Parallel port printer interface. KW909-PP

INTRODUCTION

Many ships have a data-logging printer to print engine revs, telegraph, etc.

This interface converts that data into a form that can be used by modern electronics.

- NMEA 0183 suitable for a voyage data recorder
- RS232 compatible data for a printer

The interface appears as a printer to the ship's computer so it need not know the difference. That is, it emulates the original simple printers, but if the computer expects an intelligent response back it will not get it. For the NMEA 0183 or IEC 61162 output the data is filtered so that only permitted characters are transmitted. Data fields become comma-separated to ease later analysis.

SPECIFICATION

INPUT 1: Centronics type 36 way. This is the standard printer parallel port connection.

INPUT 2: Optional NMEA 0183 from a GPS. (GGA, VTG, RMC, ZDA)

OUTPUT 1: NMEA 0183, 5 volt level via 47 ohms per leg at 10 mA.

$ERTXT,01,N,T, followed by the data from the parallel port input, filtered as described.
"N" increases with each sentence from 01 to 99.
"T" is a number 1 to 4, set by DIP switch 3 & 4, to permit 4 interfaces to be used in a system.

Optional output: (switch 1 set on) $GPGGA, $GPVTG and $GPZDA sentences.
Data rate: in time with the GPS GGA input, which is expected to be 1 per second.

DATA FILTER: All control characters below 20 Hex including LF are ignored except for the these...
CR: 0D Hex.   Used to indicate the end of the input data.
HT: 09 Hex.   Horizontal Tab, replaced with "," comma.

"SPACE": The first space of a string of spaces is replaced by "," and any spaces immediately following are ignored.

" $ * ! \ ^ ~ " and codes above 7E hex are all ignored, being reserved by NMEA 0183.

The "CR" character on the parallel data input is essential to indicate the end of a line of data.

DIP switch 2 option:
Off: allows 85 filtered characters of data in the message. If the data input from the parallel port is longer than that the additional characters are lost.
On: allows only 61 filtered characters to comply with NMEA 0183's maximum string length.

OUTPUT 2: RS232 compatible 5 volt level. Repeats the parallel port data at 4800 baud.
This output is to be used by a new printer, and contains any original control codes.

POWER: 18 to 36 volts DC at less than 0.2 amps. Intended for 24 volt professional systems.
Power is isolated from the interface so that the output data may be grounded safely.

ENCLOSURE: 222 x 155 x 55 mm diecast aluminium box painted duck-egg blue.

Andrew Fairgrieve 09:22   07/06/2002