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Issue v4.1



OPTO-4
Serial Opto Isolator

Isolate an RS232 (PC) port to protect against ground loops.

The OPTO-4 provides a safe and low cost way of connecting an NMEA 0183 system to a PC or any other device with a standard RS232 9-pin port.

As a bi-directional NMEA 0183 to RS232 interface cable, the OPTO-4 utilises OPTO-isolation to protect the PC input and spike protection for the PC output, providing comprehensive isolation of PC hardware when connecting to an NMEA 0183 bus.

If isolation in both directions is required, the Actisense USG-2 offers bi-directional isolation in a USB to RS422 (NMEA 0183) form.

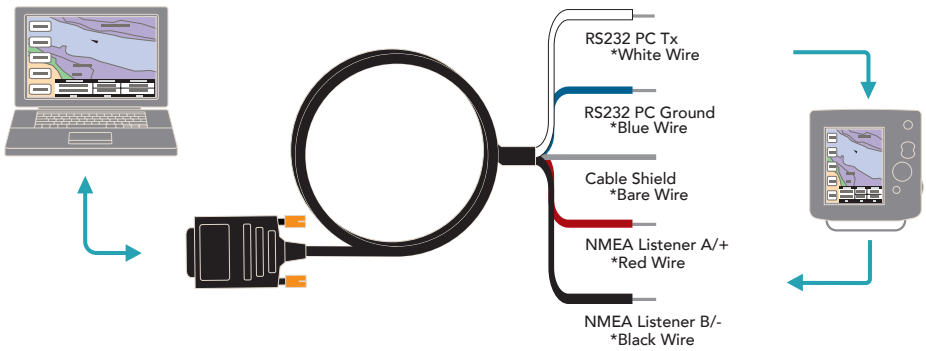
The Actisense design integrates an over-moulded case for excellent water resistance and a small footprint for installation into tight spaces.

The OPTO-4 takes power from the host RS232 signals including TX and the handshaking lines RTS and DTR, making the OPTO-4 suitable for most PC serial ports.

In systems that cannot provide power on the handshaking lines, e.g. serial devices with only Rx and Tx lines, a DC power supply can be used.

Note: Connecting an external power supply may create a ground loop between the PC port and the supply. Check that the supply ground is at the same potential as the PC ground before connecting.

Please refer to the Quick Start Guide for detailed wiring instructions, including how to use an external power supply.



Benefits

Protects PC from damage

Water resistant cable

Features:

One OPTO-isolated input

One NMEA output

Up to 115200 baud

Port powered

Shielded cable and case

What is OPTO-Isolation?

Ground loops are very easy to create in an NMEA0183 environment without even knowing about it and can wreak havoc with NMEA 0183 devices.

OPTO-isolation (also referred to as optical isolation) is a way of creating a physical barrier to the flow of electrical current to prevent ground loops from happening. Electrical energy is converted to light and transmitted over a small gap where it is converted back to electrical energy using an electronic circuit.

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OPTO-4 Specifications

Electrical	
Galvanic Isolation	NMEA Listener Only
NMEA Listener / Input Voltage	+/-15V Continuous Maximum +/-35V Max < 1 Second
NMEA Listener / Input Signal Thresholds	Logic ‘0’ +2V to +15V, Logic ‘1’-15V to 0V
NMEA Talker / Output Voltage & Current	Dependant on Host RS232 Interface. Typically +/-7V to +/-15V @ 10mA Max
RS232 Voltage on Host	+/-7V to +/-15V
RS232 Port Total Current Consumption	2mA to 5mA depending on RS232 Voltage
Speed / Baud Rate	4800 to 115200 Baud
Mechanical	
Housing Material	PVC Black
Thumb Screw Material	PVC Orange
Screw	Steel, Nickel Plated, M2.8 Thread
DB9 Connector	9 Pin Female
Cable Length	1.5m
Cable Wire	22AWG (17/34AWG) Tinned Stranded Copper
Cable Jacket	PVC
Shield	Al Mylar Foil
Cable Outer Diameter	5.5mm
Approvals and Certifications	
Operating Temperature	-20°C to +70°C
Electrical Specification	Meets IEC 61162-2
Weight	100g
Guarantee	5 years
UL Certification	Cable E137250
RoHS Compliant	

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