



INSTALLATION & USER MANUAL

SEARCHLIGHTS HALOGEN R60

NORSElight



Technical Manual for Halogen Searchlight

☐ SH 310 R60 1000W

☐ SH 470 R60 2000W

☐ 1 x 230 VAC 50/60 Hz

This manual refers to product:

Serial no.:

Controlled by:

Date:

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Introduction:

For more than 90 years, Norselight have designed and manufactured lighting products for marine vessels.

Through ongoing customer focused product development, Norselight continue to deliver quality products as demanded both at sea and on the rugged coastlines of Norway.

This commitment to quality and expertise provides the foundation for Norselight to be possibly the world's leading supplier of maritime lighting.

However, in order to stay in front, Norselight would very much appreciate all comments that you may have regarding our quality products or services.

Customer Service:

The Customer Service department of GLAMOX NT sp. z o.o. will be pleased to help you when ordering spare parts, for maintenance and repair work as well as in case of problems and questions.

Manufacturer:

GLAMOX NT Sp. z o.o.

Jagiellońska 51

32-410 Dobczyce

Poland

We would also like to use this opportunity to thank you for choosing **Norselight**.

Note:

These searchlights are intended exclusively for use on watercraft / ships.

They are therefore subject to special regulations which differ significantly from the relevant EU regulations and standards.

For use in Inland applications, additional EU directives may apply, which must then be observed for compliance.

1.0 General description:

Searchlight

The R60 searchlights SH 310 and SH 470:

are made from seawater resistant aluminum, welded and finished with white powder coat. The forks are made of stainless steel.

- The lamp housing contains one lamp, ignitor, silverplated glass-reflector, hardened frontglass, and a focus-motor for adjustment of the light beam.
- The motor housing contains a complete gear with motors for horizontal and vertical movement, a thermostat driven heating element and the electronic control system.

Control Panel

Main Operation Panel G2

It contains the following functions:

- BUS communication
- Lamp On / Off
- Joystick for horizontal and vertical movement
- Speed regulator for horizontal and vertical movement
- Focus +/- (light beam adjustment)
- Horizontal indicator for searchlight position 360° and vertical +/-30°
- Backlight intensity adjustable on Main Panel
- Adjustable limits for horizontal and vertical sectors
- Alarm menu
- Trouble shooting menu
- Help menu
- Hardware installation settings menu
- Designed for console or bulkhead mounting
- User defined sweep and two home functions



Slave Operation Panel

It contains:

Joystick and a button for lamp On / Off

Designed for console or bulkhead mounting



Wireless Operation Panel

It contains:

- Power On / Off Button
- Lamp On / Off
- Touch buttons for horizontal and vertical movement
- Speed regulator for horizontal and vertical movement
- Focus +/- (light beam adjustment)
- LED Indication for searchlight position 16 positions for 360°
- Display for searchlight ID-number
- End position indication
- Battery charger



1.1 Options

Software:

- Focus indicator
- Panel built in box or cabinet

Hardware:

- Other RAL colours
- Upside down mounting
- Pedestal standard and custom sizes
- Special cable glands on request

2.0 Technical data and dimensions

General specifications searchlight unit:

Technical data – all XS models:	
IP classification	56
Maximum ambient temperature (°C)	50
Minimum ambient temperature (°C)	-50
Horizontal movement	360°
Vertical movement	-27° / +25°
Colour	RAL 9016

Forks stainless steel

Article no:	Model	Watt	Voltage	Main body material
600106938	SH 310 R60 230V	1000	230 VAC	Seawater resistant aluminium
600107238	SH 470 R60 230V	2000	230 VAC	Seawater resistant aluminium

Specifications Main Panel G2:

IP classification	IP65 (front)
Ambient temperature (°C)	0 - 50°C
Input Voltage	24 VDC (10 to 32 VDC)
Connection 24V	2x max. 2,5mm ²
Connection Bus	2x LAN RJ45
Dimensions	230 x 230 x 54mm
Weight	1,7kg
Power consumption	max24W



Specifications Slave Panel:

IP classification	IP65 (front)
Connection signals	6x max. 4mm ²
Dimensions	96 x 96 x 44mm
Weight	40g



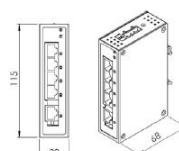
Specifications Wireless Panel:

IP classification	IP67
-------------------	------

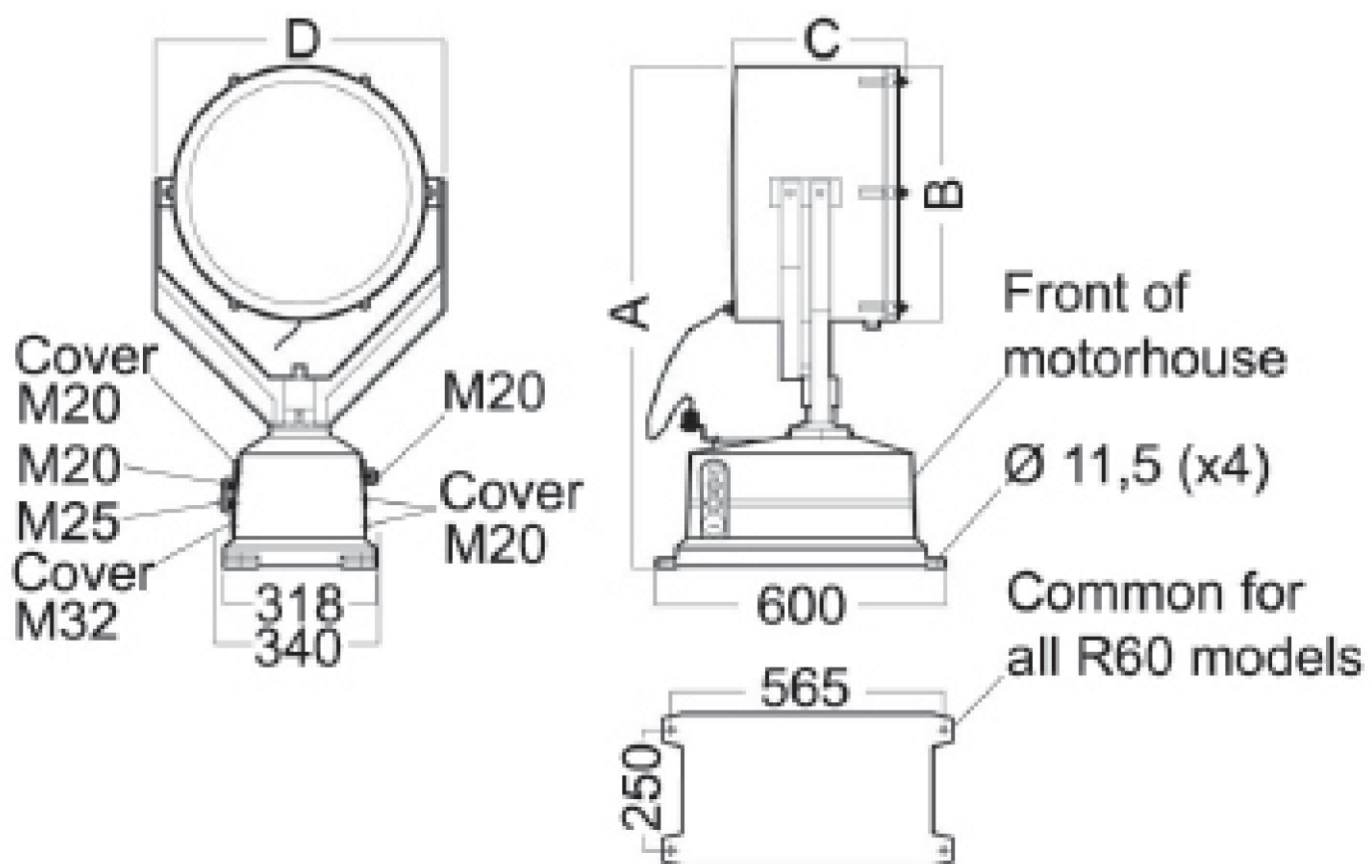


Specifications LAN switch:

IP classification	IP66
Input voltage	9,6 – 60 VDC
	18 – 30 VAC
	(redundant dual inputs)



2.1 Overall Searchlight dimensions & electrical cable dimensions

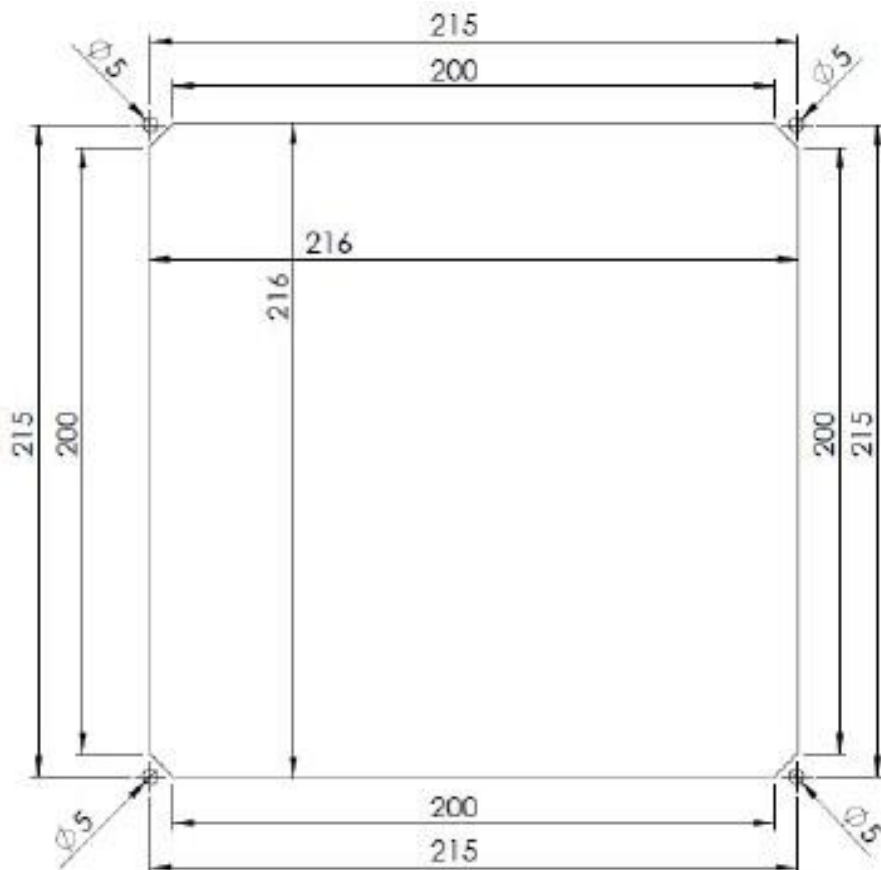


Product	A	B	C	D
SH 310 R60 BUS 1000W	890	420	330	470
SH 470 R60 BUS 2000W	1040	525	700	615
SH 480 R60 BUS 3000W	1040	525	700	615

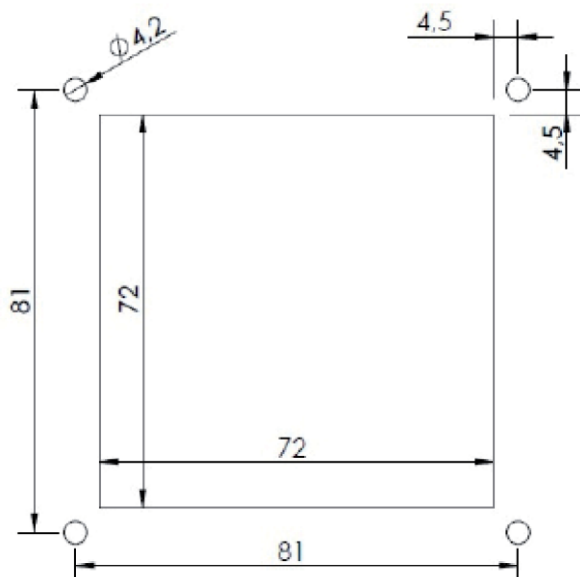
Measurements in mm

2.2 Cut / out main / slave panel

Hole dimensions for installing joystick main panel:



Hole dimensions for installing slave panel:



3.0 Electric Installation

Note: Disconnect the power when working on the equipment!

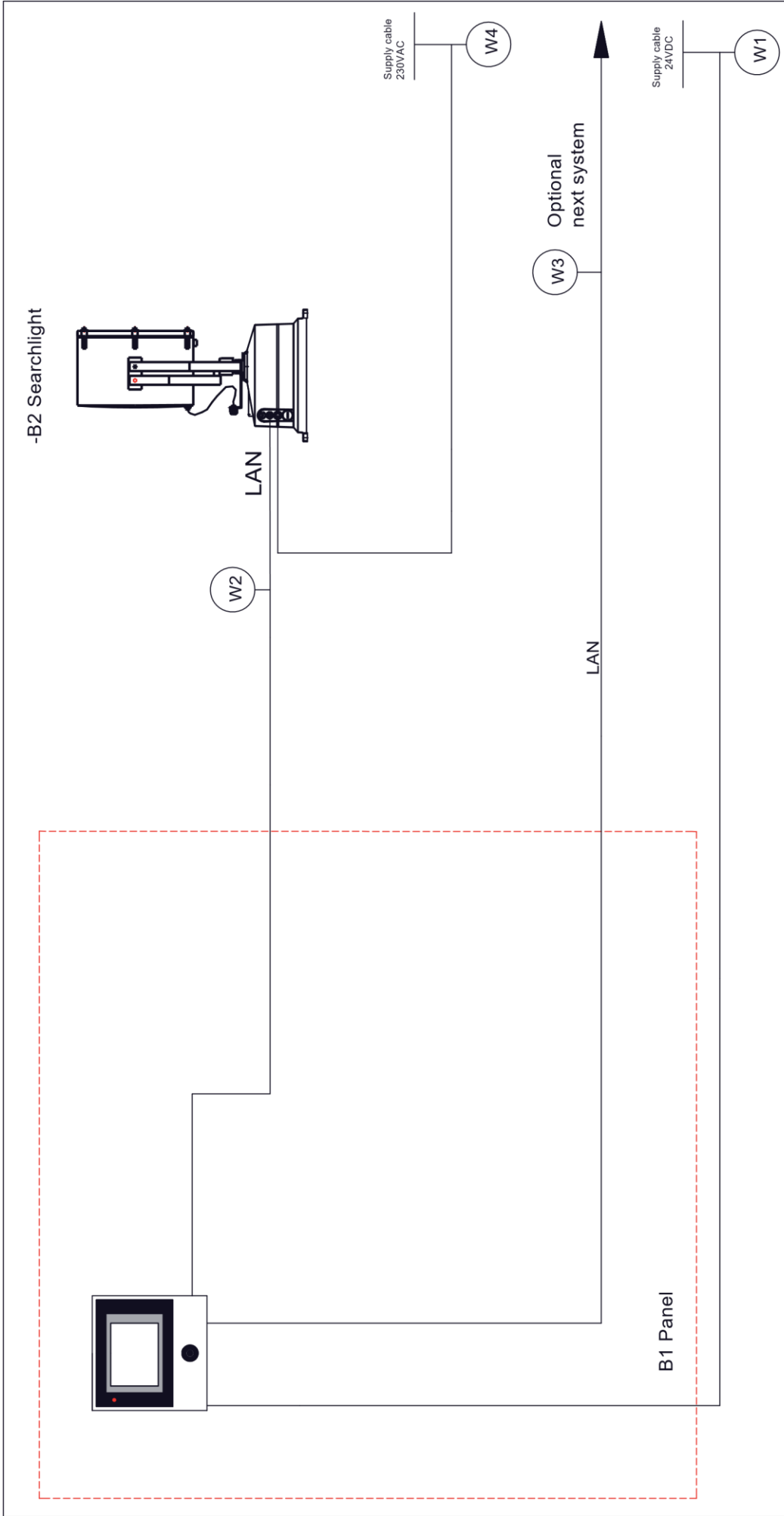


Electrical equipment must be installed by authorized personnel!

Check the polarity when connecting 24V DC!

All searchlight system equipment **MUST BE** connected to ground/earth!

3.1 R60 SH 310-SH 470 System Layout



Cabel list

Cable nr.	Use	Cable	To	From
W1	Power supply 24VDC	2x (min) 0,75mm ²	B1-X1	Customer side
W2	LAN	4pair FTP (min)cat5E	B2-LAN	B1-ETH0
W3	LAN	4pair FTP (min)cat5E	Next system	B1-ETH1
W4	Power cable	2x (min) 1,5mm ² +PE	B2-X3 230VAC	Customer side

Pos. no.	Name, type, dimension/Navn, type, dimension			Material/Materiale	Art.no.
24709	Designed/Konstruert Drawn/tegnet:	VH	Approved: Initials/Date Godkjent: Initialer / Dato	Scale/Målestokk	
T.M.	Date/Dato	22.05.12			
AG	R60 Halogen system layout			Compensation for: Ersättning for:	Replaced by/Estatlet av:
250423				E-R60 - 004	Issue/Utgave
2				Format/Papirformat:	2
			View/Prosjektsjået.		

3.3 Installation, software settings

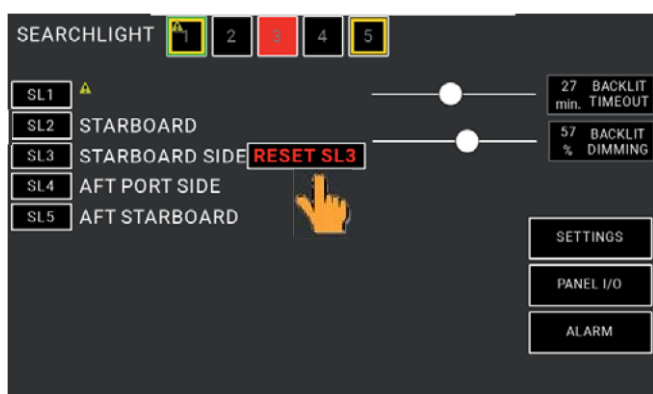
First start-up and after power loss

1. When all cabling and mechanical installation is done turn on the power.

! With every power loss of the searchlight, it need to be initialized.

Be sure the searchlight can move 360 ° horizontal and +22°/-27° vertical.

2.



The searchlight will now run all motors to calibrate its position.

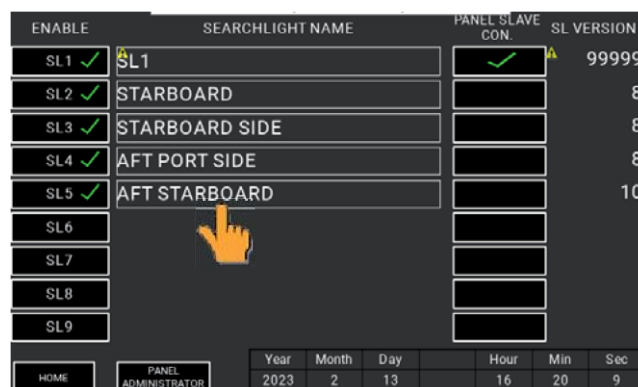
Do the same procedure for all searchlights in the system.

3.



Select all searchlights in the system. The searchlight is labeled with ID number on the motorhouse and on the inside of the back cover to the motorhouse.

4.



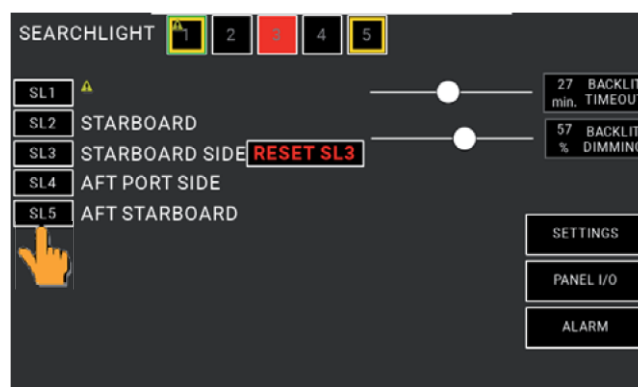
Names for each searchlight can be entered
If no new name is entered the default name is SL1 ---SL9

5.



One or more slave panels in parallel can be connected to the main panel. Select the searchlight it should control

6.

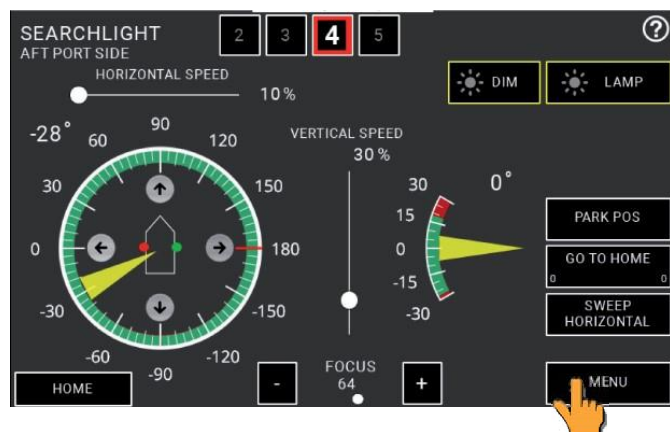


Select actual searchlight

Continue with hardware settings on page 12.

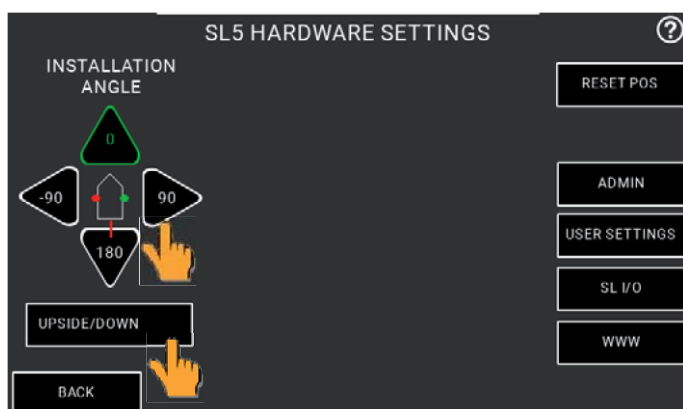
3.4 Hardware settings

7.



Press menu

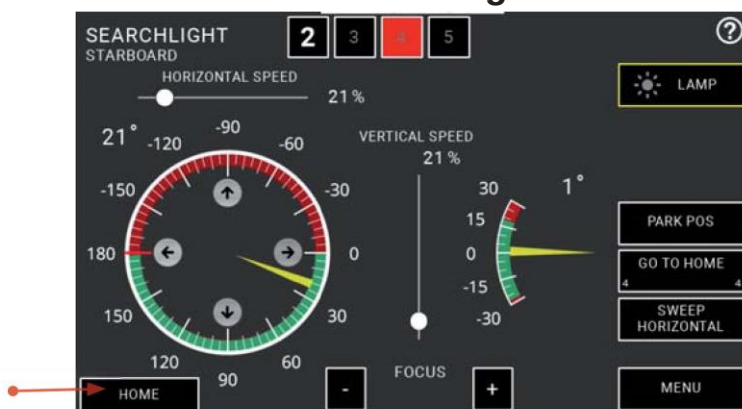
8.



Select mounting position. The symbol in the middle is the reference of the vessel

Example. The front of the motorhouse is in the same direction as the bow of a ship.

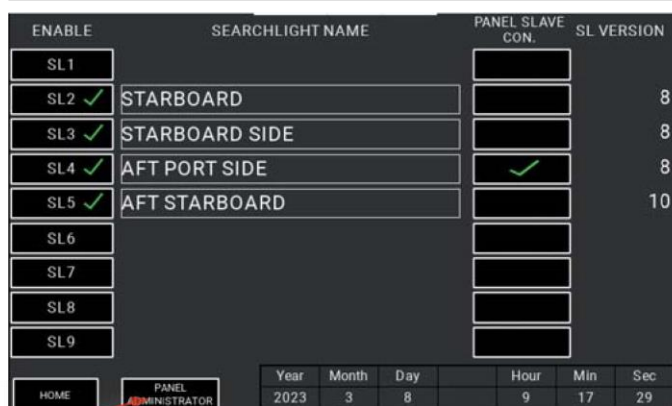
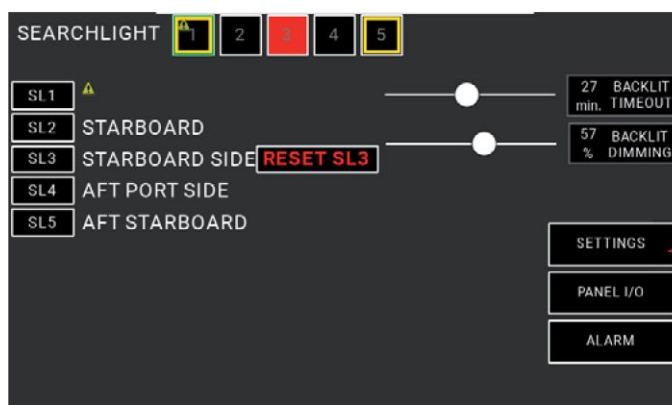
3.5 Panel IP-address setting



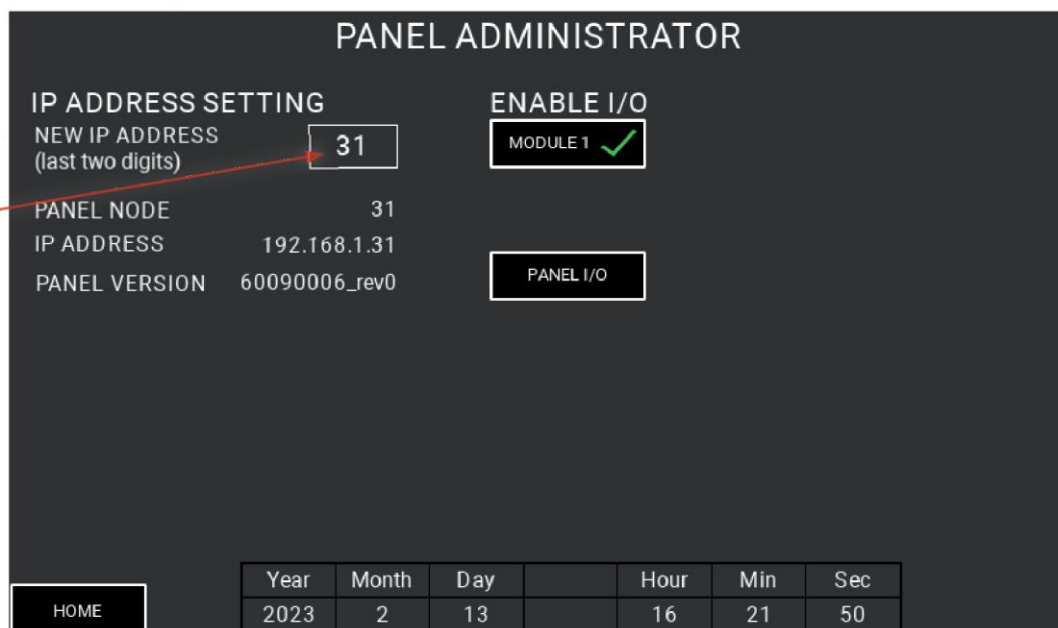
If the panel is not preset with correct IP address it can be done from the Panel administrator.

Each panel must have a unique address in the range 31-39.

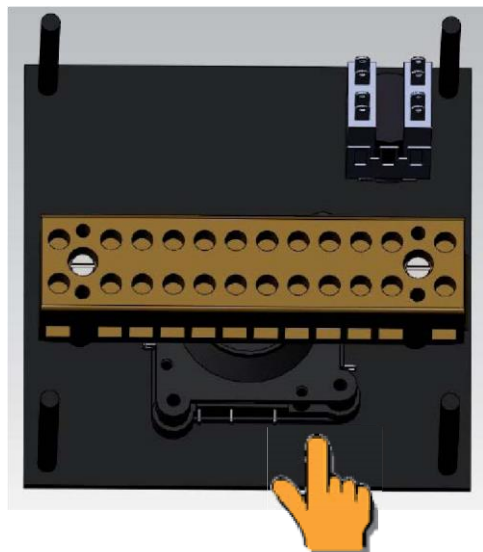
After changing of the address power Off/On



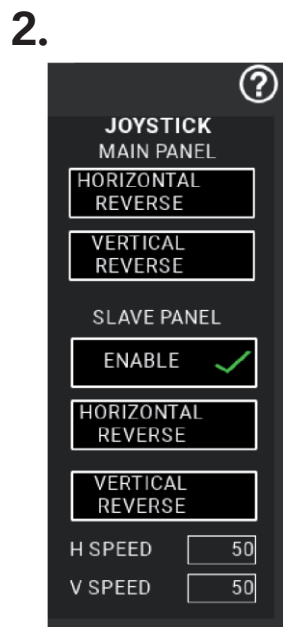
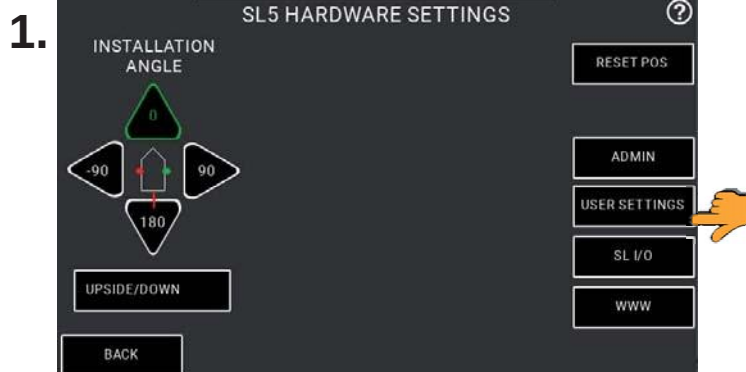
PIN 1234



3.6 Slave Panel



Connect the wires according to the drawing E-R60-027, see page 31.
It is possible to connect unlimited slave panels



Settings for the slave panel can be selected:

Reverse direction for both horizontal and vertical direction

Speed for horizontal and vertical movement

Enable panel on/off

3.7 Settings / Joystick

The searchlight can be operated from 3 different types joysticks.

1. Software joystick in the touch-screen main menu.
Settings for the joystick described in pos.1



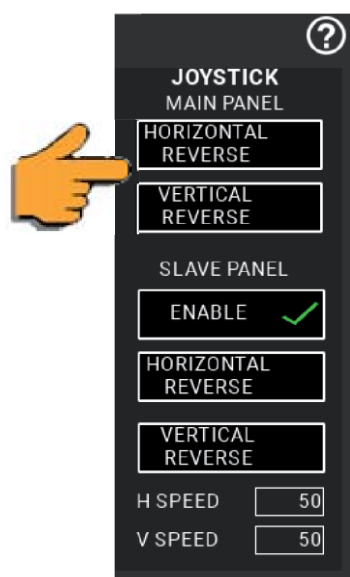
2. Hardware joystick on the main panel.

The joystick controls the selected searchlight in the main menu
Settings for the joystick described in pos. 4



3. Hardware joystick on the slave panel.

Settings for the joystick described on page 14



The movement of the searchlight from the joystick can be reversed. Settings affect both software and hardware joystick on the main panel

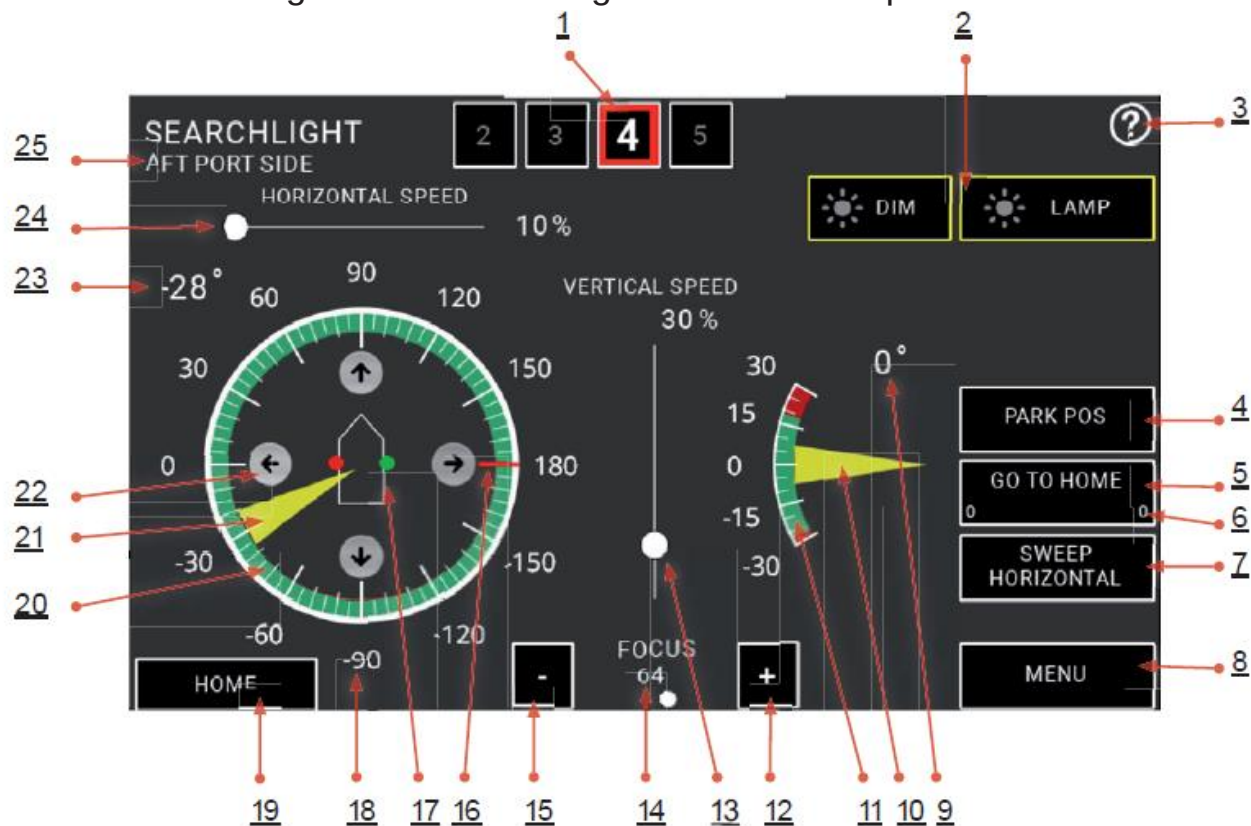
Troubleshooting see page 24.

More information is also available in the help menu.

4.0 Software useguide

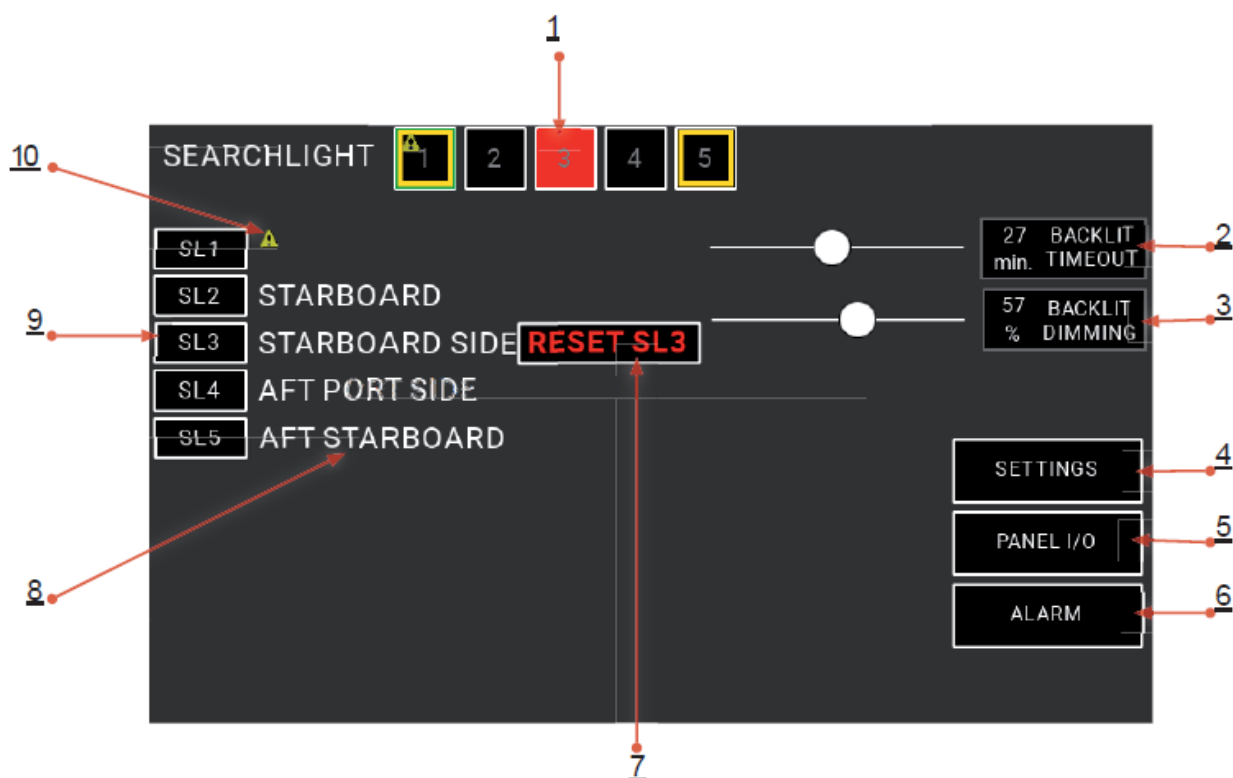
4.1 Main menu

Menu for controlling all basic searchlight functions and position feedback.



1. Searchlight selector. Bold number display selected searchlight.
Frame colour: Red=Alarm, Yellow=Light On, Green=Moving
2. Lamp button and indicator On/Off . Dim function button
3. Help Menu
4. Button for moving the SL to preprogrammed position and turn Off the lamp
5. Button for moving the SL to preprogrammed position
6. Indicator for preprogrammed Home position
7. Button for start horizontal sweep, preprogrammed limits
8. Menu for settings
9. Vertical position indicator
- 10,21 Position pointer, the width of the yellow sector follows the beam width on XS3000
11. Indicator for vertical sector, green sector OK, red stops
- 12,15. Focus button for narrow and wide beam.
13. Vertical speed slide with indicator
14. Focus position indicator, only for XS3000
16. Indicator for horizontal mechanic stop
17. Symbol for vessel as reference for 0 degree position
18. Scale for position of 0 degree, depends on mounting
19. Home button to select other SL and panel settings
20. Indicator for horizontal sector, green sector OK, red stops
22. Software joystick horizontal and vertical movement
23. Horizontal position indicator
24. Vertical speed slide with indicator
25. Name of searchlight, default SL1-SL9 can be changed

4.2 Home menu



1. Searchlight selector. up to 9 searchlights can be controlled
2. Time before turning off the panel light after last action 0= always On
3. Backlit dimming
4. Settings menu for setup of system
5. Information about panel digital Input/Output
6. Alarm menu
7. Reset pop-up if the SL needs to be reset
8. Name of searchlight, can be changed in settings menu
9. Searchlight selector.
10. Warning if the connection is lost with the searchlight

4.3 Settings / Sector limits / Sweep / Home

The searchlight movements can be limited by setting a sector for horizontal and vertical movements. The settings will have the same function as a mechanical stop unless for the reset/initializing routine.

Main menu/Settings/Hardware Installation/Searchlight limits



Do not exceed -180 and 180 degrees
Do not set the limit lower than the sweep sector

Main menu/ Searchlight limits /

1. Start sweep horizontal, this is the same button as in main menu
Set the min/max sweep degrees in pop-up menu
2. Start sweep vertical, can be operated at the same time as for horizontal
Set the min/max sweep degrees in pop-up menu
3. Home position 1, same as button in main menu
Set the position for horizontal and vertical parking in pop-up menu
4. Home position 2
Set the position for horizontal and vertical parking in pop-up menu

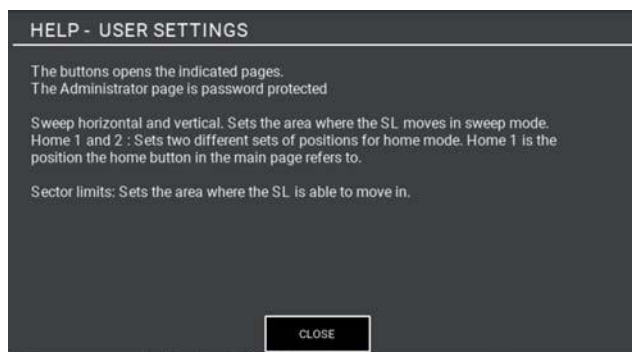
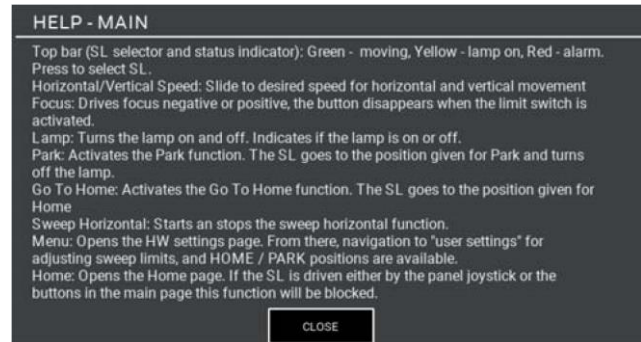
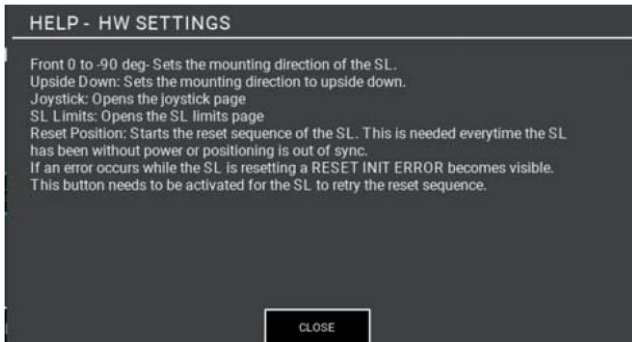


Min and max degrees/position is limited by sector limits, described above

4.4 Searchlight help and information

Help menu

In most of the menues Help is available



I/O status for searchlight

SL5 I/O		Output
Input		
00	Pulse vertical A	00 Direction Horizontal Motor
01	Pulse vertical B	01 PWM Out Horizontal Motor
02	Pulse Horizontal A	02 Direction Vertical Motor
03	Pulse Horizontal B	03 PWM Out Vertical Motor
04	Focus position In	04 Focus Negative Motor
05	Focus position Out	05 Focus Positive Motor
06	High Temp in drum	06 Ignitor
07	Lamp Button Slave panel	07 Lamp On / Remote signal
08	Joystick Left Slave panel	
09	Joystick Right Slave panel	
10	Joystick Down Slave panel	
11	Joystick Up Slave panel	
BACK		

I/O status for panel

PANEL I/O	
Input module	Output module
00 JOYSTICK LEFT	00 REMOTE SIGNAL TO PSU SL1
01 JOYSTICK DOWN	01 REMOTE SIGNAL TO PSU SL2
02 JOYSTICK RIGHT	02 REMOTE SIGNAL TO PSU SL3
03 JOYSTICK UP	03 REMOTE SIGNAL TO PSU SL4
04 SLAVE JS LEFT	04 DIM SIGNAL TO PSU
05 SLAVE JS DOWN	
06 SLAVE JS RIGHT	
07 SLAVE JS UP	
HOME	
PANEL NODE 31 IP ADDRESS 192.168.1.31 PANEL VERSION 60090006_rev0	

Alarms will be displayed for each searchlight

- Red is active not acknowledged
- Yellow active acknowledged
- Green inactive not checked out

A code light will not work

B Important , motor problem

C Less important

The timestamp is according to the clock setting

5.0 Maintenance

The guarantee is only valid against production faults. It do not cover damage caused by transportation, damage due to disregard of this technical Manual or adverse external effects. Guarantee regarding the bulb, please look at the guarantee papers following the bulb. This must be filled in and returned to Glamox NT.



Before installation, maintenance and repair work (also cleaning), disconnect searchlight from power supply and secure against reactivation by third parties. Servicing and maintenance work may only be carried out by qualified and electrically skilled personnel.

Use safety equipment, face cover and gloves all times!

Do not clean the searchlight with the high pressure!

General Searchlight Maintenance

Recommended intervals not exceeding:

6 months:

Visual inspection of gasket and glands.

Control of **all screws** and **nut connections**.

Check the level of grease and refill when needed in glider for lamp holder.

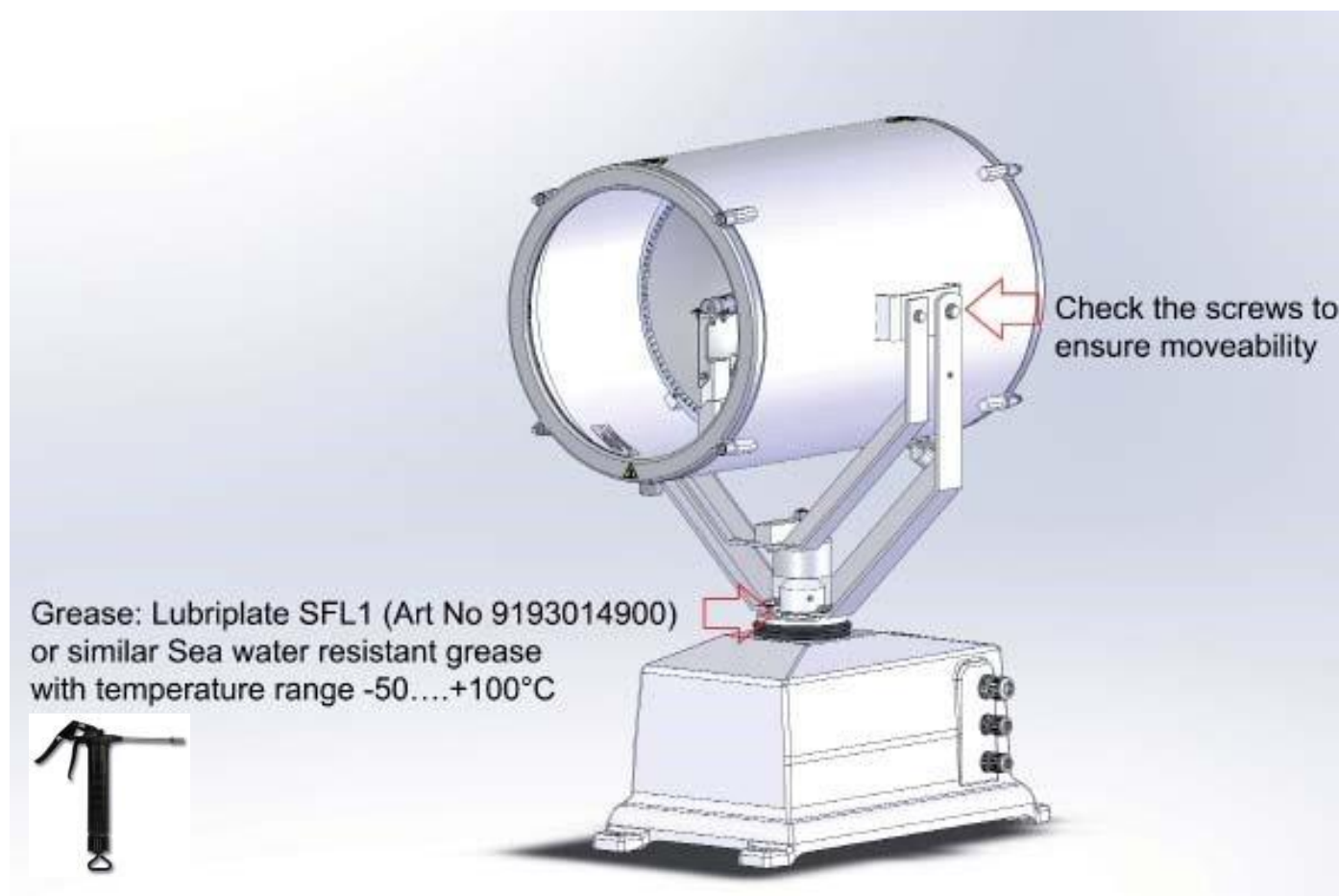
Reflector and front glass to be cleaned with a soft cloth and ethanol or similar.

1 year:

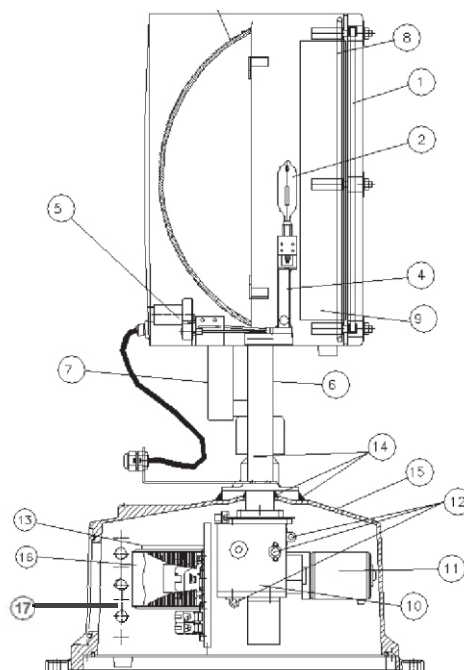
Fill up the grease-nipple on the top of the motorhouse with a grease-gun.

3 year:

Tighten all terminal strips in the searchlight junction box.



5.1 Spare Parts List



Pos.	Spare KIT	SH310	SH470
1.	Front ring complete	1009175	1009149
2.	Lamp 115V 1000W	1009310	
2.	Lamp 115V 2000W	N/A	1009311
2.	Lamp 230V 1000W	1009203	
2.	Lamp 230V 2000W	N/A	1009202
3.	Reflector complete	1009177	1009108
4.	Lamp Holder Complete w/ focus	OR	1009181
4.	Lamp Holder Complete w/ focus	N/A	1009130
4.	Lamp Holder Complete w/ focus	N/A	1009109
5.	Focus unit Complete	1009148	
6.	Forks	2008161	1009313
7.	Manouver Fork	2008160	1009381
8.	Seal KIT drum	1009275	1009277
9.	Anti dazzling screen complete	1009132	1009133
10.	Gear complete	2008183	
11.	Motor Hor/Vert	1009224	
12.	Heat element 115V/230V	1009233	
13.	PLC-module	2008184	
14.	Seal KIT Motorhouse	1009375	
15.	Motorhouse complete	2008152	
16.	Power supply motorhouse 115V/230V	1009628	
17.	Battery for PLC and Control Panel	2008190	

OR = On Request

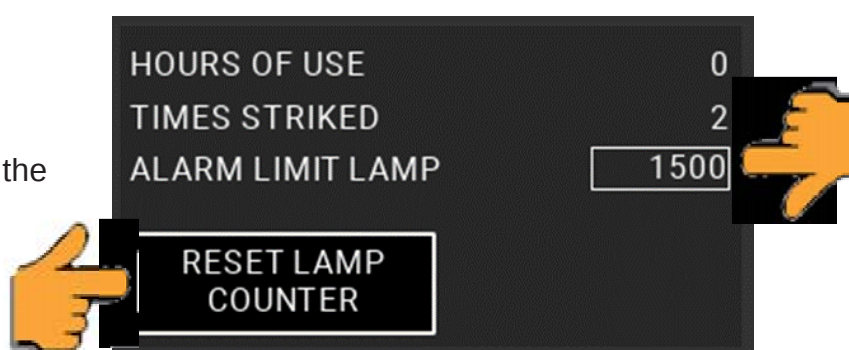
N/A = Not available

5.2 Lamp replacement

1. Cut the main power to the searchlight.
2. Make sure the lamp has cooled down before opening the lamphouse
3. Remove the lamp and replace it with a new without touching the glass part

4. Panel settings

After changing the lamp reset the lamp counter



Alarm-limit can be changed .
Example if the lamp is changed to longlife the time can be increased

5. Safety

During operation it emits intense UV radiation which is harmful to the eyes and skin.

Keep light beam and hot components away from flammable materials!

6. Disposal

Read attached operating instruction for the lamp.

5.3 Troubleshooting

Searchlight don't move on horizontal or vertical:

In case of Alarm Horizontal blocked or Vertical blocked, check that cables is not restricting movement.

In case of too much ice around the forks it can be blocked. Sensor fault, check I/O-signals on the panel searchlight.

The light does not turn on

Check on the lamp that get the ignition spark

Check that the power supply is on

Check fuses on the power-supply

Check On/Off switch for remote signal on the power-supply. Correct position is Off

Focus does not work:

Check that limit switches is work

Yellow indicator for switches cannot be On at the same time



Com error in main menu:

Check power to the ethernet-switch

Check power to the searchlight

Check LAN-cables

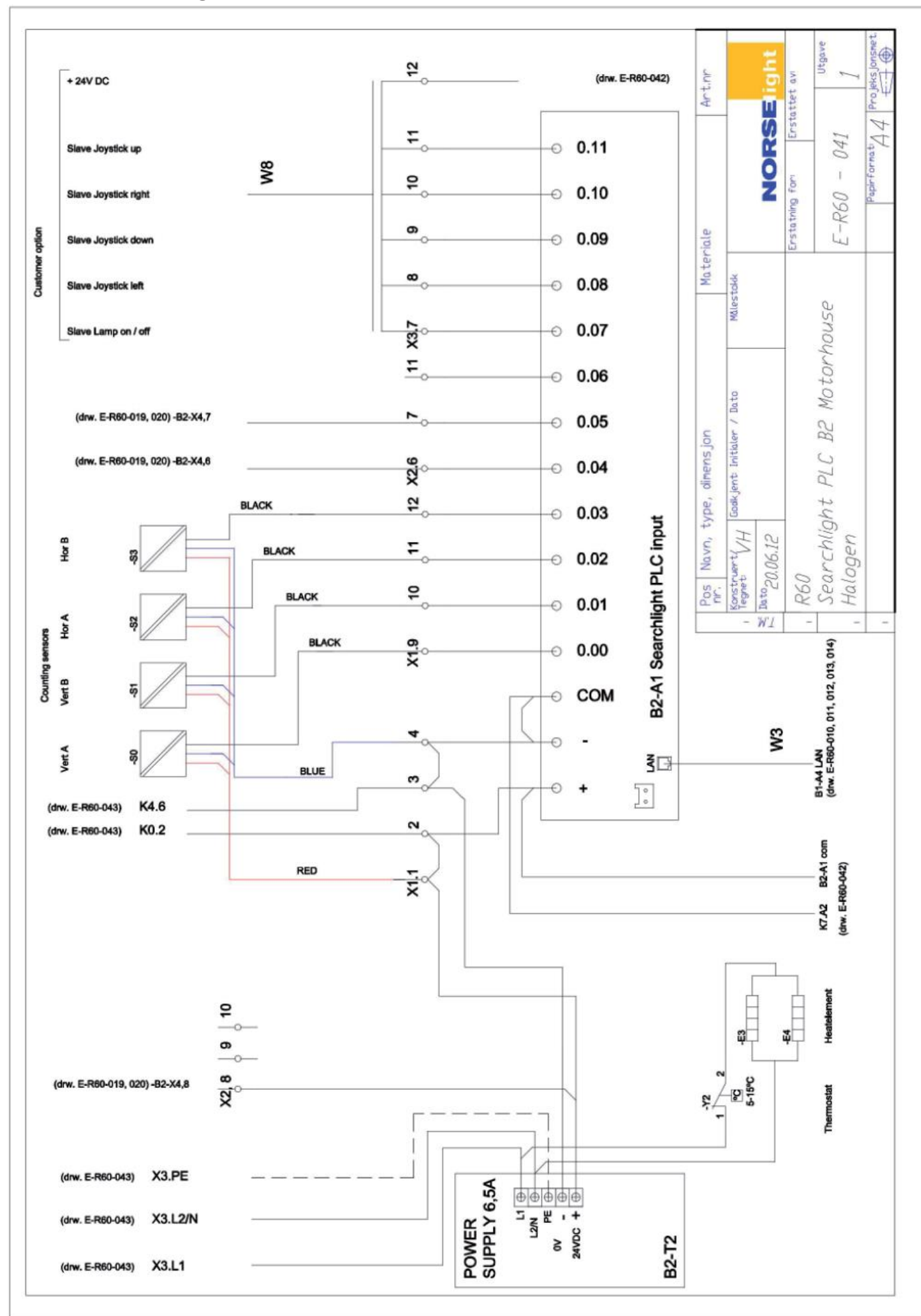
Joystick double command:

Two persons is trying to control the same searchlight

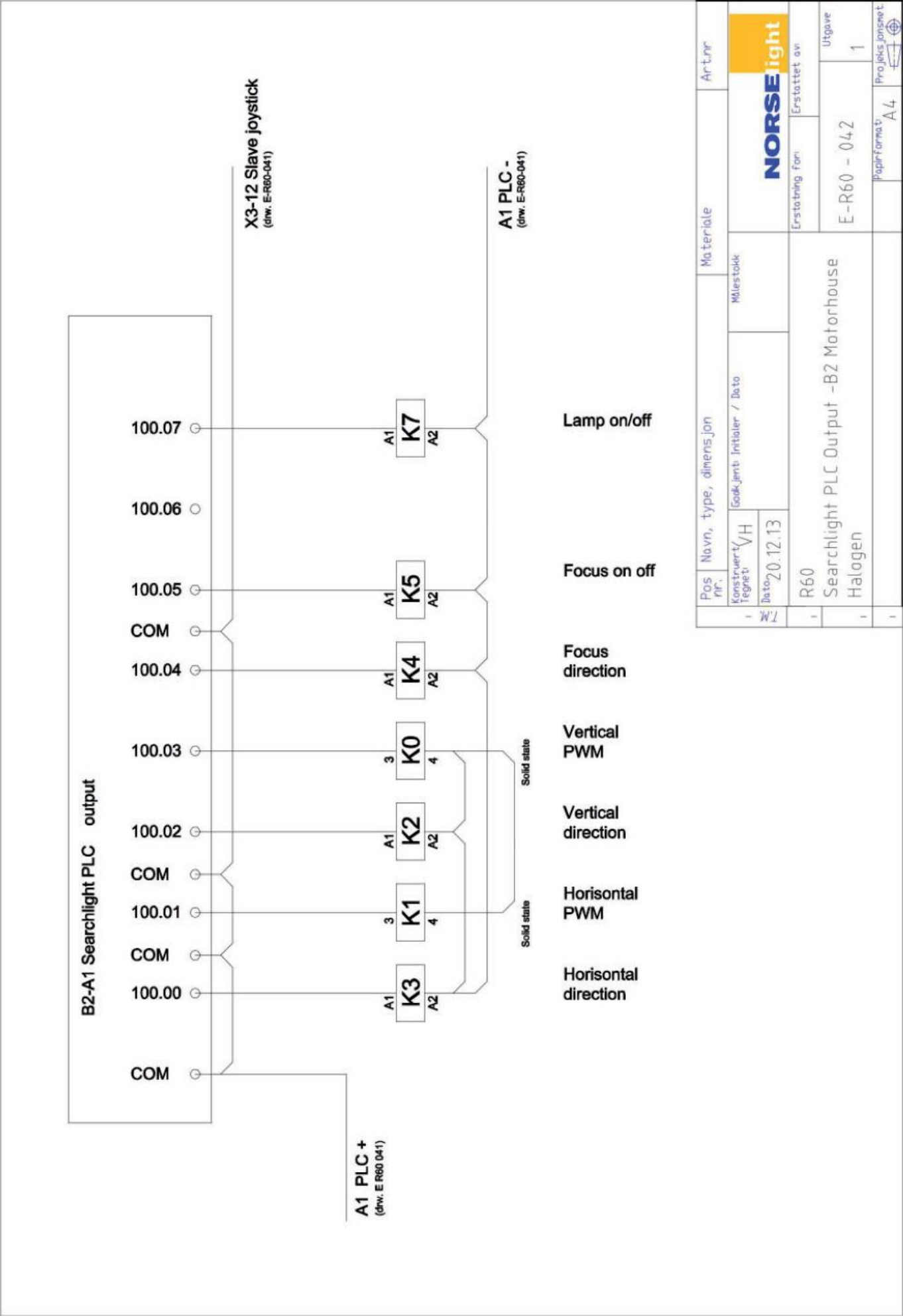
Battery error:

Change battery in PLC in searchlight.

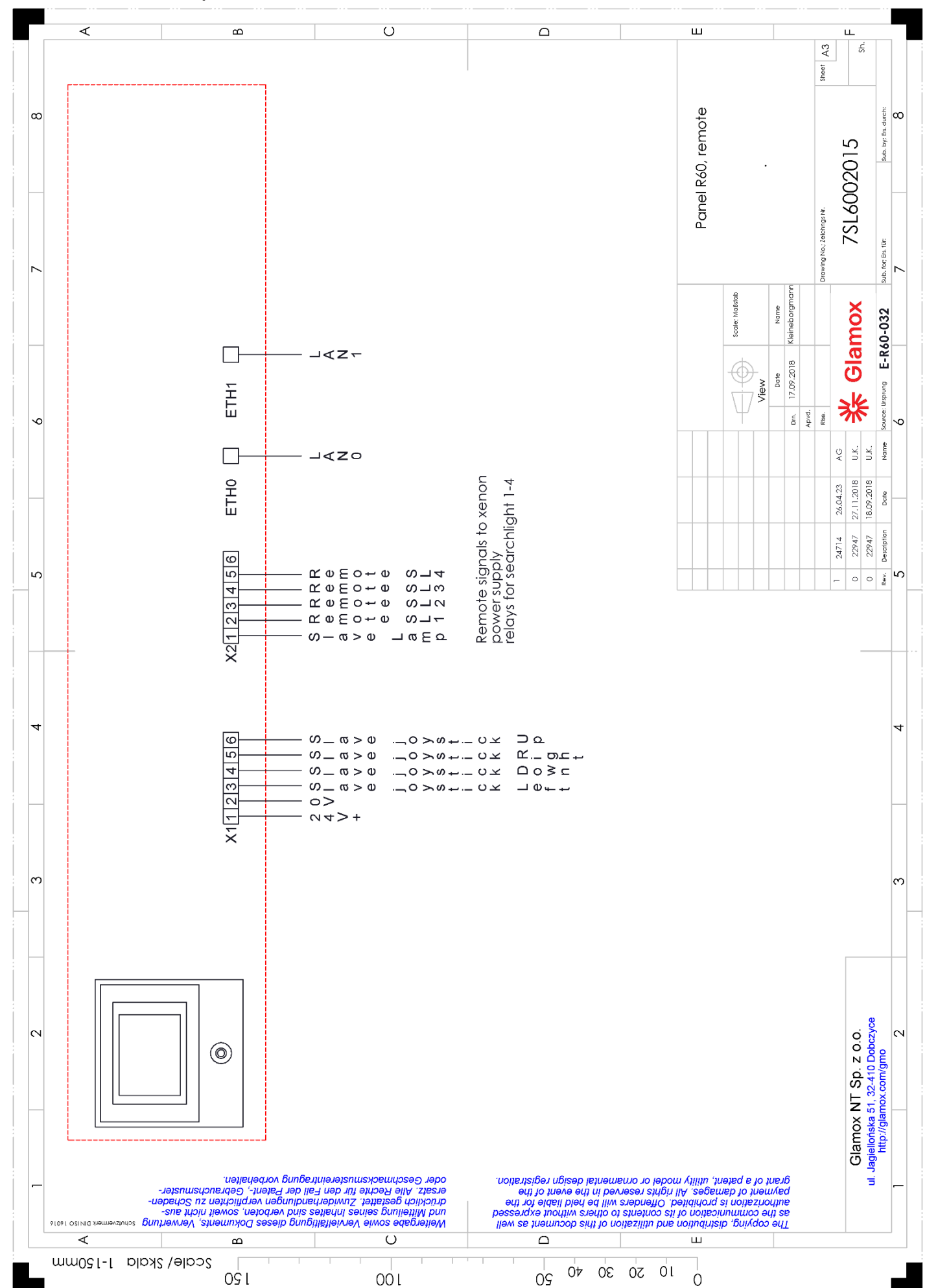
7.1 R60 Searchlight PLC B2 Motorhouse



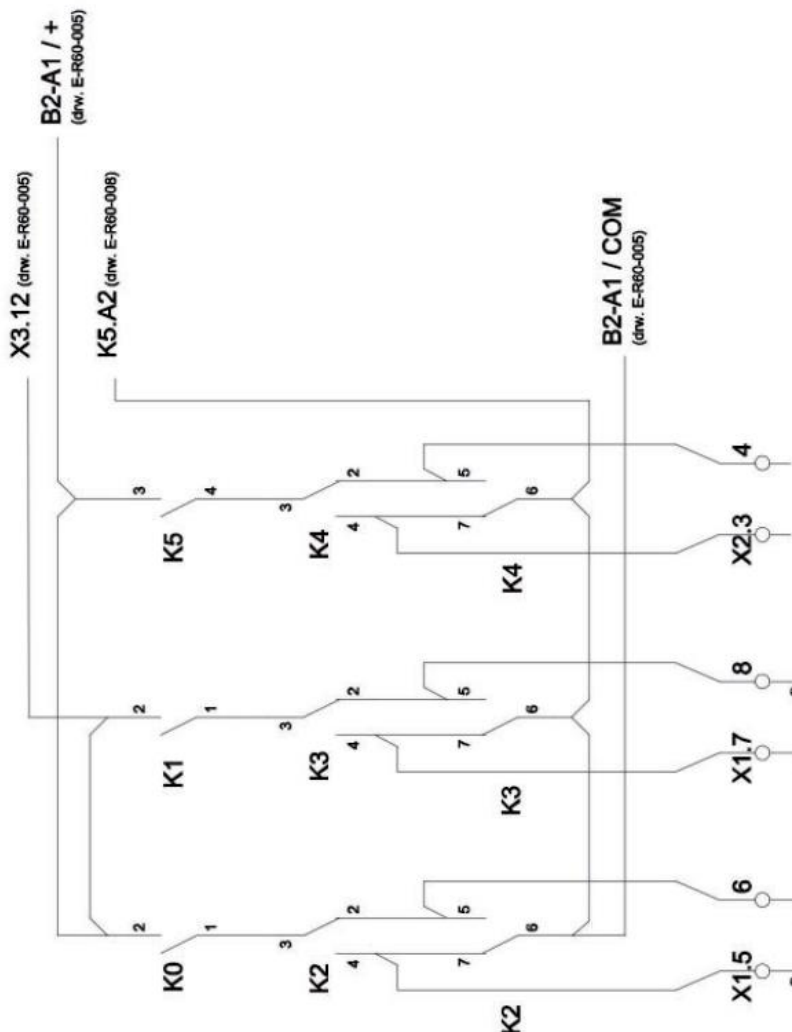
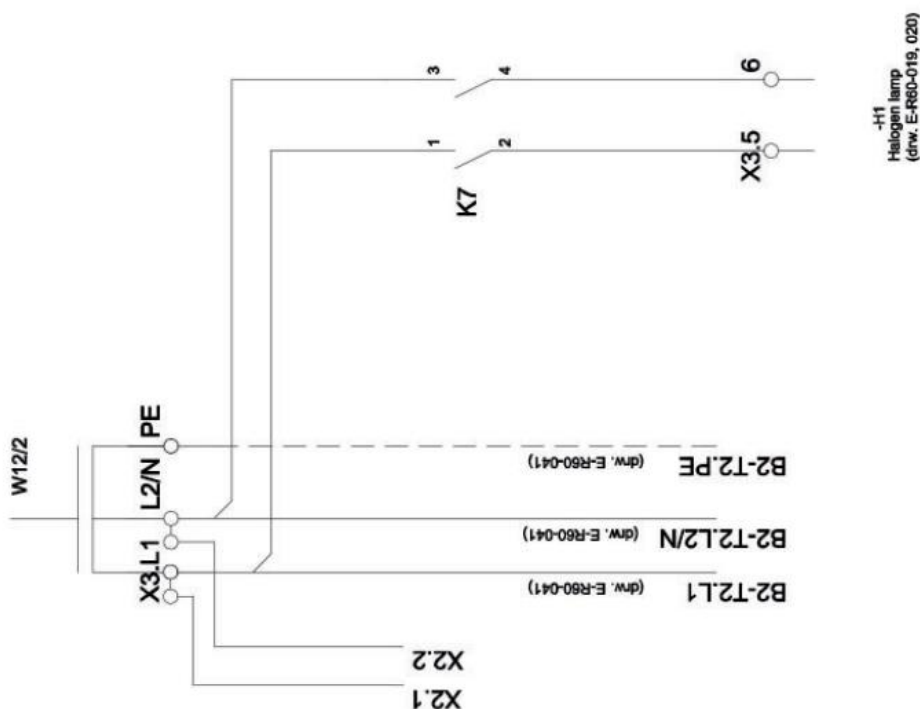
7.2 R60 Searchlight PLC Output - B2 Motorhouse



7.3 Panel R60 G2, remote



7.4 R60 Motorhouse B2



-H1
Halogen lamp
(drw. E-R60-019, 020)

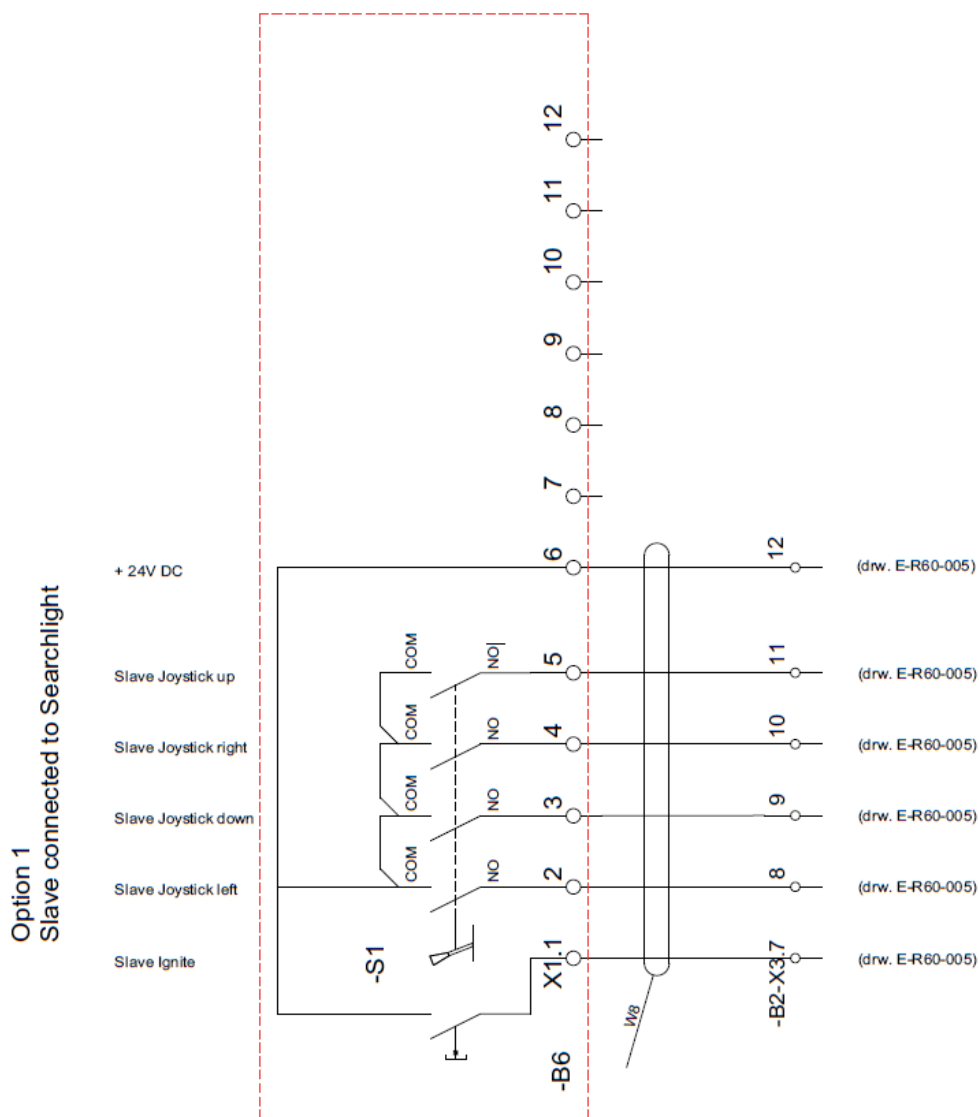
-M3
Focus motor
24V DC
3,9W
(drw. E-R60-019, 020)

-M2
Horizontal
motor
24V DC

-M1
Vertical
motor
24V
DC

Pos nr.	Navn, type, dimensjon	Materiale		Art.nr
-	Konstruert/ tegnet: VH	Godekjents Initialer / Dato	Målestokk	NORSE light
TM	Dato: 20.12.13			
-	R60 Motorhouse B2 Halogen	Erstatning for:	Erstattet av:	Utgave
-				E-R60 - 043 2
-				Papirformat: A4 Prosjektanset:

7.6 R60 Slave panel B6



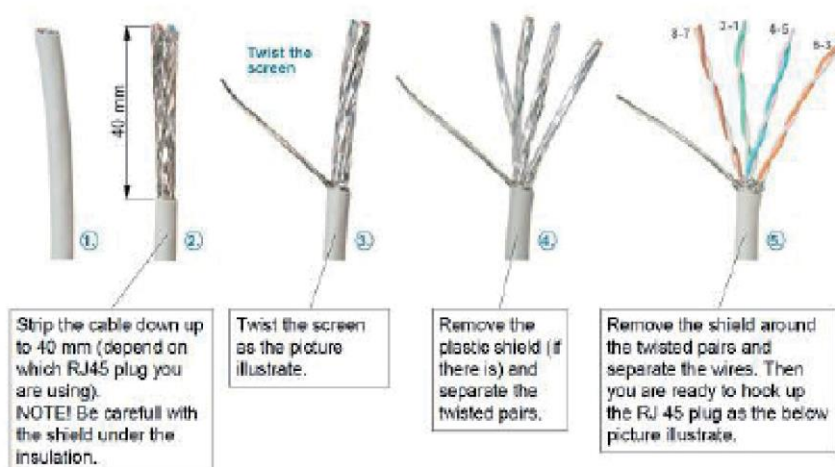
	Pos nr.	Navn, type, dimensjon		Materiale		Art.nr
	Konstruert/ tegnet:	VH	Godkjent: initialet / Dato	Målestokk		
	Dato	23.10.12				
T.M. - 24274				NORSEIGHT		
	Erløst for:			Erløst av:		
AG	R60			Ulgave		
	Slave panel B6			E-R60 - 027		
020321				2		
2	Prosjektansvarlig			Prosjektansvarlig: A4		Prosjektansvarlig: 

8.0 Network / IP addresses

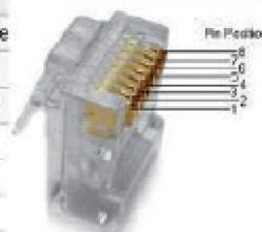
IP-adresses

Searchlight 1 :	192.168.1.11	Wireless remote control 1 :	192.168.1.61
Searchlight 2 :	192.168.1.12	Wireless remote control 2 :	192.168.1.62
Searchlight 3 :	192.168.1.13	Wireless remote control 3 :	192.168.1.63
Searchlight 4 :	192.168.1.14	Wireless remote control 4 :	192.168.1.64
Searchlight 5 :	192.168.1.15	Wireless remote control 5 :	192.168.1.65
Searchlight 6 :	192.168.1.16	Wireless remote control 6 :	192.168.1.66
Searchlight 7 :	192.168.1.17	Wireless remote control 7 :	192.168.1.67
Searchlight 8 :	192.168.1.18	Wireless remote control 8 :	192.168.1.68
Searchlight 9 :	192.168.1.19	Wireless remote control 9 :	192.168.1.69
Panel 1 :	192.168.1.31	PC-controller 1 :	192.168.1.81
Panel 2 :	192.168.1.32	PC-controller 2 :	192.168.1.82
Panel 3 :	192.168.1.33	PC-controller 3 :	192.168.1.83
Panel 4 :	192.168.1.34	PC-controller 4 :	192.168.1.84
Panel 5 :	192.168.1.35	PC-controller 5 :	192.168.1.85
Panel 6 :	192.168.1.36	PC-controller 6 :	192.168.1.86
Panel 7 :	192.168.1.37	PC-controller 7 :	192.168.1.87
Panel 8 :	192.168.1.38	PC-controller 8 :	192.168.1.88
Panel 9 :	192.168.1.39	PC-controller 9 :	192.168.1.89
Panel PLC 1 :	192.168.1.41		
Panel PLC 2 :	192.168.1.42		
Panel PLC 3 :	192.168.1.43		
Panel PLC 4 :	192.168.1.44		
Panel PLC 5 :	192.168.1.45		
Panel PLC 6 :	192.168.1.46		
Panel PLC 7 :	192.168.1.47		
Panel PLC 8 :	192.168.1.48		
Panel PLC 9 :	192.168.1.49		
Antenna 1 :	192.168.1.51		
Antenna 2 :	192.168.1.52		
Antenna 3 :	192.168.1.53		
Antenna 4 :	192.168.1.54		
Antenna 5 :	192.168.1.55		
Antenna 6 :	192.168.1.56		
Antenna 7 :	192.168.1.57		
Antenna 8 :	192.168.1.58		
Antenna 9 :	192.168.1.59		

How to make a LAN cable



Pin	Color
1	white/orange
2	orange
3	white/green
4	blue
5	white/blue
6	green
7	white/brown
8	brown



T568B

LAN-cable specifications
4pair STP/FTP (min)cat5E

NOTE! It is very important to connect the shield properly to shield jacket around the RJ 45 plug.

Manufactured by



**Glamox NT Sp. z o.o.
Jagiellońska 51
32-410 Dobczyce
POLAND**