



USER'S MANUAL

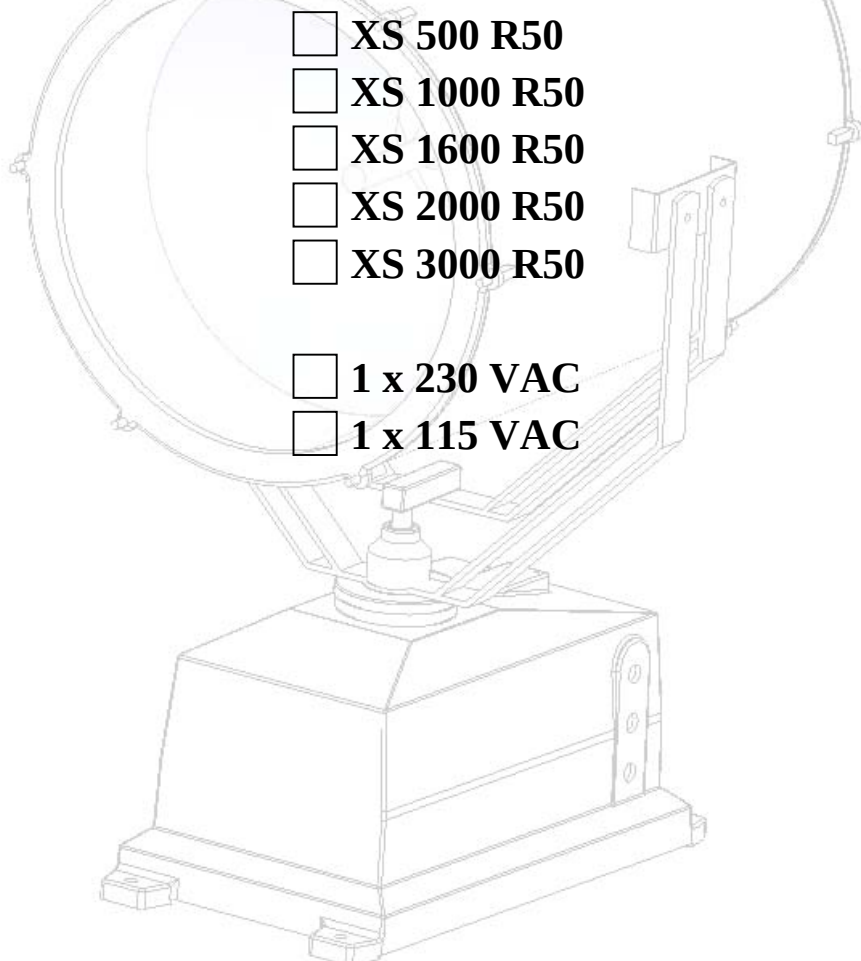
SEARCHLIGHTS XENON R50

NORSElight

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Technical Manual for Xenon searchlight



This manual belongs to the product

Serie no.: _____

Controlled by: _____

Date: _____

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 as the Norwegian.

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.

Therefore, if you have any technical or other questions, our Technical Department can be contacted as follows:

Glamox Production GmbH & Co. KG

Glasower Weg 5, 17166 Teterow, Germany

www.glamox.com/gmo

We would also like to use this opportunity to thank you for choosing **Norselight** as your supplier of marine searchlights.

Guarantee

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 Norselight.

Norselight is a registered trade name.

Norselight reserves all rights to this document.

Norselight operates a policy of continuous development. On this basis we reserve the right to make changes and improvements to all of our products and documentation.

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1 General description

1.1 Searchlight

The **searchlights** XS 500-1000-1600-2000 and XS 3000 are made from seawater resistant aluminium, welded and finished with white powder coat. The lamp housing basically contains one a lamp, a glass-reflector covered with silver, noise filters and a focus-motor for adjustment of the light beam.

1.2 The motor housing

The R50 motor housing is made from seawater resistant aluminium and finished with white powder coat. The motor housing basically contains one motor for vertical and another one for horizontal movement, a thermostat driven heating element and the electronic control system.

1.3 Control panel

Main Operation Panel.

It contains the following functions:

- Ready for max. 2 Slave Operation Panels (option)
- BUS communication.
- Lamp ON/OFF
- Joystick for sweep and tilt, horizontal and vertical movement.
- Speed regulator for sweep and tilt.
- Focus +/- (light beam adjustment)
- LED Indication for searchlight position 360°.
- Searchlight ID-number
- End position function
- Designed for console or bulkhead mounting from front.
- DIM LED intensity on Main Operation Panel

Slave Operation Panel (Option).

It contains:

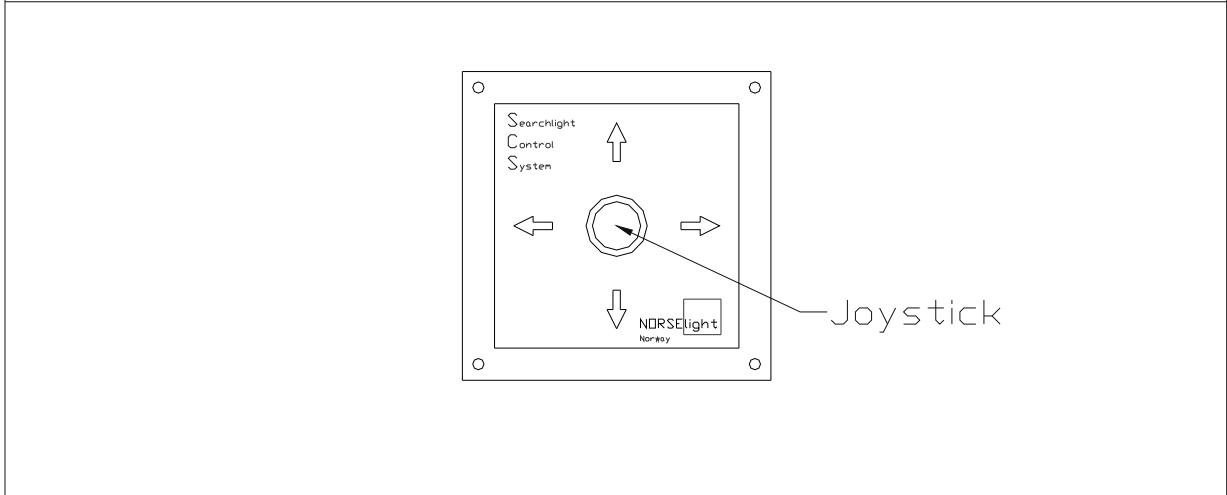
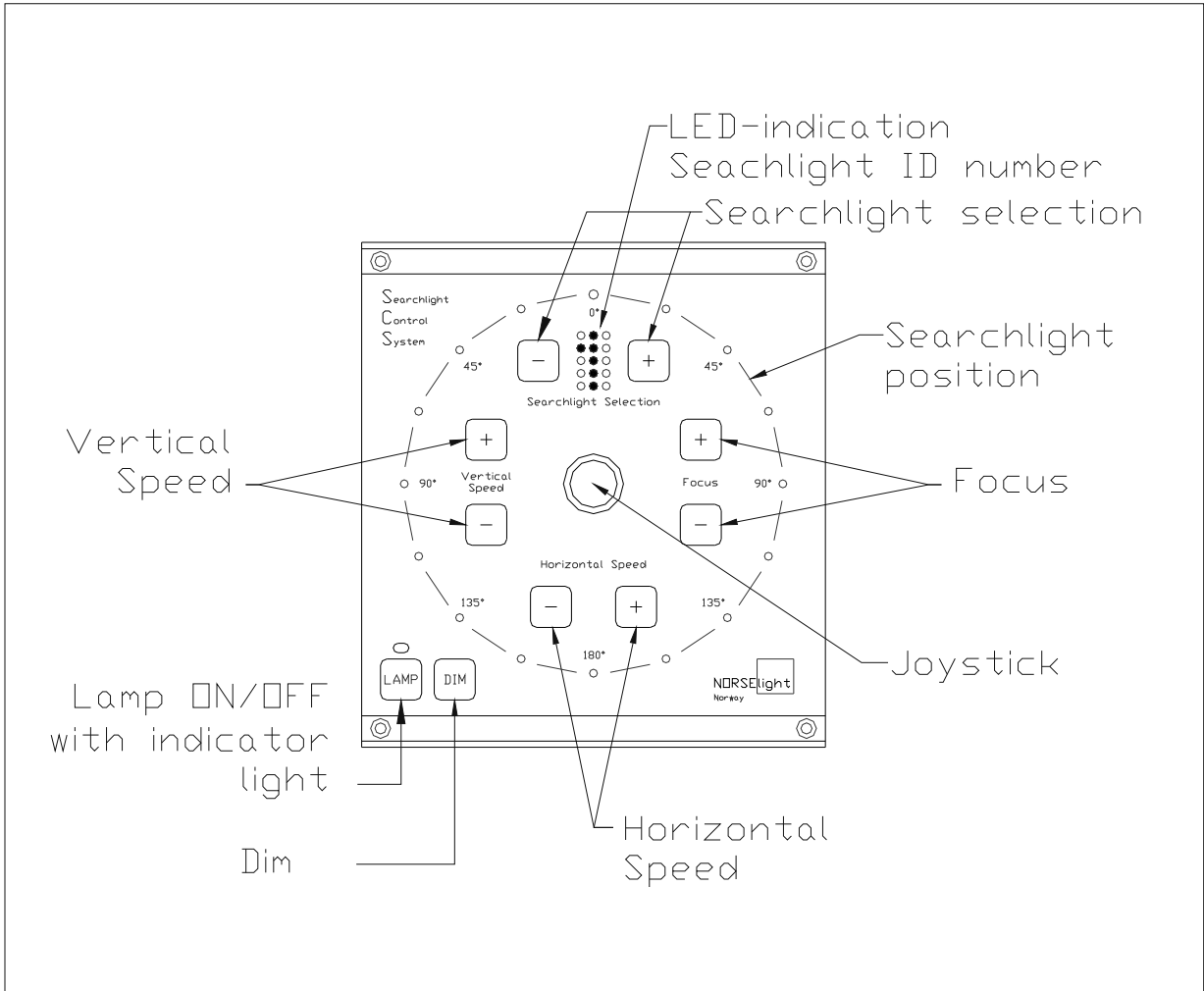
- Joystick
- Designed for console or bulkhead mounting from front.

Wireless Operation Panel (Option).

It contains:

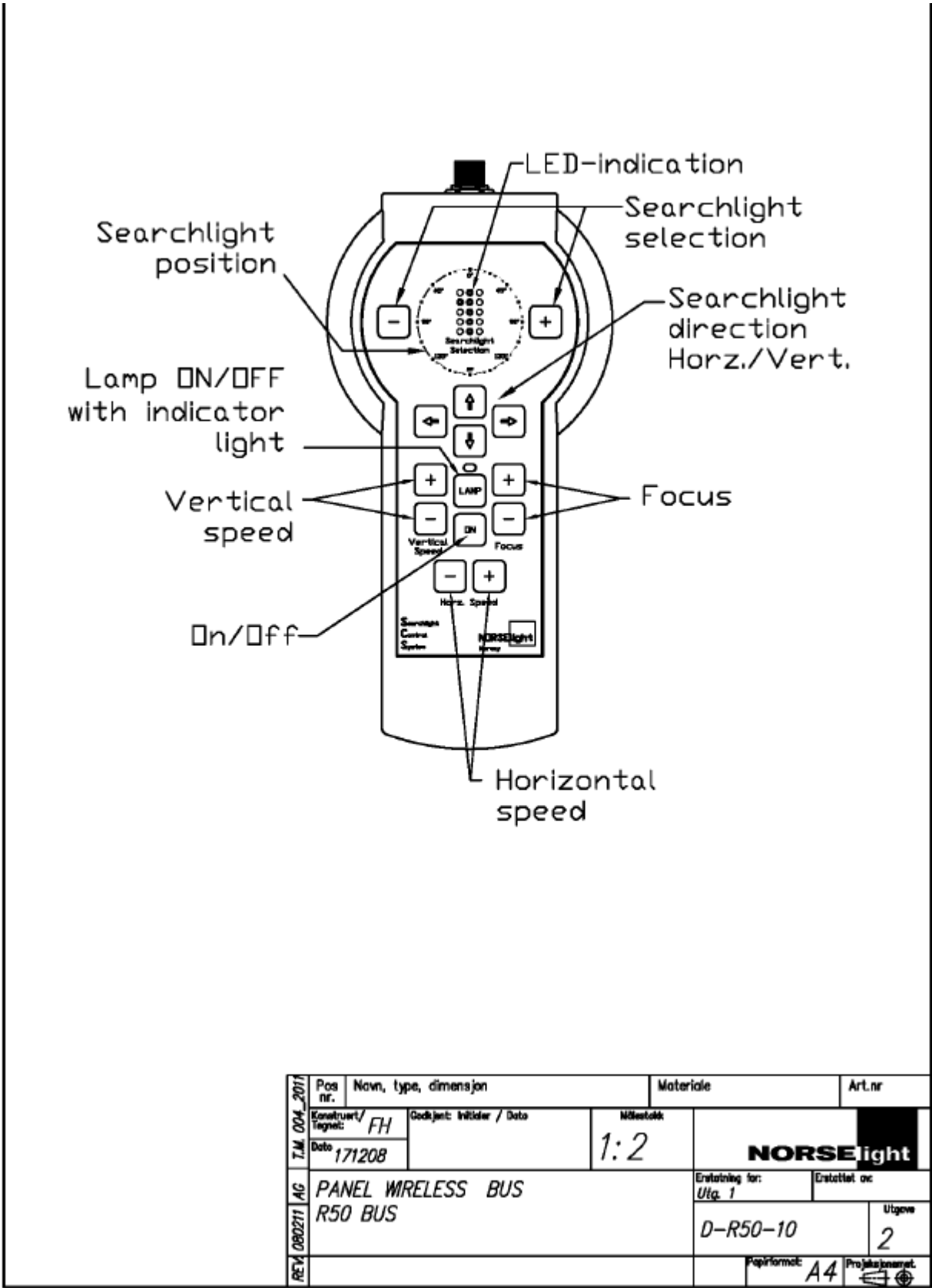
- On/Off Button
- Lamp ON/OFF
- Touch buttons for sweep and tilt, horizontal and vertical movement.
- Speed regulator for sweep and tilt.
- Focus +/- (light beam adjustment)
- LED Indication for searchlight position 360°.
- Searchlight ID-number
- End position function
- Battery charger

Main and Slave Operation Panel



Pos nr.	Navn, type, dimensjon		Materiale		Art.nr		
Konstruert/ Tegnet:	Godkjent: Initialer / Dato		Målestokk	NORSElight			
Dato			1:2				
PANEL MAIN BUS and PANEL SLAVE BUS R50 BUS				Erstatning for:		Erstattet av:	
				D-R50-09		Utgave	
						2	
				Papirformat:	Projeksjonsmet.		
				A4			

Wireless Operation Panel



1.4 The Ethernet Switch:

It contains:

- 5 port x RJ45
- DIN rail mounting
- Power 24V DC + ground

1.5 High Sensitive Receiver:

The Access Point is a high sensitive receiver for the wireless panel build for maximum range and durability. The Access Point communicate with the wireless bus, witch remotely controls the searchlights with R50 motor unit. The control system is based on TCP/IP technology were several different Operator Panel can control separately up to 9 searchlights of Xenon or Halogen. The system is connected to the same network through LAN switch to connect to a network of searchlights. Control panels both hard wired and wireless, are fitted into a standard solution.

Features and Benefits:



- Wireless receiver for SCS wireless Bus
- Bolt-on to Norselight`s network of searchlights
- Weatherproof Aluminium Casing, Compact and new design
- Based on TCP/IP technology
- Waterproof, quick disconnect RJ-45 connector
- Custom made for Offshore
- Supports masts from 1 to 2" diameter
- 200m Area wireless coverage
- IP66,RoHs, FCC, CE, IC Complaint
- -40 to +80 degree operation temperature

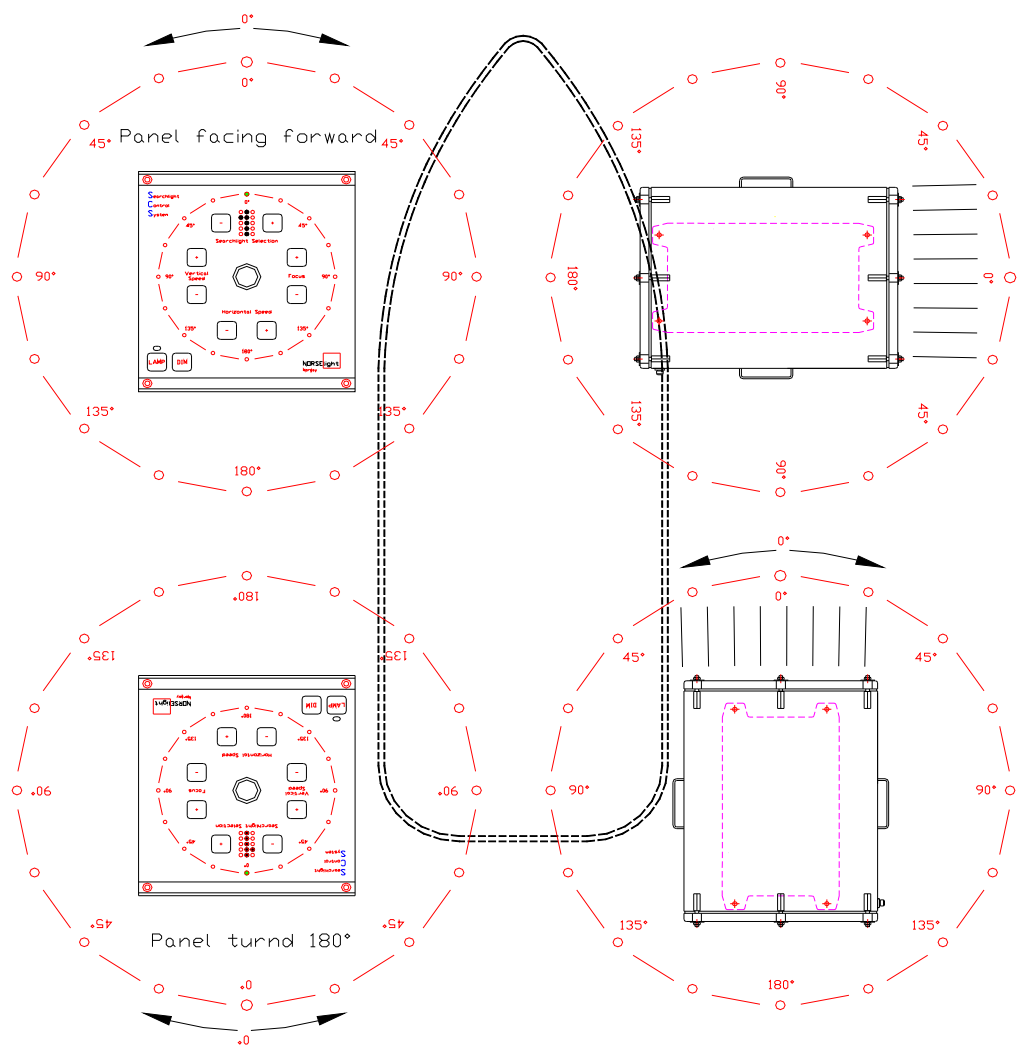
Package Include:

- 1x Wireless receiver unit
- 1x PoE Power supply
- 1x 8dBi wireless antenna
- (Network cables, not included)

1.6 Main Control Panel position indicator versus searchlight position:

In accordance to MSC/Circ. 982 Pos 5.5.1 “Movement of Controllers” and 5.5.2 “Corresponding Movements “
The position indicator on the Main Control Panel indicates the position of the searchlight. 0° position on the panel indicates that the searchlight is positioned straight forward compared to the searchlight 0° position.
The searchlight has an 180° movement to the left and right end position, in total 360°.

To calibrate the position indicator, you simply use the joystick on the Main Control Panel to turn the searchlight to end stop to both left and right end position.

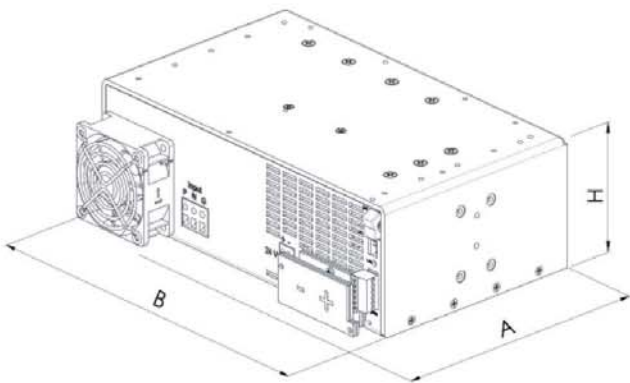


1.7 Power Supply (Rectifiers):



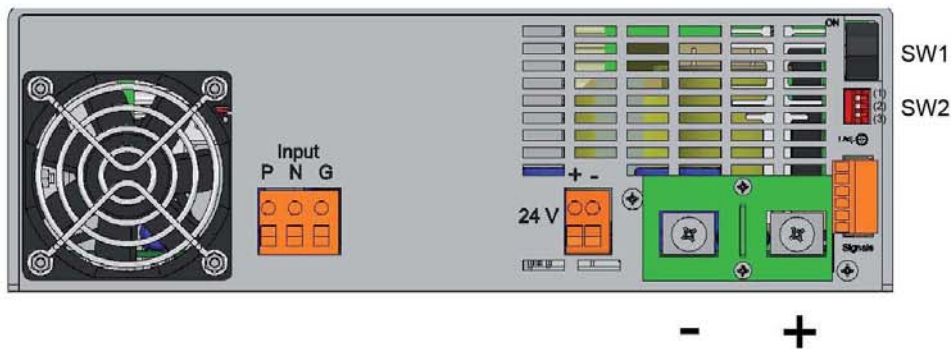
NP-0725

This single-phase rectifier has been designed to ensure correct operation and long life to short arc Xenon lamps up to 1000W. It is characterized by galvanic insulation, a soft inrush current, a low residual ripple value and a stable output current.



NP-0725

A:180 mm
B:254 mm
H:82,5 mm



Note (1) The switch SW1 must remain in OFF position when the remote ON/OFF signal is used.

SW1	ON	OFF ⁽¹⁾
	Lamp ON	Lamp OFF

Setting 500W

SW2	(1)	ON ⁽²⁾	OFF
	(2)	0.5kW	-
	(3)	-	1kW
		-	3kW

Setting 1000W

SW2	(1)	ON ⁽²⁾	OFF
	(2)	-	0.5kW
	(3)	1kW	-
		-	3kW

Setting 3000W

SW2	(1)	ON ⁽²⁾	OFF
	(2)	-	0.5kW
	(3)	-	1kW
		3kW	-

Note (2) Put the switch in the ON position to select the lamp power. The rest of switches must remain in the OFF position.

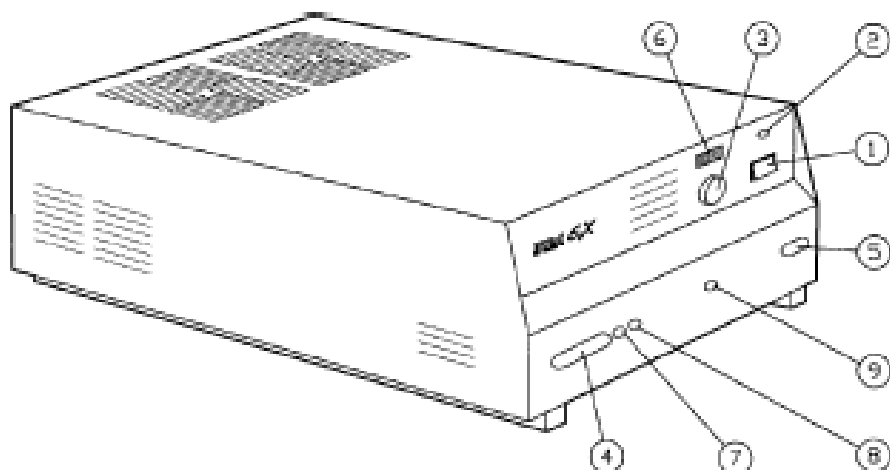


Note: After an automatic safety shutdown of the power supply due to overheating, the input power of the search light (L,N) has to be interrupted and connected again for a reset of the power supply.
(Keep the unit with the fan running for a few minutes and disconnect the mains input for >5 seconds).

- 1. Ta 55°C max running time until the searchlight will switch off is 2 hours.
- 2. Ta 45°C max running time until the searchlight will switch off is 6 hours.
- 3. Ta 35°C and less the searchlight is continuously running.

EX-30 G/1

EX30-G/1, single phase 90-265V 50/60Hz electronic power supply is specifically suitable for feeding 250 to 500W short arc Xenon lamps. Weight 8kg. Further instructions in Installation guide for Rectifier.



1. Lamp ON/OFF switch

IMPORTANT NOTE: DO NOT USE THIS SWITCH FOR THE REMOTE CONNECTION !

2. Mains on LED

3. Lamp current potentiometer

Adjusting the lamp output current

4. Input terminal board

5. Output terminal board

Used to connect the lamp power cables (+, -)

6. Current LED bar

Indicating the output current level (12A to 30A)

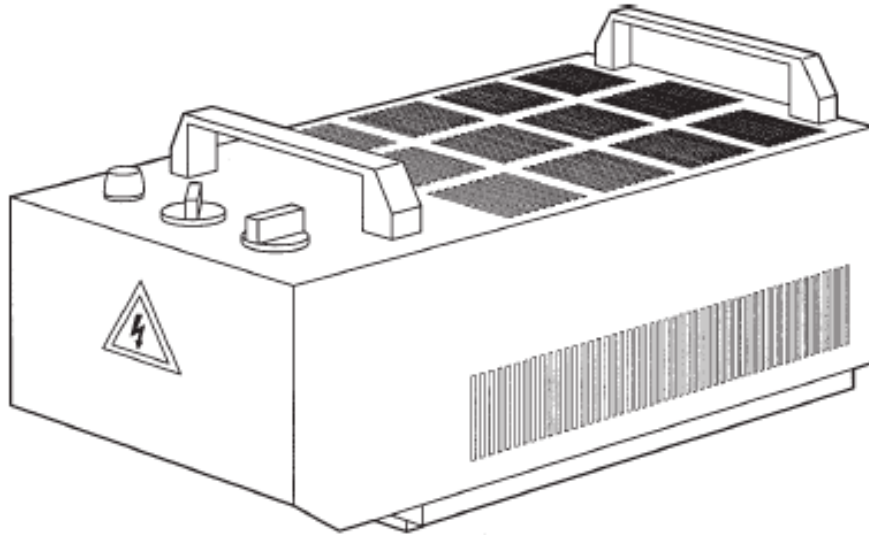
7. Lamp ON terminal board

8. Remote lamp ON/OFF terminal board

9. Igniter insertion terminal board

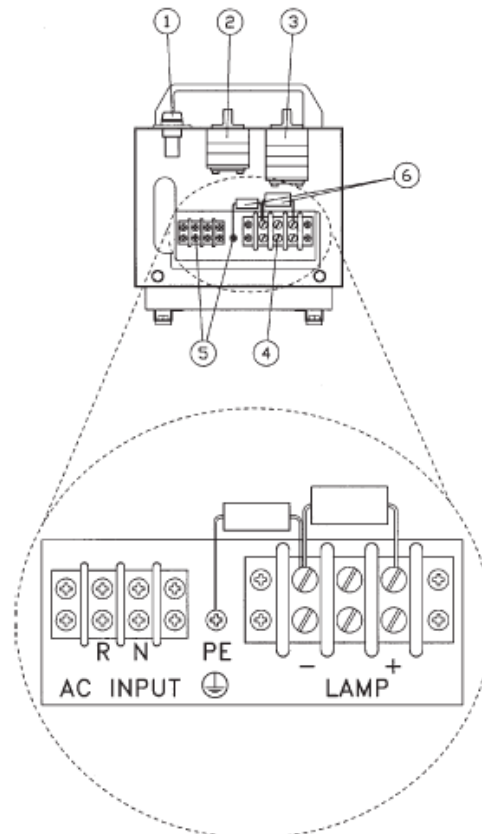
PX-50 N

These extremely compact rectifiers for single-phase inputs have been designed to feed 1000W Xenon lamps, meeting the requirements of lamps manufacturers to ensure correct operation and long life of the lamp. The units are fitted with a transformer with taps for output lamp power regulation and a special circuit to avoid the lamp turn off during the tap switching. The cabinet, equipped with carrying handles, permits an easy inspection of the inside components. Weight 63 kg. Further instructions in Installation guide for Rectifier.



Control devices

1. Mains fuse (F1)
2. ON/OFF switch and high/low diode protection (C2, lamp output current setting (Q1)
3. 6 steps lamp output current setting (Q2))
4. Output terminals (-,+) (X2)
5. Input terminals (R, N plus PE)(X1)
6. HF filtering capacitors (C5-C6)



C7, C8)

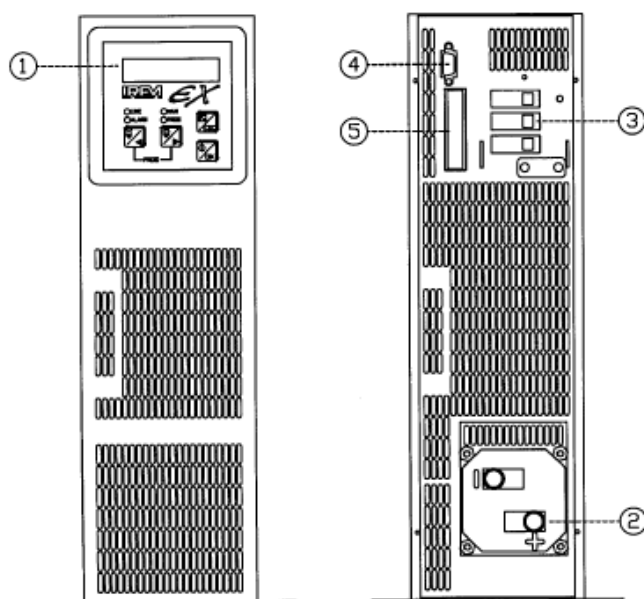
EX-100 D/1

This electronic power supply for single phase or double phase 230Vac 50/60Hz input, has been designed to feed from 1000W to 3000W short arc Xenon lamps, meeting all the requirements of lamp manufacturers to ensure correct operation, long life to the lamp, and high reliability. Weight 18 kg. Further instructions in Installation guide for Rectifier.



Control devices

1. Synoptic panel
2. Output terminal block
3. Input terminal block
4. RS232 connector
5. Auxiliary connector



N3-80 / N3-150

These high quality rectifier power supplies have been expressly designed to ensure the correct operation and long life of short arc Xenon lamps. These units, developed to meet the recommendations of Xenon lamp manufacturers, are fitted with special IREM transformers with adjustable magnetic shunt for continuous output regulation over the entire operating range.

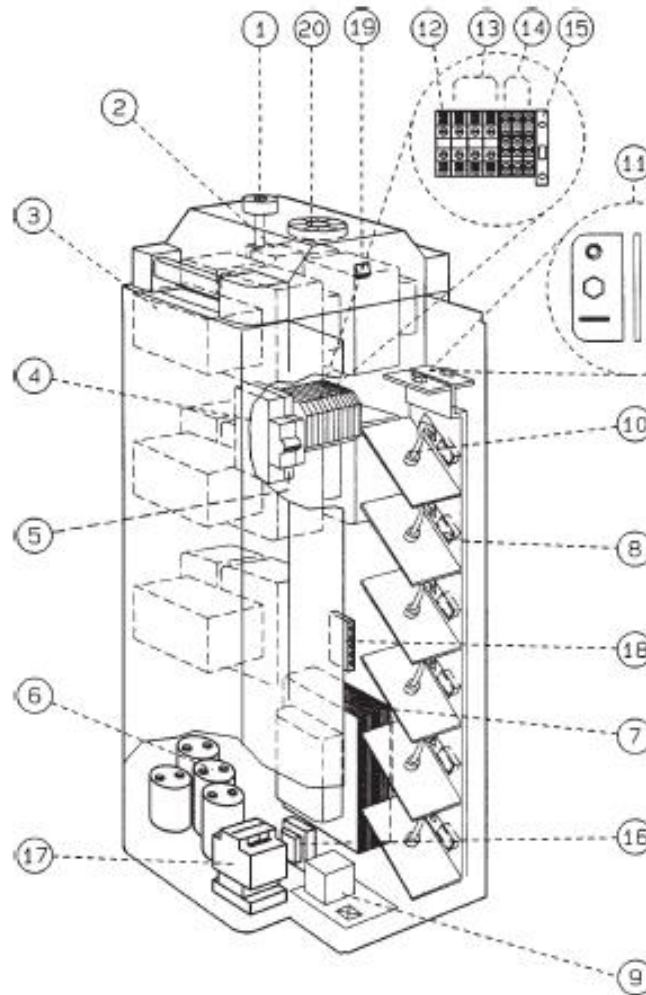
The new and peculiar design guarantees a low acoustical noise, i.e. less than 55dB(A).

The special design, including an auxiliary filter unit, ensures a low ripple with a negligible

starting energy. Weight N3 – 80 101 kg and N3 – 150 154 kg. Further instructions in Installation guide for Rectifier.

Component layout

- 1) Adjustment hand-wheel
- 2) Magnetic shunt (MS)
- 3) Transformers (T1 to T3)
- 4) Circuit breaker (QF) *
- 5) Auxiliary contact (S2) *
- 6) Output filter capacitors (C7 - C8)
- 7) Auxiliary filter (AF) (L) (on 50E, N3-80E, N3-100E models)
- 8) Protection capacitors (C1 to C6)
- 9) Ignition relay (A1)
- 10) Silicon diodes (D1 to D6)
- 11) Output terminals (+, -)
- 12) Ground terminal (PE)
- 13) Input terminals (U V W)
- 14) Alarm ON/OFF terminal (X1) *
- 15) Fuse holder for main switch coil
- 16) Auxiliary transformer versions only)
- 17) Contactor for remote control
- 18) Auxiliary connector (for manual connection and fan powering (N3-150E and N3-180E models))
- 19) ON/OFF switch with lock
- 20) Fan (N3-150E and N3-180E



request for N3-

(400V/415V

switch on breaker

models)

2 Technical data

2.1 Xenon Searchlight

Properties	Value				
Searchlight	<i>XS 500</i>	<i>XS 1000</i>	<i>XS 1600</i>	<i>XS 2000</i>	<i>XS 3000</i>
Dimension	890 mm	930 mm	930 mm	1020 mm	
Height:	470 mm	515 mm	515 mm	615 mm	
Width:	46,5 kg	49,5	51,5 kg	61,5 kg	64,5 kg
Weight of searchlight:	0,5 kg				
Weight of the SCS panel:					
Lamp type (W)	<i>XBO 500</i>	<i>XBO 1000</i>	<i>XBO 1600</i>	<i>XBO 2000</i>	<i>XBO 3000</i>
Working voltage power supply	115V/230V				
Rated Lamp voltage / Rated lamp current	18V / 28A	20V / 50A	24V / 65A	28V / 70A	29V / 100A
Lifetime (approx.)	2000 h	1500 h	2400 h	2400 h	2200 h
Luminous flux	14 500 lm	32 000 lm	60 000 lm	80 000 lm	130 000 lm
Focus distance	89mm (3,5’')	70mm (2’'3/4)		82,6 mm	
Parabolic silver plated glass reflector	Dia.305mm (12’')	Dia.356mm (14’')		457 mm (18’')	
Divergence:	2-7°		3-8°	2-7°	3-8°
Range at 1 lux: (Theoretical calculation)	4600m	6400m	7 200 m	9200 m	11500 m
Vertical movement: Speed:	1-10°/sec			2.8°/sec	
Range:	+25°/ -30°			+ -25°	
Horizontal movement: Speed:	1-20°/sec			1-18°/sec	
Range:	± 180°			± 180°	
Type of Power Supply 115V	<i>EX-30 G/1 ; NP-0725</i>	<i>PX-50N ; NP-0725</i>	On request		
Type of Power Supply 230V			<i>EX-100D/1</i>		
			<i>N3 -80</i>		<i>N3-150</i>
Drum and motor housing material	Seawater resistant aluminium 57S				
Fork and lifting rod material	Stainless steel SIS AISI 304				
Screw joint material	Stainless steel A4				
Surface treatment	White powder coated (RAL 9016)				
Protection class	IP 56				

2.2 Main Operation Panel

Standard	IEC 60945 Ed4 (2002-08)
Number of panels	Standard max 9 pcs in one system
Network	Star and Tree network topology.
Interface	RJ45 port 10/100
	LAN cable CAT5e - CAT7 twisted (568b)
Power Requirements	Power input: 24VDC (18-30VDC)
	Power consumption: <3.5W
Physical Characteristics	Casing: IP22 protection
	Dimensions(WxHxD): 147x160x43,4 mm (5.8x6.3x1.7 in)
	Weight: 500g (1.1 pound)
	Installation: Table mounting from front
Environmental Limits	Operating Temperature: -15 to 50°C(5 to 120°F)
	Ambient Relative Humidity: 0 to 95% (non-condensing)
Compass Safe distance	Standard: 40 cm
	Steering: 30 cm
Cerificates	DNV

2.3 Slave Operation Panel

Standard	IEC 60945 Ed4 (2002-08)
Number of panels	Standard max 2 pcs to each Main Operation Panel
Network	Direct connection to Main Operation Panel.
Interface	Phoenix he/she connector 3,81 pitch
	Cable 5 wire + shielded, connected 1 to 1
Power Requirements	N/A
Physical Characteristics	Casing: IP22 protection
	Dimensions(WxHxD): 96x96x25 mm (3.78x3.78x0.98 in)
	Weight: 100g (0.22 pound)
	Installation: Table mounting from front
Environmental Limits	Operating Temperature: -15 to 50°C(5 to 120°F)
	Ambient Relative Humidity: 0 to 95% (non-condensing)
Compass Safe distance	Standard: 45 cm
	Steering: 35 cm
Cerificates	DNV

2.4 Wireless Operation Panel

Tested according to	IEC 60945 Ed4 (2002-08) IEC 60092-101, -504 IEC 60068-2-1, -2-2, -2-30
Network	Wireless connection through Access Point
Interface	Standard: IEEE 802.11b ☐ Frequency: 2.4 GHz ☐ Data Rate: Up to 11 Mbps with automatic fallback ☐ Modulation: CCK (11/5 Mbps), DQPSK (2 Mbps), DBPSK (1Mbps) ☐ Transmit Power: 16 dBm typical ☐ Receive sensitivity: – 1Mbps: -92 dBm – 2Mbps: -89 dBm – 5.5Mbps: -87 dBm – 11Mbps: -82 dBm ☐ Antenna Connector: 1 x RP-SMA
Power Requirements	Battery: 4,8V (4 celle's) 1650mAh NiMh Charger: 230 VAC, 70-150mAh, 3-10 celle's, NiCd/NimH
Physical Characteristics	Casing: IP65 protection Dimensions(WxHxD): 117x228x46,24 mm (4.6x8.97x1.82 in) Weight: 500g (1.1 pound)
Environmental Limits	Operating Temperature: -25 to 70°C(-13 to 158°F) Ambient Relative Humidity: 0 to 95% (non-condensing)
Compass Safe Distance	Standard: 35 cm Steering: 25 cm

2.5 Switch

KIEN1005

Standard	IEEE802.3 IEEE802.3u IEEE802.3x IEEE802.1p Store and forward switching mode
MAC Address Table Size	32K
Network	Chain and star network topology.
Service	Diagnostics: LEDs(power, link status, port rate,) Port priority: QoS for 5th port (default high priority) Current over-load protection: Yes(AC220V) Reverse polarity power connection protection: Yes Broadcast storm protection: Yes
Interface	RJ45 port 5x10/100Base-TX(KIEN1005-5T) RJ45 port 4x10/100Base-TX and Fiber port 1x100Base-FX (KIEN1005-1S(M)-4T)
Power Requirements	Power input: 24VDC (12-36VDC), 220VDC/AC Power consumption: <3.5W
Physical Characteristics	Casing: IP40 protection Fanless design Dimensions(WxHxD): 36.5x120x90 mm (1.44x4.72x3.54 in) Weight: 300g (0.66 pound) Installation: DIN-35 Rail or wall mounting.
Environmental Limits	Operating Temperature: -40 to 85°C(-40 to 185°F) Storage Temperature: -40 to 85°C(-40 to 185°F) Ambient Relative Humidity: 0 to 95% (non-condensing)
Approvals	IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge IEC61000-4-3(RS): 10V/M (80-1000MHz) IEC61000-4-4(EFT): ±4KV power line, ±2KV data line IEC61000-4-5(Surge): power line ±4KV CM/ ±2KV DM, data line ±2KV IEC61000-4-6(CS):3V(10KHZ-150KHZ),10V(150KHZ-80MHz) IEC61000-4-8(Power frequency magnetic field):100A/m cont. 1000A/m, 1s to 3s
Certificates	DNV,CE, FCC, UL, RoHS

2.6 Access Point

High Sensitive Receiver for Wireless Operation Panel

REGULATORY/ COMPLIANCE INFORMATION

Wireless Approvals	FCC, IC, CE
RoHs Compliance	Yes
IP/NEMA Compliance	IP67/ NEMA 6

DIAMETER RANGE PERFORMANCE

11Mbps	200m
5.5Mbps	400m
2Mbps	800m
1Mbps	1600m

RADIO OPERATING

Frequency	2412-2464 MHz
TX Power	15dBm (20dBm EIRP including Antenna)
RX Sensitivity	-90dBm @ 11Mbps

ANTENNA SPECIFICATION

Gain	5dBi Omni directional
Frequency	2400-2485 MHz
Vertical/horizontal BW	25x360 degree
Weight	0.5lbs (0.2Kg)
Dimension	355x15mm

PHYSICAL / ELECTRICAL / ENVIRONMENTAL

Enclosure Size	185x130x50mm
Mounting	Supports masts up to 3" diameter
Weight	1.50kg
Enclosure Characteristics	Solid Die cast aluminium
Operating Temperature	-45C to +65C

3 Installation

3.1 Mechanical installation

- The searchlight must be mounted on a horizontal surface using 4 stainless screws.
- The Main/Slave Operation Panel and the Switch is designed for installation in indoor applications.
- The Access Point is designed for out side installation.
- The Rectifier is designed for inside installation.

3.2 Electric installation

- The Main Operation Panel requires 24V DC connected in series with a 1A fuse to the positive (+) conductor.
- The Switch requires 24V DC. In addition to grounding
- Depending on The Searchlight model it requires 115V AC or 230V AC.
- Power supplied to the power supply unit must be 2 or 3-phase.
- Current supplied to the lamp unit must be specific (se technical data for specific Type).

Note: Disconnect the power when working on the equipment!
Electrical equipment must be installed by authorised personnel!
Check the polarity when connection of 24VDC!
All Searchlight system equipment MUST BE connected to ground/earth!

Current supplied to the lamp unit must be 65A DC for 1600W, 70A DC for 2000W and 100A for 3000W.

To be able to turn off the searchlight from the main panel, the switch on top of the Power Supply N3-80 or N3-150 must be in position “0” (Zero). See picture 1



Picture 1:

3.3 BUS installation

- The BUS communication system requires minimum LAN CAT5e, 4 pair shielded twisted pair cable.
- All connection entries need RJ45 connector using T-568B cable standard.
- Make sure that all cable entries maintain their shield protection.

Note: Follow the installation requirements from your cable supplier!
Avoid brakeage on the Ethernet connectors (panel, switch and searchlight COM module)!

3.4 Start up procedure

- Adjust the lamp power. Look at the manual for the power supply.
When the lamp is lit, the lamp power should be adjusted up to a max of
28A DC for 500W
50A DC for 1000W
65A DC for 1600W
70 A DC for 2000W and
100A for 3000w lamp. This current must be measured with a clamp-on amp-meter on the cable between the power supply and the lamp unit. The current can be corrected by use of the wheel on the power supply.
- Powering up. By powering up the SCS R50 Searchlight system, the panel indicate splashing figure in LED display of the Operating Panel. The system starts to search for all units connected to the system. After few seconds a specific number of the searchlight in contact, will appear in the LED display.
- Position Calibration Turn the searchlight to Starboard side by using the Joystick turning non stop until T appears in LED-indication of the Main Operation Panel. Then turn to Port side non stop to the end position until T appears in LED-indication. Now the searchlight position indication will follow the movement of the searchlight 360°.

Note: It is important to follow correct currency to optimize lamp life.

4 Operation

4.1 Operation Panels function

LED-indication display:

- Searchlight number in use
- Indication level of Dim-light intensity.
- Indication level on vertical and horizontal speed.
- End stop indication **T** +/-180°
- Alarm indication **A**, when stop occurs before end stop.

Searchlight selection:

- Allow you to choose the searchlight you want to use, if there is more than one searchlight available. Allow max. 9 searchlights to use.
- By pushing the +/- button, you select up/down from searchlight no. 1 to 9.

Searchlight position:

- Indicate what position the searchlight is pointing towards (360°).

Focus:

- Adjustment of the light beam.
 - Focus +: Narrow beam
 - Focus -: Wide beam

Vertical speed:

- Adjusts the motor speed vertically in the range from 1 to 15 (indicated in LED display).

Horizontal speed:

- Adjusts the motor speed horizontally in the range from 1 to 15 (indicated in LED display).

Lamp:

- LAMP: Lamp on/off function. Green LED for lamp ON.

Dim:

- Adjusts the intensity of the backlight in the panel, indicated in LED-indication display.

Joystick (Searchlight direction Horizontal/Vertical):

- Allow the searchlight to move up, down or diagonal.

4.2 Change of the lamp

Warning!

When changing the bulb, use facial protection and leather gloves as accidental breakage of the glass bulb can critically harm anyone within a radius of 8m.

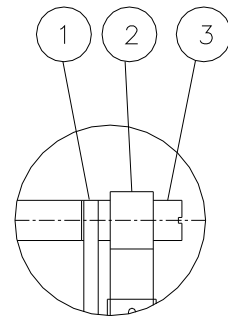
**Note: Do not touch the bulb with bare hands or with anything greasy.
The bulb must be clean.**

Note: The XBO light bulbs work under high pressure and can explode if not handled carefully.

**Note: Be ware of a hot bulb!
Do not touch the bulb with bare hands or anything greasy!
The bulb must be clean!
USE eye protection!**

Be careful to not damage any parts. Don't touch the bulb with bare hands. Check the lamp housing gasket for damages and impurities.

- Cut the main power to the searchlight.
- The lamp housing must **not** be opened until at least 10 minutes after the lamp has been turned off or until the lamp is cooled down. Put on the protection cover including a facial protection **and gloves**.
- In front of the Lamp Holder, first loosen the locking screw (1), loosen the positive contact on the lamp (2), and then remove the front Teflon holder (3).
- Unscrew the bulb from the negative contact (In front of the rear Teflon holder).
- Change the bulb and reassemble in reverse order.
- Check the level of Greece and refill when needed in glider for Lamp Holder.
- Check the lamp housing gasket for leakage.



4.3 General Searchlight Maintenance

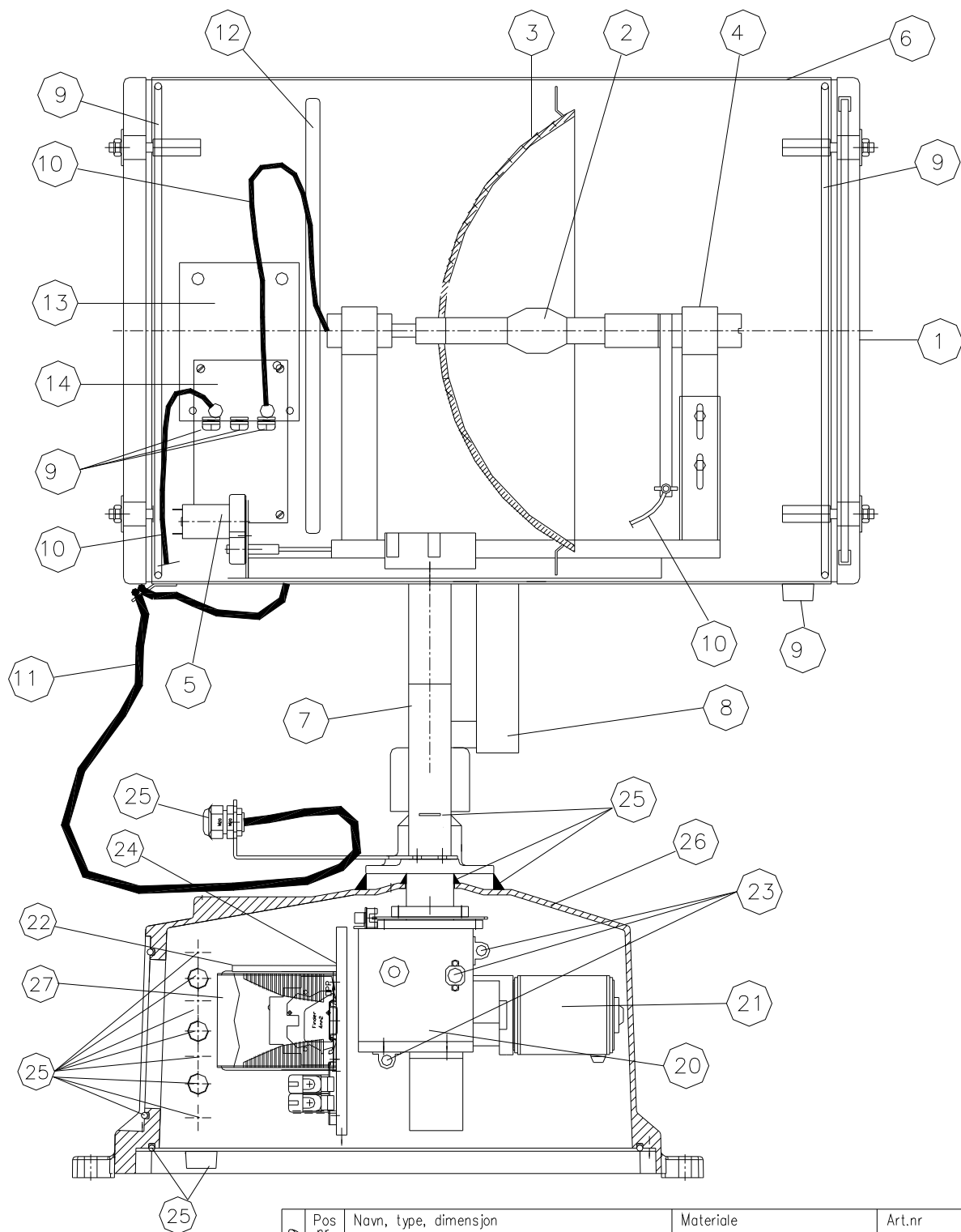
Recommended intervals not exceeding 6 months:

- **Cut the main power to the searchlight!**
- Control of all gaskets and cable glands.
- Control of all screw and nut connections.
- Check lamp holder with contact points.
- 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.
- Tighten all terminal strips in the searchlight junction box.
- After half burning time of the bulb, remove washer on the negative contact. This allows the bulb to make a half turn. This is done to rotate the coating built up on top of the bulb.
- Check the level of Grease and refill when needed underneath the VS120 gasket on the top of the motor housing.

5 Spare Parts list

OR = On Request, N/A = Not Available

Pos	Spare KIT Xenon R50	XS500	XS1000	XS1600	XS2000	XS3000
1	Front Ring complete	1009175	1009169		1009149	
2	Lamp Xenon	1009211	1009207	1009209	1009210	1009213
3	Reflector complete	1009193	1009172		1009179	
4	Lamp Holder Complete w/focus	1009188	1009171		1009189	1009192
5	Focus unit Xenon, complete	1009168				
6	Drum complete	OR	OR	1009137	OR	OR
7	Forks	1009315	1009314		1009313	
8	Manouver Fork	OR	OR	OR	OR	OR
9	Seal KIT, Drum	OR	OR	OR	OR	OR
10	Cable kit, drum	OR	OR	OR	OR	OR
11	Cable, external, Xenon	OR	OR	OR	OR	OR
12	Heat Element Drum 115V	1009135			1009136	
12	Heat Element Drum 230V	1009173			1009118	
13	Ignitor, 230V	1009240	1009239			1009237
13	Ignitor, 115V	1009235	1009241			1009236
14	Noise filter kit complete	OR	OR	OR	OR	OR
20	Gear Complete 115V	OR				
20	Gear Complete 230V	OR				
21	Motor Vert	1009224				
21	Motor Hor	1009224				
22	Heat Element Gear 115V	1009233				
22	Heat Element Gear 230V	1009232				
23	MDC complete	OR				
24	Powermodule R50, complete	1009196				
25	Seal KIT, Motor house	OR				
26	Motorhouse, complete	OR				
27	Power supply, motor house	3009009				

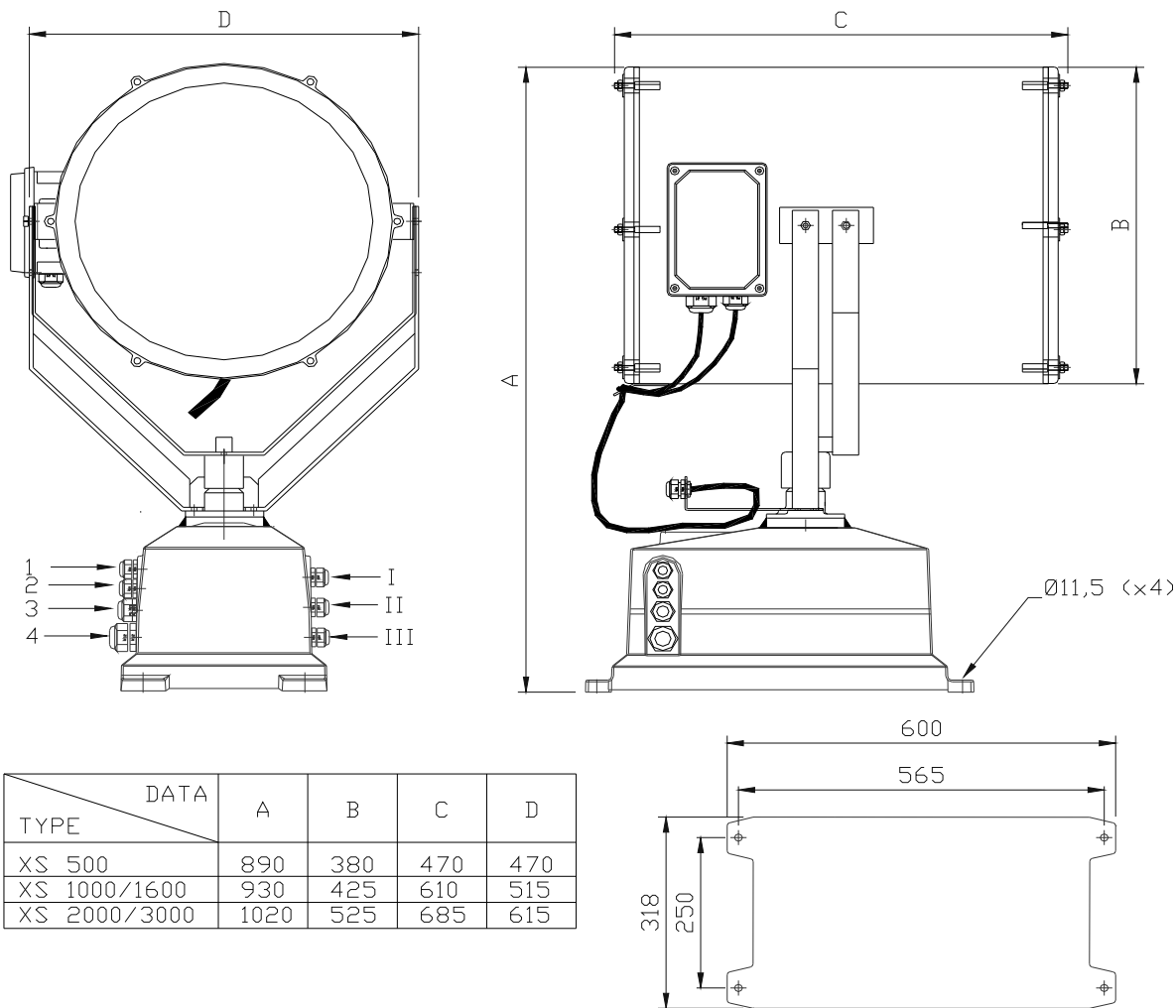


T.M. 031.09 09.10.09SAF 2	Pos nr.	Navn, type, dimensjon	Materiale	Art.nr
	Konstruert/ Tegnet:	FH	Godkjent: Initialer / Dato	Målestokk
	Dato	171208		1:5
	Assembly drawing of XS 500-3000 R50 BUS		Erstatning for: D-R50-08 utg. 1	Erstattet av: SAF
			D-R50-08	Utgave 2
			Papirformat: A4	Projeksjonsmet. ☐

6 Drawings

5.1 Mechanical Dimensions

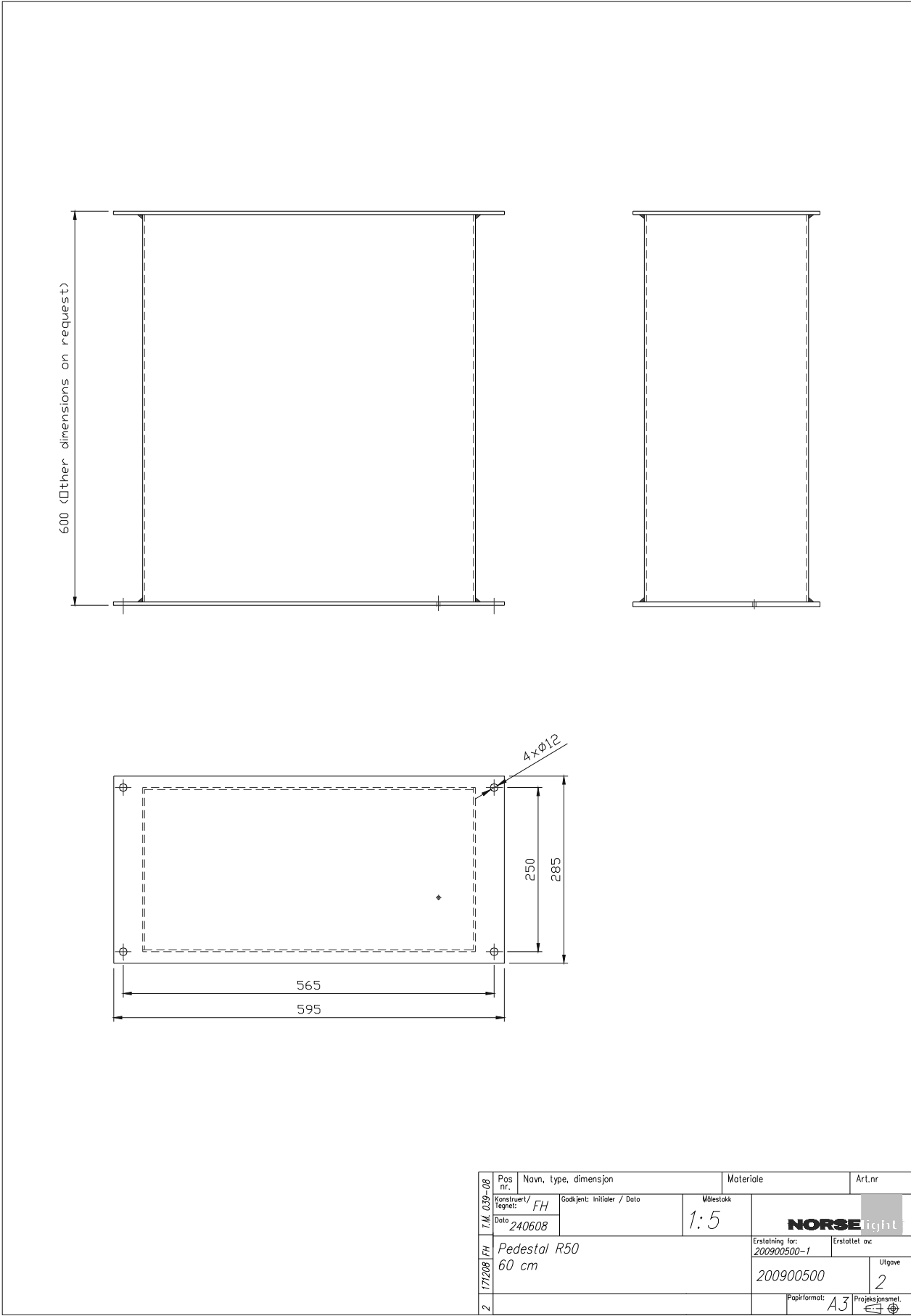
XS 500 to 3000 R50



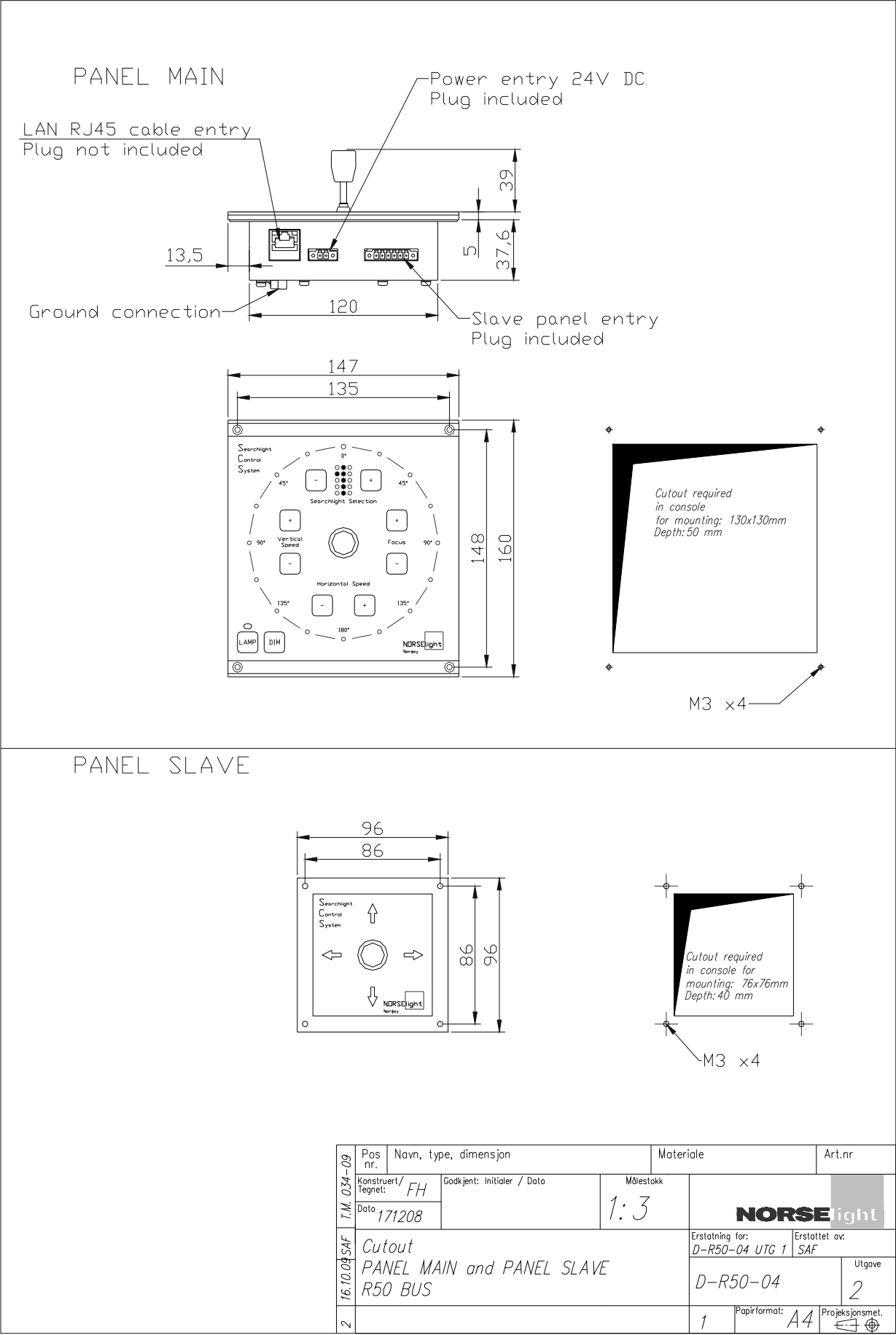
Entry #	I	II	III	1	2	3	4
Description							
Cable Gland	M20	M20	M20	M20	M20	M25	M32
Cable Ø min/max	7-14mm	7-14mm	7-14mm	7-14mm	7-14mm	9-18mm	14-25mm
Cable entry XS 500 - 1000	Norse- light side	Norse- light side	Norse- light side	Power Rectifier	LAN	Power grid	Lamp Power
Cable entry XS 1600 - 3000				Signal Rectifier	LAN	Power grid	Lamp Power

3	2	T.M. 033-09 T.M. 010-09 SAF FH 161009 120309	Pos nr.	Navn, type, dimensjon		Materiale		Art.nr	
			Konstruert/ Tegnet:	FH		Godkjent: Initialer / Dato		Målestokk	
			Dato	171208		1:10		NORSElight	
Dimensions of Xenon XS 500-3000 R50 BUS						Erstotning for: D-R50-03 v2		Erstattet av: SAF	
						D-R50-03		Utgave 3	
						Papirformat: A4		Projeksjonsmet. 	

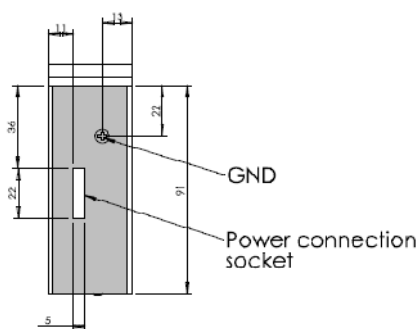
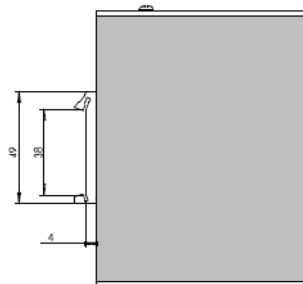
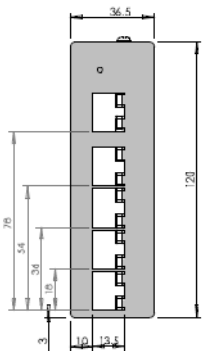
Pedestal R50



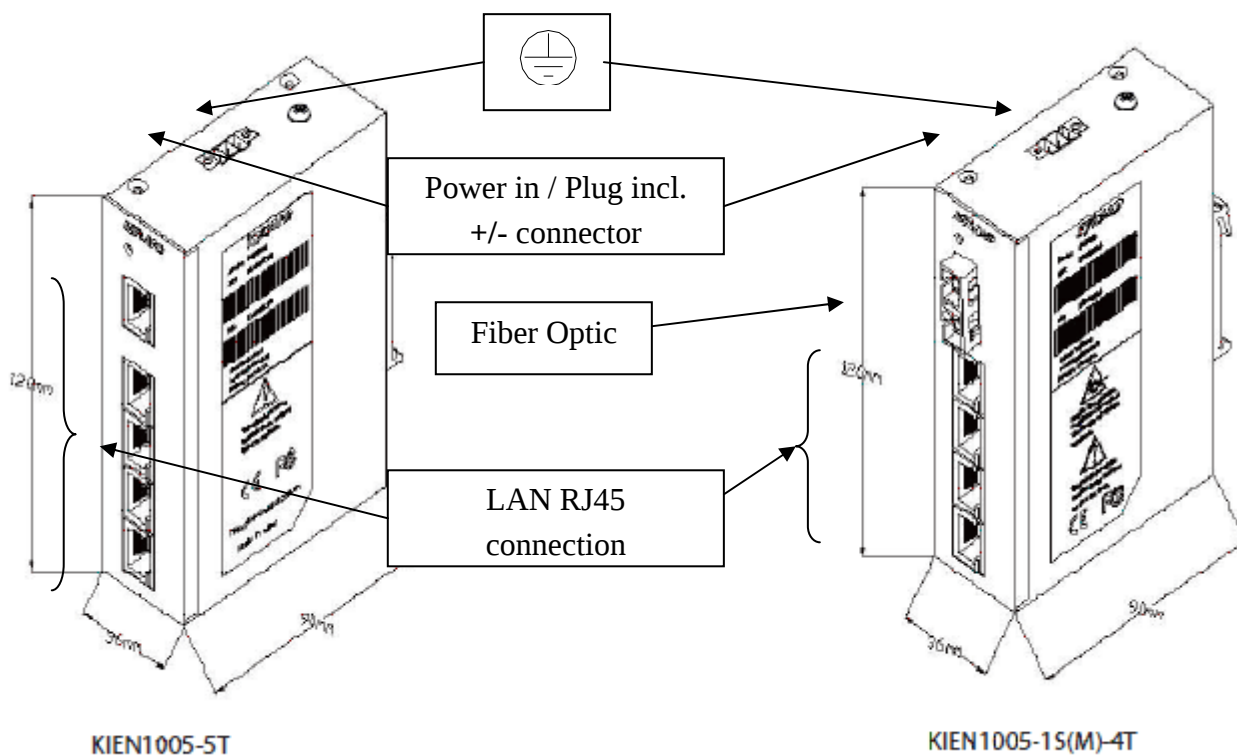
Operation Panel (Main and Slave) w/cut dimensions



The Switch BUS dimensions.



Fits for 5 LAN cable entry for RJ45 plug (KEIN1005S-5T) or 1 one full-duplex fiber port of 100Base-FX, single mode or multimode and 4 LAN cable entries (KEIN1005-1S (M)-4T).
Look in the manual for KEIN1005 for more details.
Installation: DIN-35 Rail or wall mounting



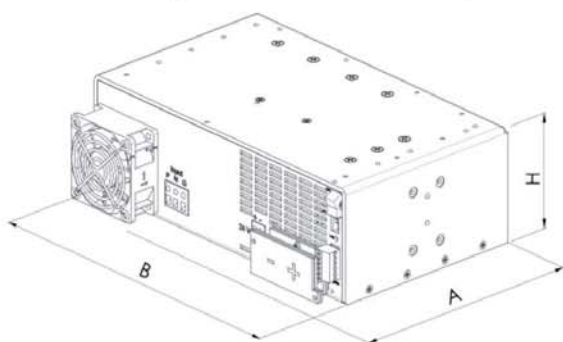
Power Supply (Rectifiers)

NP-0725



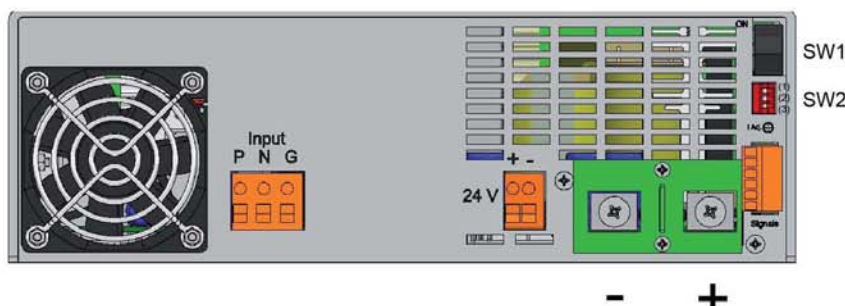
NP-0725

This single-phase rectifier has been designed to ensure correct operation and long life to short arc Xenon lamps up to 1000W. It is characterized by galvanic insulation, a soft inrush current, a low residual ripple value and a stable output current.



NP-0725

A:180 mm
B:254 mm
H:82,5 mm



Note (1) The switch SW1 must remain in OFF position when the remote ON/OFF signal is used.

SW1	ON	OFF ⁽¹⁾
	Lamp ON	Lamp OFF

Setting 500W

SW2	ON ⁽²⁾		OFF	
	(1)	0.5kW	-	-
	(2)	-	1kW	-
	(3)	-	3kW	-

Setting 1000W

SW2	ON ⁽²⁾		OFF	
	(1)	-	0.5kW	-
	(2)	1kW	-	-
	(3)	-	3kW	-

Setting 3000W

SW2	ON ⁽²⁾		OFF	
	(1)	-	0.5kW	-
	(2)	-	1kW	-
	(3)	3kW	-	-

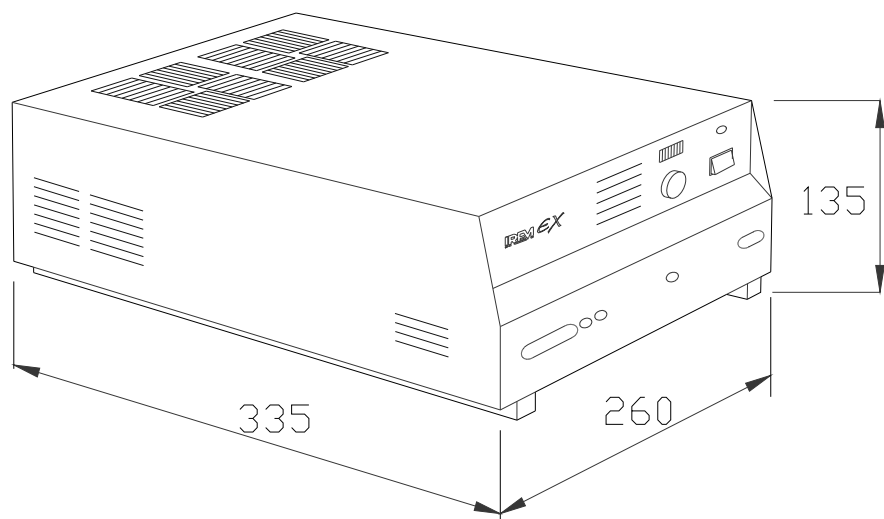
Note (2) Put the switch in the ON position to select the lamp power. The rest of switches must remain in the OFF position.



Note: After an automatic safety shutdown of the power supply due to overheating, the input power of the search light (L,N) has to be interrupted and connected again for a reset of the power supply.
(Keep the unit with the fan running for a few minutes and disconnect the mains input for >5 seconds).

1. Ta 55°C max running time until the searchlight will switch off is 2 hours.
2. Ta 45°C max running time until the searchlight will switch off is 6 hours.
3. Ta 35°C and less the searchlight is continuously running.

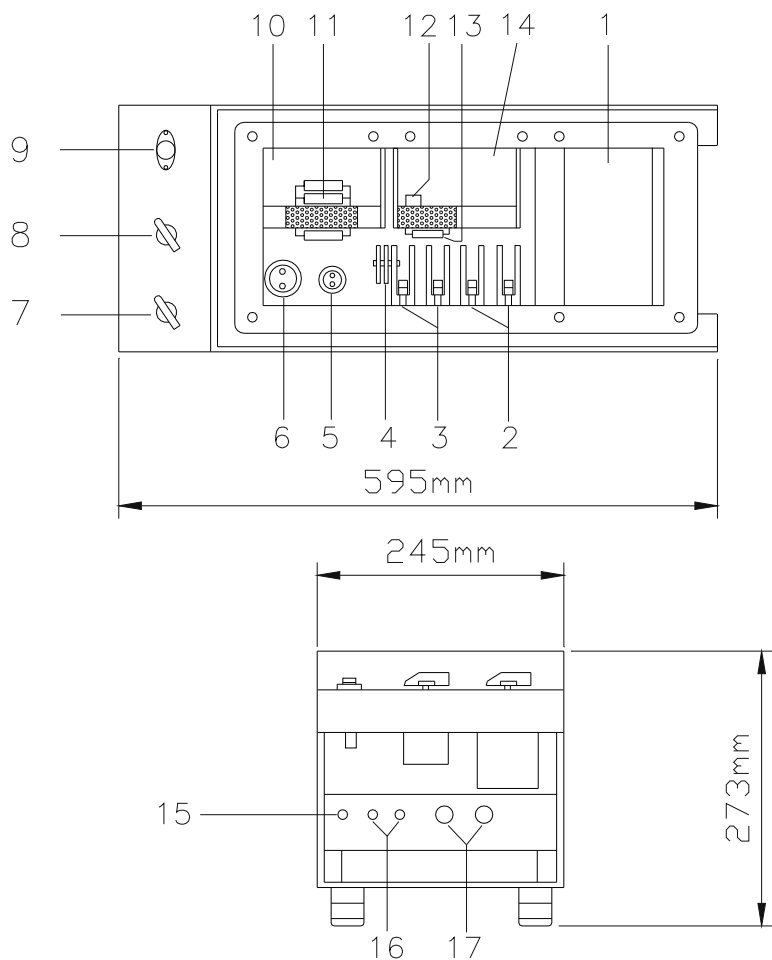
EX-30 G/1



Weight 8 kg

Pos nr.	Navn, type, dimensjon		Materiale	Art.nr	
Konstruert/ Tegnet: FH	Godkjent: Initialer / Dato		Målestokk	NORSElight	
Dato 300608			—		
Power Supply EX-30 G/1 XS 500 R10			Erstatning for:		Erstattet av:
			D-R10-74		Utgave 1
			Papirformat: A4	Projeksjonsmet. 	

P-X50 (N) C

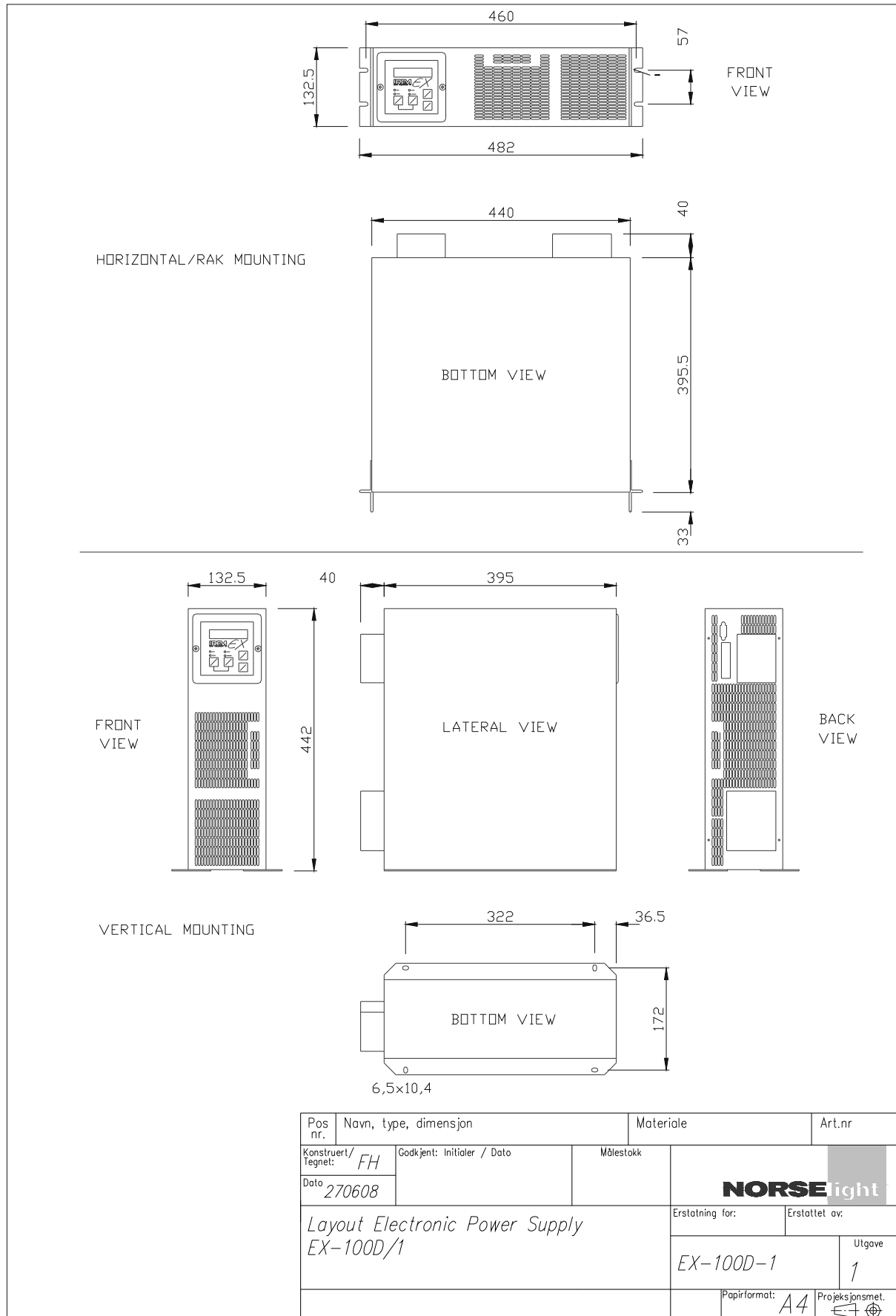


Weight: 63 kg

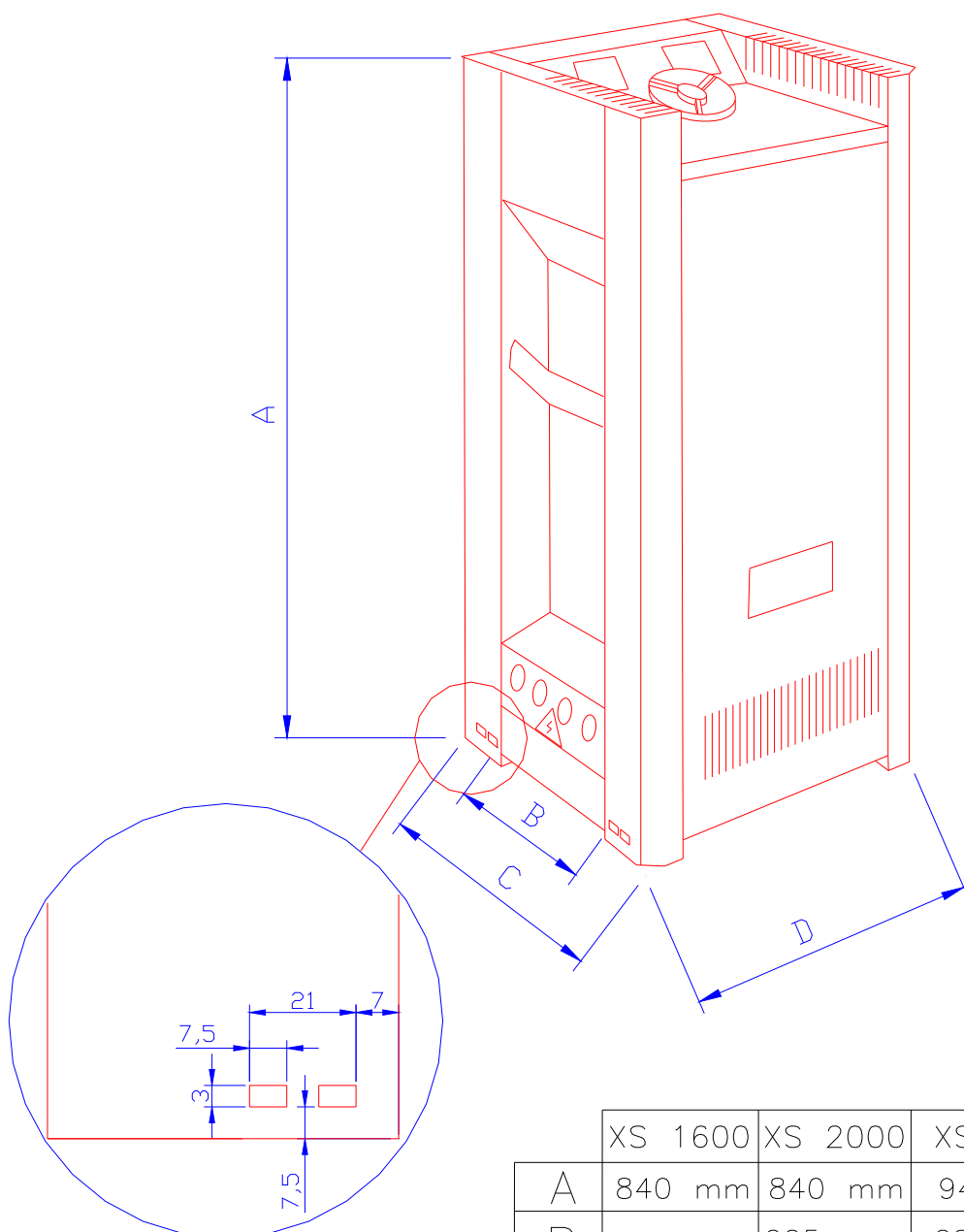
NO.	COMPONENTS
1	Transformer
2	D1-D2 rectifier diodes
3	D4 blocking diode
4	Silicon plate
5	C4 support capacitor
6	C3 filter capacitor
7	Output current adjustment switch
8	ON/OFF and high/low current adjustment switch
9	Fuse holder
10	Filter impedance
11	R4-R5 resistors
12	D3 diode
13	R1 resistor
14	Filter impedance
15	Ground terminal
16	Mo input terminal board
17	MO1 output terminal board

T.M. 039-08	T.M. 022-05	Pos nr.	Navn, type, dimensjon	Materiale	Art.nr	
		Konstruert/ Tegnet: <i>AJL</i>	Godkjent: Initialer / Dato	Målestokk <i>1:10</i>	NORSE light	
		Dato <i>050500</i>				
FH	FH	<i>Power supply P-X50C XS 1000 RS2 / R10 / R50 115 / 230V AC</i>			Erstatning for: <i>D-RS2-45 u2</i>	Erstattet av:
					<i>D-RS2-45</i>	Utgave <i>3</i>
3	2				Papirformat: <i>A4</i>	Projeksjonsmet. 

EX-100 D/1



N3-80 / N3-100

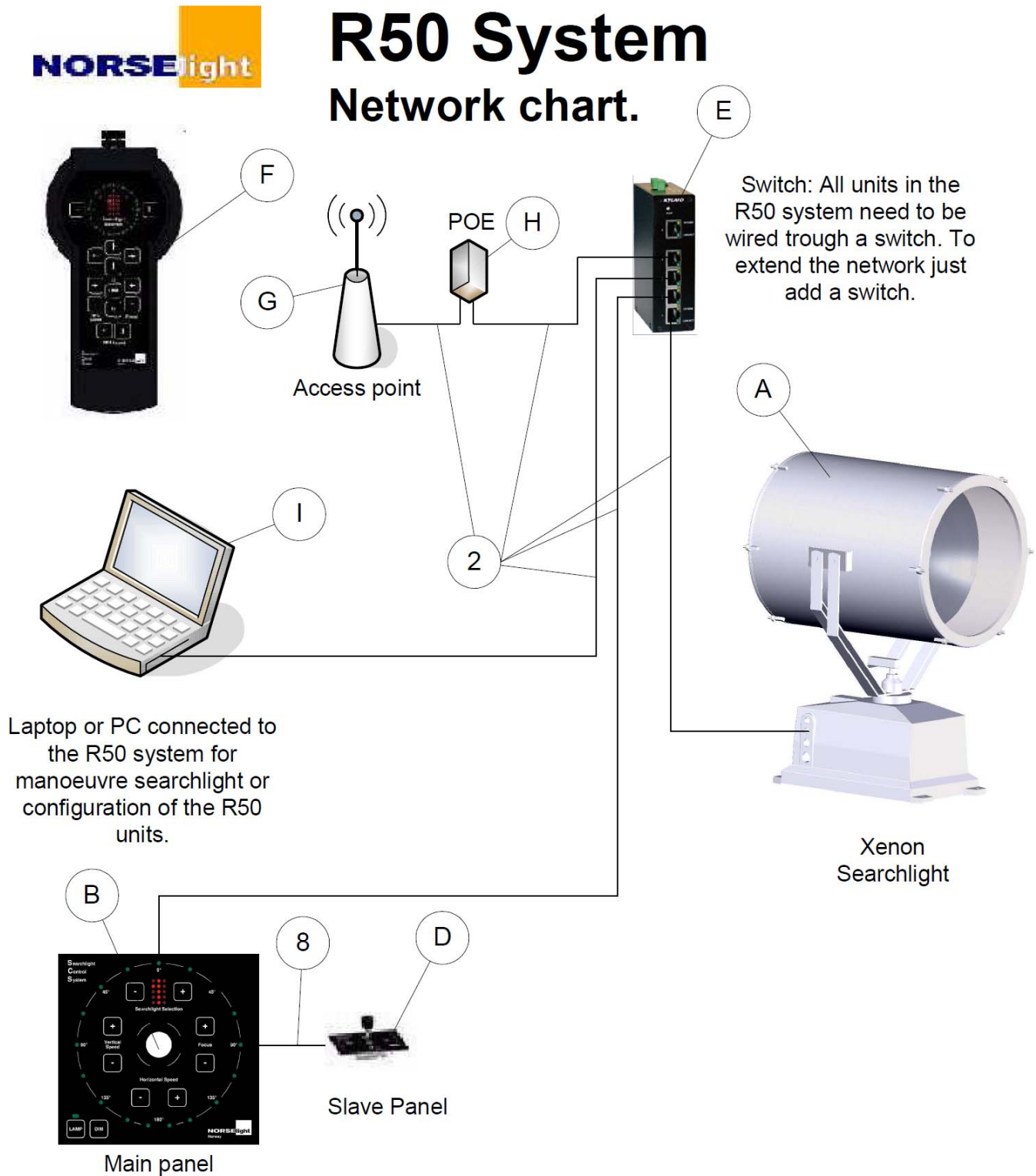


	XS 1600	XS 2000	XS 3000
A	840 mm	840 mm	940 mm
B	225 mm	225 mm	285 mm
C	350 mm	350 mm	410 mm
D	410 mm	410 mm	460 mm
Weight/ Vekt	101 kg (N3-80)	101 kg (N3-80)	154 kg (N3-150)

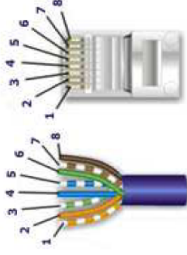
T.M. 050-05		T.M. 0097-01		Pos nr.	Navn, type, dimensjon		Materiale		Art.nr		
				Konstruert/ Tegnet:	Godkjent: Initialer / Dato		Målestokk				
				Dato							
				230300							
FH				Power Supply Unit / Strømforsyning				Erstatning for:		Erstattet av:	
				N3-80 / N3-150				D-RS2-39 uA			
261005		271101		XS 1600-2000-3000				D-RS2-39		Utgave	
										3	
3		A						Papirformat:		Projeksjonsmet.	
								A4			

6.1 Ethernet BUS

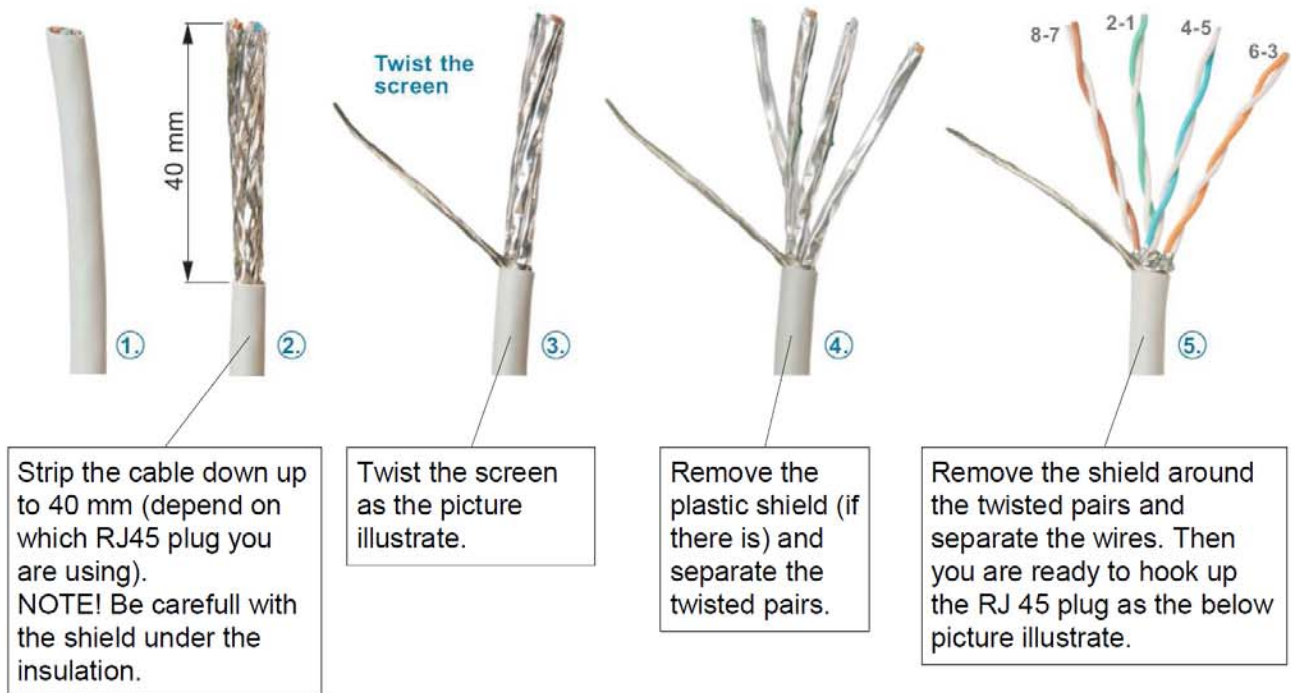
LAN Cables only



Description:

A	Halogen searchlight	The searchlight only needs mains input and a LAN cable to be ready for operating. Plug and play. The maximum number of searchlights per network is nine.
B	Main Operation Panel - MOP	Main Operation Panel for bulkhead mounting. For example in a bridge console. Needs 24 VDC and a LAN cable to be ready for Operating searchlights connected to the R50 system. Plug and play.
D	Slave Operation Panel	This panel can operate searchlights which are chosen by the Main Panel. There is only possible to manoeuvre horizontally and vertically with the Slave Panel.
E	Switch	Switch with 5 Ethernet LAN outlets. Connect another switch in series with this, to get more LAN outlets. All R50 equipment must be connected to the switch.
F	Wireless Operation Panel -WOP	Press ON button to connect to access point. WOP is prepared for Norselight Access point.
G	Access point	Just connect access point to a switch through a Power over Ethernet adapter with a LAN cable. The Access point is powered through a power over Ethernet adapter is delivered with the access point. The LAN cable is the only cable needed for the Access point. Access point is secured with a WEP key. .
H	Power over Ethernet – POE	Power over Ethernet supplies power to the access point, through the LAN cable.
I	Laptop or stationary PC	Connect a PC to the switch and hook up to the R50 system. A laptop or a stationary PC can easily manoeuvre searchlight or do some simple configurations of the R50 units, if there is need for a change. Norselight can supply the necessary programs.
2	LAN Cable – Min required LAN Cat 5e	To achieve the bit rate required by the equipment, the system must be supplied with LAN cables with minimum CAT 5e standard. It is important to use 568 B wiring standard. 568 B 
8	Multi wire to the Slave Operation Panel	Use a 7 core multi cable and connect the Slave Panel to the Main Panel. There can be connected 2 Slave panels per Main Panel.

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

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

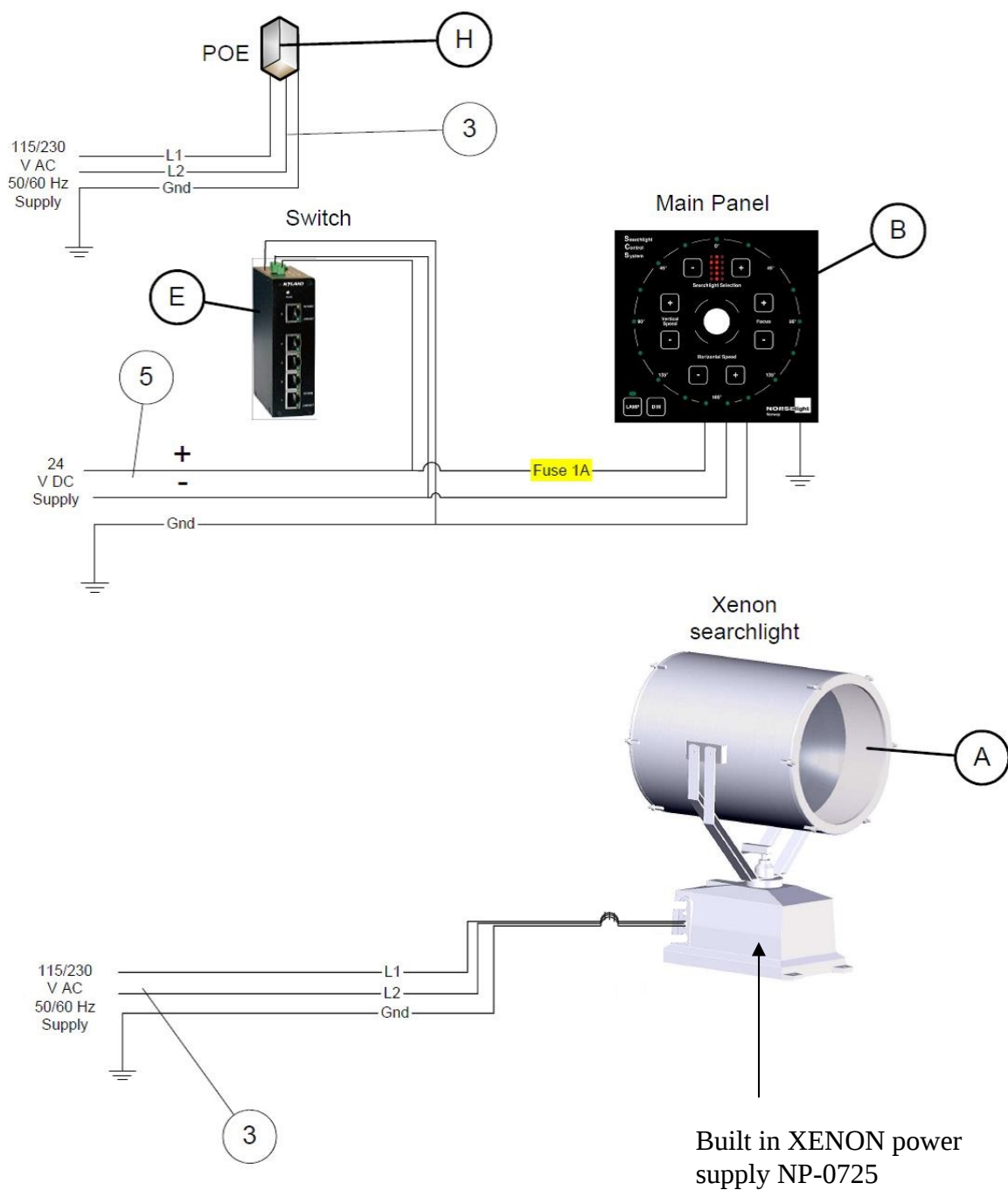
6.2 Electrical

XS500-1000W with integrated Xenon Power Supply



R50 System Electric installation

XS500-1000W with integrated PSU



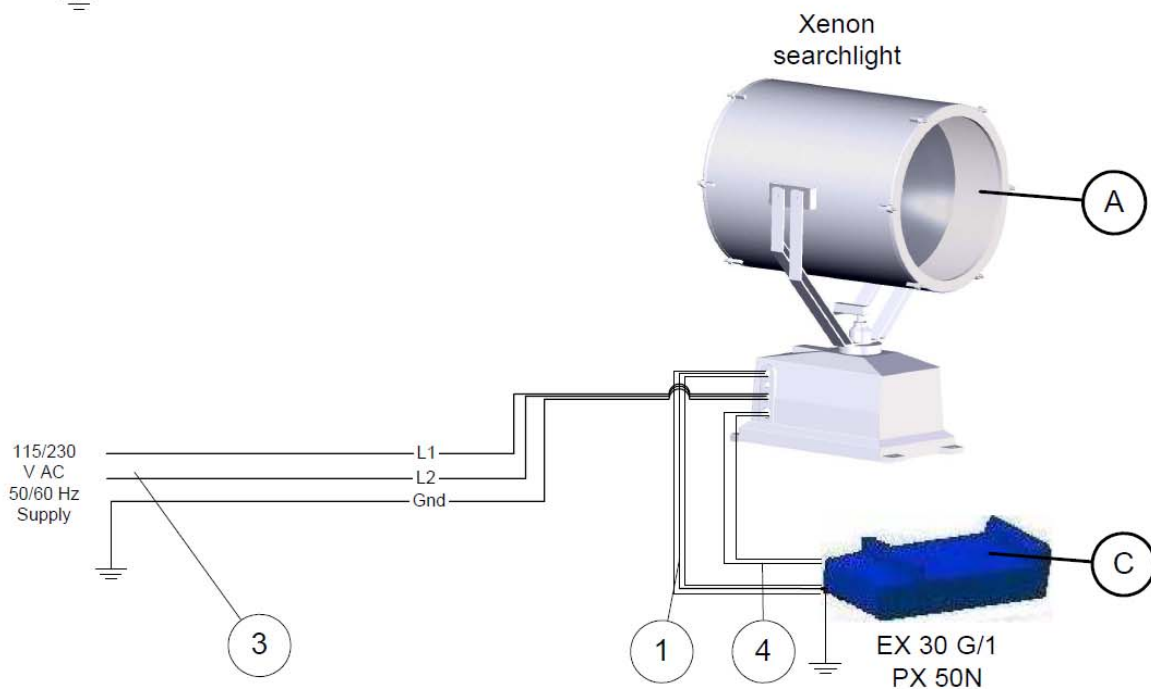
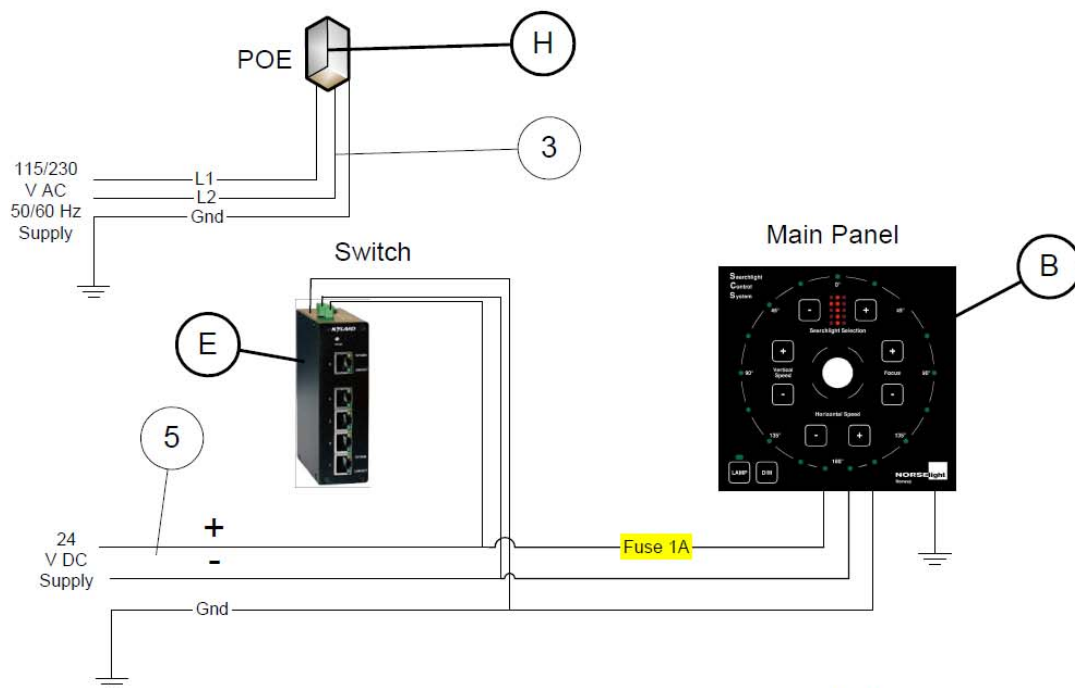
XS 500-1000W.



R50 System

Electric installation

XS 500 – 1000 W

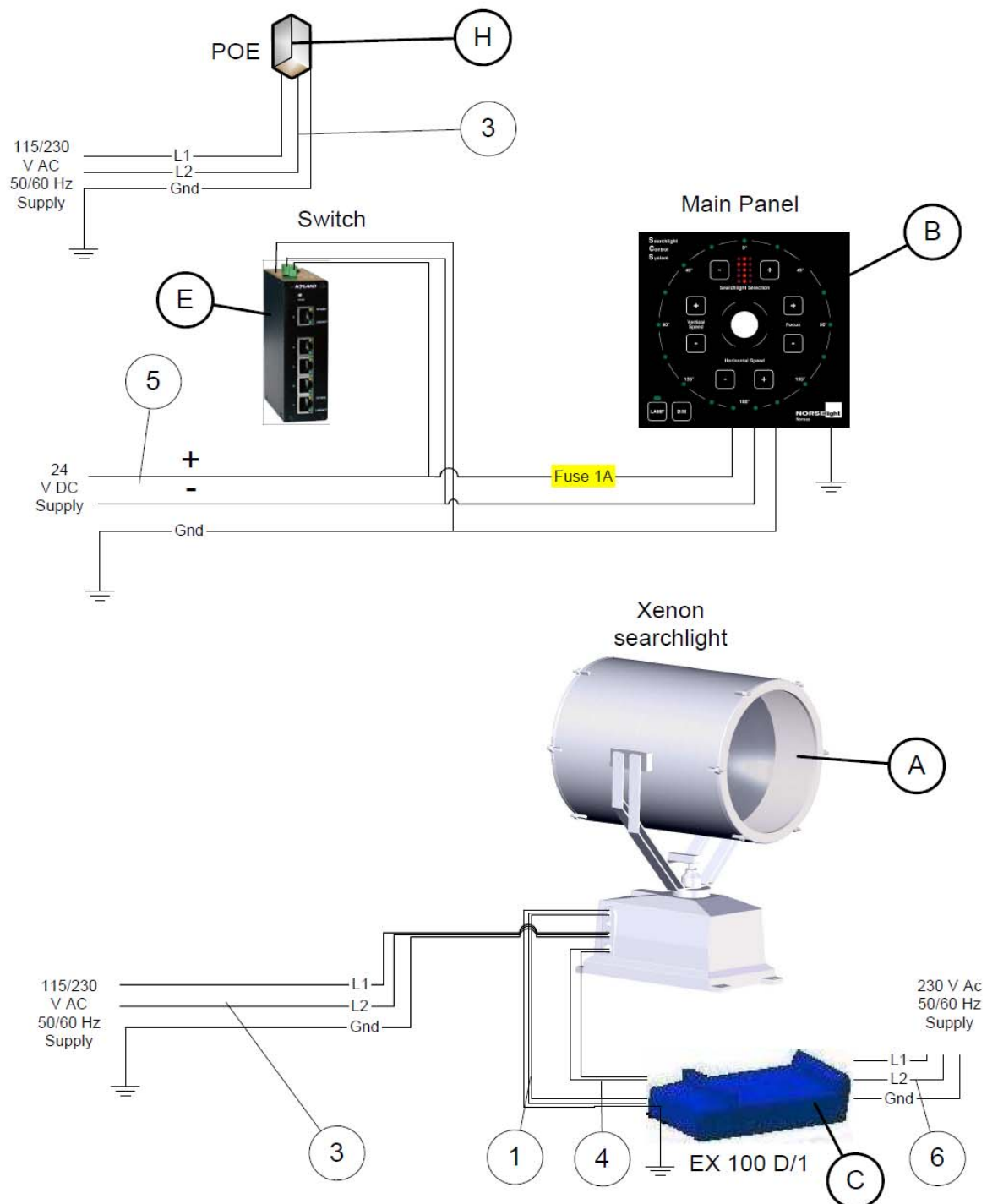


XS 1600-3000W with EX 100 D/1.

R50 System

Electric installation

XS 1600 – 3000 W

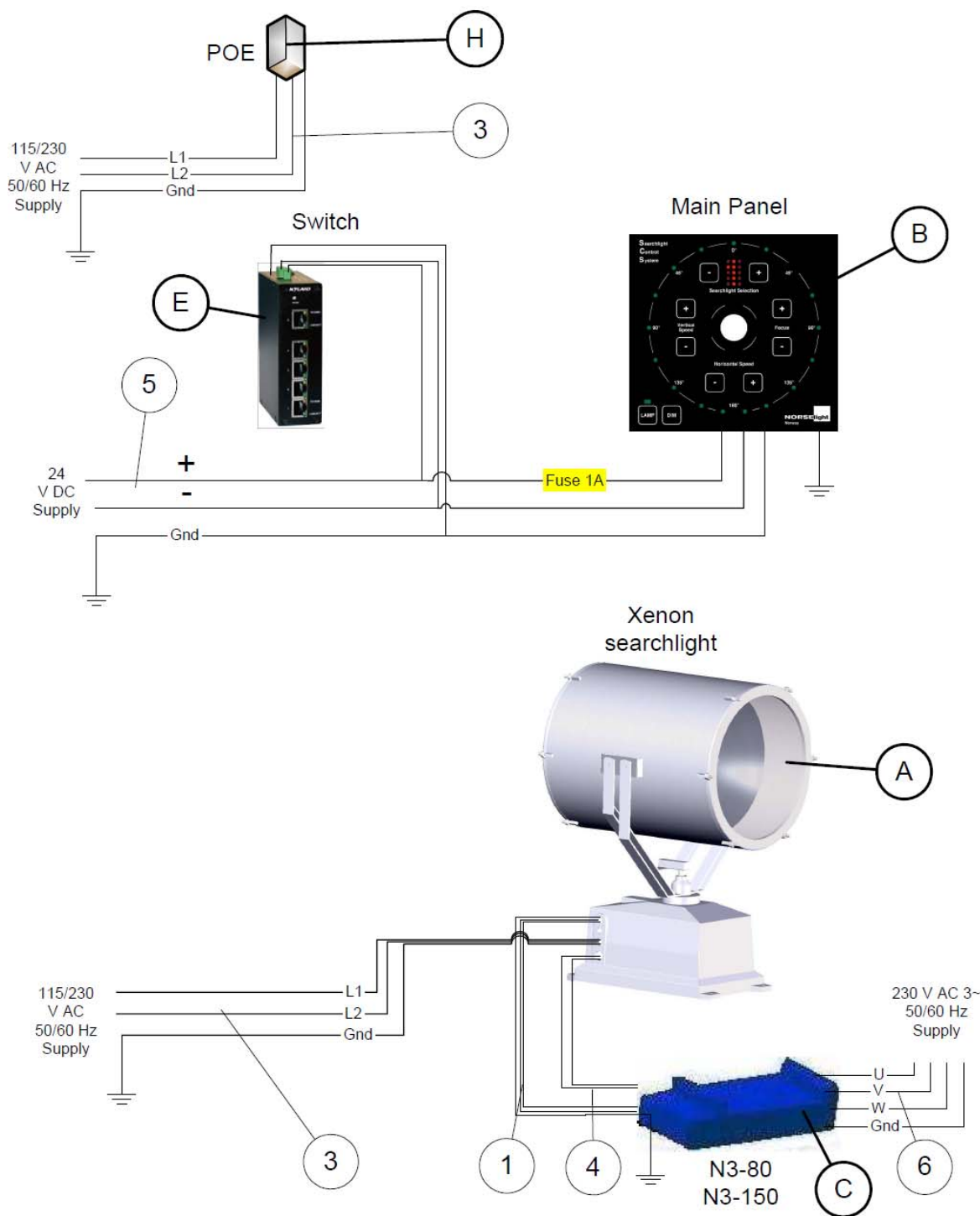


XS 1600-3000W with N3 - 80 or N3 - 150.

R50 System

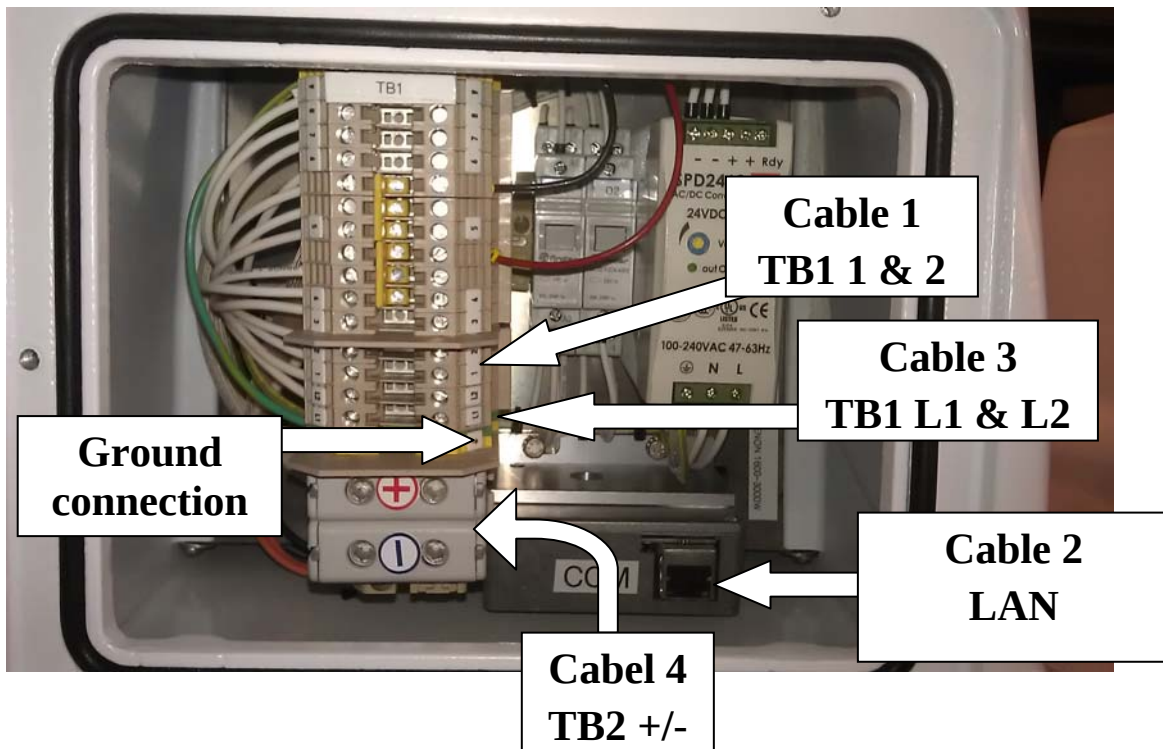
Electric installation

XS 1600 – 3000 W



Xenon Cable overview

Cable #	Function	Lamp effect	Number of wires	Flow rate			Connection point	Terminal Dimention Max [mm ²]	Cable entry Max Ø [mm]	Cable Gland entry
				Power W	Current A	Volt V				
1	Power and signal from Searchlight to Rectifier EX 30 G/1	500W	2+Earth	500	4.4 / 2.2	115 / 230	D1 (2&4)	4	7 - 14	M20
	Power and signal from Searchlight to Rectifier PX 50 N	1000W	2+Earth	1000	8.8 / 4.4	115 / 230	D1 (2&4)	4	7 - 14	M20
	Signal from Searchlight to Rectifier EX 100 D/1	1600, 2000 and 3000W	2+Earth	< 2	0.02 / 0.01	N/A	D1 (2&4)	4	7 - 14	M20
2	LAN cable Cat 5a to 7	All type	4 par (8) twisted	N/A	N/A	N/A	Digi connector	RJ45 - T-568B	7 - 14	M20
3	Power to XS500	500W	2+Earth	770	6.6 / 3.31	115 / 230	TB1	4	9 - 18	M25
	Power to XS1000	1000W	2+Earth	1270	11.0 / 5.5	115 / 230	TB1	4	9 - 18	M25
	Power to XS 1600, 2000 & 3000	1600, 2000 and 3000W	2+Earth	279	2.42 / 1.21	115 / 230	TB1	4	9 - 18	M25
4	Xenon Lamp cable	500W	2	500	28.0	18.0	TB2	50	14 - 25	M32
	Xenon Lamp cable	1000W	2	1000	50.0	20.0	TB2	50	14 - 25	M32
	Xenon Lamp cable	1600W	2	1600	65.0	24.0	TB2	50	14 - 25	M32
	Xenon Lamp cable	2000W	2	2000	70.0	28.0	TB2	50	14 - 25	M32
	Xenon Lamp cable	3000W	2	3000	100.0	30.0	TB2	50	14 - 25	M32
5	Power to Main Operation Panel	All type	2x(min) 0,75mm ²	2,16	0,09	24	Terminal plug	1,5	N/A	N/A
	Power to Switch	All type	2x(min) 0,75mm ²	3,5	0,16	24	Terminal plug	1,5	N/A	N/A
6	Power to Rectifier EX 100 D/1	1600W	2+Earth	1600	4.0 / 2.0	115 / 230	Input terminals (R, N plus PE) (X1)	4	N/A	N/A
		2000W			10.0 / 5.0	115 / 230	Input terminals (R, N plus PE) (X1)	4	N/A	N/A
	N3 - 80		3+Earth	2000	5.0	230	U,V,W	10	N/A	N/A
	Power to Rectifier EX 100 D/1	3000W	2+Earth	3000	15.0 / 7.5	115 / 230	Input terminals (R, N plus PE) (X1)	4	N/A	N/A
			3+Earth		5.0	230	U,V,W	10	N/A	N/A
7	Power to adapter 24VDC	All type	2+Earth	60	5.0 / 2.5	115 / 230	Spring calmp	1,5	N/A	N/A
8	Signal cable to Slave Operation Panel	All type	6x(min) 0,75mm ²	N/A	N/A	N/A	Terminal plug	1,5	N/A	N/A



Junction Box connections

All installation cables enters from the right side looking directly into the Junction Box through 2x M20, M25 and M32 as explained in earlier dimension drawing.

For LAN connection it is recommended to use either WAGO connecting RJ45 with termination points up to 1.5mm² or WAGO connecting plug RJ45.

WAGO connecting adapter, Item no.: 289-175

Product description: INTERFACE MODUL FOR ETHERNET RJ-45 CAGE CLAMP®CONNECTION for DIN 35 rail



adapter to

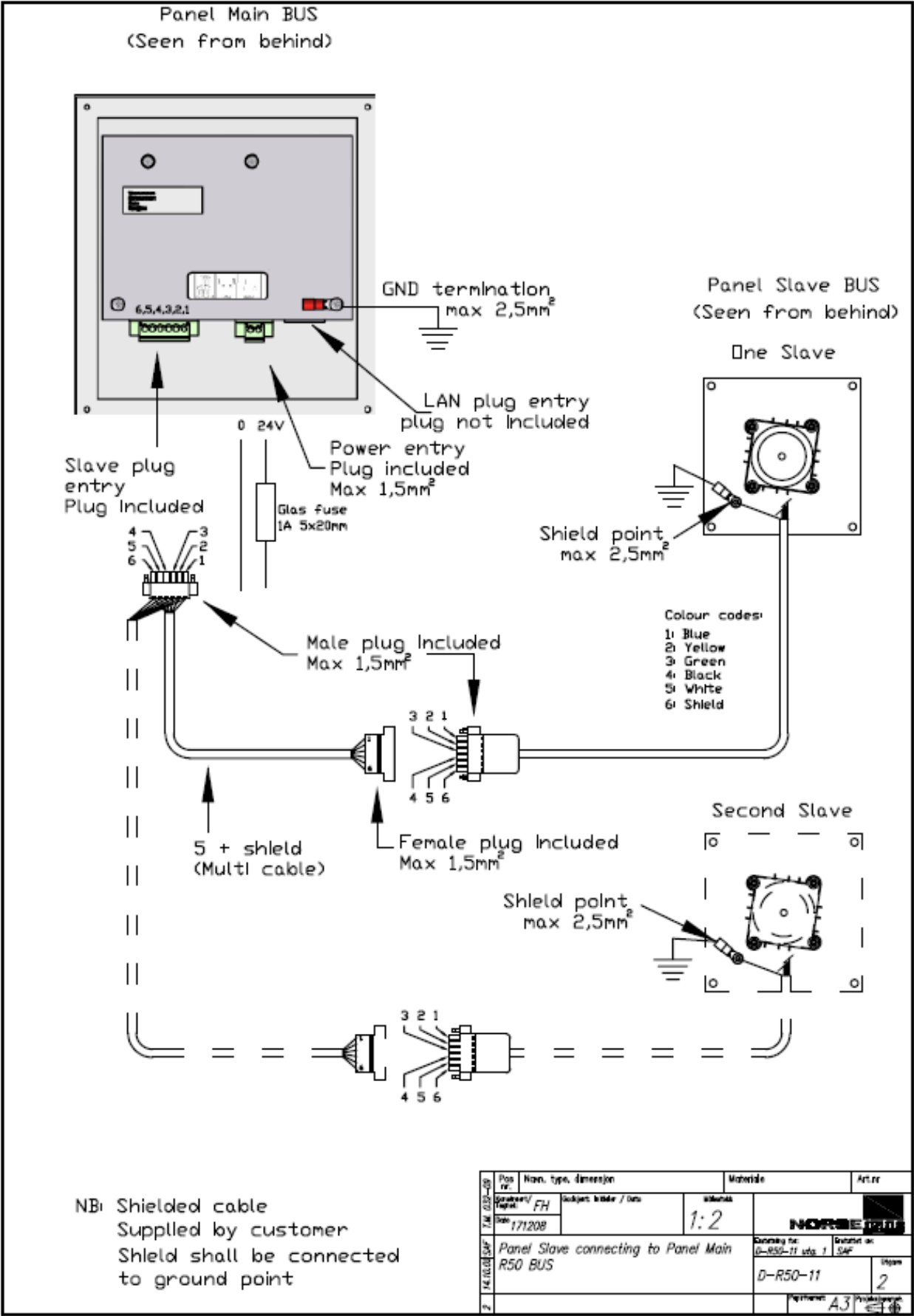
Or

RJ45 connector, Item no.: 1658435 IP20, CAT5e, 4-pos., PROFINET with fast connection technology, for 1-wire and 7-wire conductors AWG 26 ... cable diameter of 4.5 mm ... 8.0 mm, color: gray.

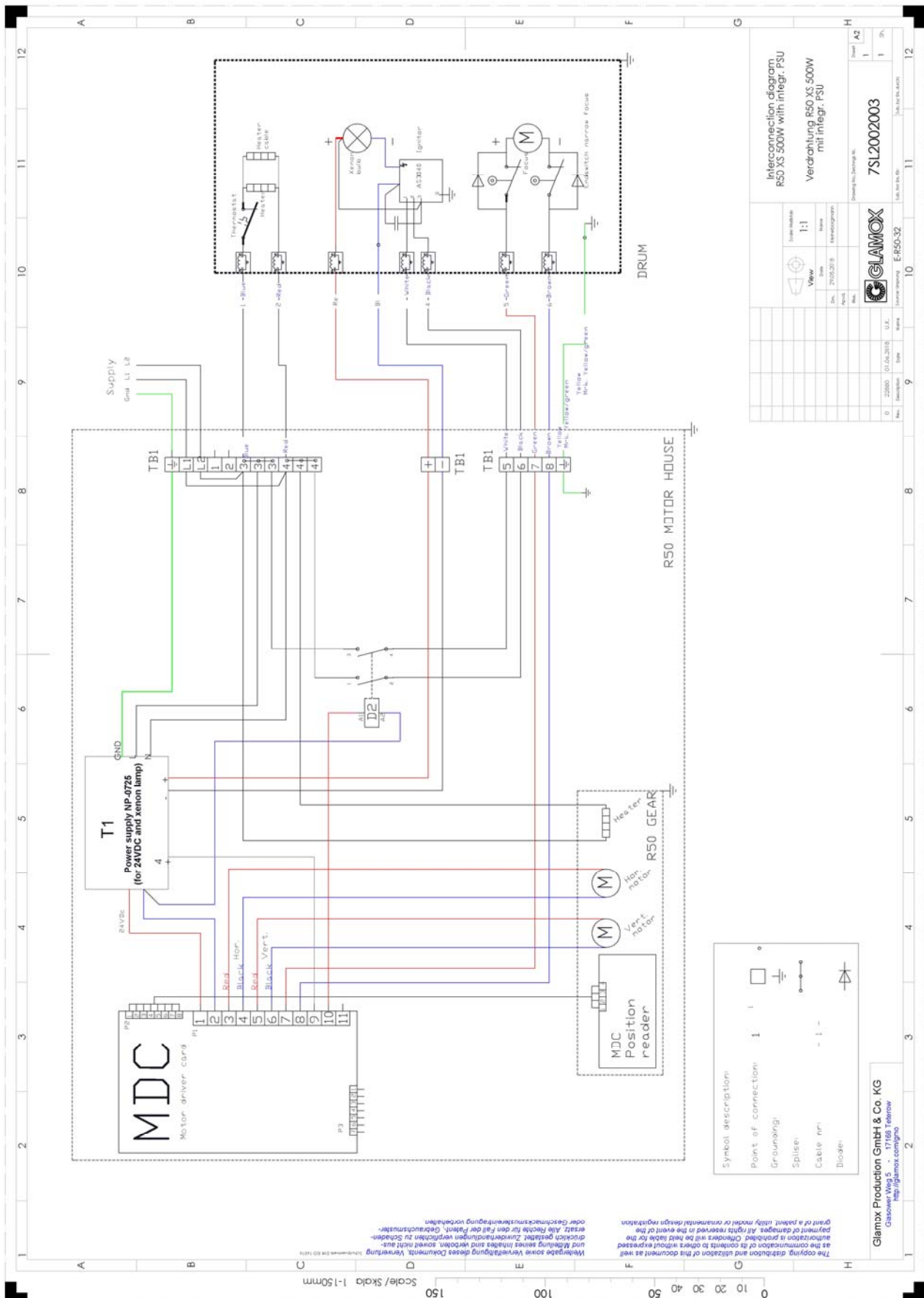


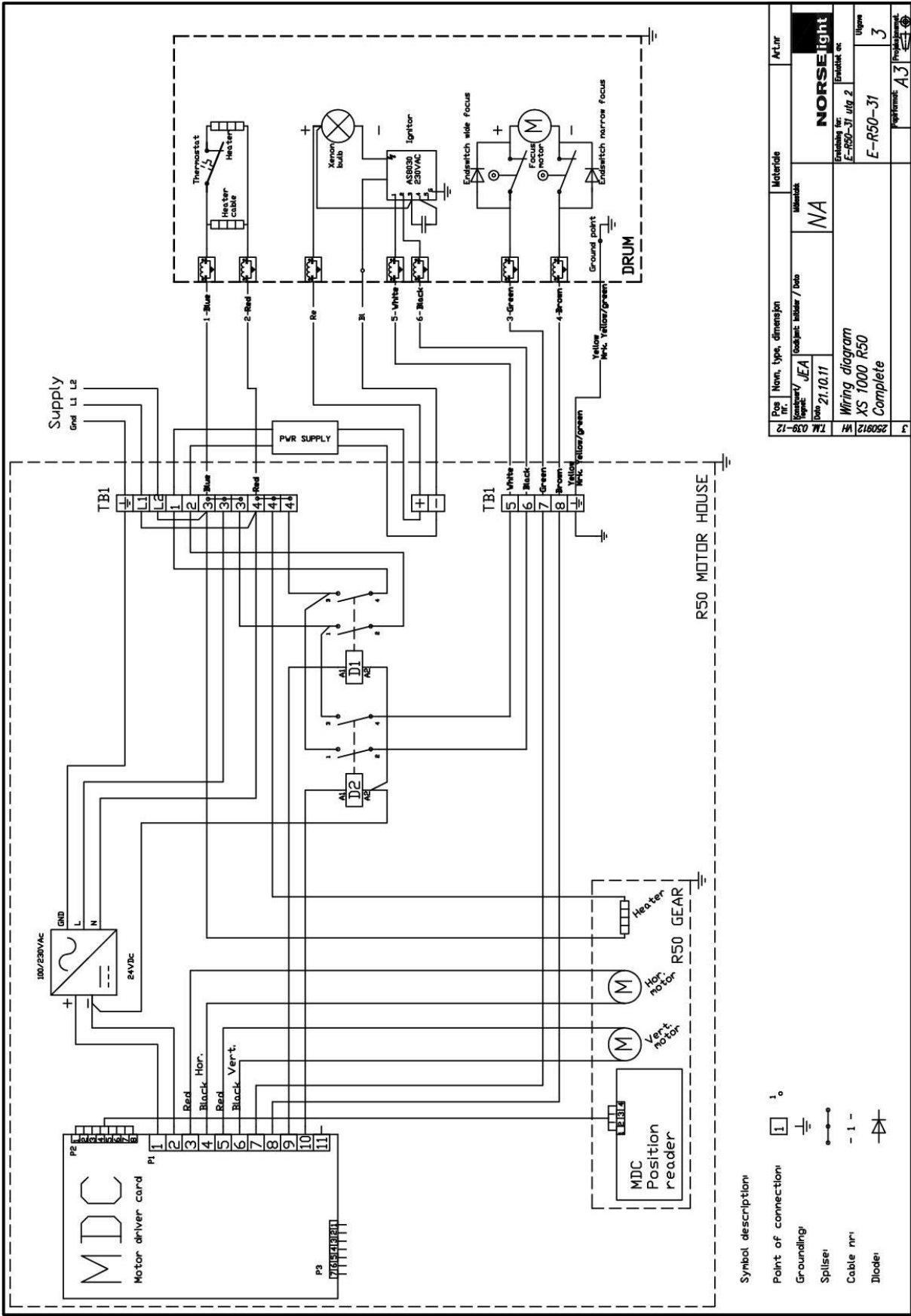
QUICKON 22, for

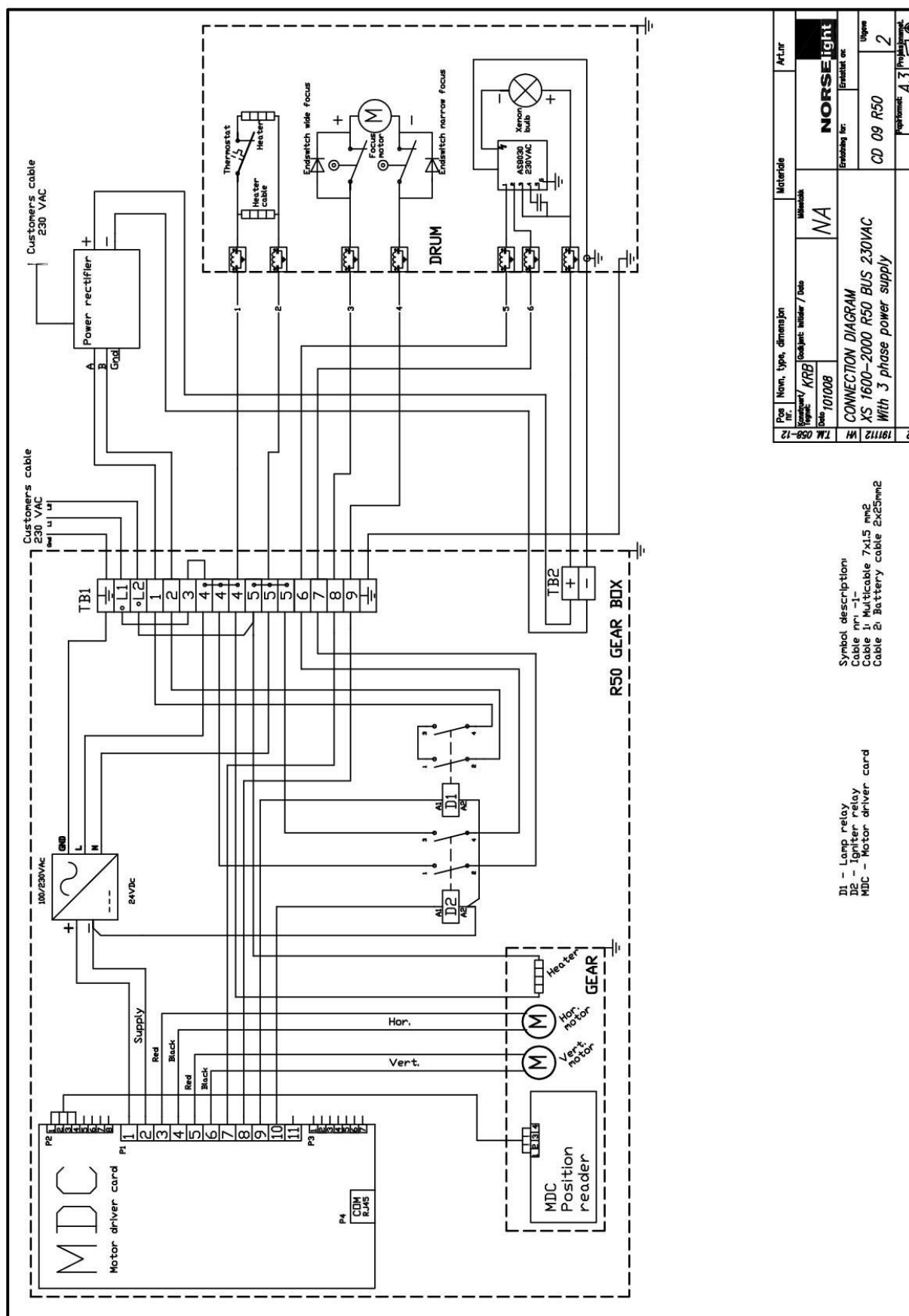
Connecting diagram Main and Slave Operation Panel



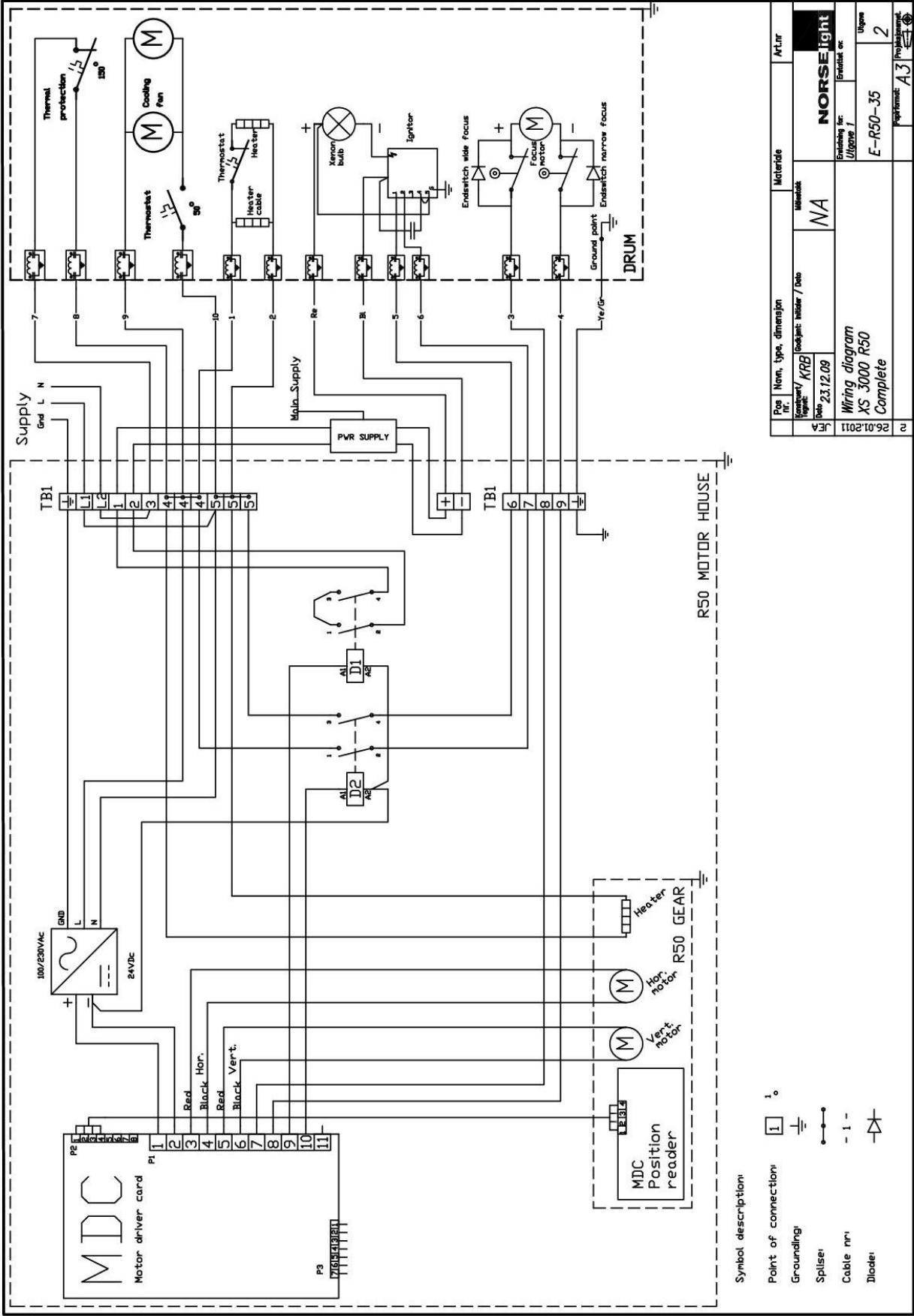
6.3 Internal Wire Diagram

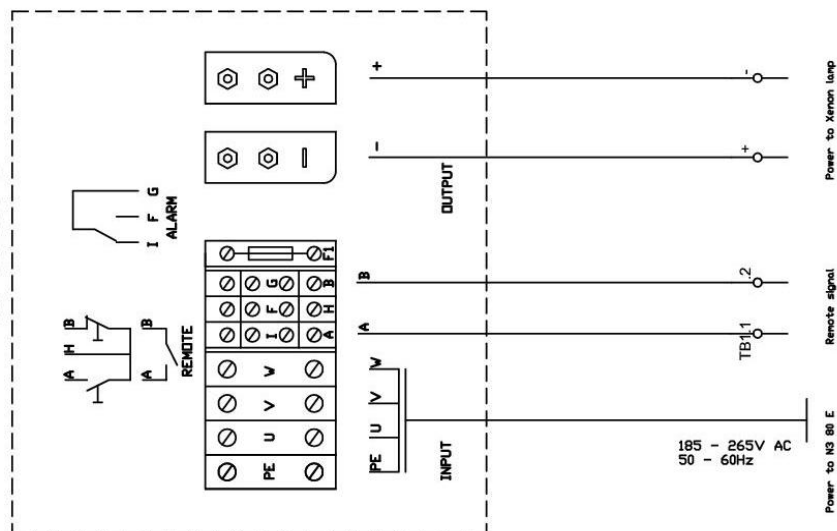






XS 3000 R50



[illegible]

P max	I max	I min St. by	I Init	Control
1000W	55A	40A	50A	Remote
1600W	75A	45A	65A	Remote
2000W	85A	50A	70A	Remote
3000W	110A	60A	104A	Remote

Pipe m.	Name, type, dimension	Metallic	Material	Art.nr
700 mm Ø	Welded / VH	Substrate		
Date 16.11.12	Gradient: Initial / End			
NORSElight				
Enabling for:			Enabling at:	
R50				Upson
Power N3 80 - 150 E			E-R50-39	1
			Performance:	4.4
			Project Name:	

Owner NOTES: _____
