



Article Number - 00019-2011

Date - 22nd Mar 2011

Article applies to - All Digital Yacht **products with NMEA Output**

ISSUE: Simple LED Test of an NMEA0183 Output

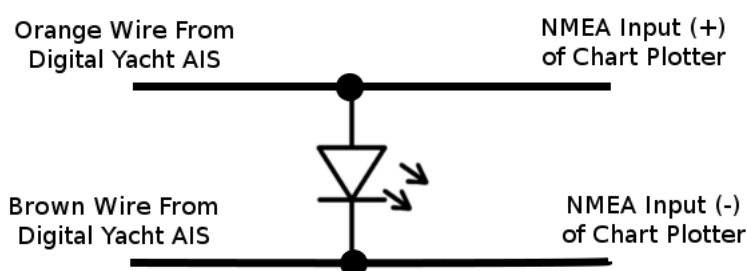
Often when connecting an AIS or GPS unit to another piece of equipment it is useful to be able to test if there is NMEA0183 data being transmitted. With a normal DC voltage measurement using a multi-meter, it is often inconclusive and can actually confuse the situation if you misinterpret the voltage measurement.

A much better test is to use a Light Emitting Diode (LED), which are available from most electronic component shops such as Radio Shack, Maplin, etc. Add an LED to your tool box and you will always be able to quickly test NMEA0183 data onboard your boat, using the guide below.

SOLUTION:

An LED is basically a special type of diode that emits a light when a DC voltage is connected to it. All NMEA0183 outputs should be able to drive an LED and make it flash if they are working correctly and transmitting NMEA data.

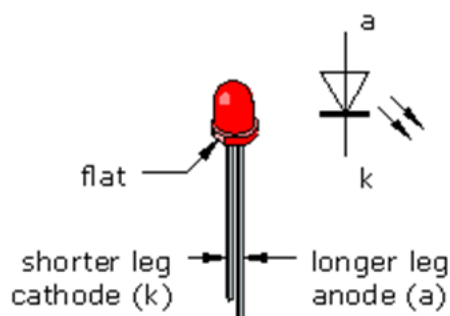
An LED is polarity conscious and will only flash when there is positive voltage on its “anode” compared to its “cathode” (see diagram below).



IMPORTANT NOTE

LED will flash in sequence to the NMEA data being transmitted.

If there are very few AIS targets, then the flash will be short and infrequent.



To test an NMEA0183 output, simply connect the LED across the NMEA + (A) and NMEA – (B) connections. In one direction the LED will not illuminate and in the other direction the LED should flash in time to the NMEA0183 data being received. No damage can be done to either the LED or the equipment being tested by connecting it the wrong way round.

If the LED does not illuminate in either direction then there is no NMEA0183 data being transmitted and the equipment that should be transmitting must be considered to be at fault. To be absolutely sure, it is recommended that you disconnect the transmitting equipment from the NMEA0183 input of the receiving equipment (in case the input has a fault/short) and do the LED test again just on the transmitter output connections.

If the LED also fails to illuminate in either direction with the transmitting unit disconnected from the receiving unit, then the transmitting equipment definitely has a fault and should be returned to the manufacturer for repair.