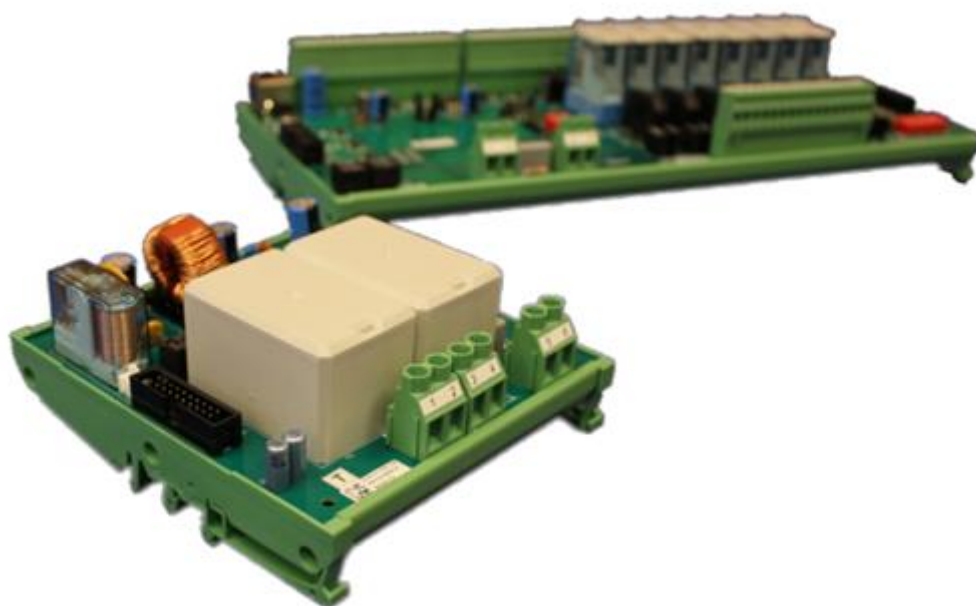




NORMA.

**NAVIGATION LIGHTS CONTROL AND
SURVEILLANCE**

VDR PROTOCOL 2



1 SUMMARY

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Version	Date	Description	Author	Approved by
0	20/06/2022	First release	MH	JMA
1	27/06/2022	Checksum field added	MH	JMA

2.1 Hardware specification

All frames transmitted by NORMA.CPU comply with IEC 61162-1 Edition 4.0 2010-11.

The characteristics of the VDR communication are:

- Baud rate: 4800 bauds
- Parity: None
- Data bits: 8
- Stop bit: 1

The communication is performed via a RS485 bus (two wires). Two communication ports (NET1/NET2) are available on NORMA.CPU, based on RS485 standard. Only NET2 is dedicated to VDR communication.

It's necessary to set the switch number 6 of the *S_CFG* micro-switches block to 'ON'

NORMA.CPU sends the following frames to the VDR:

Table 1: Frames to VDR

Frame	Signification	Event	Every 5 minutes
EVE	Startup frame Alive frame	X	X
ALR	System fault, Main power supply fault Emergency power supply fault Navigation Light fault Navigation light lifetime fault	X X X X X	

2.2 Talker identifier

All frames from NORMA.CPU are identified with the following talker identifier « NL »:

\$NLALR,,242,A,V,NAVIGATION LIGHT N 42*6E

Note: NL identifies the frame as from the navigation light system NORMA.CPU.

3 ALR FRAMES – SYSTEM FAULT

Frames ALR are used to report any navigation light fault, electrical fault and system fault that occurs on the controller.

\$NLALR, hhmmss, xxx, A, A, c—c*hh<CR><LF>

Field N°	Data form	Field Name	Definition
0	\$NLALR	Header	
2	hhmmss	Event time	Not used
5	xxx	System indicator of original alarm source	101 => Main power supply 102 => Emergency power supply 103 => System fault 201 ... 248 => Navigation light fault, channel 01..48 301 ... 348 => Navigation light lifetime fault, channel 01..48
6	a	Alarm condition	A – Alarm V – No alarm
7	a	Alarm's acknowledgement state	V – Not acknowledged A – Acknowledged
8	c--c	Alarm's description text	Ex: « MAIN POWER SUPPLY »
9	hh	Checksum field	Checksum calculation as described in EN-61162-1

4 EVE FRAMES – GENERAL EVENT MESSAGE

EVE frames are used to report some events that are not described in ALR frames.

\$NLEVE, hhmmss, c—c, c--c*hh

Field N°	Data Form	Field Name	Definition
0	\$NLEVE	Header	
1	Hhmmss	Event time	Not used
2	c—c	Tag code used for identification of source of event	401 => Startup frame 402 => Alive frame
3	c--c	Event description	Ex: « STARTUP »
4	hh	Checksum field	Checksum calculation as described in EN-61162-1

5 PERIODIC REPORT

VDR should accept information from navigation light system at least every 5 minutes. Thereby, NORMA.CPU sends to the VDR every 5 minutes an "Alive" sentence as indicated below:

\$NLEVE,,FR,ALIVE*3B

6 EXAMPLE

Line number	Description
1	Startup of the NORMA.CPU system
2	System fault detected
3	Navigation light fault - navigation light N°41
4	Navigation light fault - navigation light N°42
5	System fault acknowledged
6	Navigation light fault N°41 acknowledged
7	Navigation light fault N°42 acknowledged
8	Navigation light fault N°41 disappeared
9	Alive frame
10	Alive frame
11	Navigation light fault N°42 disappeared
12	Alive frame

```

$NLEVE,401,STARTUP*24CRLF
$NLALR,,103,A,U,SYSTEM FAULT*3BCRLF
$NLALR,,241,A,U,NAVIGATION LIGHT N 41*6ECRLF
$NLALR,,242,A,U,NAVIGATION LIGHT N 42*6ECRLF
$NLALR,,103,A,A,SYSTEM FAULT*2CCRLF
$NLALR,,241,A,A,NAVIGATION LIGHT N 41*79CRLF
$NLALR,,242,A,A,NAVIGATION LIGHT N 42*79CRLF
$NLALR,,242,U,U,NAVIGATION LIGHT N 42*79CRLF
$NLEVE,402,ALIVE*35CRLF
$NLEVE,402,ALIVE*35CRLF
$NLALR,,241,U,U,NAVIGATION LIGHT N 41*79CRLF
$NLEVE,402,ALIVE*35CRLF

```

7 AFTER SALES SERVICE CONTACT

- After sales service remains available for any technical information:
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