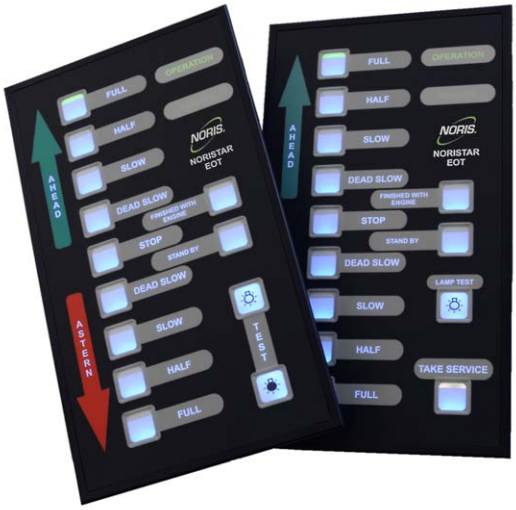
NORISTAR EOT
Emergency Order Telegraph

- Rugged construction for harsh environments
- Various EOT types for different locations
- Up to 12 telegraphs in one system
- Illumination of all commands and push-buttons
- Different illumination colours for different command states
- Operating status indication
- Failure monitoring and indication
- Lamp test
- Dimming function (bridge EOT only)
- Wrong way alarm
- Integrated buzzer, e. g. for upcoming commands
- CANbus interface for system communication
- 2 binary inputs, galvanically isolated
- 6 potential-free relay outputs for failure, wrong way, external buzzer and external flashlight
- VDR system connection via RS-422/485 interface



Emergency order telegraph EOT

NORISTAR EOT Emergency Order Telegraph

The NORISTAR EOT emergency order telegraph is an emergency communication system between the wheelhouse and engine room for transmitting basic commands quickly and reliably.

General Function

Each EOT module is equipped with 11 command push-buttons. The EOT is mounted in a panel cut-out and interconnected via CANbus. Three different types of EOT panels are available: a master module for the bridge and astern bridge respectively and a slave module for the engine room or engine control room. When a command push-button (e. g. on the bridge EOT) is pressed, the connected EOT panels indicate the command visually and acoustically: the relevant command push-button flashes and an integrated buzzer is activated at the same time. The operator has to acknowledge the command at the receiving EOT by pressing the flashing command push-button.

EOT Illumination and Engine Order Announcement

The neutral background illumination is blue. The command push-buttons light up green to indicate when ahead commands are active and red to indicate when astern commands are active. The command status is indicated by a flashing light (for unacknowledged commands) or a steady light (for acknowledged commands). Furthermore, all the inscription on the EOT panels is illuminated. In addition, the bridge EOT has an integrated dimmer function for adjusting the illumination. The illumination functionality can be tested by performing a lamp test.

Failure Monitoring and Alarm Indication

The proper operation of the EOT system is monitored and indicated by an illuminated operating status field and a system failure field on each EOT. A flashing code provides information about any failures that occur. Furthermore, a system analysis is performed via an RS-232 interface to read out system failures. All NMEA datasets and alarms contain a time stamp which is created by an internal real-time clock or an external ship clock signal. Alarms are stored in a ring buffer and can be accessed via the serial port interconnection.

Operation with Several EOTs

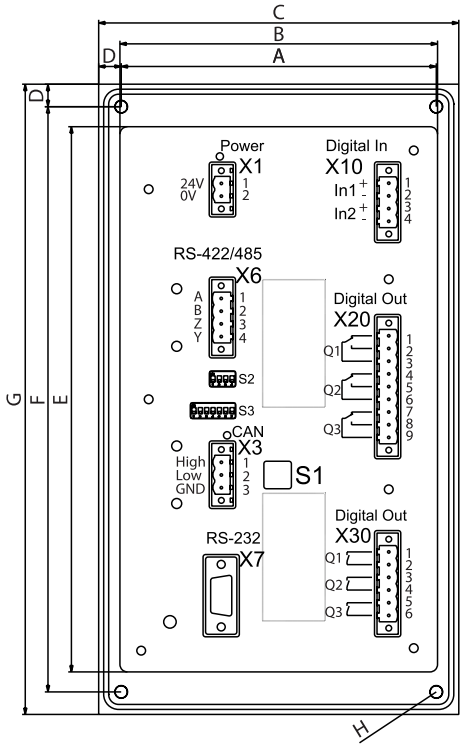
The EOT system can manage up to 12 telegraph modules. Up to 6 modules can operate on the bridge side plus another 6 on the engine side.

Additional Functions

Each EOT has 6 potential-free relay outputs, e. g. for failure, wrong way alarm, or connection of an external buzzer or an external flashlight. It also has two galvanically isolated binary inputs, e. g. for switching between two bridge EOT systems. Communication with a Voyage Data Recorder (VDR) is achieved in accordance with the IEC61162-1 standard using a galvanically isolated RS-422/485 serial interface.

Dimensions, connections and drawings

Device dimensions and connections



Explanation to the left illustration

A) Length 126 mm
B) Length 127 mm
C) Length 144 mm
D) Length 9 mm
E) Length 218 mm
F) Length 234 mm
G) Length 252 mm
H) Diameter Ø 4 mm

Explanation to the left illustration (side view)

A) Length 19.20 mm
B) Length 19.80 mm
C) Length 24.20 mm
D) Length 5 mm

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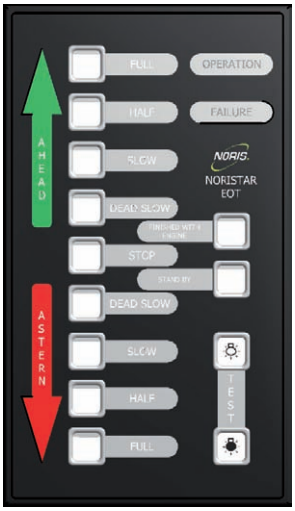
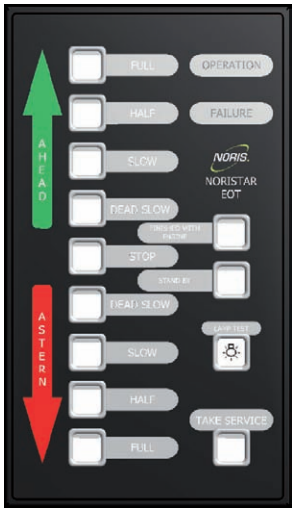
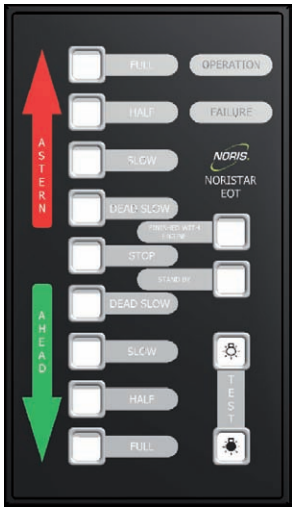
Panel types



Front panel
EOT Bridge Forward

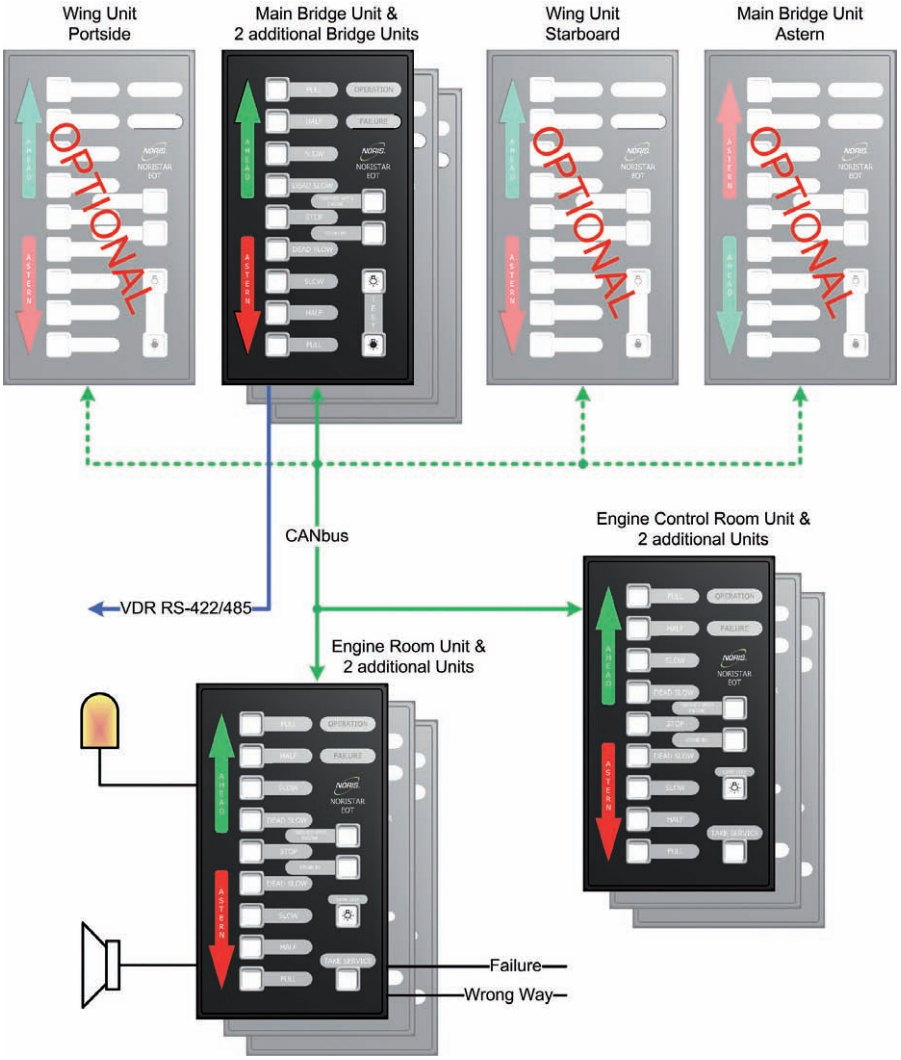


Front panel
EOT Engine Room /
Engine Control Room



Front panel
EOT Bridge Astern

System structure



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Technical data

Connection	EOT Bridge Side	EOT Engine Side
Supply voltage	Unom 24 VDC, range 18...32 VDC	
Current consumption	< 300 mA @ 24 VDC	
Reverse voltage protection	Integrated	
Over voltage protection	Integrated	
Galvanical isolation	RS-422/485 interface	
Insulation voltage	500 V	

Interface	EOT Bridge Side	EOT Engine Side
System connection	1 x CANbus	
VDR connection	1 x RS-422/485	
Programming, analysis	1 x RS-232	

Input	EOT Bridge Side	EOT Engine Side
Binary input X10/1	Master switch	Free
Binary input X10/2	Free programmable	

Output	EOT Bridge Side	EOT Engine Side
Relay change-over X20/1	Free	External flashlight
Relay change-over X20/2	Wrong way ahead	
Relay change-over X20/3	Wrong way astern	
Relay normal open X30/1	Failure	
Relay normal open X30/2	Free	External buzzer
Relay normal open X30/3	Free	

Environmental influences	EOT Bridge Side	EOT Engine Side
Operating temperature	DIN IEC 60068-2-2, DIN IEC 60068-2-1 Ad: -25°C...+70°C	
Climatic test	IEC 60068-2-30 Db	
Storage temperature	IEC 60068-2: -40°C...+85°C	
Vibration resistance	DIN IEC 60068-2-6 Fc: ±1.6 mm @ 2...25 Hz; ±4 g @ 25...100 Hz	
Shock resistance	DIN IEC 60068: 15 g/11 ms	
Degree of protection	DIN EN 60529: front panel IP54; back side IP30	
ESD	IEC 61000-4-2: ± 6 kV/CD; ± 8 kV/AD	
HF-Interference immunity	IEC 61000-6-2, IEC 61000-4-3, -4-4, -4-5, -4-6	
Interference emission	IEC 61000-6-4; CISPR16-1, CISPR16-2, EMC 1	

Mechanical quantities	EOT Bridge Side	EOT Engine Side
Material	Front: aluminium, chassis: stainless steel	
Mounting	Console cut-out	
Installation position	Any	
Dimensions	144 x 252 mm	
Weight	900 g	

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Other	EOT Bridge Side	EOT Engine Side
Illumination	Dimmable	Factory setting
Buzzer	Integrated buzzer	
Real-time clock	Internal real-time clock with battery backup	
Electrical connection	Plug with spring-type terminals, cable 2.5 mm^2; RS-232 D-Sub9 female plug	
Approvals	CE, ABS, BV, DNV, GL, LR, NK, RS	
Fire protection class	V0	

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Type code

Type code structure EOT…					
NORISTAR	**-EOT**	**RECV**	**-BOX**	**-AW-FL**	**Example: NORISTAR-EOT RECV-BOX-AW-FL**
	Base type				
		Model / Device Type			
			Equipment option 1		
				Equipment option 2	

Type code NORISTAR…					
Base type	**-EOT**	Emergency Order Telegraph			
Model / Device type		**TRA FWD**	Transmitter Forward facing		
		TRA AFT	Transmitter Astern facing		
		RECV	Receiver (console mounting if without Equipment option 1)		
Equipment option			**-BOX**	Receiver installed in wall mounting cabinet (standard mounting if without Equipment option 2)	
				-AW	Bell installed at wall mounting cabinet
				-FL	Flash light installed at wall mounting cabinet
				-AW-FL	Bell and flash light installed at wall mounting cabinet

NORISTAR	**-EOT**	_ _ _ _ _ _	-_ _ _	-_ _-_ _	**Example: NORISTAR-EOT RECV-BOX-AW-FL**

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