

Binary Alert System NAS 24

user manual

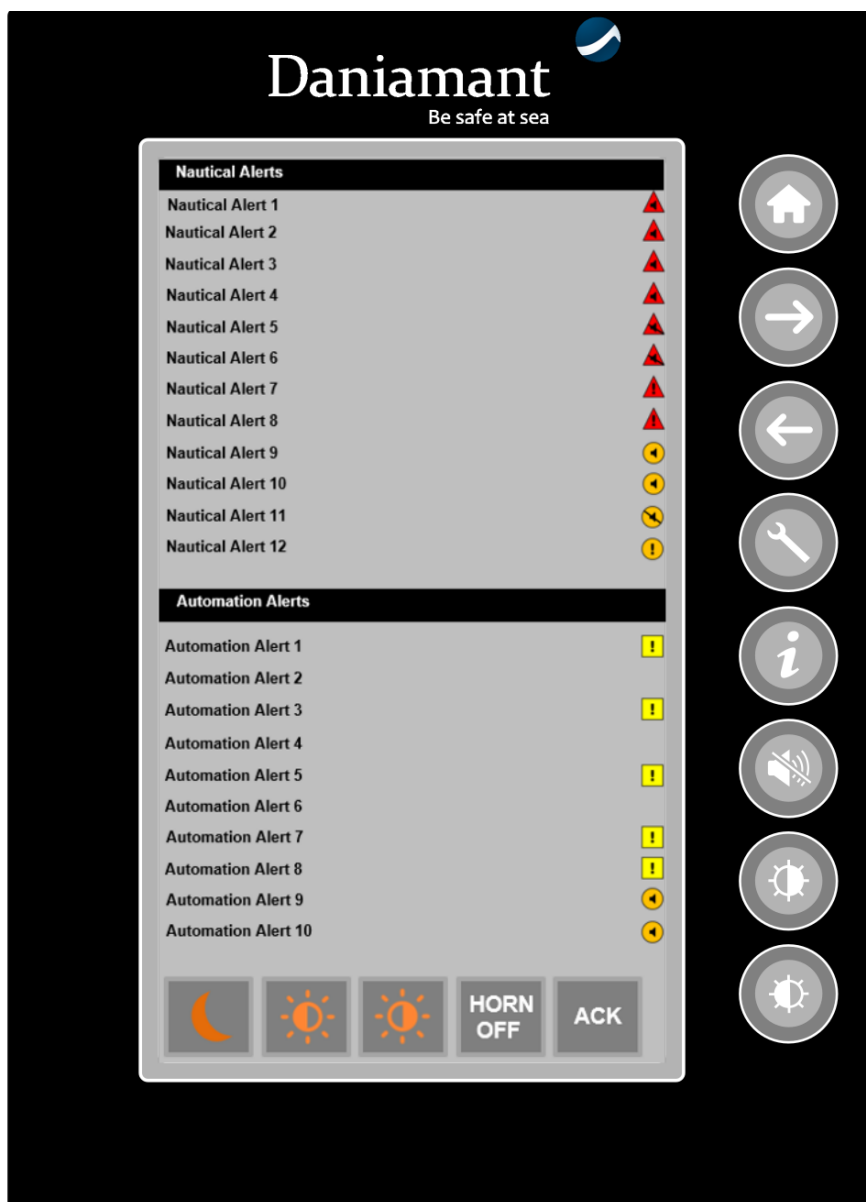


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Revision History

NAS24_user_manual_20191101	Initial release
NAS24_user_manual_20201009	GUI changes
NAS24_user_manual_20210122	predefined buzzer characteristics, ext. mute delay and transfer alarm delay changed to min. 30 sec. Page 8 and 9 switched. Minimum alarm delay 2 sec. Minimum silence delay 30 sec. Updated settings button description on page 6

1 Safety Indication

The Daniamant *NAS 24* must be installed by trained electricians or other persons who are familiar with installation of electric equipment.

Parts of the system can be damaged and persons put at risk if system is connected incorrectly.



2 General Instruction

The Daniamant NAS 24 has been designed to indicate binary alarms or status on a common screen especially for marine application. All alarm channels are permanently indicated even though they are not active to give full overview about the monitored states. Typical applications for the NAS 24 are, nautical alarms, tank level alarms, bilge level alarms, watertight doors and fire doors.

Technical system data & features

- dimmable 7,0" full graphic touch display
- with day vision / night vision
- touch panel protection rate: IP65 (front)
- 23 inputs / alarm channels (dry contacts expected)
- external mute (dry contact expected)
- internal buzzer & output for external buzzer (600mA short-circuit protected voltage output 24VDC)
- output for alarm transfer (common alarm)
- system failure (real watch dog)
- outputs for selectable alarm transfer locations (600mA short-circuit protected voltage output 24VDC)

Parameter adjustable by user:

- input logic n/o or n/c (each channel)
- alarm delay 2... 20 sec (each channel)
- each channel selectable as alarm or status indication
- alarm & status indication color selectable
- alarm transfer delay 60...180 sec (common delay)
- each alarm text to be edited by user via on-screen keyboard
- system failure contact N/C 2A.
- external mute delay 30...180 sec
- silence delay 30...180 sec

3 power supply arrangement

Type of supply voltage	DC
Rated value (DC)	24 V
Permissible range, lower limit (DC)	20,4 V
Permissible range, upper limit (DC)	28,8 V
Current consumption (rated value)	800 mA
Power consumption (rated value)	19,2 W

Disclaimer

Operating Panel NAS24-M02 has to be equipped with supply filter Epcos B84113C (included in delivery scope) in order to meet EMC class B requirements.

Control Unit NAS24-M01 has to be equipped with supply filter Epcos B84113C and Dehn Blitzductor (included in delivery scope) in order to meet EMC class B requirements.

4 User Interface

The screenshot shows the Daniamant user interface. At the top, the logo and tagline 'Be safe at sea' are displayed. The main area is divided into two sections: 'Nautical Alerts' and 'Automation Alerts'. The 'Nautical Alerts' section lists 12 alerts, each with a red triangle icon. The 'Automation Alerts' section lists 10 alerts, each with a yellow exclamation mark icon. At the bottom of the interface, there are five buttons: a moon icon (switch between day and night mode), a sun icon (increase/decrease screen brightness), a speaker icon (mute the alarm buzzer), a 'HORN OFF' button, and an 'ACK' button. To the right of the interface, a vertical column of six circular buttons is shown with arrows pointing to them from descriptive text. These buttons are: a home icon (bring user back to home screen), a right arrow (move to next menu page), a left arrow (move to previous menu page), a wrench icon (push to setting menu), an information icon (same functionality as HORN OFF), and a sun icon (increase screen brightness). Below these buttons, there is a section for 'Login data' with the text 'User: captain' and 'Pass: 2401'.

Daniamant
Be safe at sea

Nautical Alerts

Nautical Alert 1
Nautical Alert 2
Nautical Alert 3
Nautical Alert 4
Nautical Alert 5
Nautical Alert 6
Nautical Alert 7
Nautical Alert 8
Nautical Alert 9
Nautical Alert 10
Nautical Alert 11
Nautical Alert 12

Automation Alerts

Automation Alert 1
Automation Alert 2
Automation Alert 3
Automation Alert 4
Automation Alert 5
Automation Alert 6
Automation Alert 7
Automation Alert 8
Automation Alert 9
Automation Alert 10

Buttons at the bottom of the interface:

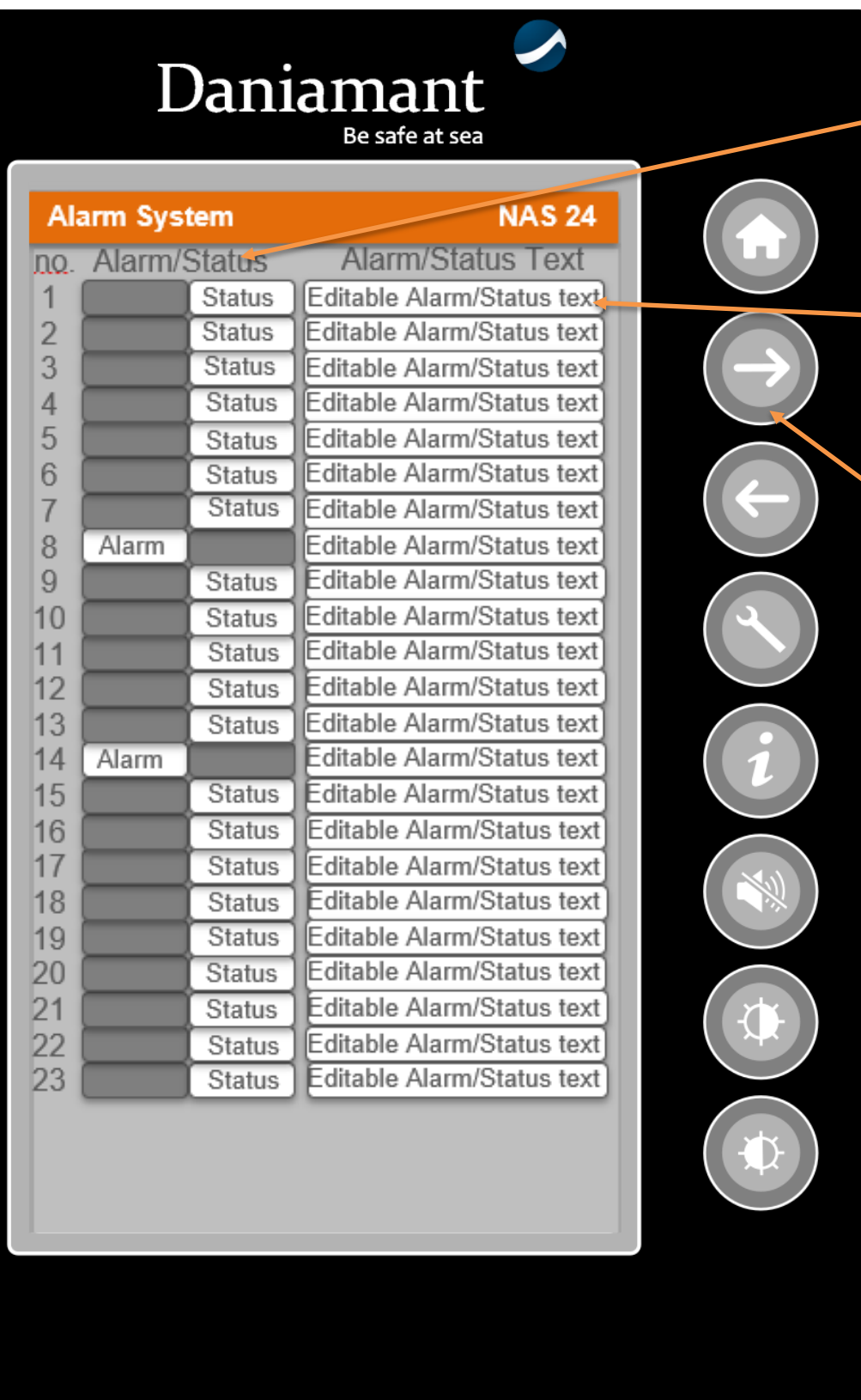
- Switch between day and night mode
- Increase/decrease screen brightness
- Mute the alarm buzzer
- Acknowledge the alarms/warnings

Buttons on the right side of the interface:

- This button brings the user back to the home screen
- Move to the next menu page
- Move to the previous menu page
- Push to setting menu (type in User, Pass). Afterwards press the button and hold for at least 3 seconds to enter the settings menu
- This button has the same functionality as HORN OFF
- Increase screen brightness
- Decrease screen brightness

Login data
User: captain
Pass: 2401

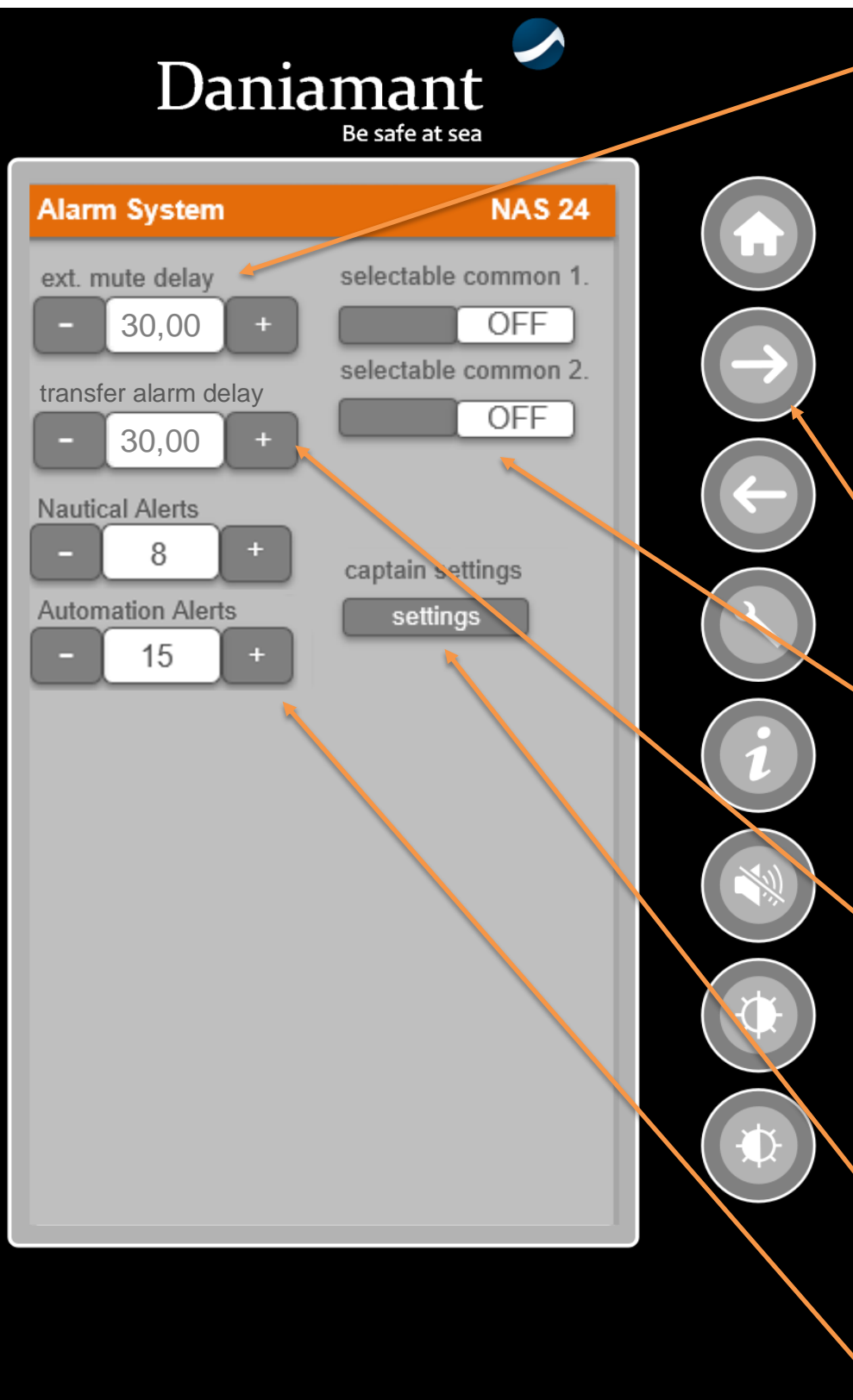
5 Settings



Each of the 23 binary inputs can be separately defined as status or alarm

The alarm text, which will later be shown in the alarm list, can be edited at any time

After finishing the adjustments, this button will bring the user to the next settings page



The NAS 24 buzzer can be muted through a binary input. The mute delay will silence the system buzzer for the defined time before it gets active again. A permanent silence state can only be activated at the NAS 24 panel (ACK).


After finishing the adjustments, this button will bring the user to the next settings page

2 selectable alarm outputs (600mA) which will be activated with the common alarm

Adjustable delay for the transfer alarm output contact

Captain settings will open up the settings page shown on the next page

Amount of nautical and automation alerts needs to be defined











Daniamant

Be safe at sea

Alarm System
NAS 24

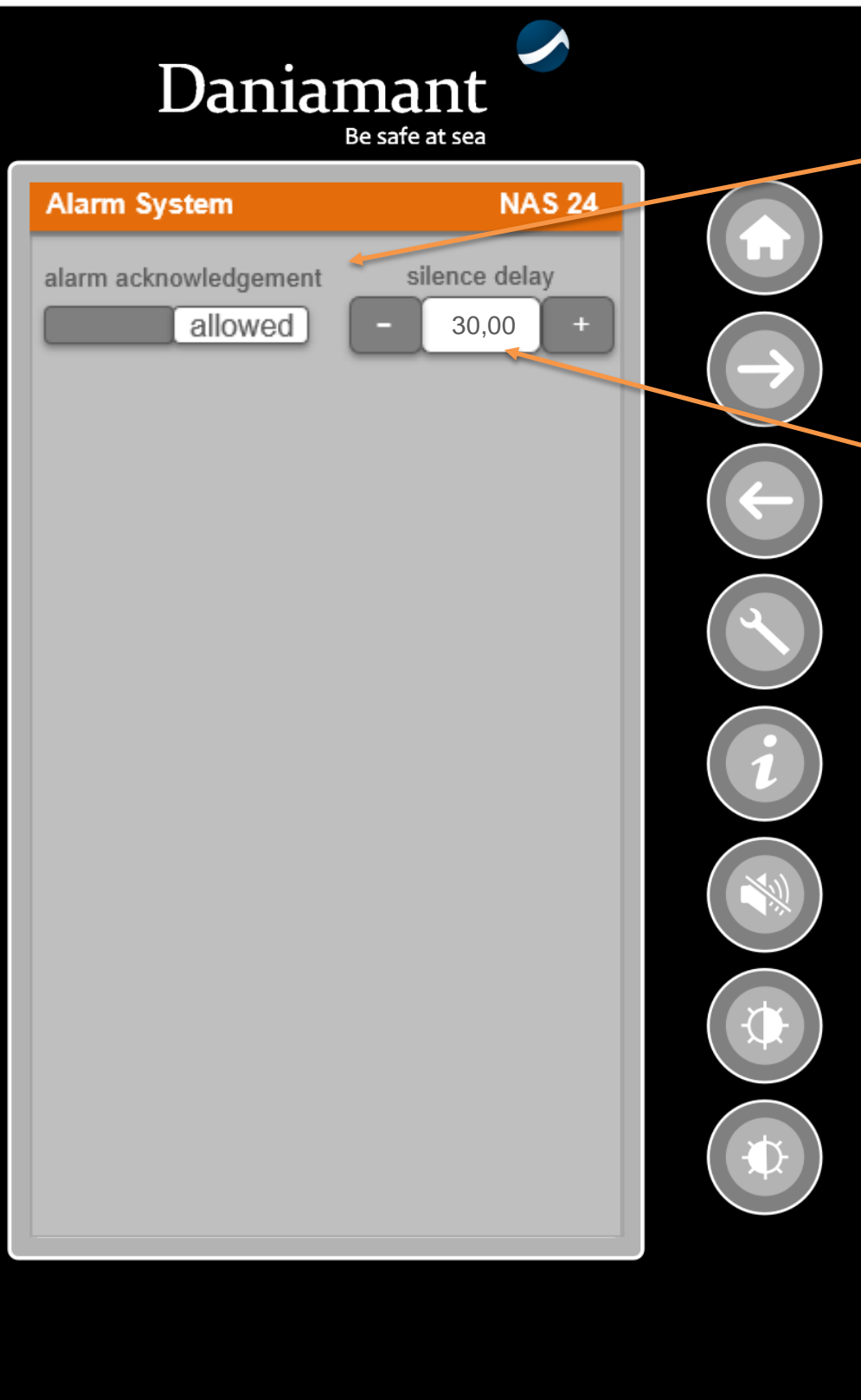
no.	no/nc	delay	warning/alert
1	no	2,00	alert
2	nc	2,00	alert
3	no	2,00	alert
4	no	2,00	alert
5	no	2,00	alert
6	no	2,00	alert
7	nc	2,00	alert
8	no	2,00	Warning
9	no	2,00	alert
10	no	2,00	alert
11	no	2,00	alert
12	no	2,00	alert
13	no	2,00	alert
14	no	2,00	Warning
15	nc	2,00	alert
16	no	2,00	alert
17	no	2,00	alert
18	no	2,00	alert
19	no	2,00	alert
20	no	2,00	alert
21	no	2,00	alert
22	no	2,00	alert
23	no	2,00	alert

Each binary input can individually be set to normally open/closed

Each binary input alert/warning/status can be delayed in a specific range.

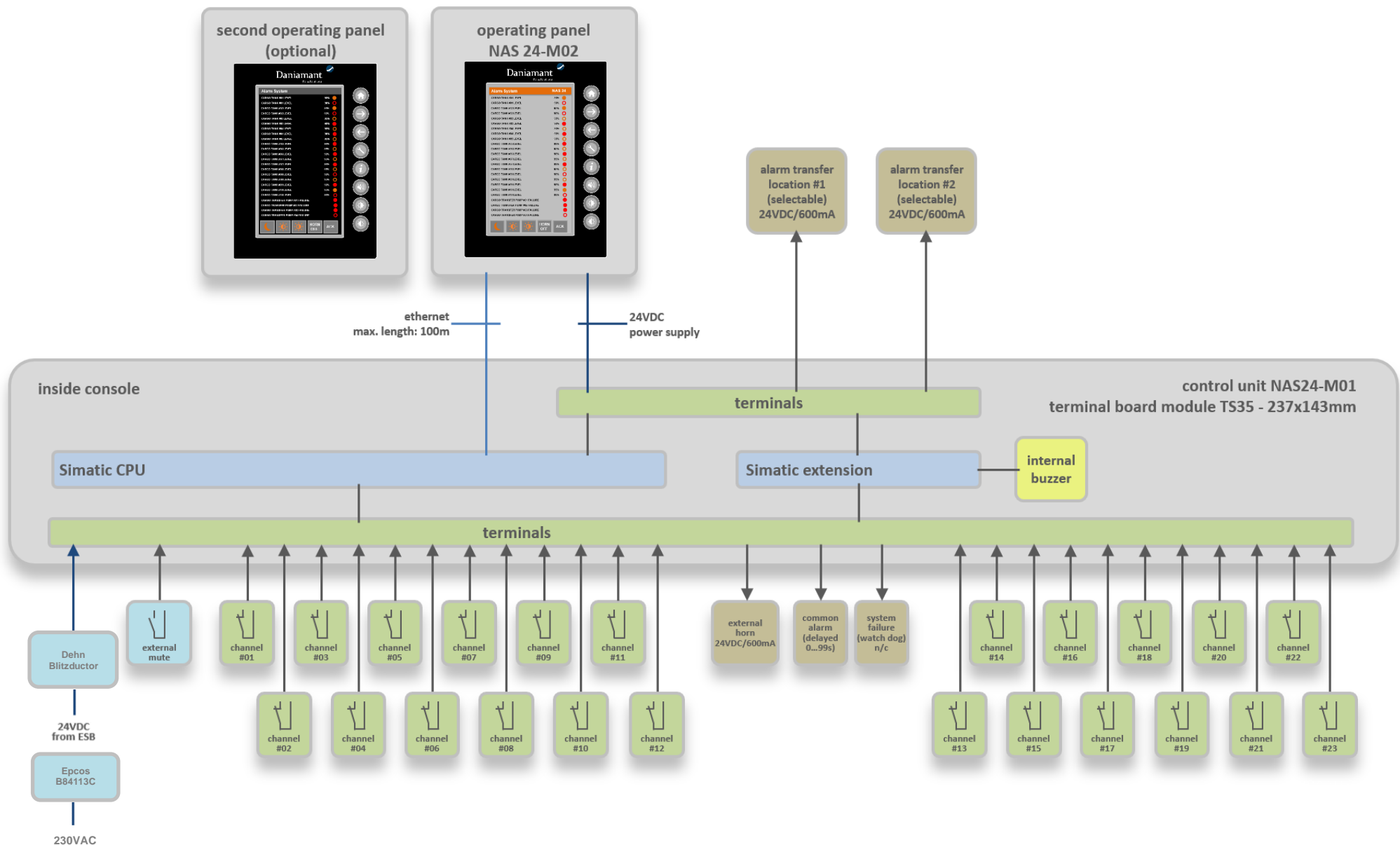
After finishing the adjustments, this button will bring the user to the next settings page



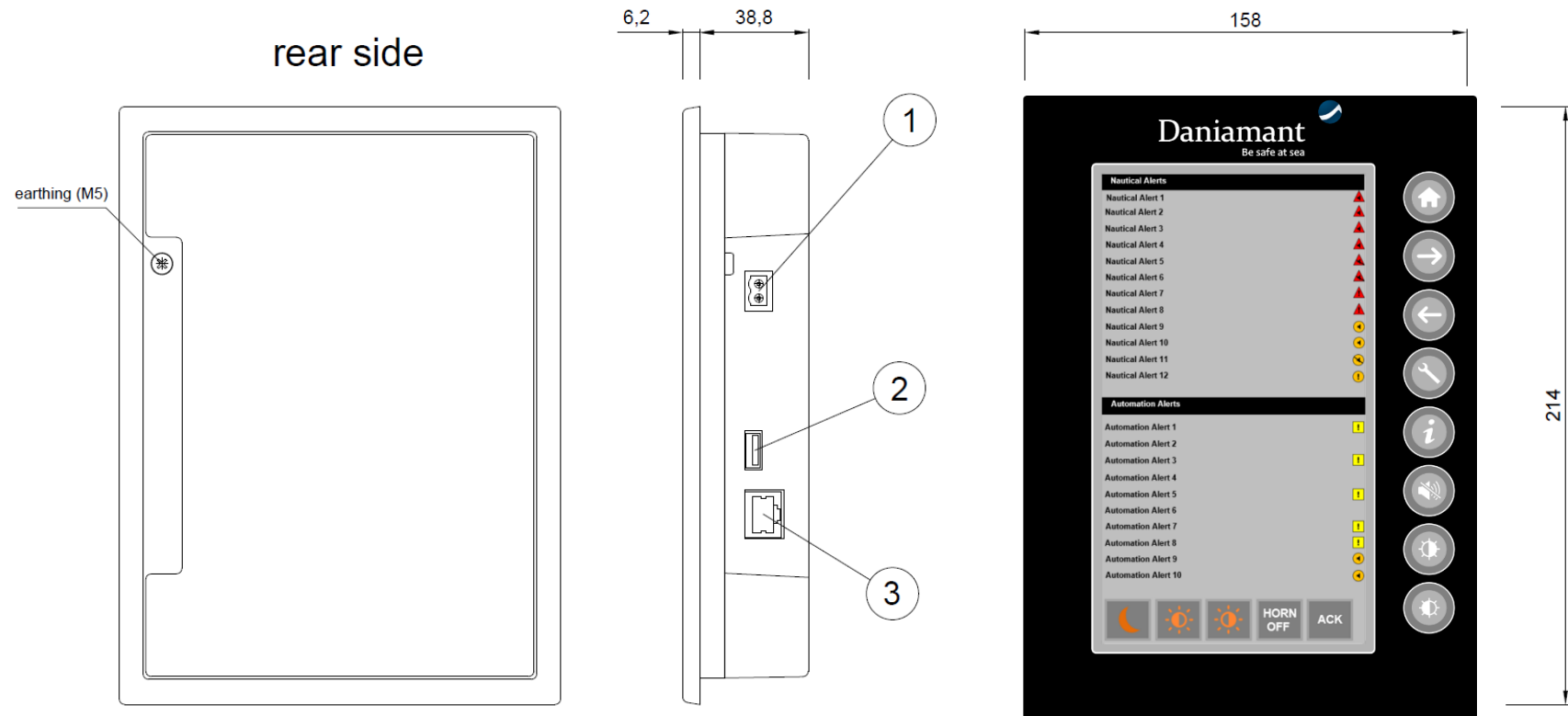
In case the NAS 24 a second operation panel is available, the captain can allow the acknowledgement from the second panel and define the silence delay.

Silence delay is adjustable between 30 and 180 sec.

6 Single line diagram



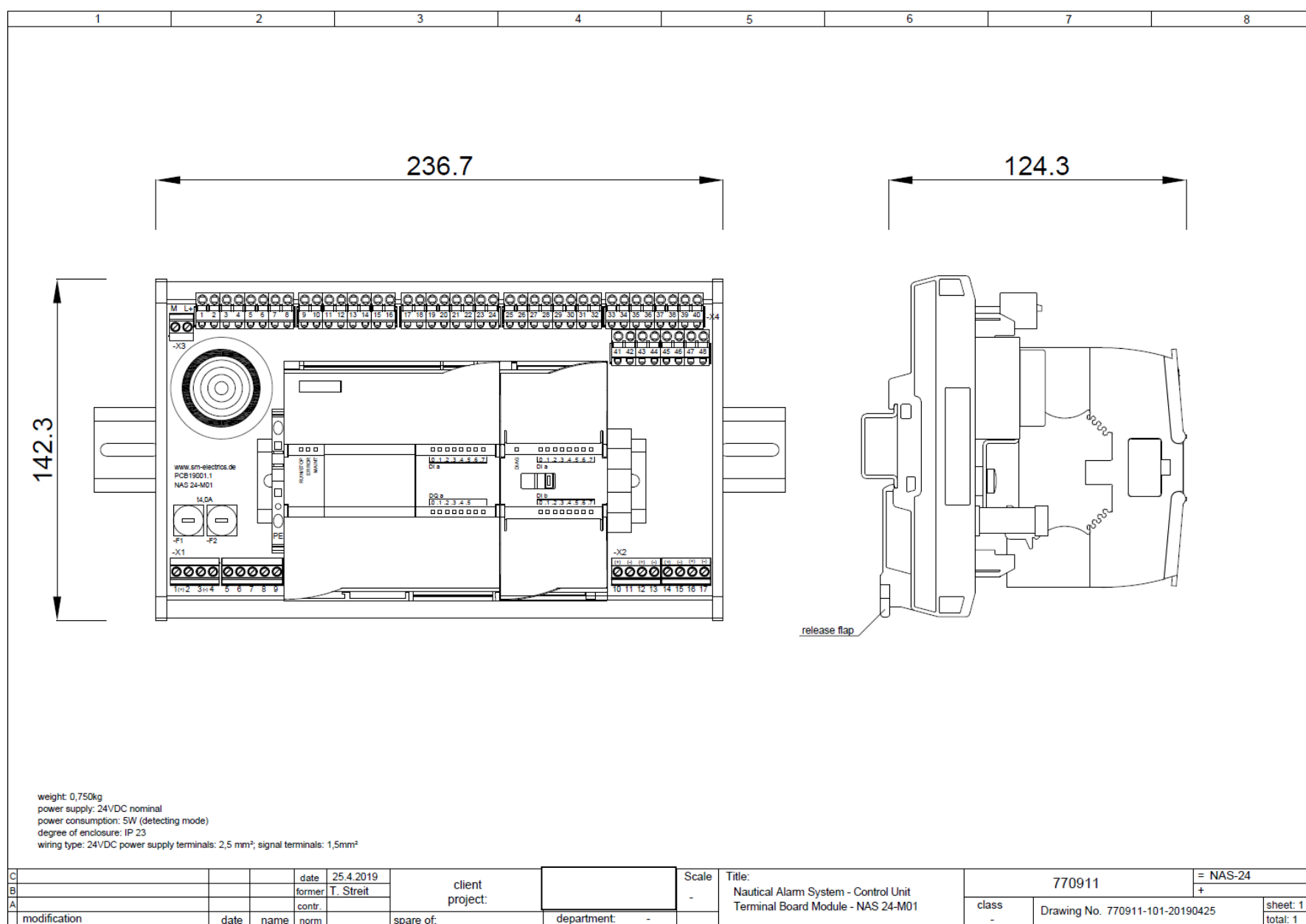
7 Drawings



LED backlight (day vision / night vision)
system voltage: 19,2...28,8VDC, power consumption: 5,6W
core size: max 0,2... 1,5mm
degree of enclosure: front: IP 65, rear: IP 20
max. depth: 39,0mm
weight: 0,780kg
safety distance to magnetic compass: 0.5m
cutout: 197x141mm
panel thickness (mounting): 1,5 - 9,5mm
display size: 154,1 x 85,9mm

connectors:
1: 24VDC power supply
2: USB (for software update only)
3: Ethernet (link to NAS 24 i/o module)

C			date	23.3.2018		Scale	Title:	770912	= NAS_24
B			former	T. Streit	client project:	-	NAS 24-M02		+ -
A			contr.				Nautical Alarm System - Operating Panel	class	
	modification	date	name	norm	spare of:	department:	-	Drawing No.: 770912-101-20190429	sheet: 1
									total: 1



8 Connecting sheet

	description / alarm text	channel	terminal	signal type	delay [sec]	link	cable No.	core type	core no.	terminal	type system
TB											
-X1	+24VDC NAS 24 power supply (6A)	+	1					0,5...2,5mm ²			NAS 24
		+	2								
	0VDC NAS 24 power supply (6A)	-	3								NAS 24
		-	4								
	NAS 24 failure contact (watch dog)		5								NAS 24
			6								
-X2	NAS 24 external buzzer (24VDC/600mA max)	+	10		0			0,5...2,5mm ²			NAS 24
		-	11								short-circuit protected
	NAS 24 transfer alarm location #1 (24VDC/600mA max)	+	12		60						NAS 24
		-	13								short-circuit protected
	NAS 24 transfer alarm location #2 (24VDC/600mA max)	+	14		60						NAS 24
		-	15								short-circuit protected
-X3	NAS 24 external buzzer - alarm panel #2 (24VDC/600mA max)	+	16		0			0,5...2,5mm ²			NAS 24
		-	17								short-circuit protected
-X4	NAS 24-M02 operating panel	+	L+					0,5...2,5mm ²			NAS 24
		-	M								
(for alarm grouping use odd numbers as common)		1	1	2	nc			0,25...1,5 mm ²			monitored system # 1
		2	2								
		3	3	2	nc						monitored system # 2
		4	4								
		5	5	2	nc						monitored system # 3
		6	6								
		7	7	2	nc						monitored system # 4
		8	8								
		9	9	2	nc						monitored system # 5
		10	10								
		11	11	2	nc						monitored system # 6
		12	12								
		13	13	2	nc						monitored system # 7
		14	14								
		15	15	2	nc						monitored system # 8
		16	16								
		17	17	2	nc						monitored system # 9
		18	18								
		19	19	2	nc						monitored system # 10
		20	20								
		21	21	2	nc						monitored system # 11
		22	22								
		23	23	2	nc						monitored system # 12
		24	24								
		25	25	2	nc						monitored system # 13
		26	26								
		27	27	2	nc						monitored system # 14
		28	28								
		29	29	2	nc						monitored system # 15
		30	30								
		31	31	2	nc						monitored system # 16
		32	32								
		33	33	2	nc						monitored system # 17
		34	34								
		35	35	2	nc						monitored system # 18
		36	36								
		37	37	2	nc						monitored system # 19
		38	38								
		39	39	2	nc						monitored system # 20
		40	40								
		41	41	2	nc						monitored system # 21
		42	42								
		43	43	2	nc						monitored system # 22
		44	44								
		45	45	2	nc						monitored system # 23
		46	46								
		47	47	0	no						NAS 24
		48	48								external mute (silencing)

TYPE APPROVAL CERTIFICATE

DNV-GL

Certificate No:
TAA000016S
Revision No:
1

This is to certify:

That the Peripheral Equipment

with type designation(s)

SIMATIC HMI / Panel System OP ..., TP ..., MP ..., KP ..., KTP ... Basic, KP/KTP... Comfort, KP/TP... Comfort, KTP... Basic, KTP... Mobile, Connection Box...

Issued to

Siemens AG A&D AS RD ST Type Test
AMBERG, Germany

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature B

Humidity B

Vibration A

EMC	B
-----	---

Enclosure Required protection according to DNV Rules shall be provided upon installation on board

Issued at Hamburg on 2017-05-02

This Certificate is valid until 2022-05-01.

DNV GL local station: Augsburg

Approval Engineer: Heinz Scheffler



Digitally Signed By: Rinkel, Marco

for DNV GL

Location: Hamburg, on behalf of

Joannis Papanuskas
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Form code: TA 251

Revision: 2016-12

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Job Id: 262.1-024489-2
Certificate No: TAA000016S
Revision No: 1

Product description

SIMATIC Operator Panel Systems covering:

- | | |
|---|----------|
| • OP 270, MP 270, MP 370 | 6AV6 542 |
| • TP 270, MP 270, MP 370, TP 170 | 6AV6 545 |
| • OP 73micro, TP 177micro-6 | 6AV6 640 |
| • OP 73, OP 77 | 6AV6 641 |
| • TP 177A, TP 177B, OP 177B, TP 177B-4", MP 177-6" | 6AV6 642 |
| • OP 277, TP 277, MP 277T, MP 277K | 6AV6 643 |
| • MP 377-15" Daylight | 6AV6 644 |
| • KP300 Basic, KTP400/600 Basic, KTP1000 Basic | 6AV6 647 |
| • KP400 Comfort, KP700 Comfort, KP900 Comfort, KP1200 Comfort, KP1500 Comfort | 6AV2 124 |
| • TP400 Comfort, TP700 Comfort, TP900 Comfort, TP1200 Comfort, TP1500 Comfort, TP1900 Comfort, TP2200 Comfort | 6AV2 124 |
| • KTP400 Basic, KTP700 Basic, KTP900 Basic, KTP1200 Basic | 6AV2 123 |
| • KTP700 Mobile, KTP900 Mobile | 6AV2 125 |
| • KP8 PN | 6AV3 688 |
| • Connection Box Standard, Connection Box Advanced, Connection Box Compact | 6AV2 125 |

Application/Limitation

Location classes:

EMC class B: only with appropriate filter and/or protection as listed below.

A filter is to be fitted in the power supply lines:

- TP170 is to be fitted with filter Corcom 3EQ1 (tested) or equivalent
- MP 377-15" Daylight can be installed without filter
- KP300 Basic is to be fitted with common mode choke 20 mH WÜRTH 744821120 (tested) or equivalent.
- KP/KTPxxx Basic/ Comfort with filter B84113C
- KTP700/900 Mobile Bridge and Deck zone with filter B84113C
- KP8 PN power supply and signal line are to be fitted with common mode choke WÜRTH 742 716 22 (tested) or equivalent

Surge Immunity: External Protective circuits required for DC systems.

See the current System Manual (A5E03461486) for recommendations.

MP370 are only to be used with EMC Protection manufactured by Bartec.

- | | |
|--------------------|------------------------|
| • MP370 Key 12": | MP370-12K 05-0042-0016 |
| • MP370 Touch 12": | MP370-12T 05-0042-0015 |
| • MP370 Touch 15": | MP370-15T 05-0042-0017 |

Installation of the units described in manufacturer's instructions.

Job Id: **262.1-024489-2**
 Certificate No: **TAA000016S**
 Revision No: **1**

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After the certification the clause for application software control will be put into force.

Clause for application software control

All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV GL for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Type Approval documentation

Documents: Equipment Manual MP/TP/OP270 (A5E00136825, Edition 12/01)
 Operating Instructions OP73micro, TP177micro (A5E01006740-02, Edition 09/2007)
 Operating Instructions MP277 (A5E02479740-02, Edition 07/2014)
 Operating Instructions Mobile Panels 2nd Generation (A5E33876626-AB, Edition 11/2015)
 Operating Instructions Comfort Panels (A5E36770603-AC, Edition 08/2018)
 Operating Instructions Basic Panels 2nd Generation (A5E33293231-AB, Edition 10/2016)
 Operating Instructions Basic Panels 1st Generation (A5E02421799-03, Edition 04/2012)
 Operating Instructions KP8, KP8F, KP32F (A5E03284305-02, Edition 11/2011)
 Internal Drawing A5E46416330A, Rev.001
Test Reports: List of Test Reports A5E46416330A, Rev.001

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:

- model name
- manufacturer name
- serial number

Job Id: 262.1-024489-2
Certificate No: TAA000016S
Revision No: 1

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE

DNV GL

Certificate No:
TAA000000K
Revision No:
1

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Programmable Electronic System

with type designation(s)
SIMATIC S7-1200

Issued to

Siemens AG DF FA AS SIMATIC Type Test
Amberg, Bayern, Germany

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature D

Humidity B

Vibration A

EMC A/B*

Enclosure Required protection according to DNV Rules shall be provided upon installation on board

*** see Application/Limitation**

Issued at **Hamburg** on **2018-12-13**

This Certificate is valid until **2023-12-03**.

DNV GL local station: **Augsburg**

Approval Engineer: **Heinz Scheffler**



Digitally Signed By: Rinkel, Marco
for **DNV GL**

Location: Hamburg, on behalf of

Joannis Papanuskas
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Form code: TA 251

Revision: 2016-12

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Job Id: **262.1-009980-5**
 Certificate No: **TAA000000K**
 Revision No: **1**

Product description

Programmable Logic Controller SIMATIC S7-1200

Including:

Type of equipment	Type designation
CPU – Central Processing Units	
CPU 1211C	6ES7 211-...
CPU 1212C	6ES7 212-...
CPU 1214C	6ES7 214-...
CPU 1215C	6ES7 215-...
CPU 1217C	6ES7 217-....
SB - Signal Modules	
SM 1221	6ES7 221-...
SM 1222	6ES7 222-...
SM 1223	6ES7 223-...
SM 1231	6ES7 231-...
SM 1232	6ES7 232-...
SM 1234	6ES7 234-...
CM - Communication Modules	
CB/CM 1241	6ES7 241-...
Signal boards	
SB 1221	6ES7 221-...
SB 1222	6ES7 222-...
SB 1223	6ES7 223-...
SB 1231	6ES7 231-...
SB 1232	6ES7 232-...
Power supply module	
PM 1207	6EP1 332-...
Accessories	
Memory Cards	6ES7 954-...
BB1297	6ES7 297-...

Application/Limitation

Location classes:

EMC class B: Only with filter type Epcos B84113C or equivalent. Tested with: I=3A, C=2x0,47uF+2x4700pF, L=4x4,7mH

24V power supply lines are to be protected by Dehn Blitzductor order No. 918 402 (tested) or equivalent.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Job Id: 262.1-009980-5
Certificate No: TAA000000K
Revision No: 1

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After the certification the clause for application software control will be put into force.

Clause for application software control

All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV GL for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Type Approval documentation

Documents: Operating Instructions (PS); C98130-A7569-A1-04-6419 dated June 2009;
System Manual no.: No. A5E02486680 dated 08/2018;
Siemens SIMATIC S7-1200 Product Information No. A5E02808525-01 dated 01/2010;
Internal Drawing A5E46276822A Rev. 01
Test Reports: TAA000000K list of testreports Rev. 01

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE

DNV-GL

Certificate No:
TAA00002HS

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Monitoring System

with type designation(s)
Binary Alert System NAS24

Issued to
sm electrics GmbH services & more
Stakendorf, Germany

is found to comply with
DNV GL rules for classification – High speed and light craft
DNV GL rules for classification – Ships

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature	B
Humidity	B
Vibration	A
EMC	A/B*
Enclosure	Required protection according to DNVGL Rules shall be provided upon installation on board

***see Application/Limitation**

Issued at **Hamburg** on **2019-11-05**

This Certificate is valid until **2024-11-04**.

DNV GL local station: **Hamburg**

Approval Engineer: **Jan Reinecke**

for **DNV GL**



Digitally Signed By: Schaarmann, Arne
Location: DNV GL SE Hamburg, Germany
Signing Date: 2019-11-08

Arne Schaarmann
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Form code: TA 251

Revision: 2016-12

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Job Id: 262.1-031848-1
Certificate No: TAA00002HS

Product description

The Binary Alert System NAS24 consists of the following components:

- Operating Panel NAS24-M02, Software Vers. NAS_24_190522
- Control Unit NAS24-M01, Software Vers. NAS_24_190522

Approval conditions

The following documentation of the actual application is to be submitted for approval in each case:

- Reference to this Type Approval Certificate
- System block diagram
- Power supply arrangement (may be part of the System block diagram)

Product certificate

As long as the units are covered by the Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1 will not be required. Correct configuration and set up for each delivery to be tested during commissioning after installation onboard and witnessed by attending DNV GL surveyor. After the successful testing the clause for software control will be put into force.

Software control

All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV GL for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

Application/Limitation

EMC class B: only with filter type Epcos B84113C.

24 V power supply lines are to be protected by Dehn Blitzduktor, order no. 918 402

Type Approval documentation

DNV GL No	Document Id.	Rev.	Description
11	FAT-NAS24-20190923	20190923	Report: FAT Protocoll 20190923
9	no.1035	2019-10-21	BSH, Compass Safe Distance Certificate
8	NAS24_user_manual_20191101	20191101	Manual: Binary Alert System NAS 24, user manual

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

For the bridge mounted components the 'Compass safe distance' was measured according to section 11.2 of IEC 60945, 4th edition (2002).

Components type approved with following certificates: SIMATIC S7: TAA000000K; HMI Panel KTP700 Basic: TAA000016S

Job Id: **262.1-031848-1**
 Certificate No: **TAA00002HS**

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- Compass safe distance
- power supply ratings

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE

Product Data Sheet: BLITZDUCTOR VT

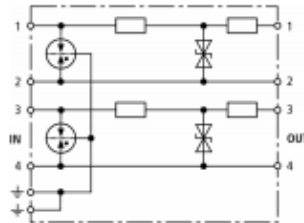


BVT TTY 24 (918 400)

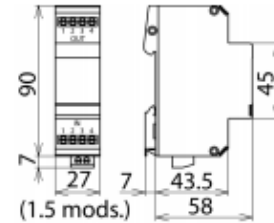
- Simultaneous protection of two TTY loops
- Additional decoupling with regard to the terminal device
- For installation in conformity with the lightning protection zone concept at the boundaries from 0_B – 2 and higher



Figure without obligation



Basic circuit diagram BVT TTY 24



Dimension drawing BVT TTY 24

Owing to the additional decoupling resistors at the output, even diodes with a low absorption capacity integrated in terminal equipment are energy-coordinated with the protection stages. This is especially important for optocoupler interfaces.

Type	BVT TTY 24
Part No.	918 400
SPD class	TYPE 2
Nominal voltage (d.c.) (U_N)	24 V
Max. continuous operating voltage (d.c.) (U_C)	26.8 V
Max. continuous operating voltage(a.c.) (U_C)	18.9 V
Nominal current (I_N)	0.1 A
D1 Lightning impulse current (10/350 μ s) per line (I_{imp})	0.8 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	10 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
Voltage protection line-line for I, C2 (U_p)	≤ 65 V
Voltage protection level line-PG for I, C2 (U_p)	≤ 700 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 36 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V
Series resistance per line	17.2 ohms per pair
Cut-off frequency line-line (f_c)	8 MHz
Capacitance line-line (C)	≤ 1 nF
Operating temperature range (T_U)	-40 °C ... +80 °C
Degree of protection	IP 20
For mounting on	35 mm DIN rails acc. to EN 60715
Connection (input / output)	screw / screw
Cross-sectional area, solid	0.08-2.5 mm ²
Cross-sectional area, flexible	0.08-2.5 mm ²
Tightening torque (terminals)	0.5 Nm
Earthing via	screw terminal
Enclosure material	thermoplastic, UL 94 V-0
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
Approvals	CSA, EAC
Weight	104 g
Customs tariff number (Comb. Nomenclature EU)	85363010
GTIN	4013364074231
PU	1 pc(s)

We reserve the right to introduce changes in performance, configuration and technology, dimensions, weights and materials in the course of technical progress. The figures are shown without obligation.



2-line filters

B84113C

SIFI-C for very high insertion loss

Power line filters for 1-phase systems
Rated voltage 250 V DC/AC, 50/60 Hz
Rated current 3 to 10 A

Alternative version

- Series B84113H (SIFI-H)
offers a low-cost solution

Construction

- 2-line filters
- Metal case
- Polyurethane potting (UL 94 V-0)

Features

- Compact design
- Optimized leakage current
- Cost-optimized construction
- Also for assembly on top-hat rails
- ENEC10, UL and CSA approval

Applications

- Switch-mode power supplies in
 - industrial electronics
 - telecommunications
 - data systems
 - medical equipment
- DC applications

Case styles and terminal styles

- | | |
|--------------|--|
| Case style A | Tab connectors on face ends, lateral fixing lugs.
Particularly suitable for mounting on a shielding wall. |
| Case style B | Tab connectors on face ends, fixing lugs on face ends. |
| Case style K | IEC connector as per IEC 60320 C 14 on line side,
tab connectors on load side, mounting holes with metric thread. |
| Case style L | Litz wires on face ends, fixing lugs on face ends |

Marking

Marking on component:

Manufacturer's logo, ordering code,
rated voltage, rated current, rated temperature,
climatic category, date code

Minimum marking on packaging:

Manufacturer's logo, ordering code



Please read *Cautions and warnings* and
Important notes at the end of this document.

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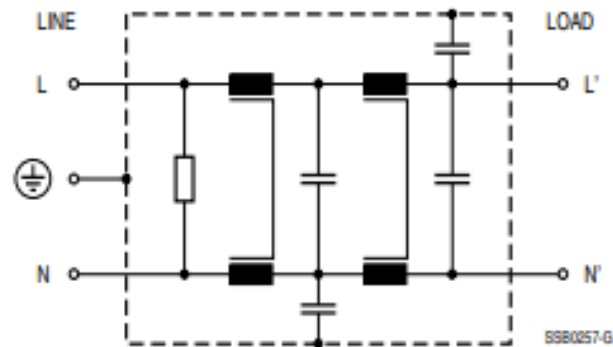


2-line filters

B84113C

SIFI-C for very high insertion loss

Circuit diagram



Technical data and measuring conditions

Rated voltage V_R	250 V DC/AC, 50/60 Hz
Rated current I_R	Referred to 40 °C ambient temperature
Test voltage V_{test}	1414 V DC, 2 s (line/line) 2700 V DC, 2 s (lines/case)
Leakage current I_{leak}	At 230 V AC, 50 Hz
Climatic category (IEC 60068-1)	25/085/21 (-25 °C/+85 °C/21 days damp heat test)
Approvals	EN 133200, UL 1283, CSA C22.2 No.8

Characteristics and ordering codes

I_R	C_R	L_R	I_{leak}	Case style	Approx. weight g	Ordering code	Mounting plate for top-hat rail (ordering code)
A		mH	mA				
$V_R = 250 \text{ V DC/AC, 50/60 Hz}$							
3	$2 \times 0.47 \mu\text{F (X2)}$ + $2 \times 4700 \text{ pF (Y2)}$	4×4.7	< 0.5	A	210	B84113C0000A030	—
				B	210	B84113C0000B030	C62122A0132B092
				K	270	B84113C0000K030	—
				L	210	B84113C0000L030	—
6	$2 \times 0.47 \mu\text{F (X2)}$ + $2 \times 4700 \text{ pF (Y2)}$	4×4.7	< 0.5	A	510	B84113C0000A060	—
				B	510	B84113C0000B060	C62122A0132B095
				L	510	B84113C0000L060	—
10	$2 \times 0.47 \mu\text{F (X2)}$ + $2 \times 4700 \text{ pF (Y2)}$	4×3.6	< 0.5	A	690	B84113C0000A110	—
				B	690	B84113C0000B110	C62122A0132B095
				L	690	B84113C0000L110	—

Please read *Cautions and warnings* and *Important notes* at the end of this document.

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