



TYPE APPROVAL CERTIFICATE
No. ELE224122XG

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

<i>Description</i>	Diesel engine safety system
<i>Type</i>	N3000-SAP
<i>Applicant</i>	NORIS AUTOMATION GMBH MUGGENHOFER STRASSE 95 90429 Nuernberg GERMANY
<i>Manufacturer</i>	NORIS AUTOMATION GMBH
<i>Place of manufacture</i>	MUGGENHOFER STRASSE 95 90429 Nuernberg GERMANY
<i>Reference standards</i>	Rules for the classification of ships.- Part C - Machinery, systems and fire protection. - Ch.3, Sect. 6, Table 1.

Issued in **HAMBURG** on **November 16, 2022**. *This Certificate is valid until* **November 15, 2027**



RINA Services S.p.A.
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This certificate consists of this page and 1 enclosure

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N3000-SAP

Product description:

The N3000-SAP system is a safety system for diesel engines with following functions :

- Emergency stops
- Overspeed protection
- Automatic shutdowns
- Override function
- Failure signalisation / alarm
- Wire break test

Power supply: X1, 1 to 4; Duplicated monitored power supply 18 - 73V DC

Front N3000-SAP: The switch status and failure modes of the input and output channels are signaled at the front panel via LED's.

Back N3000-SAP: All electrical input and output plug-in terminations are located on the backside

Inputs:

X2, 1 to 8 AS1 up to AS4 Automatic stop
(ext. WB-monitor)
X2, 9 to 16 ES1 up to ES4 Emergency stop
(ext. WB-monitor)
X4, 13 & 14 AS5 Autostop (WB monitored)
X5, 9 to 12 In1 and In2 for Override (ext. WB-monitor)
X5, 13 & 14 Input RESET remote (button ext. WB-monitor)
X7, 1 to 3 Input Frequency 1 for Pick Up 1 (WB-monitor)
X8, 1 to 3 Input Frequency 2 for Pick Up 2 (WB-monitor)

Outputs:

X3, 1 to 12 NC system information and system failure
X3, 13 to 16 Output 1 & 2 AO for engine speed
(standard signals)
X4, 1&2 Output Override
X4, 3 to 12 NC/NO system information and system failure
X4, 15 & 16 Output Frequency Pick Up
X5, 1 to 8 Output 1 to 4 Autostop triggered
X5, 15 & 16 Output Frequency Pick Up, Alarm System
X6, 1 to 4 Output Shut Down Valve1 & 2, (WB-monitor)

Additional equipment:

For retrofit of N3000-SAP into older systems, the additional amplifier relay "SA677" is needed to adapt the valve currents. SA677 can only be used together with N3000-SAP, it may be considered as part of it.

Documents:

- N3000-SAP Description, Info 609E Version 1.48,
- Electrical Drawings, Block SAP 070606, HG-N3000-SAP-5 II, Overspeed-TimingSAP-V3, FF9-2G III, SA673-1, SA675-1,
- Product test report for LESS N3000-SAP-x, Nov./Dec. 2006
- EUT in climatic test, 11.12.2006
- Final performance test at test engine 6M25C, dated 05/2008
- Product test report for SA677-xxG No. PB 00.101:2011-03 dated 2011-12-14
- Product information for System SA677 "Amplifier relay with integrated wire break monitor", Version 1.04
- Software information: N3000-SAP-xxx, Info 610E Version 1.41

Remarks:

- System configuration / block diagram and function list to be approved for each installation on board.
- The products fulfill EC-Code: EC33.
- This certificate replace the certificate no.: ELE235317XG.

HAMBURG November 16, 2022

