Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the LR Type Approval System.

This certificate is issued to:

PRODUCER	NORIS Automation GmbH Friedrich-Barnewitz-Strasse 10 18119 Rostock Germany
DESCRIPTION	Engine Order Telegraph for emergency communication between wheelhouse and engine room to transmit basic commands
TYPE	NORISTAR EOT
APPLICATION	Marine applications for use in environmental categories ENV1, ENV2, ENV3 as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 – 2002.
ADDITIONAL TESTS	Low temperature test: -25°C/ 16 hours Vibration test: 4g Mechanical shock test: half sine, 15g, 11ms Number of load planes: 6 (±X, ±Y and ±Z) Number of shocks per load plane: 3 (in total 18) Needle Flame Test: according IEC 60695-11-5
DESIGN CODE	Manufacturer's specification
RATINGS	Power Supply: U_{Nom} = 24V DC, range 18 … 32V DC Current consumption: < 300mA / 24 V DC System connection: 1x CAN bus Voyage Data Recorder connection: 1x RS-422/485, galvanic isolated Connection for programming/analysis: 1x RS-232
Certificate No.	12/20036
Issue Date	23 August 2012
Expiry Date	22 August 2017
Sheet	1 of 2

Ronny Lehmann
Hamburg Design Support Office
Lloyd's Register EMEA

Lloyd's Register EMEA
71 Fenchurch Street, London EC3M 4BS

"Lloyd's Register, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the 'Lloyd's Register Group'. The Lloyd's Register Group assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register Group entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract."

RATINGS (cont.)	Digital inputs: 2x (X10/In1 and X10/In2), galvanic isolated Digital outputs: 3x relay change over (X20/Q1, X20/Q2 and X20/Q3) 3x relay normal open (X30/Q1, X30/Q2 and X30/Q3)
OTHER CONDITIONS	Final functional arrangements are to comply with appropriate Lloyd's Register Rules and will be subject of the Plan Approval process, if applicable.

"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."

The Design Appraisal Document No. ETS 26929-12 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Certificate No.	12/20036
Issue Date	23 August 2012
Expiry Date	22 August 2017
Sheet	2 of 2

Ronny Lehmann
Hamburg Design Support Office
Lloyd's Register EMEA

Lloyd's Register EMEA
71 Fenchurch Street, London EC3M 4BS

"Lloyd's Register, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the 'Lloyd's Register Group'. The Lloyd's Register Group assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register Group entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract."

LLOYD'S REGISTER GROUP PAPER (01/2005)