

KC-2W Quick Installation Manual



N2K and NMEA0183 bidirectional converter

Note :

- *In this manual N2K means NMEA2000*
- *PGN is the data in the N2K network*

Verifying the contents

When you first open the box of your KC-2W, N2K and NMEA0183 bidirectional converter, please confirm that you have the following items inside the box:

- KC-2W main unit attached one end 1.2 meters cable with M12 male 5 pins connector (N2K) and the other end 1.2 meters cable with open wires (NMEA0183)
- Mounting screws X 4 pcs.
- Manual (quick installation manual)

Interconnections



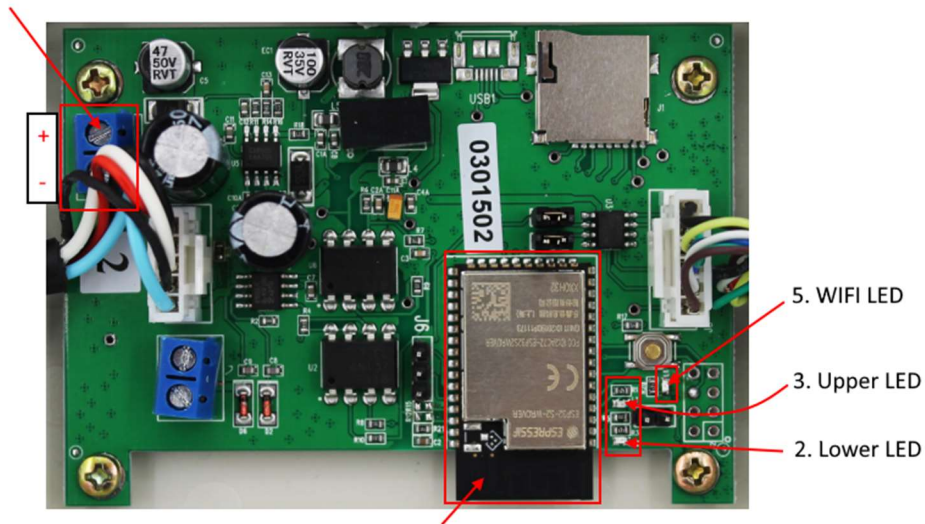
Descriptions

KC-2W is a bi-directional converter, it converts NMEA0183 sentences to N2K PGNs and converts N2K PGNs to NMEA0183 sentences.

KC-2W is for individual user or marine electronic company if they want :

- Connect equipment with only support NMEA0183 to the N2K network or vice versa
- Install N2K network onboard but they have equipment onboard only support NMEA0183
- Sharing PGNs and NMEA0183 sentences from their equipment onboard with their mobile phone or tablet

1. External power input (from 9V ~ 30V)



4. WIFI module

1. External power input

On some circumstance if there is no power from the N2K network you can connect an external power to your KC-2W with polarity as shown. The input voltage range is from 9VDC to 30VDC.

Note : Please DO NOT any power to this terminal if there are power from N2K network.

2. Lower LED

It has two functions :

- Power indicator, it lights up when there is power from N2K or you connected the external power input.
- N2K data indicator, it is flashing when there are data detected on N2K network

Status 1 : There are PGN input and output on N2K port, quick flash 1 second then light up 1 second alternatively

Status 2 : Only PGN output appear on N2K port (no input), quick flash 1 second and OFF 1 second alternatively

Status 3 : Only PGN input appear on N2K port(no output), light up 1 second and OFF 1 second alternatively.

Status 4 : No PGN input or output on N2K port, light up only indicate power up.

3. Upper LED

It is NMEA0183 data indicator

Status 1 : There are NMEA0183 sentences input and output appear on NMEA0183 port, quick flash 1 second and light up 1 second alternatively

Status 2 : Only NMEA0183 sentences output appear on NMEA0183 port (no input), quick flash 1 second and OFF 1 second alternatively.

Status 3 : Only NMEA0183 sentences input appear on NMEA0183 port (no output), light up 1 second and OFF 1 second alternatively.

Status 4 : No NMEA0183 sentences input or output appear on NMEA0183 port, OFF

4. WIFI module

It has two functions :

- You can connect NMEA0183 sentences or N2K PGNs to mobile or tablet.
- Configuration and firmware update

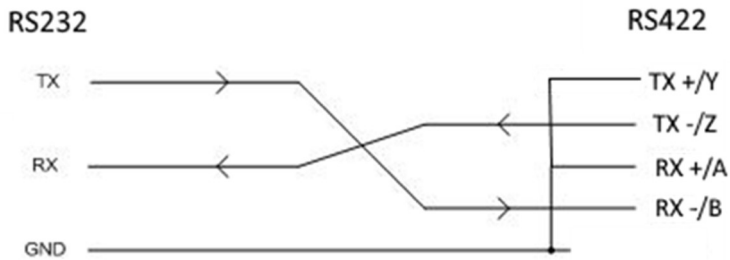
Note : For more detail please visit : <http://onwamarine.com/kc-2w-new/>

Connections

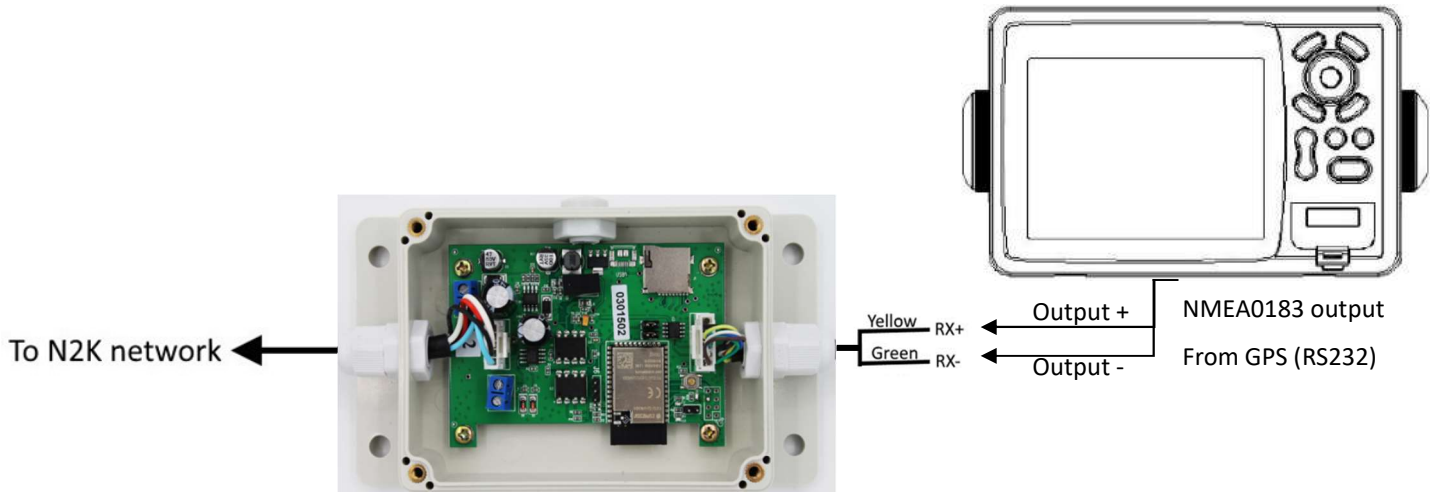
1. How to connect NMEA0183 output from external equipment to KC-2W

The electrical interface of NMEA0183 input of KC-2W is RS422 and it support auto baudrate input among 4800, 9600, 38400 and 115200

It can also connect to RS232 interface as shown :



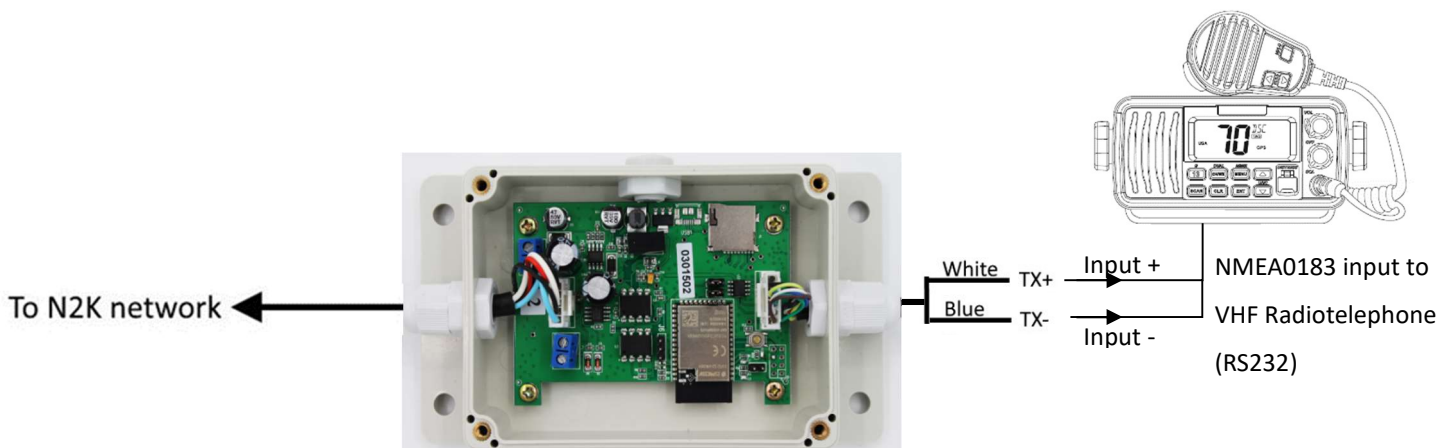
1.1 Example of connecting GPS output NMEA0183 data to KC-2W



2. How to connect NMEA0183 output from KC-2W to external equipment

The default output baudrate of KC-2W is 38400, for baudrate other than 38400 it needs to re-configure the output baudrate by “KC-2W PC user software” which you can download from Onwa marine website : <http://onwamarine.com/kc-2w-new/>

2.1 Example of connecting KC-2W NMEA0183 output to a VHF radiotelephone



Default settings

- N2K support : All ON
- NMEA0183 support : All ON
- NMEA0183 input baudrate : Auto-detect
- NMEA0183 output : 38400
- WiFi Settings :
- WiFi type : HotSpot
- WiFi user name : KC2W_ESP32_xxxxxxxx
- WiFi password : 12345678

Specifications

1. Power supply (N2K Port)

1.1 Electrical: 9 ~ 30VDC

1.2 Current drain : 50ma at 12VDC

1.3 Protection: overvoltage, power transient and accidental reverse polarity protection

2. N2K Port (IEC61162-3)

2.1 Support PGNs

126992 , 127237, 127245, 127250 , 127251 , 127258 , 127488, , 128267, 128275, 129025 , 129026 , 129029 ,
129033 , 129038, 129039, 129040, 129041, 129044 , 129283 , 129284 , 129291 , 129539 , 129540 , 129793 ,
129794 , 129795, 129797, 129798 , 129801, 129802, 129809 , 129810, 129811, 129812, 130306 , 130310 ,
130311 , 130312

2.2 Electrical : Opto-isolated on N2K Can bus

2.3 Connector : M12 male

2.4 Cable length : 1.2 meter

2.5 Factory default : All above supported PGNs are enabled

3. NMEA0183 Port(IEC61162-1)

3.1 Support sentences :

AAM, AMB, APB, BBM, BWC, DBT, DPT, DSC, DSE, GGA, GLL, GSA, GST, GSV, HDG, HDM, HDT, HSC, MDA, MTW,
MWD, MWV, RMB, RMC, ROT, RPM, RSA, VBW, VDM, VDO, VDR, VHW, VLW, VTG, VWR, XTE, XDR, ZDA,

3.2 Electrical :

3.2.1 Output : RS422

3.2.2 Input : RS422

3.3 Baudrate :

3.3.1 Input : Auto detect (up to 38400)

3.3.2 Output : Configurable (factory default 38400)

3.3.3 Factory default : All above supported NMEA0183 are enabled

4. WIFI

4.1 Mode : Hotspot (default) or WIFI terminal

4.2 Username : KC2W_ESP32_xxxxxxx (default)

4.3 Password : 12345678 (default)

4.4 IP : 192.168.4.1

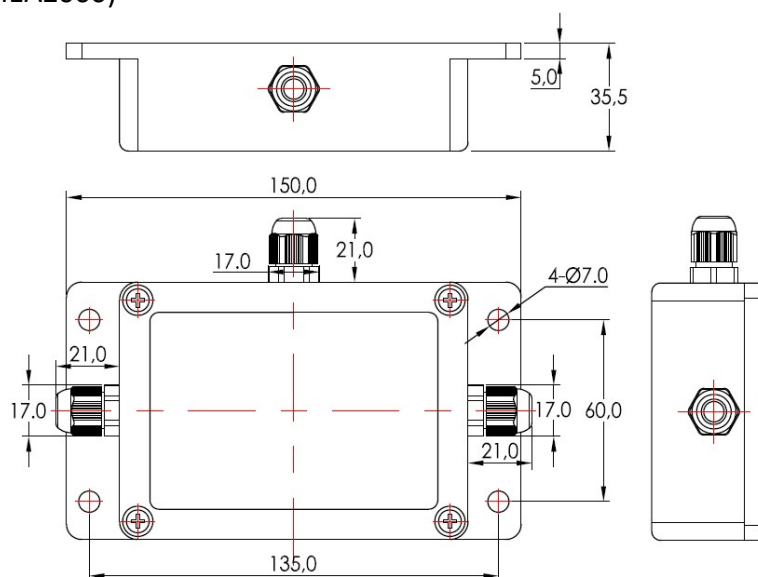
4.5 Port : 10110 (NMEA0183) and 10111 (NMEA2000)

5. Environmental conditions

5.1 Working temperature : -20°C to +55°C

5.2 Humidity : 93% ±3% on 40°C

5.3 Waterproofing : IPX67



*Measurement : in mm

For more details please download the full manual from <http://www.onwamarine.com>