SABIK OFFSHORE
MARK IT · LIGHT IT · KEEP IT SAFE

Data sheet

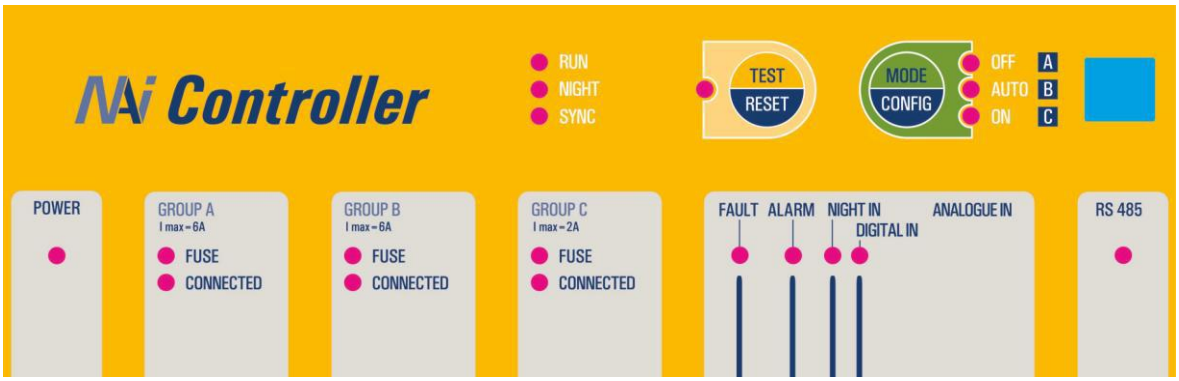
NAi Controller

- **Control and monitoring of a maximum of 3 groups of navigation light and marking components using the standard 5 wire NAi bus interface**
- **Power supply and load monitoring for the connected components**
- **Transmission of the synchronization signal for synchronous flash codes**
- **Communication interface to a central control and monitoring system (RS-485 interface according to standard protocol (MODBUS RTU))**
- **Simple installation, commissioning and monitoring of the entire NAi network**

The NAi Controller (NAi = NavAid Interface) is intended for mounting in the switching cabinet in the interior of an offshore installation. Three groups of marking and navigation light components, which are located in the exterior on the same installation, can be connected via the 5 wire NAi bus.

The NAi Controller is a central supply, control, monitoring and communication unit in the NAi network for all navigation light and marking components connected via the NAi bus. The controller allows easy function monitoring with local visual signals (LEDs), a local service interface (USB) and an RS-485 interface for communication with the central SCADA system via MODBUS RTU protocol.

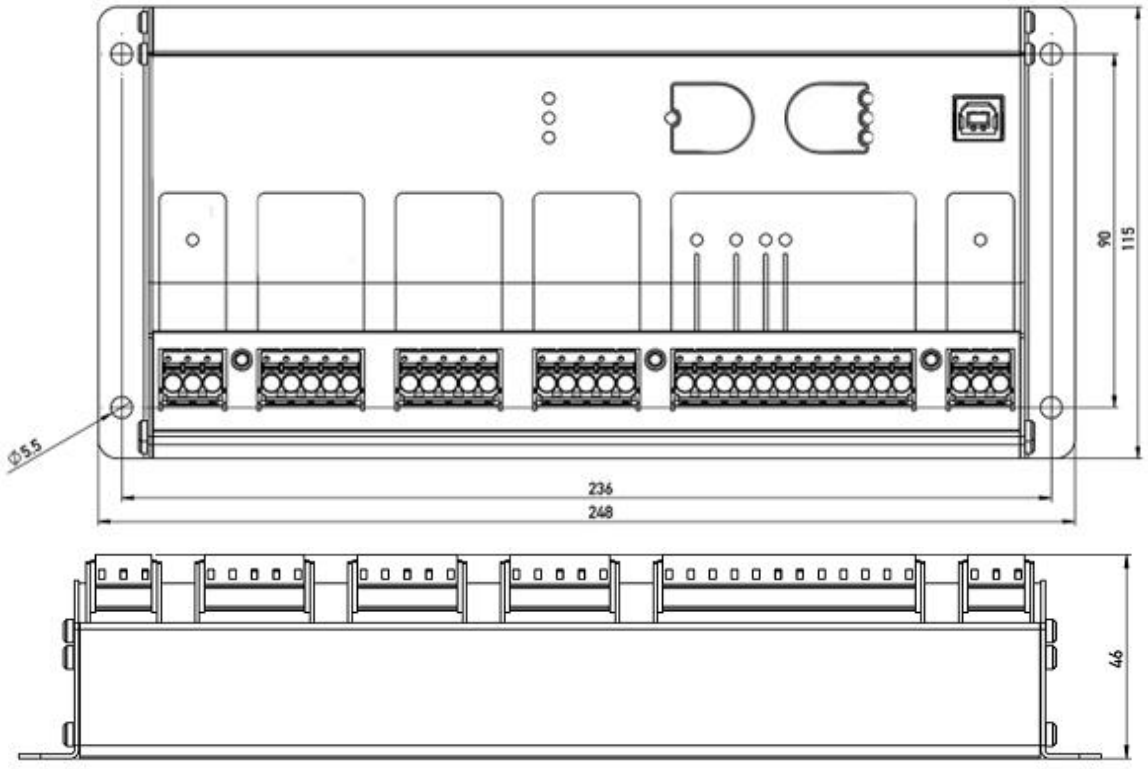
Interface and functions

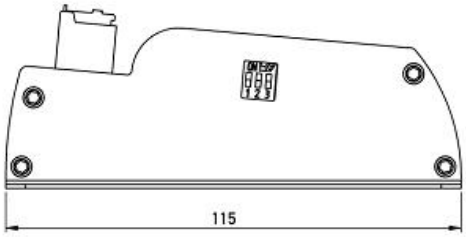


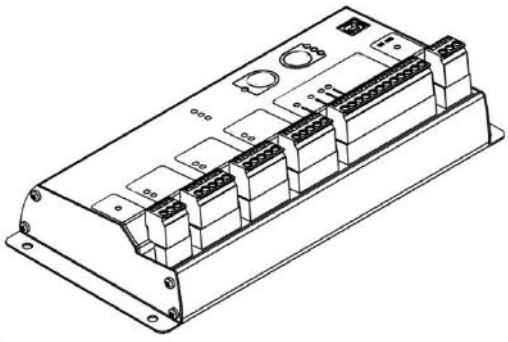
POWER		Power supply 9 to 36 V DC
GROUP A **GROUP B** **GROUP C**	I max = 6 A I max = 6 A I max = 2 A	3 NavAid interfaces (connection to the NAi bus), each for the connection of a group of navigation light components or marking components, each with load monitoring and state display using LEDs in the front panel
FAULT		Fault output, galvanically isolated, with overload protection
ALARM		Alarm output, galvanically isolated, with overload protection
NIGHT IN		Input 'Night Mode', galvanically isolated
DIGITAL IN		2 digital inputs, galvanically isolated, for general use
ANALOGUE IN		2 analogue inputs 0 to 50 V, for general use
RS 485		RS-485 interface for communication with the control center
RUN		Operation indicator of the LightGuard NAi controller
NIGHT		Day-Night identification: LED is illuminated in night mode
SYNC		Display of the GPS synchronization
TEST/RESET		Pushbutton for : 1. Starting the test mode on all connected NAi devices (with LED indication) 2. Resetting arisen alarms and tripped fuses
MODE/CONFIG		Pushbutton for: 1. Selecting the operation mode of the connected NAi devices (with LED indication) OFF - all devices permanently off AUTO - all devices in automatic mode (day-night switching) ON - all devices permanently on 2. Selecting one out of three preconfigured parameter sets for the NAi network (A/B/C, with LED indication)
SERVICE		(not labeled, above RS 485), service interface (USB)

Technical Data

Dimensions and weight







Housing dimensions (width x height x depth) **Height with plug**	248 mm x 40 mm x 115 mm 57 mm
Weight	approx. 700 g

Reliability

MTBF acc. To Siemens SN29500-1 (Ambient temperature 50 °C)	910 000 h

Environmental conditions

Ambient temperature T_A (operation)	-40 °C to 55 °C
Ambient temperature (storage / transport)	-40 °C to 70 °C
Humidity (operation / storage / transport)	max. 95 %
Degree of protection (acc. to IEC 60529)	IP40
Protection class	III
Degree of pollution	V 2, condensation in operation not permissible!

EMC compliance

EMV-Anforderungen		**Applied Standard**	**Test standard/test criteria**
Emission	**Radiated emission**	EN 61000-6-4:2007 + A1:2011	IEC/CISPR 16-2-3:2010 Antenna distance 10 m
	Conducted emission	EN 61000-6-4:2007 + A1:2011	IEC/CISPR 16-2-1:2010
Interference immunity	**Electrostatic discharge (ESD)**	EN 61000-6-2:2005	IEC 61000-4-2:2008 Performance criterion B 8 kV air discharge 4 kV contact discharge
	Electromagnetic fields	EN 61000-6-2:2005	IEC 61000-4-3:2010 Performance criterion A Field strength 10 V/m
	Fast transients (burst)	EN 61000-6-2:2005	IEC 61000-4-4:2012 Performance criterion B Test level: 2 kV on DC supply lines (L+,L-) 1 kV on I/O, RS485 and NAi bus lines (VP,VN,DP,DN)
	High energy transients (surge)	EN 61000-6-2:2005	IEC 61000-4-5:2005 0,5 kV on DC-supply lines (L+,L-) 1 kV on I/O, RS485 and NAi bus lines (VP,VN,DP,DN)
	Conducted disturbances, induced by radio-frequency fields	EN 61000-6-2:2005	IEC 61000-4-6:2008 Performance criterion A All lines: Test level: 10 V
	Magnetic fields (power-frequency)	EN 61000-6-2:2005	IEC 61000-4-8:2010-11 30 A/m, 50 Hz

Digital Inputs

NIGHT IN **DIGITAL IN**	Number of inputs	2	isolated, both inputs connected to a reference voltage
	Input voltage	0 V DC to 36 V DC	
	Switch on voltage	7 V DC	
	Switch off voltage	4.5 V DC	
	Input resistance	approx. 3 kΩ	
	Maximum input frequency	200.0 Hz	
	Minimum input pulse width	150.0 µs	

Outputs Fault/Alarm

FAULT/ALARM	Switching voltage	9 V to 36 V	isolated
	Load current	0.0 A to 0.6 A	ohmic load; overload and short circuit protection

Analogue inputs

ANALOGUE IN	Number of inputs	2	not isolated
	Measuring range	0.0 to 50.0 V DC	
	Resolution	0.05 V DC	
	Accuracy	0.4 %	from end value
	Over voltage	max. 100 V	
	Input resistance	100 kΩ	
	Maximum input frequency	0,5 Hz	

RS-485 interface (not isolated)

Protocol	MODBUS RTU (Slave)	
Bit rate	9600/ 19200 baud	
Data format	Transfer mode A (default)	1 Start bit/ 8 Data bits/ even parity/ 1 Stop bit
	Transfer mode B	1 Start bit/ 8 Data bits/ no parity/ 2 Stop bits
Termination	120 Ω	

Power supply

Supply voltage	9 to 36 V DC
Mean own consumption	approx. 400 mW