

1N4B 1-to-4 NMEA splitter/buffer, manual.

1 Description



The 1N4B NMEA splitter/buffer is intended for situations where interface to existing NMEA serial data output is required where system load is unknown or high. This may include installation of for instance VDR, S-VDR or other systems.

It has an opto-isolated input feeding four separate differential output drivers.

The unit can be powered from almost any DC supply in the range 10 – 40 V.

1N4B differs from 1N4 in that it has 100 % high speed IEC 61162-1 and -2 compliant inputs and outputs, where also the output drivers are isolated from the supply voltage. This means that it is possible to connect one of its outputs even to a side-grounded input without creating any ground loops. See section 4.3 for more information.

2 Technical Data

Dimensions:	Boxed 68 x 110 x 22 mm.
Input:	Opto isolated input, compliant with NMEA 0183/0183HS and corresponding IEC 61162-1/-2.
Output:	NMEA0183, 0183HS, IEC 61162-1 and -2 compliant using RS422/485 differential drivers. All channels are equipped with a “C” output terminal. Output drivers are fed from the same internal supply, but isolated from DC input power source.
Connectors:	Phoenix screw terminals, accepting up to 1.5 mm ² cable.
Power requirements:	10 – 40 V DC, appr 12 mA at 24 V with open outputs.
Environmental:	Meets or exceeds IEC 60945 class “Protected”

3 Indications

During operation, two LED indicators will reflect activity:

- The green LED will indicate DC power applied.
- The yellow LED will flash with the NMEA bits received.

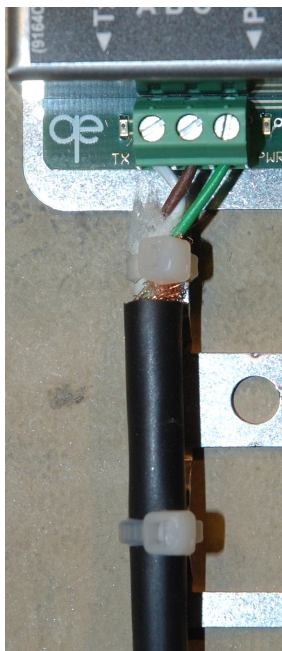
4 Installation, setup

The unit should be bolted to a flat surface, preferably vertically and with wiring from below.

4.1 Wiring termination

On the lower part of the unit an area is provided for securing the cables using wire straps. Connection should be done using shielded cable and making sure the installation will be compliant with the EMC requirements of IEC 60945 it is necessary to make sure that the outer cable shield is securely connected to the chassis of the unit.

The simplest way to accomplish this is to remove the outer insulation of the cable and to fold down the screen on the outside of the insulation and to secure the cable with the straps supplied.



4.2. Input connection

When connected to an output, the yellow input LED should light when the digital input goes active. With a normally working NMEA connection, this LED will flash as data are received and will be unlit between messages. If the opposite indication is observed, the input terminals “A” and “B” should be reversed. The “C” input terminal is only used when connected to NMEA 0183HS/IEC 61162-2 outputs.

4.3. Output connection

The unit has four RS422/485-based output pairs. Each output will drive several inputs. The output capacity is in excess of 30 mA per channel and the maximum total load of all output channels is 100 mA. The output drivers are galvanically isolated from the power source, but all output drivers are fed from the same internal supply.

Output terminal “A” should be connected to input terminal “A” of the receiving equipment, which in some cases is marked “+”. “B” connects in the same way to “B” (or “-“). Output terminal “C” on

1N4A-2 units should be connected to the “C” terminal of the input.

It is in most cases possible to feed also RS232 inputs if this is required. The NMEA output terminal “A” should be connected to RS232 Rx terminal and the NMEA output “B” should be connected to the RS232 GND. This will make all the outputs sidegrounded to the RS232 GND connection but as long as the other outputs are only feeding standard isolated NMEA/IEC inputs this should still work well.

It should however be noted that such use of the output does not comply with any international standards.

5 CE Declaration of conformity

according to the EMC Directive 89/336/EEC and amendments

1N4B 1-to-4 NMEA splitter/buffer U/N 9244G

Manufacturer: qwerty elektronik
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SE-128 44 Bagarmossen, Sweden
tel: + 46 70 680 0115, fax: + 46 8 50 311 316
E-mail: info@qe.se, web: www.qe.se

Equipment: 1N4B 1-to-4 NMEA splitter/buffer U/N 9244G

The above equipment has been tested and, when connected to digital status data, will output serial navigation data conforming to IEC 61162-1 or -2.

The unit is CERTIFIED as complying with the environmental requirements as defined by IEC 60945: 2002, which is tested på accredited test houses.

Date 2009-12-20

Signature: Anders Jangö, QA Manager

6 BSH Type approval

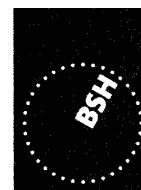


Bundesrepublik Deutschland

Federal Republic of Germany

Bundesamt für Seeschifffahrt und Hydrographie

Federal Maritime and Hydrographic Agency



BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

Baumusterprüfbescheinigung

type examination certificate no.

Nr. BSH 46162/0041158/09

Die Navigationsausrüstung/ The navigation equipment:

Schnittstellenkonverter

Interface Converter

mit der Typbezeichnung
with the type designation 1N4B, Typ 9244G

des Herstellers
of the manufacturer qwerty elektronik ab
Laxåvägen 46
SE-128 44 Bagarmossen
Schweden

zusätzliche Handelsnamen
additional trade names

ist nach den folgenden Normen/Standards geprüft worden
has been type-tested in accordance with the following standards

Norm/Standard	Prüfnorm/Test standard
ITU-T X.27/V.11 : 1996	IEC 61162-1 : 2007
ITU-R M.1371-3 : 2007 *	IEC 61162-2 : 1998
	IEC 60945 : 2002
	NMEA 0183 : 2008 *

* Sofern zutreffend / As far as applicable

und wird für den Antragsteller / and has been approved for the applicant
qwerty elektronik ab, Laxåvägen 46, SE-128 44 Bagarmossen, Schweden

für den nachstehenden Verwendungszweck zugelassen:
for the following application:

Schnittstellenkonverter für serielle Daten gemäß IEC 61162
Interface converter for serial data according to IEC 61162

Die Zulassung berechtigt zur Anbringung der Baumusternummer (Nummer der Baumusterprüfbescheinigung).

With the approval it is granted, that the equipment can be labelled with the type approval number (number of the type approval certificate).

Ausgabedatum: 29. März 2010
Date of issue:

Ausgegeben
durch:

**Bundesamt für Seeschifffahrt und
Hydrographie Bernhard-Nocht-Str. 78
20359 Hamburg
Germany**

Ablaufdatum: 29. März 2015
Expiry date:

Issued by:



Im Auftrag
on behalf
Ralf-Dieter Preuß