TYPE APPROVAL CERTIFICATE
No. **ELE060719XG**

This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

Description	**Connecting devices**
Type	**NMEA Buffer** **1T8** **2S12**
Applicant	**BOOLEAN SP. Z O.O.** **ul. KS. GRZEGORZA PIRAMOWICZA 24A** **71-157 Szczecin** **POLAND**
Manufacturer *Place of manufacture*	**BOOLEAN SP. Z O.O.** **ul. KS. GRZEGORZA PIRAMOWICZA 24A** **71-157 Szczecin** **POLAND**
Reference standards	**- Rules for the Classification of Ships- Part C - Machinery, Systems and fire protection - Ch.3 ; Sect. 6 ; Tab. 1 .**

Issued in **Hamburg** on **April 11, 2019**. *This Certificate is valid until* **April 10, 2024**

RINA Services S.p.A.

This certificate consists of this page and 1 enclosure

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Enclosure - Page 1 of 1
NMEA Buffer

NMEA Buffer 1T8
NMEA Buffer has been designed to distribute NMEA or other RS422 signals from one transmitter to up to 8 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. The unit simply distributes input signal (in example GPS receiver) to all connected listeners.

NMEA Buffer 2S12
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.

Power Supply	24VDC (9 to 36VDC)
Power consumption:	maximum 1,7 W at 24VDC (for 1T8); 7,5 W (for 2S12)
Galvanic isolation	Power supply 1,5kVDC, signal input/output up to 5kVRMS
Short circuit output protection	Yes
Over voltage power input protection	up to ±37V

Reference Documents:
Installation and user manual for NMEA Buffer 1T8, NMEA Buffer 2S12
NMEA Buffer 2S12 Block diagram
NMEA Buffer 1T8 Example application diagram
NMEA Buffer 2S12 Example application diagram
Report No. 36/BT/2018
Test Report No. LEP/0012/2018
EMC Test Report No. RP 195-201/2016 LA
EMC Test Report No. RP 66-72/2017 LA
Test Report Environmental Compatibility

Hamburg April 11, 2019

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