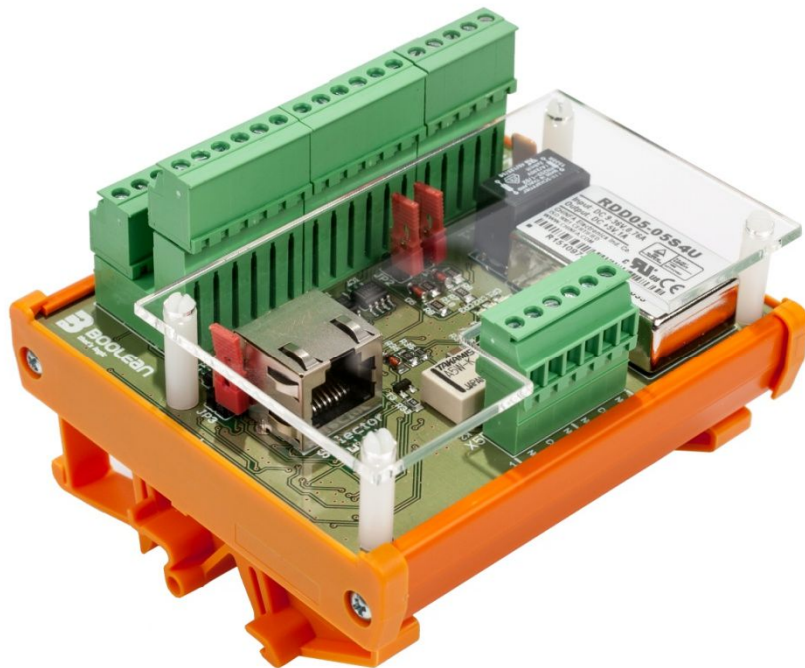


NMEA Buffer 2S12

Installation and user manual



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Safety information



Do not work inside the equipment unless totally familiar with electrical circuits.

Hazardous voltage which can cause electrical shock, burn or serious injury exists inside the equipment.



Turn off the power at the mains switchboard before beginning the installation.

Post a sign near the switch to indicate it should not be turned on while the equipment is being installed.

Fire, electrical shock or serious injury can result if the power is left on or is applied while the equipment is being installed.

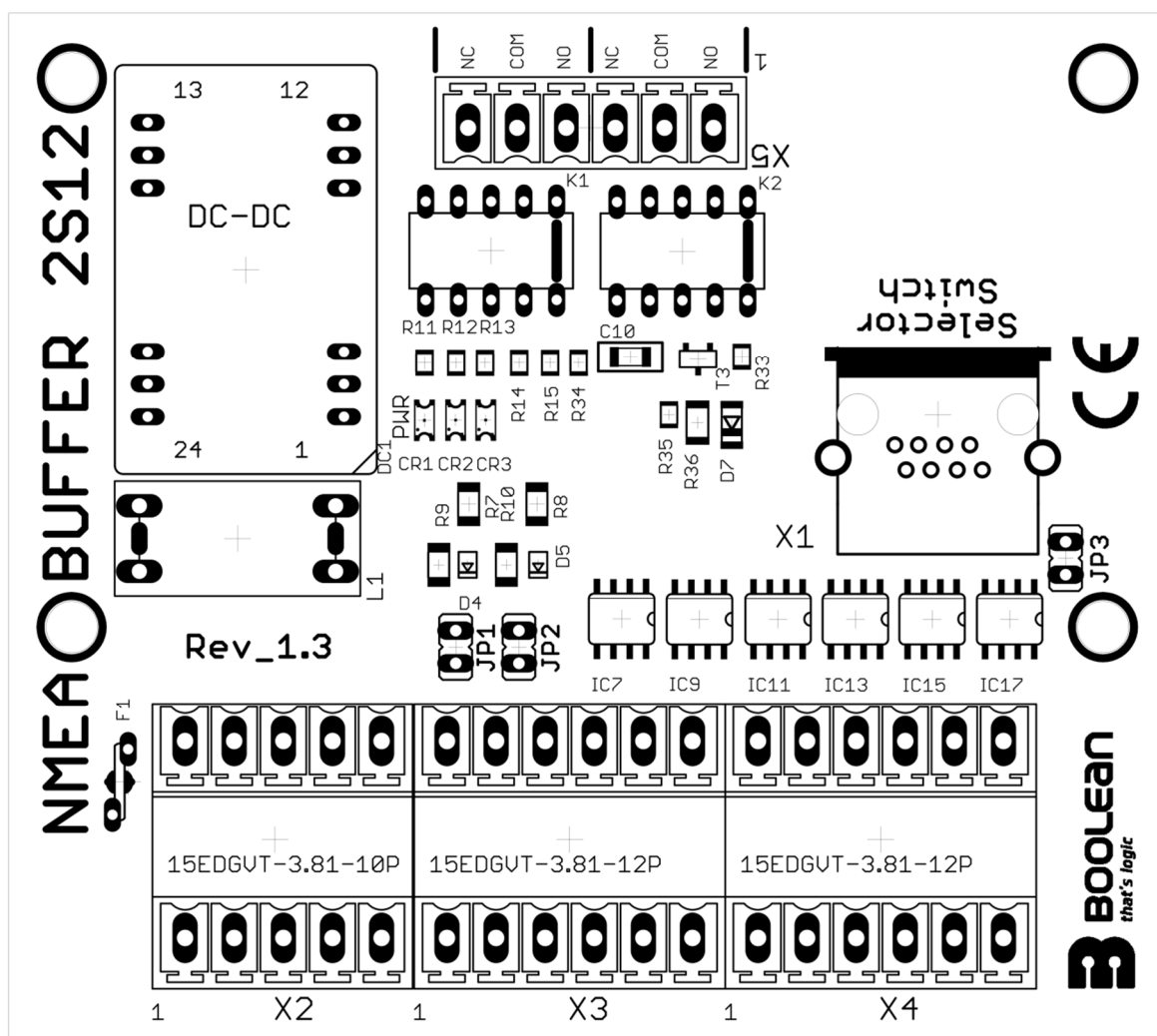


Confirm that the power supply voltage is compatible with the voltage rating of the equipment.

Connection to the wrong power supply can cause fire or equipment damage. The voltage rating appears on the last page of this manual.

Description

NMEA Buffer has been designed to distribute NMEA or other RS422 signals from one transmitter up to 12 listeners. Transmitted signal is galvanically isolated from power supply and all listeners. Unit can operate with signal speed up to 230400 bps and power supply range from 9 to 36 VDC. Unit has possibility to connect two independent NMEA transceivers (in example two GPS receivers) and distribute manually selected signal source to all listeners – optional switch connection is necessary. Device has 3 functional modes: Dual Independent Transmission, Single Input Transmission and Selectable Dual Input mode described later in this manual.



Component layout.

Terminal, jumper and LED description

Power and signal connection for hardware rev_1.0 and higher. Refer to below tables:

X2: Power and input signals connection:

Bottom row of terminal		Upper row of terminal	
1	PWR + power positive	6	PWR + power positive
2	PWR - power negative	7	PWR - power negative
3	Grounding	8	Grounding
4	NMEA1 + input 1	9	NMEA2 + input 2
5	NMEA1 – input 1	10	NMEA2 – input 2

Note: Terminal 1 and 6, 2 and 7, 3 and 8 are connected parallel.

X3: Outputs:

Bottom row of terminal X2		Upper row of terminal X2	
1	NMEA out 1 A	7	NMEA out 2 A
2	NMEA out 1 B	8	NMEA out 2 B
3	NMEA out 3 A	9	NMEA out 4 A
4	NMEA out 3 B	10	NMEA out 4 B
5	NMEA out 5 A	11	NMEA out 6 A
6	NMEA out 5 B	12	NMEA out 6 B

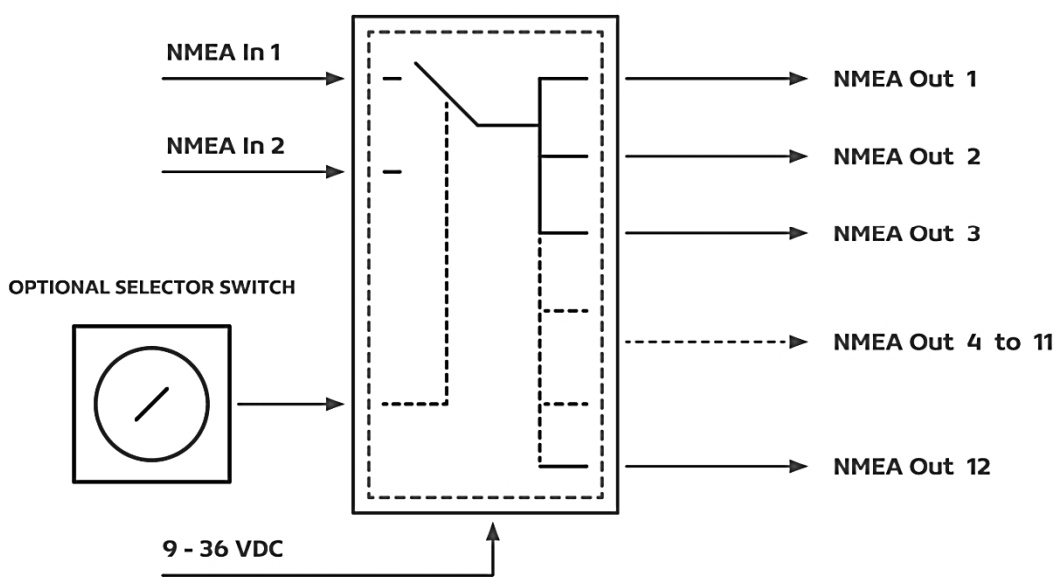
X4: Outputs:

Bottom row of terminal X3		Upper row of terminal X3	
1	NMEA out 7A	7	NMEA out 8 A
2	NMEA out 7B	8	NMEA out 8 B
3	NMEA out 9 A	9	NMEA out 10 A
4	NMEA out 9 B	10	NMEA out 10 B
5	NMEA out 11 A	11	NMEA out 12 A
6	NMEA out 11 B	12	NMEA out 12 B

X1: RJ45 Switch. Optionally installed for two NMEA signals distribution. User has possibility to select manually between signal sources. Connection to switch can be done by means of LAN cable, straight through cable is recommended. This feature is called Selectable Dual Input transmission and mostly used for GPS signal distribution onboard commercial vessels.

Selectable Dual Input mode:

Selectable Dual Input mode



X5: Power failure / Signal failure: Relay output for external alarm system with following connection options:

Power Failure		Signal Failure	
1	NC – normally closed	4	NC – normally closed
2	COM – common	5	COM – common
3	NO – normally opened	6	NO – normally opened

Note: Alarm is generated approximately 20 seconds after input signal loss.



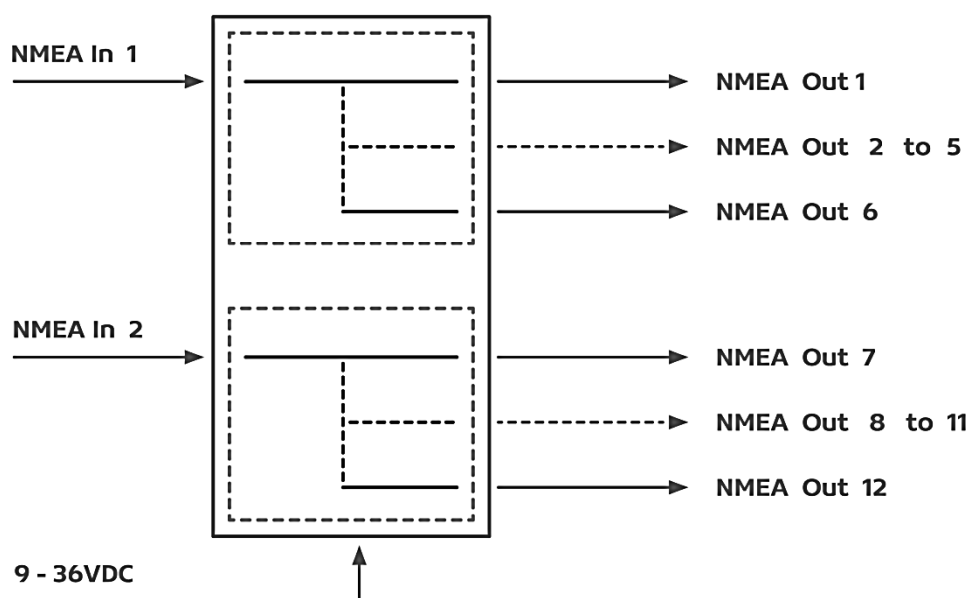
Signal Failure relay works in case of lack of two signals in Dual Independent Transmission mode, lack of selected signal in Selectable Dual Input mode or lack of input 1 signal in Single Input Transmission mode.

Jumpers JP1, JP2: Close jumper in case of weak input signal. Normally leave opened. JP1 corresponds to input 1 and JP2 corresponds to input 2.

Jumper JP3: Jumper opened = Dual Independent transmission. Input 1 is transmitted to outputs 1 to 6 and Input 2 to outputs 7 to 12.

Dual Input Independent Transmission mode:

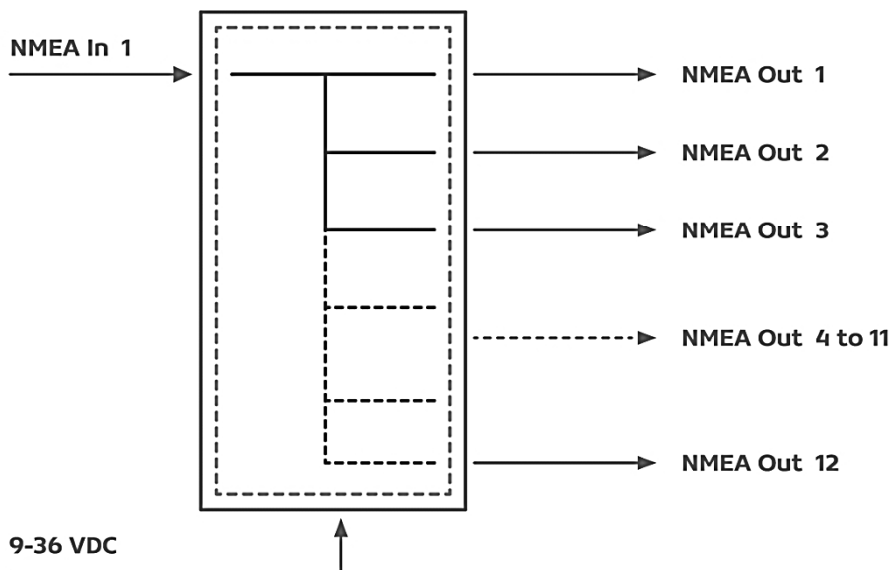
Dual Input Independent Transmission mode



Jumper JP3: Jumper closed = Single Input Transmission. Input 1 is transmitted to outputs 1 to 12.

Single Input Transmission mode:

Single Input Transmission mode

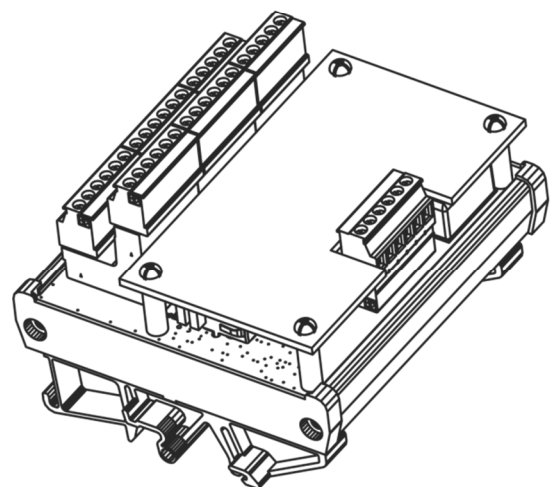
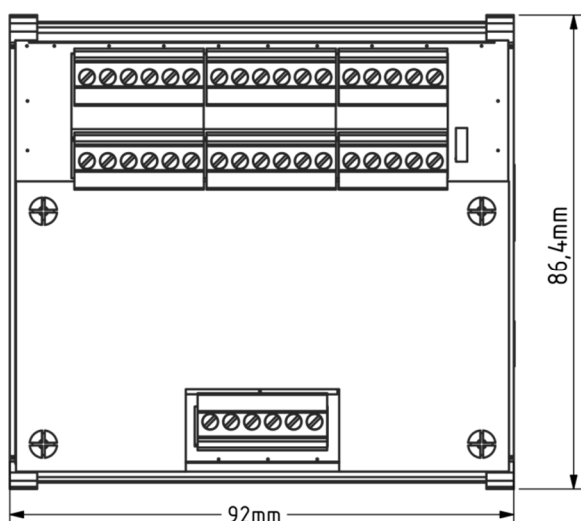
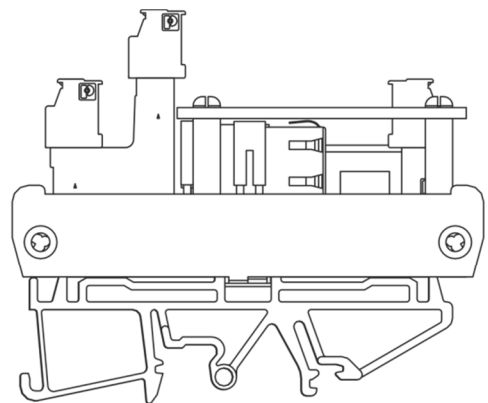
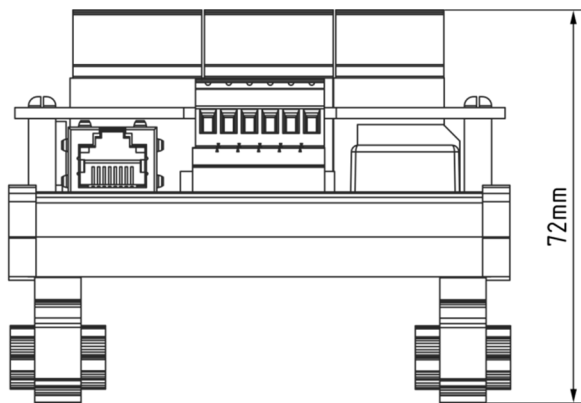


LED Description:

LED number		Description
1	CR 1	POWER present – normally lit.
2	CR 2	NMEA 1 Input signal present – normally blinking.
3	CR 3	NMEA 2 Input signal present – normally blinking.

Technical data

- Power Supply: 24VDC (9 to 36VDC)
- Power consumption: Typical 3,1 W, maximum 7,5 W at 24VDC
- Galvanic isolation: Power supply 1,5kVDC, signal input/output up to 5kV_{RMS}
- Short circuit output protection
- Reversed power supply polarity protection
- Over voltage power input protection (up to ±37V)
- Number of inputs: 2, manually selectable
- Number of outputs: 12, manually configurable
- Input/output signal speed: Up to 230400 bps
- Connection: cables diameter up to 1,5mm²
- Dimensions: L 92,0mm x W 86,4mm x H 72,0mm
- Mounting: DIN Rail.



Warranty and after sales support

For warranty terms and conditions please refer to our website: <http://www.boolean.pl/>

Or contact via e-mail: info@boolean.pl



Boolean Sp. z o.o.

e-mail: info@boolean.pl

Company address:

Street: Sw. Stanisława Kostki 13A

Post code: 71-143

City & Country: Szczecin, POLAND

Declaration of Conformity

Boolean Sp. z o.o.
Street: Sw. Stanisława Kostki 13A
Post code: 71-143
City & Country: Szczecin, POLAND

Declares under our sole of responsibility, that following product:

NMEA Buffer 2S12

Conforms with the EMC provisions of the following directive:

IEC60945 – General Requirements for Marine Navigation Equipment

The following harmonized standards were applied:

Emission:

- **Conducted disturbances emission test EN 60945:2002 (test basis: EN 55022:2010)**
- **Radiated disturbances emission test EN 60945:2002 (test basis: EN 55022:2010)**

Immunity:

- **Electrostatic discharge immunity test EN61000-4-2:2009**
- **Radiated, electromagnetic field immunity test EN61000-4-3:2006 + A1:2008 + A2:2010**
- **Electrical fast transient / burst immunity test EN61000-4-4:2012**
- **Immunity test to conducted disturbances EN61000-4-6:2014**
- **Immunity test to voltage dips, short interruptions and voltage variations EN 61000-4-11:2004**

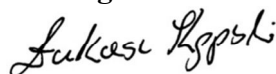
Name and number of accredited certification body / laboratory and certificate number / number of the report from the Research of type:

Institute of Logistics and Warehousing, Laboratory of Electronic Devices
EMC TEST REPORT no RP 195-201 / 2016 LA

Place:

Szczecin, PL

Signature:



Lukasz Kępski
CEO / Project Manager

Date:

30 Jan 2017

BOOLEAN Sp. z o.o.
ul. Św. Stanisława Kostki 13a
71-143 Szczecin
NIP:852-262-24-37, REGON:364920543
KRS: 0000627887

BOOLEAN Sp. z o.o.

Lukasz Kępski