variant) Compatibility USB 1.1, 2.0 and 3.0 Speed / Baud Rate Connectivity Male type A plug moulded onto cable Cable Length 1.8m Isolation NMEA 2000 Port to ISO Port NMEA 2000 Port to USB Port Mechanical Housing Material Body Housing Material End Caps Flame retardant PBT Weight NGX-1-ISO Turrent limited and overdrive protection to 40VDC Current limited and overdrive protection to 40VDC USB 1.1, 2.0 and 3.0 Male type A plug moulded onto cable 1.8m Isolation Flame retardant Potycarbonate	Output Voltage Drive	>= 2.1V (differential) into 100Ω
Input Voltage Tolerance -15V to +15V continuous -35V to +35V short term (< 1 second) Input Protection Current limited and overdrive protection to 40VDC Connectivity 5mm stripped and tinned wire 0.75m USB Port (USB Variant) Compatibility USB 1.1, 2.0 and 3.0 Speed / Baud Rate 4800 to 230400 Baud Connectivity Cable Length 1.8m Isolation NMEA 2000 Port to ISO Port NMEA 2000 Port to USB Port Weight NGX-1-ISO 112g -15V to +15V continuous -35V to +35V	Output Current Drive	20mA max.
Input Voltage Tolerance +35V short term (< 1 second) Input Protection Current limited and overdrive protection to 40VDC Connectivity 5mm stripped and tinned wire Cable Length 0.75m USB Port (USB Variant) Compatibility USB 1.1, 2.0 and 3.0 Speed / Baud Rate 4800 to 230400 Baud Connectivity Male type A plug moulded onto cable Cable Length 1.8m Isolation NMEA 2000 Port to ISO Port USB SoDrive™, Hi-Pot tested to 1000V NMEA 2000 Port to USB Port Galvanic Isolation, Hi-Pot tested to 1000V Mechanical Housing Material Body Flame retardant Polycarbonate Housing Material End Caps Flame retardant PBT Weight NGX-1-ISO 112g	Output Protection	Short circuit and ESD
Input Protection Connectivity Cable Length USB Port (USB Variant) Compatibility Speed / Baud Rate Connectivity Cable Length USB 1.1, 2.0 and 3.0 Speed / Baud Rate Connectivity Male type A plug moulded onto cable Cable Length 1.8m Isolation NMEA 2000 Port to ISO Port NMEA 2000 Port to USB Port Weight NGX-1-ISO Uses IsoDrive™, Hi-Pot tested to 1000V Flame retardant Polycarbonate Flame retardant PBT Weight NGX-1-ISO 112g	Input Voltage Tolerance	
Cable Length USB Port (USB Variant) Compatibility USB 1.1, 2.0 and 3.0 Speed / Baud Rate 4800 to 230400 Baud Connectivity Male type A plug moulded onto cable Cable Length 1.8m Isolation NMEA 2000 Port to ISO Port WEA 2000 Port to USB Port Uses IsoDrive™, Hi-Pot tested to 1000V Mechanical Housing Material Body Flame retardant Polycarbonate Housing Material End Caps Flame retardant PBT Weight NGX-1-ISO 112g	Input Protection	
USB Port (USB Variant) Compatibility USB 1.1, 2.0 and 3.0 Speed / Baud Rate 4800 to 230400 Baud Connectivity Male type A plug moulded onto cable Cable Length 1.8m Isolation NMEA 2000 Port to ISO Port NMEA 2000 Port to USB Port Galvanic Isolation, Hi-Pot tested to 1000V Mechanical Housing Material Body Housing Material End Caps Flame retardant Polycarbonate Housing Material End Caps Flame retardant PBT Weight NGX-1-ISO 112g	Connectivity	5mm stripped and tinned wire
Compatibility USB 1.1, 2.0 and 3.0 Speed / Baud Rate 4800 to 230400 Baud Connectivity Male type A plug moulded onto cable Cable Length 1.8m Isolation NMEA 2000 Port to ISO Port NMEA 2000 Port to USB Port Galvanic Isolation, Hi-Pot tested to 1000V Mechanical Housing Material Body Flame retardant Polycarbonate Housing Material End Caps Flame retardant PBT Weight NGX-1-ISO 112g	Cable Length	0.75m
Speed / Baud Rate 4800 to 230400 Baud Connectivity Male type A plug moulded onto cable Cable Length 1.8m Isolation NMEA 2000 Port to ISO Port Uses IsoDrive™, Hi-Pot tested to 1000V NMEA 2000 Port to USB Port Galvanic Isolation, Hi-Pot tested to 1000V Mechanical Housing Material Body Flame retardant Polycarbonate Housing Material End Caps Flame retardant PBT Weight NGX-1-ISO 112g	USB Port (USB Variant)	
Connectivity Cable Length 1.8m Isolation NMEA 2000 Port to ISO Port NMEA 2000 Port to USB Port Mechanical Housing Material Body Housing Material End Caps Weight NGX-1-ISO Male type A plug moulded onto cable Salvanic Isolation, Hi-Pot tested to 1000V Flame retardant Polycarbonate Flame retardant PBT	Compatibility	USB 1.1, 2.0 and 3.0
Cable Length Isolation NMEA 2000 Port to ISO Port NMEA 2000 Port to USB Port Uses IsoDrive™, Hi-Pot tested to 1000V NMEA 2000 Port to USB Port Galvanic Isolation, Hi-Pot tested to 1000V Mechanical Housing Material Body Flame retardant Polycarbonate Housing Material End Caps Flame retardant PBT Weight NGX-1-ISO 112g	Speed / Baud Rate	4800 to 230400 Baud
Isolation NMEA 2000 Port to ISO Port NMEA 2000 Port to USB Port Uses IsoDrive™, Hi-Pot tested to 1000V Mechanical Housing Material Body Housing Material End Caps Flame retardant Polycarbonate Housing Material End Caps Flame retardant PBT Weight NGX-1-ISO 112g	Connectivity	
NMEA 2000 Port to ISO Port Uses IsoDrive™, Hi-Pot tested to 1000V NMEA 2000 Port to USB Port Galvanic Isolation, Hi-Pot tested to 1000V Mechanical Housing Material Body Housing Material End Caps Flame retardant Polycarbonate Flame retardant PBT Weight NGX-1-ISO 112g	Cable Length	1.8m
NMEA 2000 Port to ISO Port 1000V NMEA 2000 Port to USB Port Galvanic Isolation, Hi-Pot tested to 1000V Mechanical Housing Material Body Housing Material End Caps Flame retardant PBT Weight NGX-1-ISO 11000V Galvanic Isolation, Hi-Pot tested to 1000V Flame retardant Polycarbonate Housing Material End Caps Flame retardant PBT	Isolation	
to 1000V Mechanical Housing Material Body Housing Material End Caps Flame retardant Polycarbonate Flame retardant PBT Weight NGX-1-ISO 112g	NMEA 2000 Port to ISO Port	
Housing Material Body Flame retardant Polycarbonate Housing Material End Caps Flame retardant PBT Weight NGX-1-ISO 112g	NMEA 2000 Port to USB Port	
Housing Material End Caps Flame retardant PBT Weight NGX-1-ISO 112g	Mechanical	
Weight NGX-1-ISO 112g	Housing Material Body	Flame retardant Polycarbonate
	Housing Material End Caps	Flame retardant PBT
Weight NGX-1-USB 113g	Weight NGX-1-ISO	112g
	Weight NGX-1-USB	113g

Approvals and Certifications	
NMEA 2000	NMEA 2000 Certified
NMEA 0183	Meets IEC 61162-1 & 61162-2 Requirements
RoHS and REACH	Compliant
Module Certification	KCC / BQB / IC / Wi-Fi / NCC / MIC / FCC DSS / FCC DTS / SRRC / CE
EMC	EN 60945:2002 Edition 4 (section 9.3) EN 301 489-1 V2.2.3 EN 301 489-17 V3.2.4 EN 300 328 V2.2.2 Radiated Spurious Emissions FCC Part 15b ICES-003 Iss 7
Environmental Protection	IP68
Operating Temperature	-25°C to +70°C
Storage Temperature	-30°C to +70°C
Recommended Humidity	0 to 93% RH @ 40°C
Guarantee	3 years, extended to 5 years upon registration

Note: Contains a Wi-Fi module which is DISABLED. Freq Band 2412-2484MHz, Max output Power 19.22dBm, int. antenna 3.4dBi

Product Dimensions

