



DIGITAL TO ANALOGUE 4-20 mA or +/- 10v INTERFACE. KW920 - SV

INTRODUCTION

The interface converts NMEA 0183 data from navigation instruments or sensors such as echo sounder & log into a 4 to 20 mA current loop and voltages as used to drive analogue indicators, data loggers, chart recorders and engine control systems. The interface can output:

- 4-20 mA OR
- +/-10 volts or
- +/-5v or 0 to+5 volts (To special order, resistor change.)

The list of data handled so far is shown below. If your requirement is not here let us know and we can program the interface to suit you. The interface is made for either 4-20 mA or voltage output. In the past we supplied without the voltage output, but in future it will be for +/-10v, unless built to order.



SPECIFICATION

INPUT: NMEA 0183, RS422 or RS232 via opto isolated channel.

POWER: 9 to 28 volts DC at less than 200 mA.

4-20 mA OUTPUT: Max voltage 10 volts so 500 ohms is the highest value load. Accuracy is typically better than 1%. The current goes to zero if there is no input data. Isolated from power, data and ground.

VOLTAGE OUTPUT: +/- 10 volts
10K ohm or greater load.

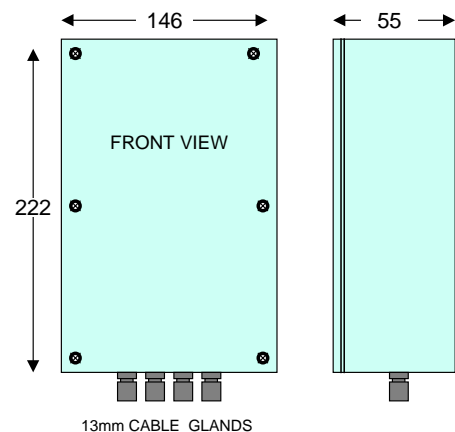
HOUSING: Duck Egg Green diecast box 222 x 155 x 55 mm for bulkhead mounting.
Fitted with cable glands.
Removable terminal blocks on the PCB.

FEATURES: NMEA 0183 test point for monitoring & test.
Bi-colour status LED.

OPTIONS: Selected by DIP switch on the PCB.

NO-INPUT: If there is no data input the output current will fall to less than 1 mA. Receiving equipment should recognise this as being a fault condition. In the case of voltage output it will go to zero.

Updated 22/06/2006 by Andrew Fairgrieve.



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Switch position**123456** **0 = off. 1 = on.**

Option 0. 000000	IN: All valid gyro or magnetic NMEA heading sentences. HE, HC, GP. OUT: 4 -20 mA for 000 to 360 degrees. (Precision is not to a deg.)	
Option 1. 000001	IN: IN: Marimatech Echo Sounder data. (E-Sea sound format.) OUT: 4 -20 mA for 0 to 160 metres depth.	
Option 2. 000010	IN: NMEA 0183 rudder angle, \$ERRSA,x.x,A,x.x,A cr lf Where the values are in degrees 0 to 359.9 OUT: 4 -20 mA for 0 to 360 degrees. (Precision not to 1 deg)	
Option 3. 000011	IN: \$ERRPM Revs per minute OUT: Stbd inner 4 -20 mA for -1300 to +1300 RPM	
Option 4. 000100	IN: \$ERRPM Revs per minute OUT: Starboard outer 4 -20 mA for -1300 to +1300 RPM	
Option 5. 000101	IN: Ground or water speed NMEA 0183 \$--VBW OUT: 4 -20 mA for -8.0 to +30.0 knots	
Option 6. 00 0110	IN: GPS speed over ground \$GPVTG, RMC, 0 to 30 knots. OUT: 4 -20 mA for -8.0 to +30.0 knots	
Option 7. 00 0111	IN: GPS speed over ground, \$GPVTG, RMC, 0 to 30 knots OUT: 4 -20 mA for -8.0 to 30.0 knots	
Option 8. 001000	IN: Depth \$SDDBT or \$SDDPT OUT: 4 -20 mA for 0 to 50 metres. (Over 50 metres = 20 mA,)	
Option 9. 001001	IN: Rudder angle \$AGRSA, \$APRSA or \$IIRSA OUT: 4 -20 mA for +/- 45 degrees. 12 mA = Midships	
Option 10. 001010	IN: Rudder angle \$AGRSA, \$APRSA or \$IIRSA OUT: 4 -20 mA for +/- 30 degrees. 12 mA = Midships	
Option 11. 001011	IN: \$HEHDT heading OUT: +/- 10 volts. -10v= 180deg. 0v=0 deg. +10v=179.9	
Option 12. 001100	IN: Rudder angle \$AGRSA, \$APRSA, or \$IIRSA OUT: +/- 10 volts for +/- 40 degrees.	
Option 13. 001101	IN: Water speed OUT: 4-20 mA for -8 to +30 knots	
Option 14. 001110	IN: Heading OUT: Sine of heading +/- 10 volts peak to peak	
Option 15. 001111	IN: Heading OUT: Cosine of heading +/- 10 volts peak to peak	
Option 16, 010000	IN: GPS speed OUT: 4-20 ma for 0 to 16 knots	
Option 17. 010001	IN: Log speed OUT: 4-20 mA for 0 to 16 knots	
Option 18. 010010	IN: Echosounder OUT: 4-20 mA for 0 to 40 metres	Program SV19 and later
Option 19. 010011	A test function	
Option 20. 010100	IN: Rate of Turn HE/HC/II/TI/GP, ROT OUT: +/- 10v = +/- 500 degrees per minute	Program SV22 and later
Option 21. 010101	IN: Rate of Turn HE/HC/II/TI/GP, ROT OUT: +/- 10v = +/- 30 degrees per minute	
Option 22. 010110	IN: Rate of Turn HE/HC/II/TI/GP, ROT OUT: +/- 10v = +/- 50 degrees per minute	

Option 23. IN: Rate of Turn HE/HC/II/TI/GP, ROT
010111 OUT: +/- 10v = +/- 100 degrees per minute

Option 24. IN: Rate of Turn HE/HC/II/TI/GP, ROT
011000 OUT: +/- 10v = +/- 180 degrees per minute

Option 25. IN: Rate of Turn HE/HC/II/TI/GP, ROT
011001 OUT: +/- 10v = +/- 300 degrees per minute