NMEA Flash input interface

Product reference : 90-60-360

REV: 2

USER GUIDE
and
INSTALLATION GUIDE

nke - Sailing competition

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1 PRESENTATION

The ***NMEA input interface*** allows the connection to the ***Topline*** bus of any instrument fitted with an NMEA 0183 output (GPS, PC, etc.). It is a one-way communication gateway, which converts the NMEA data transmitted by the instrument, into ***Topline*** channels. These can then be used on the instruments of your ***Topline*** installation : display, driver, calculator.

The ***NMEA input interface*** allows the connection of one single instrument that delivers NMEA frames. If you wish to connect a second instrument, you can connect it either to the NMEA input of a ***TOPLINE*** multifunction system, or to a second ***NMEA input interface***.

Please note that an NMEA frame transmitted by an instrument (GPS, PC, etc.) cannot replace a channel already created by a ***Topline*** instrument of your installation.

IMPORTANT

- Please read this guide completely before starting the installation.
- Any electrical connection on the ***TOPLINE bus*** must carried out with the terminal box 90-60-121. Only use ***TOPLINE bus*** cable 20-61-001.

2 LIST OF IDENTIFIED NMEA FRAMES

The ***NMEA input interface*** identifies the frames below. The interface is thus able to create up to 40 NMEA channels on the Topline bus of your installation. These NMEA channels do not have sub-channels.

Please note :

- ***Topline*** channels have priority : an NMEA channel will not be taken into account if an equivalent ***Topline*** channel is already present on the bus.

- When the instrument connected to the ***NMEA input interface*** no longer transmits NMEA frames, the last values received remain on display for 64 seconds.

Channels created		**NMEA frames used**		
N°	Label	Priority 1	Priority 2	Priority 3
1	HEADING_MAG	HDG	VHW	
2	TRUE_HEADING	HDT	VHW	
3	DEPTH	DPT	DBT	--
4	MINSEC	ZDA	RMC	--
5	LOCHT	VLW	--	--
6	LOCHJ	VLW	--	--
7	HOURDAY	ZDA	RMC	--
8	TEMP_AIR	MTA	XDR	--

9	TEMP_WATER	MTW	--	--
10	BARO	MMB	XDR	--
11	SPEEDO	VHW	--	--
12	ANEMO	MWV	VWR	--
13	APP_WIND_ANG	MWV	VWR	--
14	DIST_TO_WP	BWC	RMB	--
15	HEAD_TO_WP (true)	BWC	RMB	--
16	X_TRACK	APA	APB	XTE
17	BOTT_SPD	VTG	RMC	--
18	BOTT_HDG (true)	VTG	RMC	--
19	DIR_HDLG	XDR	--	--
20	C_WP_OD	APA	APB	--
21	B_PILOT	APA	APB	XTE
22	YEARMONTH	ZDA	RMC	--
23	R_COMPAS	HDG	HDM	VHW
24	R_ APP_WIND_ANG	MWV	VWR	--
25	LAT_DEGMIN	GGA	GLL	RMC
26	LAT_MILMIN	GGA	GLL	RMC
27	LON_DEGMIN	GGA	GLL	RMC
28	LON_MILMIN	GGA	GLL	RMC
29	V_WP	WCV	--	--
30	TARGET_SPD	KEP	--	--
31	OTHER_SIDE_HDG	KEP	--	--
32	OPT_WIND_ANG	KEP	--	--
33	PRES_EFF	KEP	--	--
34	POLAR_EFF	KEP	--	--
35	CMG_OPT_ANGLE	KEP	--	--
36	VMG_OPT_ANGLE	KEP	--	--
37	CMG_TRACK_GAIN	KEP	--	--
38	VMG_TRACK_GAIN	KEP	--	--
39	CURRENT_DIREC	KEP	VDR	--
40	CURRENT_SPD	KEP	VDR	--
41	ATM_PRESS	MMB	XDR	--

3 TECHNICAL SPECIFICATIONS

- Power supply : 10 to 16VDC.
- Power consumption : 20mA.
- Tightness : IP54.
- Connection cable : 5 meter length.
- Weight : 280 g (cable included).
- Operating temperature : -10℃ to +50℃.
- Storage temperature : -20℃ to +60℃.
- Characteristics of the NMEA frames :

The NMEA frames identified by the ***NMEA input interface*** comply with the NMEA 0183 V2.30 standard (or previous version).

The format of the frames is : 4,800 bauds / 8 bits with bit 7 at 0 / 1 start bit and 1 stop bit. With or without checksum.

The NMEA input is isolated by an optocoupler.

4 DIAGNOSTIC OF 1ST LEVEL TROUBLESHOOTING.

This chapter can help you rapidly resolve minor problems which do not require the intervention of a specialist. Before contacting technical support, please check the troubleshooting table below.

Problem	**Possible causes and solutions**
The ***Topline*** installation does not detect the NMEA Interface. The NMEA frames do not show on the ***Topline*** display of your installation.	The bus cable is not or is badly connected to the terminal box : check the plugging and the connection inside the terminal box. Check the state of the cables : they must not show any sign of wear or cut. Have you initialised the NMEA interface ? After initialisation, the red initialisation wire must be connected to the earth or to the init terminal : see installation chapter
An NMEA channel does not show on the ***Topline*** display of your installation.	The ***Topline*** channel is already present and provided by an ***nke*** instrument.

If you do not manage to solve the problem, please contact your distributor.

5 INSTALLATION

5.1 List of accessories

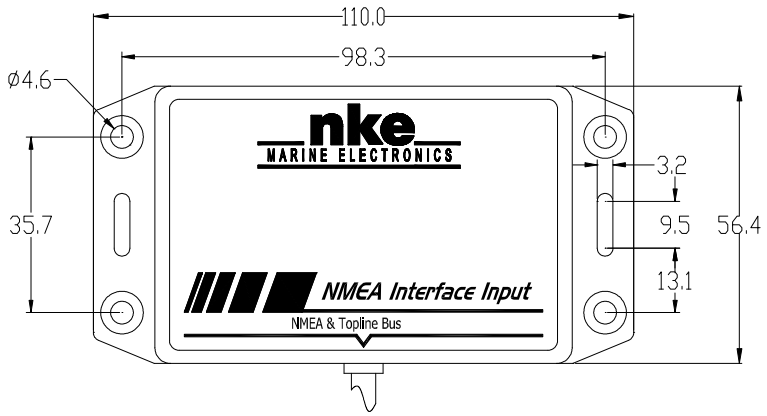
- TOPLINE terminal box : 90-60-121
- TOPLINE terminal box, with NMEA connection : 90-60-417

5.2 Installation precautions

The housing of the ***NMEA input interface*** is waterproof against water spray. Install the housing in a location that is unlikely to get flooded.

5.3 Installation of the NMEA input interface housing

- Fix the housing in place using Ø4 screws



unit : mm

Figure 1

CAUTION :

- The connection of this sensor must be carried out with the power switched off.

5.4 Connection to the *Topline* bus

1. Make the bus cable run from the ***NMEA input interface*** to the ***TOPLINE*** terminal box of your installation.
2. Connect the bus cable inside the terminal box.
3. Connect the NMEA**+** and NMEA**-** conductors to your instrument.

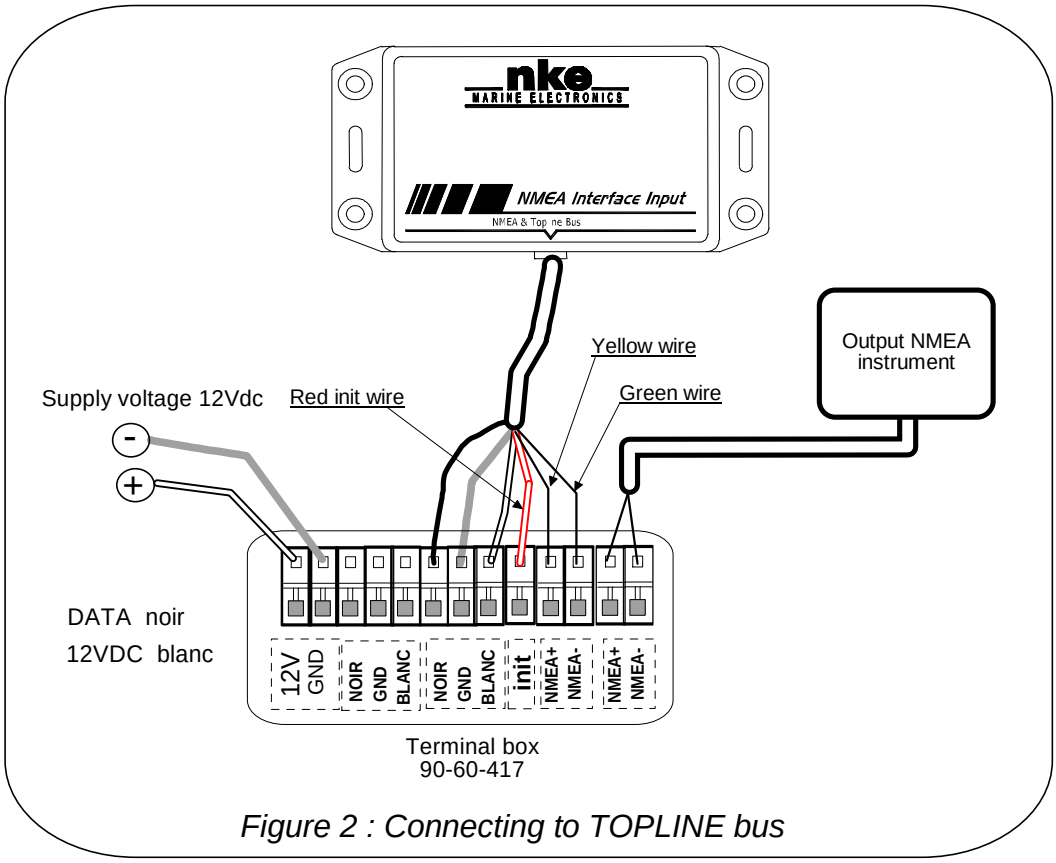


Figure 2 : Connecting to TOPLINE bus

If you reduce the length of the bus cable, strip and galvanise the wires before connecting them inside the terminal box.

Identification of the cable wires

White cable 5 conductor wires	Wire identification	
White wire	+12V	***TOPLINE*** bus
Black wire	***Topline*** data	
Braid	Earth	
Red wire	NMEA initialisation wire	
Yellow wire	NMEA +	NMEA input
Green wire	NMEA –	

5.5 Initialisation of the *NMEA input interface*

At the first power-up, the ***NMEA input interface*** must be initialised in order to identify and memorise the NMEA frames transmitted by the instrument (GPS, PC, etc.). The NMEA channels created are then saved to the memory of the ***NMEA input interface***, and restored at each power-up, on the ***Topline*** bus.

5.5.1 Initialisation procedure

- Disconnect the red wire from the ***init*** terminal (or from the GND terminal).
- The ***NMEA input interface*** then performs a search sequence of NMEA data as long as the red initialisation wire is disconnected, then it creates the new channels that correspond to the NMEA frames transmitted by the instrument. A sounding beep is emitted for each NMEA frame identified.
- Reconnect the red initialisation wire to the ***init*** terminal (or to the GND terminal).

Initialisation is then complete and you may select the NMEA channels on the ***Topline Multifunction*** displays of your installation.

Please note that this initialisation procedure can be repeated at any time, to start over a failed frame identification for example.

CAUTION :

- Under normal operation, the red wire must remain connected to the ***init*** terminal (or to the GND terminal).

- Use one ***NMEA input interface*** per instrument that transmits NMEA frames ; Each interface will thus be initialised separately.