Panasonic



MX25, MX40, and MX IP65

MX Emergency and Exit lights

Fire alarm solutions
technical description

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1. INTRODUCTION

This document describes:

- Exit signs MX25, MX40
- Exit sign MX25 red x, MX40 red x
- Safety Sign MX25 Fire Hydrant
- Emergency light MX Light
- MX Outdoor Emergency light
- MX IP65 Exit / Emergency light
- MX Power box

The document contains information about the product and instructions on how to mount and connect it.

2. ABBREVIATIONS

CIE	Control and indicating equipment	= control unit
Lux	Indicates how much light hits a surface. One lux is equal to one lumen per square meter (lux = lumens/m2)	
Maintained	Always on and will stay illuminated in the event of a power failure	
Non-maintained	Only comes on in the event of a power failure	

3. GENERAL DESCRIPTION

The exit lights are maintained, the lights are always on, both when the mains power fails and when it is present. Emergency lights are non-maintained, the lights are only on when the mains power fails or in case of emergency.

The exit lights also have an option for a red cross panel. The red cross is achieved by mounting a red cross panel onto the MX25 and MX40 pictogram.
The red cross on the exit light can be activated by a detector / zone in fire alarm state to indicate an unsafe exit direction.

Fire Hydrant (Pictogram) is a Fire Safety Sign designed to show location of fire fighting equipment. Available as MX25.

All MX units are fulfilling all the emergency light standards, EN 60598-2-22, EN 1838, EN 62034, and EN ISO 7010.

MX25, MX40, and MX Light units are IP41 rated, and are intended for indoor use in dry premises.

MX Outdoor and MX IP65 Exit / Emergency light are IP65 rated.

3.1. EXIT LIGHT

The entire exit light pictogram is illuminated in normal and emergency mode, with a viewing distance of 25 m or 40 m. This ensures that exit points and evacuation routes are fully lit at all times.

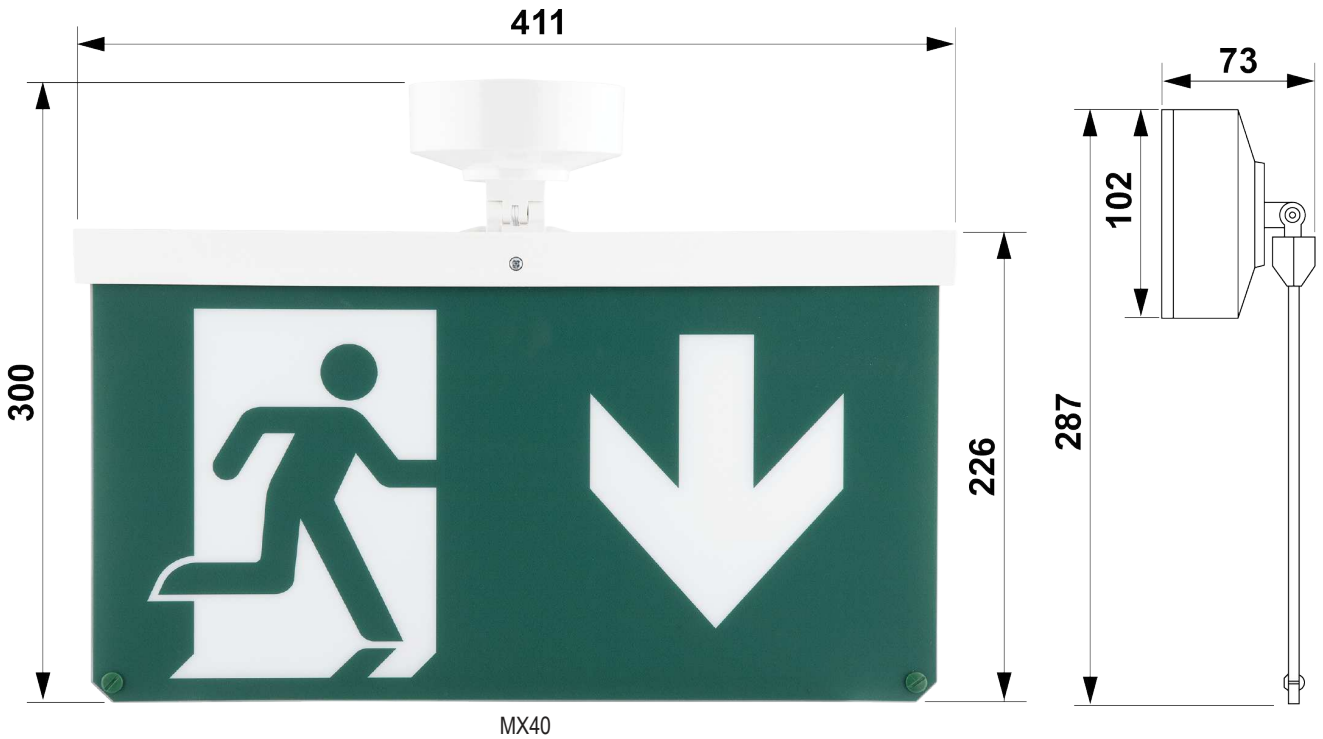
The exit light has an build-in back up battery that provides power to the exit light for one hour when the electricity goes out.

3.1.1. MX25 AND MX40

The MX25 and MX40 pictogram can be one or two sided.



MX25



MX40

(Measure in mm)

3.1.2. EXIT LIGHT RED X

Exit light red x unit has an additional panel with a cross, that is mounted on top of the pictogram. The pictogram on an exit light with red x can only be one sided.
In EBLWin the unit is programmed as Exit light (MXER).

FIRE ALARM MXER UNIT
When an alarm point / zone is in fire alarm state, the activated control expression will turn on the red cross on the exit light, to show a blocked exit.
The red cross is deactivated when the fire alarm is reset via the CIE reset button.



3.1.3. PICTOGRAM

The exit light pictogram fulfil the requirements of EN 1838

- The minimum luminance in the green area is 2 cd/m2
- The contrast between the white and the green area is between 1:5 and 1:15
- Within the same colour, the contrast is less than 1:10

The pictogram for the exit light is ordered separately and are available in different directions. The pictogram can be one or two sided.



Pictogram HCP kit



970036 MX25 Pictogram (Hydrant)



3.1.4. EXIT LIGHT - ORDER FOLLOWING PARTS

For a complete exit light you need an analog base 3312FLW / 3312W, a mounting profile, and a pictogram. For the MX25/40 red x units you also need the red cross panel.

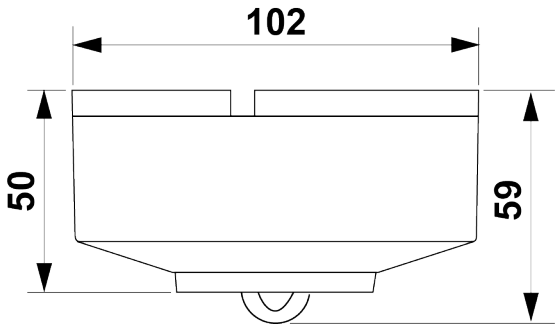
	MX25	MX25 red x	MX40	MX40 red x
Mounting profile:	825200	825201	840200	840201
Red cross panel		970020		970020
Analog base	3312FLW/3312W	3312FLW/3312W	3312FLW/3312W	3312FLW/3312W
Pictogram	See "3.1.3. PICTOGRAM" on page 8 and pricelist for article numbers			

3.2. MX LIGHT

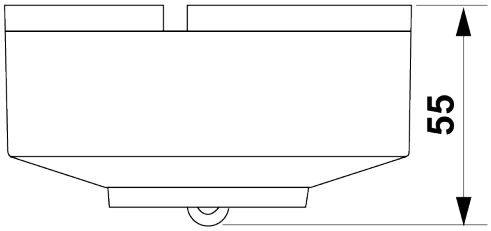
MX Light emergency lights are non-maintained and the light come on in the event of a mains power failure or emergency situation, making sure all emergency evacuation routes are clearly illuminated.
During normal operation the MX Light unit take power from the mains supply, but when switching to emergency mode the unit take power from a build-in back up battery.

The emergency light can be activated with, control expression, phase monitoring, or by a fire alarm.

The emergency lights are available in two different variants:
MX Light R: is used for open areas where emergency light is required. Light R has a round symmetric light image and will illuminate the floor with 0.5 to 1 lux.
MX Light C: is used for corridors or evacuation routes, and will illuminate the floor with 0.5 to 5 lux. Light C has an asymmetrical light image



Light R



Light C

(Measure in mm)

3.3. LED

MX units connected to an analog base 3312FLW / 3312W, has one LED to indicate the unit status.



LED	State of the unit
Solid green	Operating normally
Blinking green	Performing commissioning test
Solid red	Faulty LED luminaire
Blinking red	Faulty battery or failed duration test

If the LED luminaire is faulty, the entire unit needs to be changed. The LED has a normal operational life time of more than 10 years.

3.4. INTERNAL BATTERIES

The MX units are back-up powered by one 1.2V NiMh battery or a 2.4V Nimh battery pack, see "9.1. BATTERY CONNECTOR" on page 29.
The battery has three to six years of service life used in normal operation. A technical warning is activated in the CIE when the batteries needs to be replaced.

The 1.2V NiMh battery has 1 hour operation time during emergency situation, and the 2.4V Nimh battery pack has 3 hours operation time.

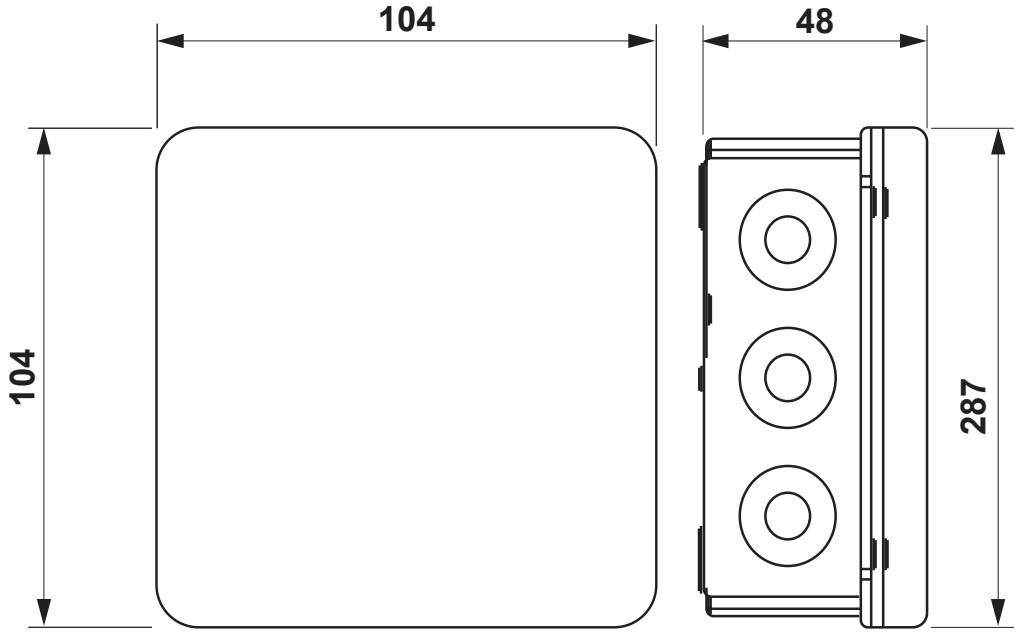
3.5. MX OUTDOOR EMERGENCY LIGHT

MX Outdoor are IP65 rated and luminaire is designed specifically to withstand harsh conditions such as parking halls and outdoor environment.

MX Outdoor Emergency Light is non-maintained and the light come on in the event of a mains power failure or emergency situation, making sure the emergency evacuation exit is clearly illuminated.
During normal operation the MX Outdoor Emergency Light take power from the mains supply, but when switching to emergency mode the unit take power from a build-in back up battery with 3 hour back up time.

MX Outdoor Emergency Light always consists of two units: the luminaire and a separated electronic unit. Between the luminaire and electronic unit includes a 2 meter fire-proof cable.

The luminaire is designed for surface mounted on wall or ceiling.

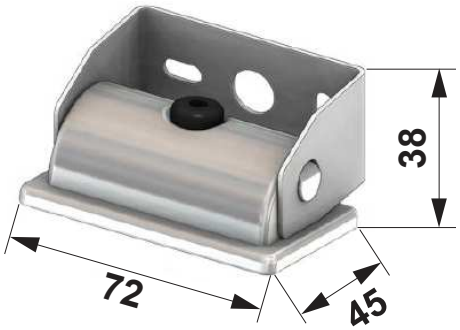


(Measure in mm)

Wall, angle 45°



Wall, angle 80°



Ceiling, angle 0°



3.6. MX IP65 EXIT / EMERGENCY LIGHT

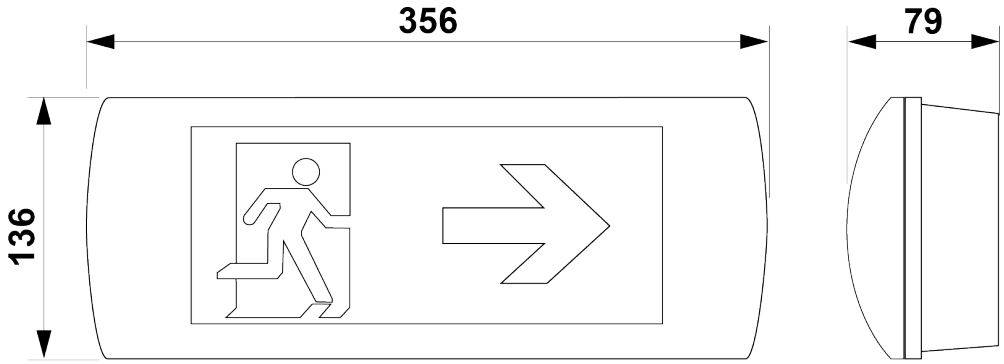
MX IP65 Exit / Emergency light is designed specifically to withstand harsh conditions such as parking halls and outdoor environment. The unit can be used both as exit light and emergency light, a dip switch is used to select the mode of the unit.

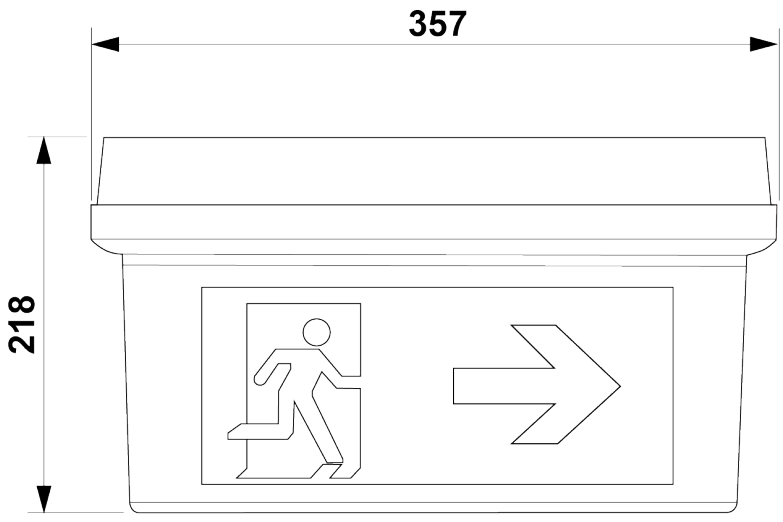
When used as exit sign, the entire MX IP65 Exit / Emergency light pictogram is illuminated in normal and emergency mode, with a viewing distance of 25 m. This ensures that exit points and evacuation routes are fully lit at all times.
The pictogram can be one or two sided. As an accessory (part number 930016, MX IP65 Double sided cover) is a double sided cover available.

When used as an emergency light it is non-maintained and the light come on in the event of a mains power failure or emergency situation.

The MX IP65 Exit / Emergency light has an build-in back up battery that provides power to the exit light for three hours when the electricity goes out.

Can be mounted on the ceiling or on the wall.



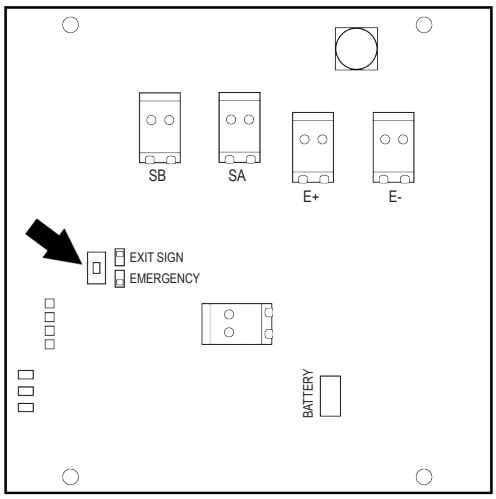


Double sided cover

(Measure in mm)

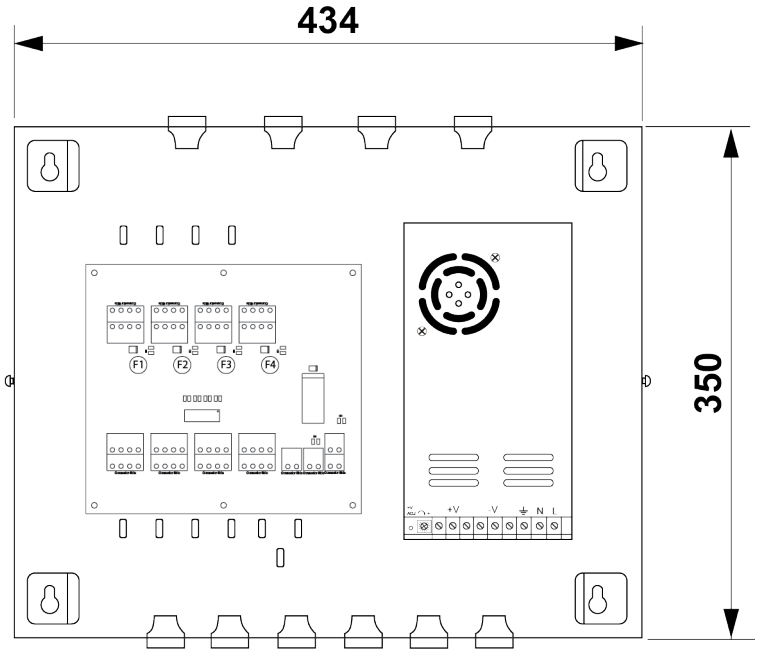
3.6.1. EXIT OR EMERGENCY LIGHT MODE

The MX IP65 Exit / Emergency light is factory set to the Emergency light mode. Use the dip switch, see arrow, to choose between Exit sign or Emergency light mode.



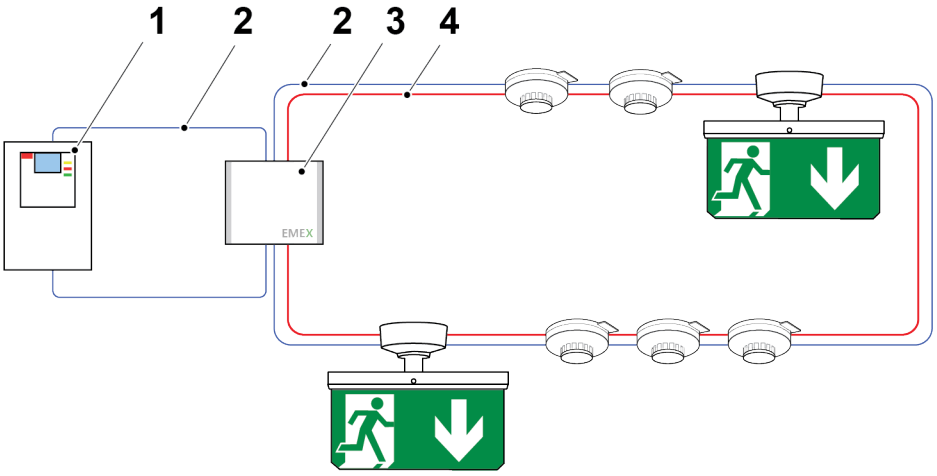
3.7. MX POWER BOX

The MX Power box consists of the rectifier and a connection board.
MX Power box is intended to be used as power supply for the exit lights and emergency lights.



(Measure in mm)

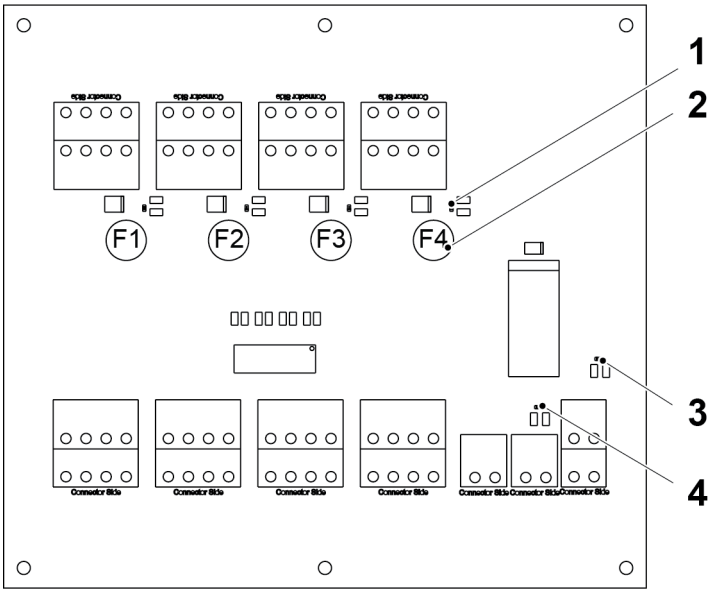
MX power box provides supply line to exit and emergency lights located on up to four COM-loops.



1. Control unit
2. COM loop
3. Power box
4. Supply line, 24 V

3.7.1. FUSES

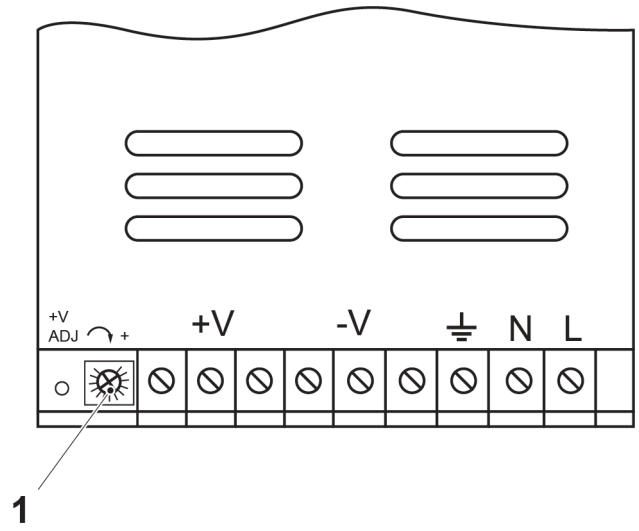
The connection board has separate fuse holders for each COM-loop. TR5 3.15A -fuses are supported.
Each COM-loop also has a green LED for indicating a faulty fuse (Solid green = operating normally).
24V IN has LED for indicating connected power and TEST SW has LED for indicating activated test relay.



1. COM-loop LED
2. Fuse
3. 24V IN LED
4. TEST LED

3.7.2. OUTPUT VOLTAGE

MX Power box output voltage can be adjusted using the adjusting screw on the rectifier. For longer COM-loops it is recommended to set the output voltage to maximum voltage of about 31.5 V.



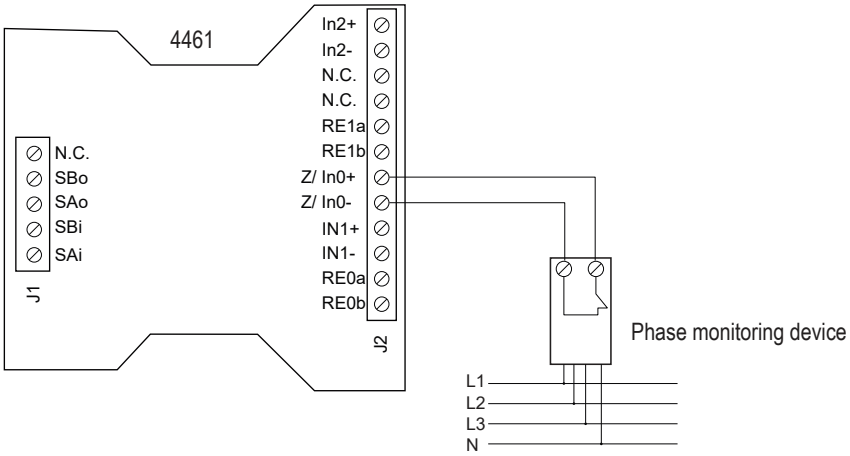
1) Adjusting screw

Input	Voltage	88-264 V AC (Universal input 110/230VAC)
Output	Voltage	26-31.5 V DC
	Current	Max 11.9 A
	Power	Max 320 W

3.8. PHASE MONITORING

The emergency lights continuously monitor the voltage of the supply line and enters emergency mode if the voltage falls below 12 V. However, the building lights may be connected to another phase than the power supply for the emergency lights.
To make sure that the emergency lights are activated in case of any phase fault, a phase monitoring device should be used.

One phase monitoring device is needed for each power system. Connect one I/O unit 4461 / 4462 , to the COM loop, with a phase monitoring device connected to the monitored input Z/In0.



4. TEST

4.1. COMMISSIONING TEST

Commissioning test consists of duration test, battery test, and a LED luminaire test. After first time powering on the unit or after emergency mode which caused the unit to turn off, the unit starts to perform a commissioning test.
During the commissioning test green indicator light is blinking. After passing the commissioning test without errors green indicator light is solid.
If the duration test or the battery test failed, it is indicated with a blinking red indicator light and an activated technical warning for the failed test.
If the LED luminaire test failed, it is indicated with a solid red indicator light and an activated technical warning.

4.2. MONTHLY TEST

MX units has an automatic test system and a functional test is done monthly to ensure proper functionality of the LED luminaire and the battery. When the functional test starts, the unit switches from using supply line power to battery power and performs LED luminaire test and battery test. The functional test last only for a couple of seconds.
When the test mode is ended, a status message is logged in the Exit light event log that can be retrieved in EBLWin.

At the end of the functional test, failed LED luminaire test is indicated with a solid red indicator light and an activated technical warning, and a failed battery test is indicated with a blinking red indicator light and an activated technical warning.

4.3. ANNUAL TEST

Since the battery capacity deteriorates over the years, a duration test is done at least once a year.
When the duration test starts, the MX unit switches from using supply line power to battery power and turns on the LED luminaire. The device is tested for its full rated operating time (1 hour). After the duration test, the unit returns to normal mode and starts the battery charging process.
After one hour, when the duration test is ended, a message is is logged in the Exit light event log that can be retrieved in EBLWin.

If during the duration test, the unit does not fulfill its rated operating time, a failed duration test is indicated with a blinking red indicator light and an activated technical warning.

See “3.3. LED” on page 10.

5. ILLUMINATION

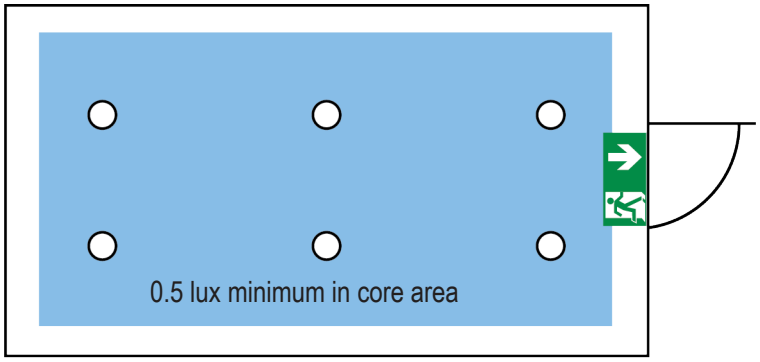
In an evacuation situation, it is important that there is enough light in the room and that exit lights are placed so that people can locate, as well as move to, an evacuation route.

5.1. PLACEMENT EMERGENCY LIGHT

The emergency lights must be positioned so that a safe evacuation can take place and that all possible obstacles along the evacuation route can be detected. The purpose of emergency lighting is not only to be able to locate, and move to an evacuation route, it is also important that the emergency lighting ensures that, First Aid stations, fire-fighting equipment, fire alarm buttons, etc. can be easily located.

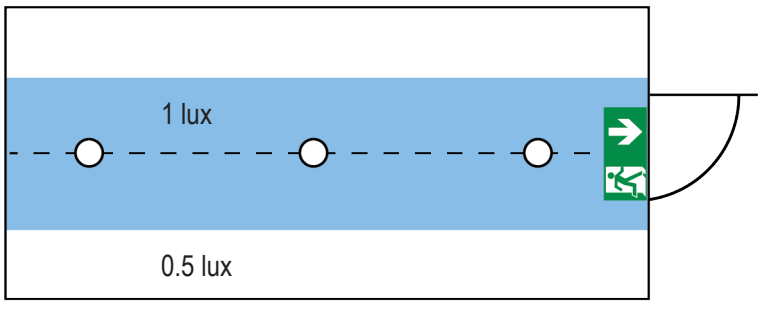
Lux: the amount of light that is cast on the surface is called illuminance, which is measured in lux. This can be thought of as light intensity within a specific area.

Open areas: Any floor area larger than 60 m², or less if there are additional risks, for example that many people can stay, is an open area requiring emergency lighting. In open areas, illumination of 0.5 lux minimum should be provided, apart from 0.5 m closest to the wall.



○ = Emergency light

Evacuation route: The illuminance required on the floor of a corridor-like evacuation route, up to 2 m wide, should be a minimum of 1 lux along the center line, and half of the width of the central evacuation route shall have a minimum of 0.5 lux.



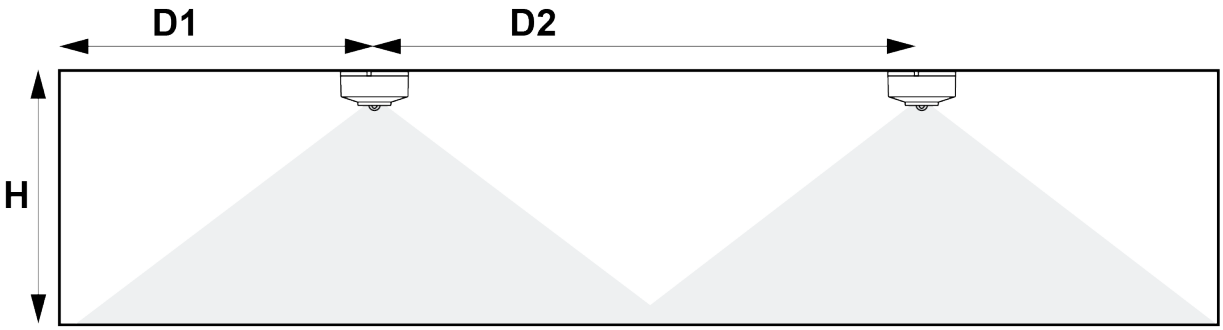
○ = Emergency light

High risk areas: Some high risk areas require more illuminance, for example fire-fighting equipment, stairs, and other level differences in the evacuation routes, and must be illuminated with at least 5 lux.

5.1.1. MX LIGHT

The tables below are a recommended illumination of the emergency lights. To be sure that the illuminance in the event of a mains power failure / fire alarm will be satisfactory, lighting calculations must be performed, see chapter "5.2. EMERGENCY LIGHTING CALCULATION" on page 23.

National regulations must be followed when calculating the amount of lux needed.



Each part of the evacuation route and each open surface must be illuminated by two lights (emergency light or exit light), in order to avoid total darkness in the event of a luminaire failure.

Light R, 0.5 lux

Height (m)	D1 (m)	D2 (m)
2.5	4.4	9.7
3	4.9	11
3.5	5.3	12.2
4	5.5	13.4
4.5	5.6	14.4
5	5.4	14.8
5.5	5.3	13.2

Light C, 1 lux

Height (m)	D1 (m)	D2 (m)
2.5	8.7	19.4
3	8.7	20.2
3.5	8.3	20.5
4	8.2	19.8
4.5	8.1	19.3
5	7.5	18.5
5.5	4.8	17.8

Light R, 5 lux

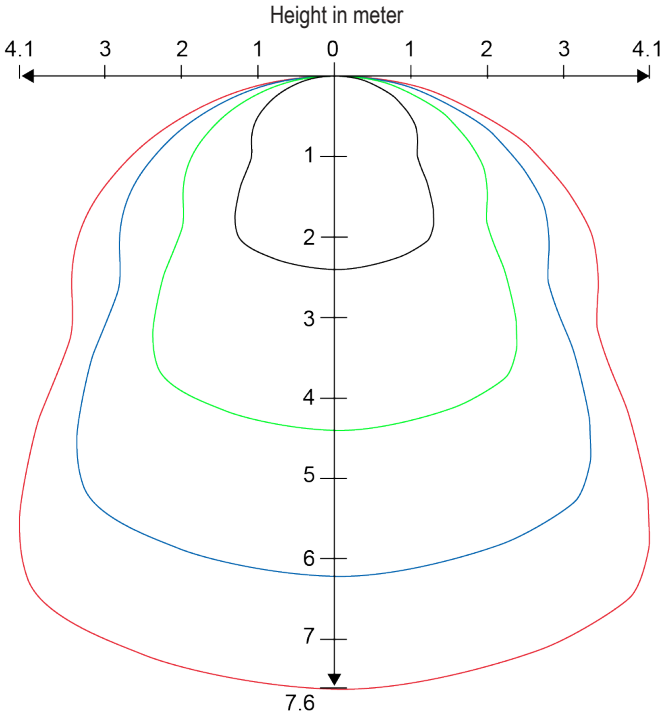
Height (m)	D1 (m)	D2 (m)
2.5	3	8
3	2.5	9
4	2	8

Light C, 5 lux

Height (m)	D1 (m)	D2 (m)
2.5	5	11
3	5.5	12
4	6	16
5	3	14

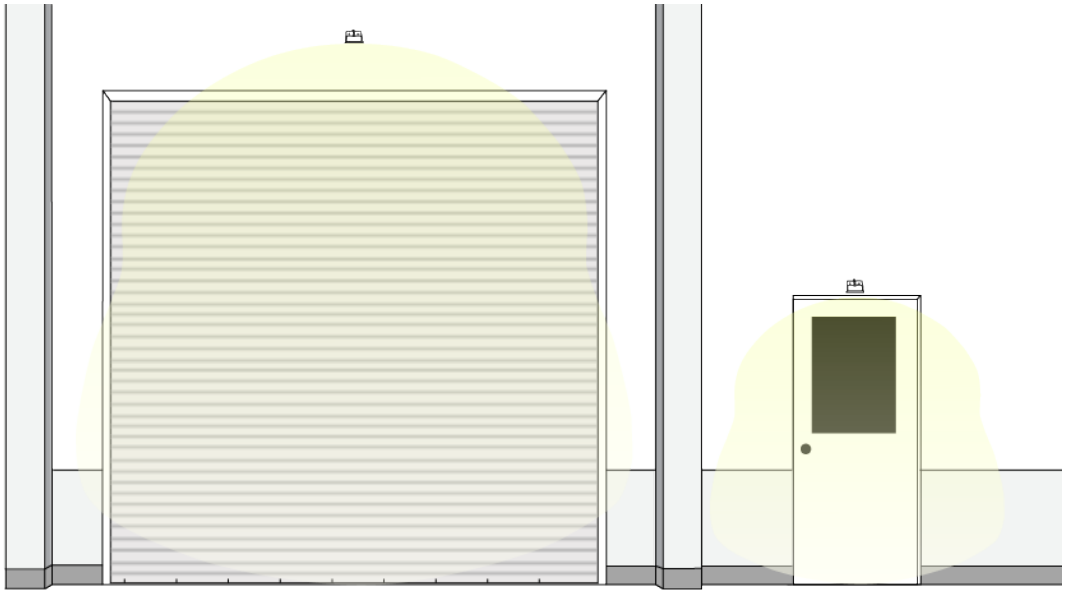
5.1.2. MX OUTDOOR

Mounting height from 2 to 7.5 meters.



Red	1 lux
Blue	2 lux
Green	3 lux
Black	4 lux

The illustration is an example of how the evacuation exit may be illuminated with an MX Outdoor emergency light mounted above the door.



Mounted at 4,5 meters hight, ground illuminated with 3 lux.

Mounted at 2 meters hight, ground illuminated with 4 lux.

5.1.3. MX IP65 EXIT / EMERGENCY LIGHT

MX IP65 Exit / Emergency light, 0.5 lux

Height (m)	D1 (m)	D2 (m)
2.5	5.0	10
3	5.5	11
4	6.5	12
5	6.5	13
6	7	14
7	6.5	13
8	6.5	13

MX IP65 Exit / Emergency light, 1 lux

Height (m)	D1 (m)	D2 (m)
2.5	4.0	8.7
3	4.5	9.5
4	5	9.5
5	5	10
6	5	9.5
7	4.5	9
8	3.5	7.5

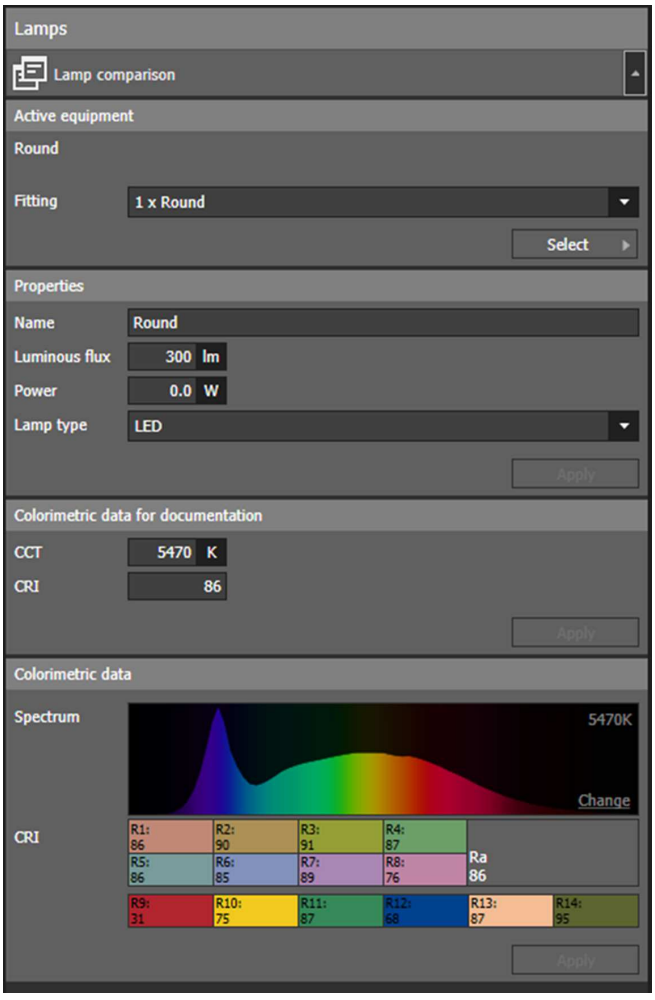
5.2. EMERGENCY LIGHTING CALCULATION

A photometric data file (IES file) is a plain text file that contain data on light for architectural programs that can simulate light. Plan, calculate, and visualize the emergency light pattern for entire buildings or individual rooms in for example DIALux lighting design software.
IES files for the emergency lights can be downloaded from https://www.panasonic-fire-security.com/.

Example - Using the DIALux software
All parameters are not defined in a IES file or LDT file, and they need to be adjusted or changed in Dialux.
IES files don't include information of color, because that information can't be transferred to IES format.
The user needs to know Information of lamp type and add it to Dialux.
Most of these parameters, not included in the IES file, has no critical importance for calculation results such as illuminance. But they will be shown in the datasheet of the lamp when exporting results.
The IES files are quite general, since the files are used in many different types of softwares.

Data for both Round and Corridor:
156lm
CCT 5000k
CRI 86
Power 1W

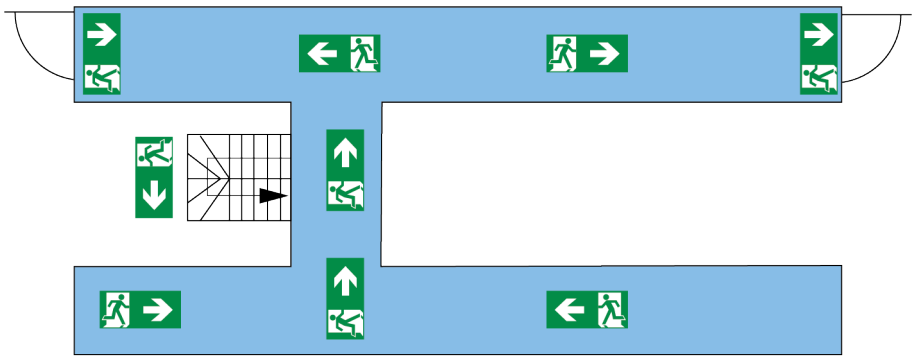
Below is an example with Round.IES, where the lamp type is changed, lumens, CCT and CRI:



5.3. PLACEMENT EXIT LIGHT

In open areas, exit lights must be provided for safe movement to the evacuation route.
In the evacuation routes, there must also be an exit light above each door and at each change of direction.

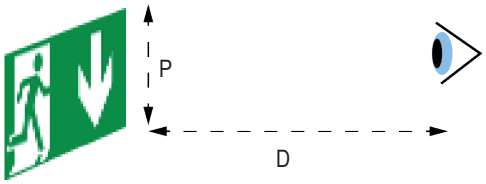
The exit lights should be positioned so that each sign is always within a readable viewing distance and each sign shall be located so that it is visible to confirm the correct route at every intersection or change of direction.



The height of the exit light pictogram determines the reading distance the luminaires are approved for. To calculate the maximum viewing distance of the exit light, use the following formula:

D=SxP
S = Constant 200 for an internally illuminated sign.

Example:



In rooms where there are many other signs (billboards and other points of light that attract attention) it can be recommended to oversize the pictogram's sizes.

6. CONFIGURATION

The MX units needs to be manually added into the configuration. A control expression can be programmed to activate the emergency lights or the red cross on the MXER unit.

All technical warnings must have unique names.

6.1. EXIT LIGHT AND EMERGENCY LIGHT

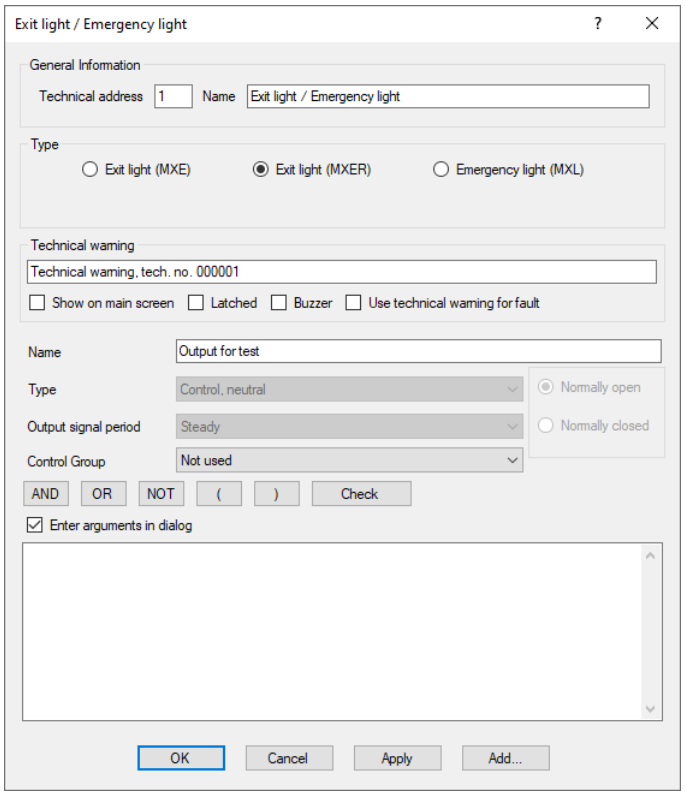
In the Exit light / emergency light properties window, set the following:

6.1.1. EXIT LIGHT MXE

- Technical address
- Type 'Exit light (MXE)' is set as default. Edit if required
- Technical warning: Choose 'Show on main screen', 'Latched', or 'Buzzer'. Edit if required

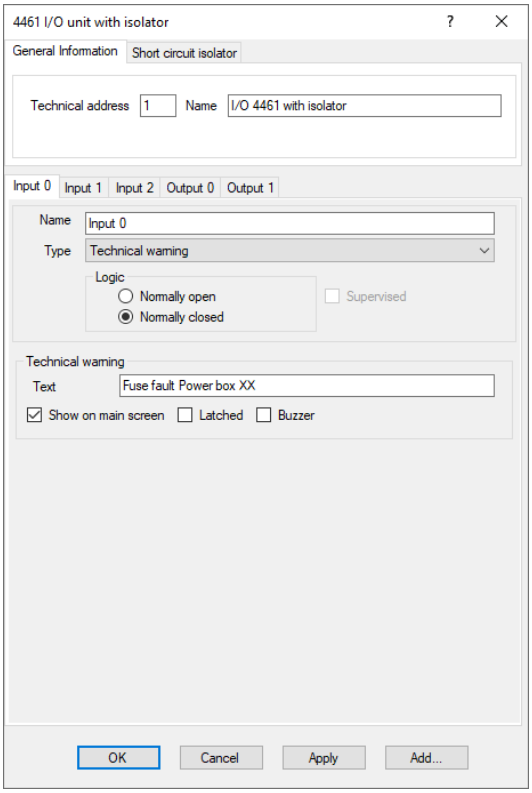
6.1.2. EXIT LIGHT (MXER) AND EMERGENCY LIGHT (MXL)

- Technical address
- Type: Select 'Exit light (MXER)' or 'Emergency light (MXL)'
- Technical warning: Choose 'Show on main screen', 'Latched', 'Buzzer', or "Use technical warning for fault".
- Control expression (one or more trigger conditions)



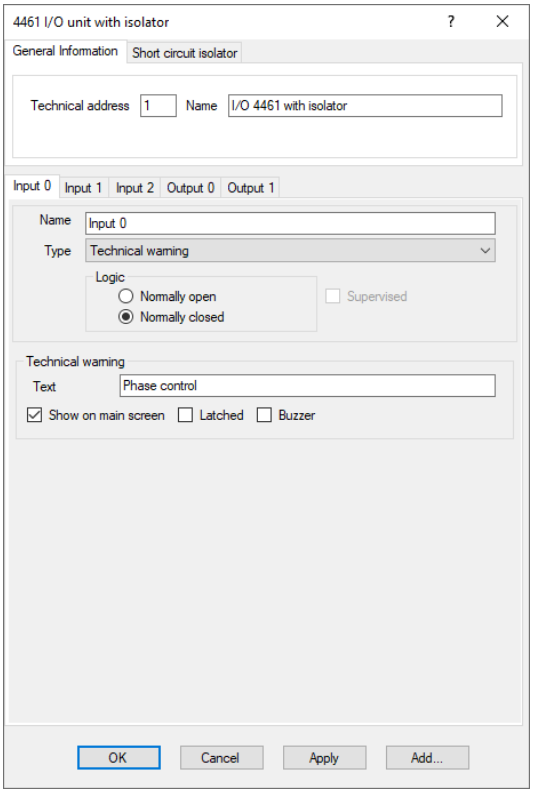
6.2. 4461 / 4462 FUSE FAULT

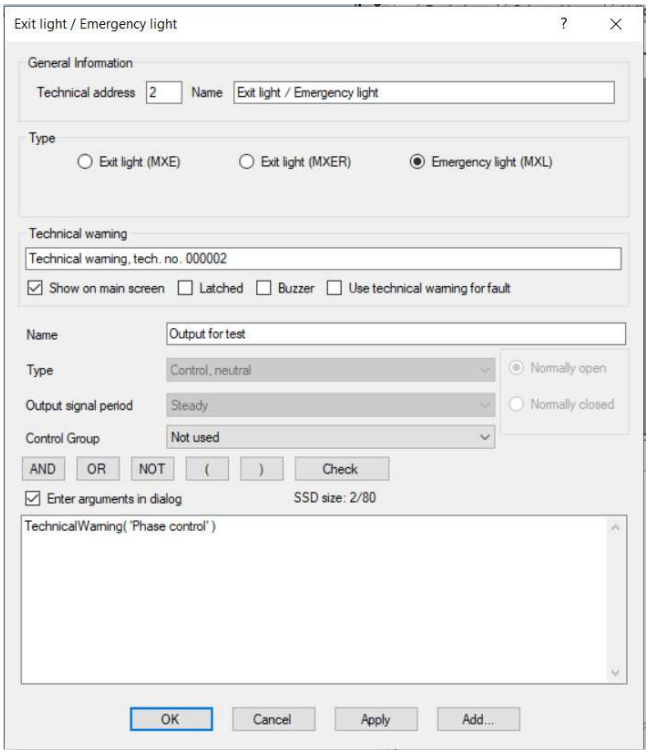
4461 / 4462 can be programmed to “Alarm at fuse fault”. The 4461 / 4462 input has to be programmed with a trigger condition and to be normally closed (NC).



6.3. 4461 / 4462 PHASE MONITORING

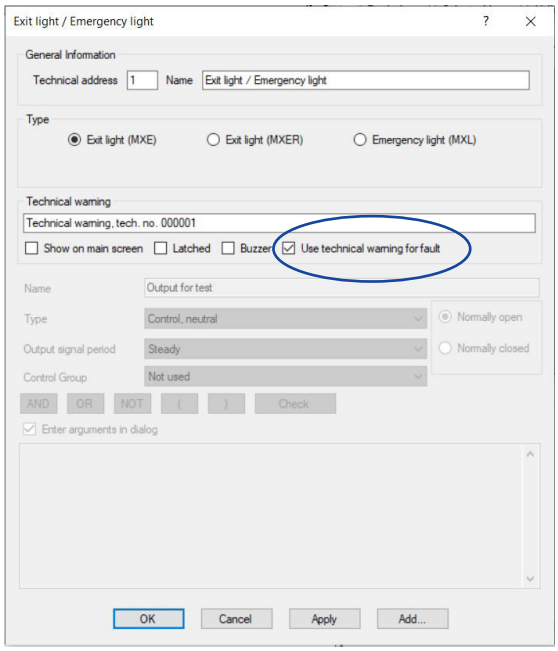
4461 / 4462 can be programmed to “Alarm at phase fault”. The 4461 / 4462 input has to be programmed with a trigger condition and to be normally closed (NC). The technical warning can be used to activate the emergency lights or a control unit output.





6.4. NO REPLY FAULT

Normally, if the control unit can not communicate with the exit light a “No reply fault” is detected. For example if an exit light is removed. However there is also a possibility to use the technical warning instead of the fault message. Edit if required.



7. SET THE COM LOOP ADDRESS

Each COM loop unit has to have a unique COM loop address (001-253).
Set the address with the Address Setting Tool (4414).

The COM loop address and mode settings have to be done before the unit is connected to the COM loop.

8. SET THE MODE

Set the mode with the Address setting tool (4414).

Set the mode to NORMAL.

8.1. COMPATIBILITY TABLE

	Advance mode	NORMAL mode	2330 mode	2312 mode
EBLOne	Not used	V ≥ 3.3	Not used	Not used
EBL512 G3	Not used	V ≥ 2.10	Not used	Not used

(V = Software version)

9. ACCESSORIES AND SPARE PARTS

9.1. BATTERY CONNECTOR

NiMh 1.2V battery and connector.
Battery for MX25, MX40, and MX Light



Art. No. 910002

NiMh 2.4V battery and connector
Battery for MX IP65 Exit / Emergency light and MX Outdoor



Art. No. 910007

9.2. RECESS MOUNTING FRAME

Recess mounting frame for easy and quick installation in environments where aesthetics are of importance, such as hotels and office buildings. The recess mounting frame is mounted in the ceiling with springs.

Art. No. 920007 (MXLight)
- Fits a ceiling thickness of between 5 and 25 mm.
- Ø 120 mm ceiling cut-out size



Art. No.920001 (MX25)
- Fits a ceiling thickness of between 5 and 30 mm.
- 287 x 105 mm ceiling cut-out size



9.3. BALL PROTECTION

Ball protection are used in for example sports halls, gyms, and stadiums, to protect the exit lights against balls. The ball protection is available in two sizes.

Art. No. 920009 (MX25)
280 x 280 x 100 mm

Art. No. 920010 (MX40)
425 x 425 x 100 mm



9.4. TREADED ROD PLATE

Threaded rod plate for ceiling and wall mounting, are used in for example a store that does not have a suspended ceiling. The threaded rod plate allows you to hang the exit and emergency light from your ceiling or wall at any distance.
Mount the analog base on the threaded rod plate. Use a threaded rod (Ø 8 mm) of desired length and mount the threaded rod plate with the analog base in one end and another threaded rod plate in the other end.

Art. No. 920013



10. MOUNTING

10.1. ANALOG BASE

The analog base 3312FLW / 3312W used with MX units can be mounted on the ceiling or on the wall.

10.2. MOUNTING OF PICTOGRAM

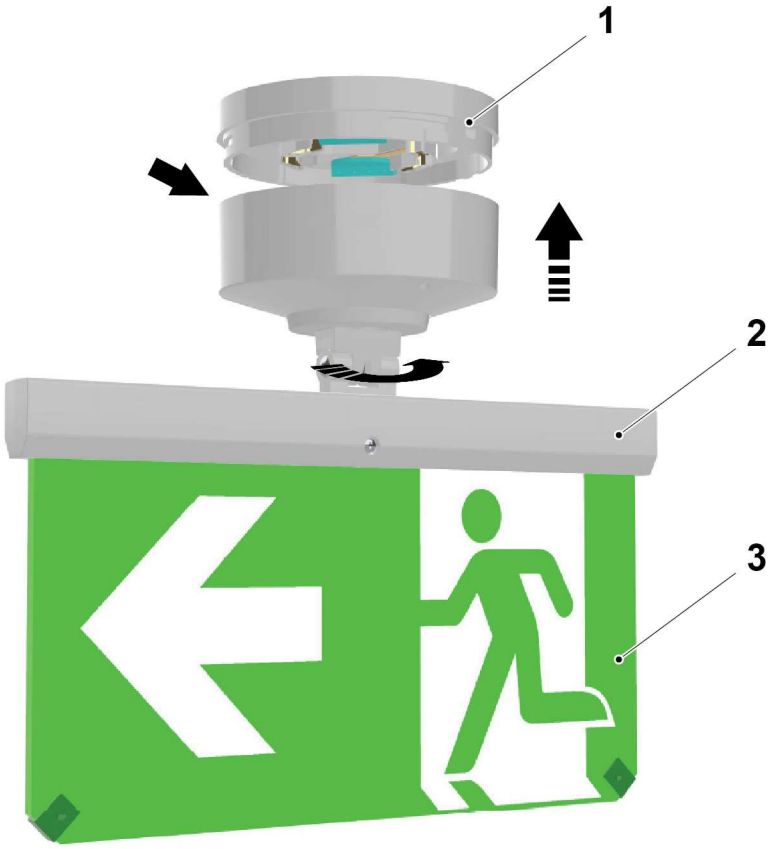
1. Mount the pictogram by sliding it into the mounting profile according to the picture below. You will hear a click when the pictogram is in right place.
2. Tighten the screw to secure the picogram.



10.3. MX UNIT

The MX unit is plugged in the analog base 3312FLW / 3312W.

1. Connect the battery.
2. Place the MX unit in the base with the MX unit “Mark” in the same position as the “Mark” on the base and turn the unit clockwise 25 degrees.
3. The MX unit mounting profile is prepared with one hexagon socket screw for mechanical locking with the analog base. Tighten the screw.
4. Rotate the pictogram to the correct position.



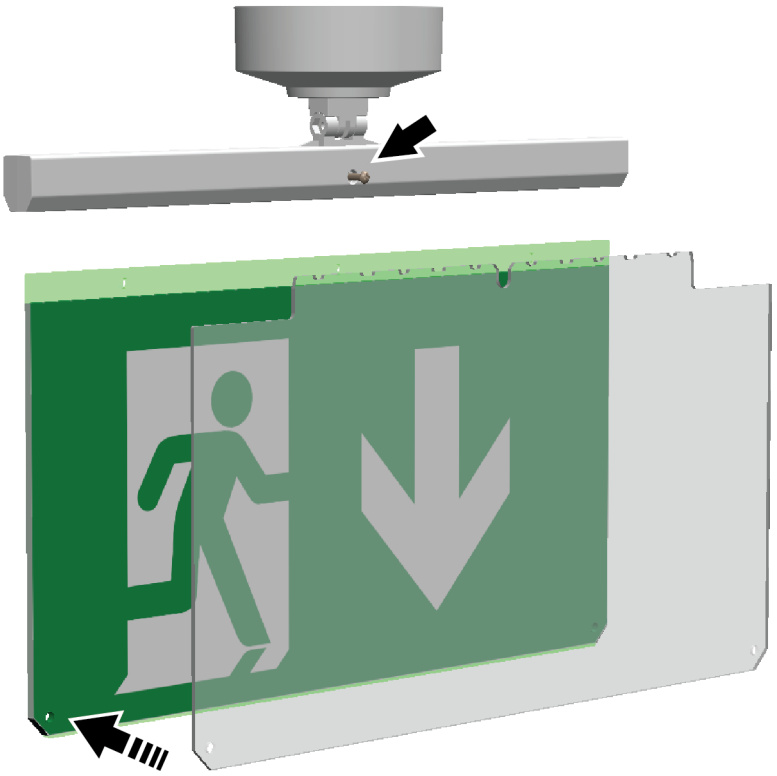
5. Analog base 3312FLW
6. Mounting profile
7. Pictogram

10.4. RED X MODEL

The red cross panel for MX25 and MX40 red x model is installed after installing the pictogram to the mounting profile.

The red x model is only available as single-sided pictogram.

1. Slide the red cross panel on top of the exit light pictogram.
2. Tighten the screw.
3. Fix the red cross panel in place with the included plastic buttons.



10.5. MX OUTDOOR

The MX Outdoor Emergency Light must be mounted at a maximum height of 7.5 meters, on the wall or on the roof.

1. Mount the metal profile on the wall or in the ceiling, mounting height 2 to 7.5 meter.
2. Mount the luminaire on the metal profile. Press both sides to make tight after the luminaire is mounted on the profile.

Take in consideration the luminaire angle.

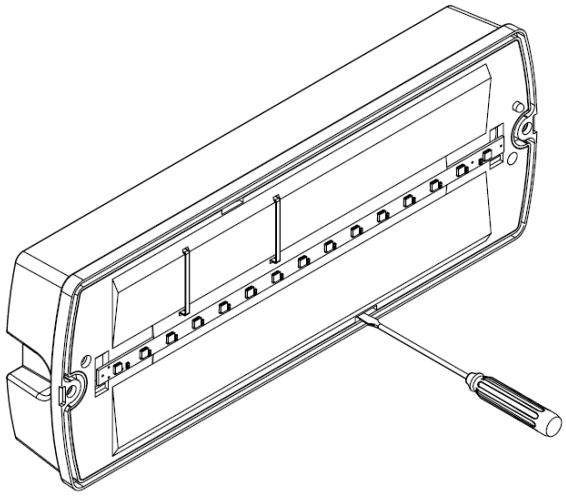


3. Mount the electronic box.
4. Connect the luminaire cable.

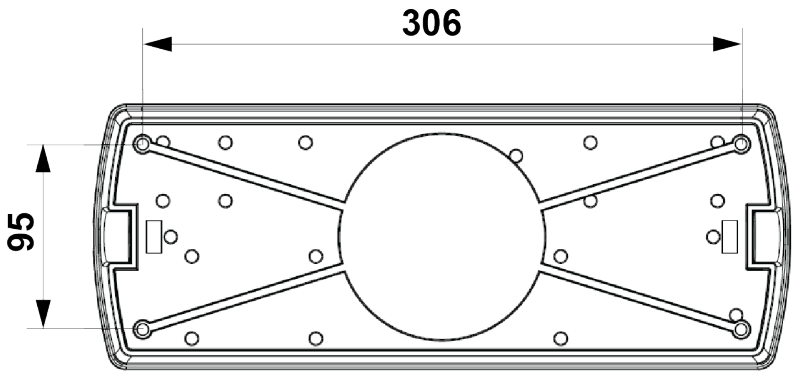
10.6. MX IP65 EXIT / EMERGENCY LIGHT

MOUNT THE HOUSING

1. Remove the two screws and the cover.
2. Use a screw driver to remove the middle part.

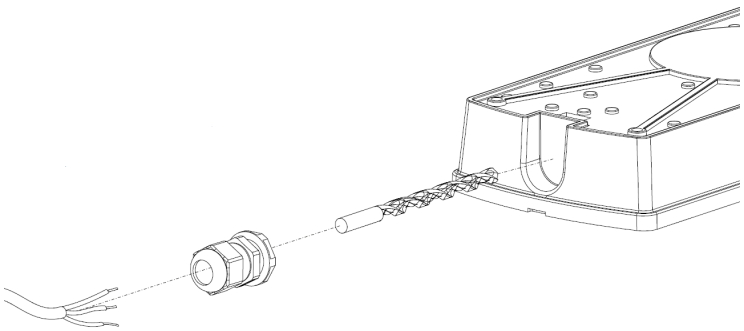


3. Mount the housing on the wall or in the ceiling.



CABLE CONNECTIONS

4. Make a hole in the housing and insert the cable gland.
5. Pull the cables through the cable glands.

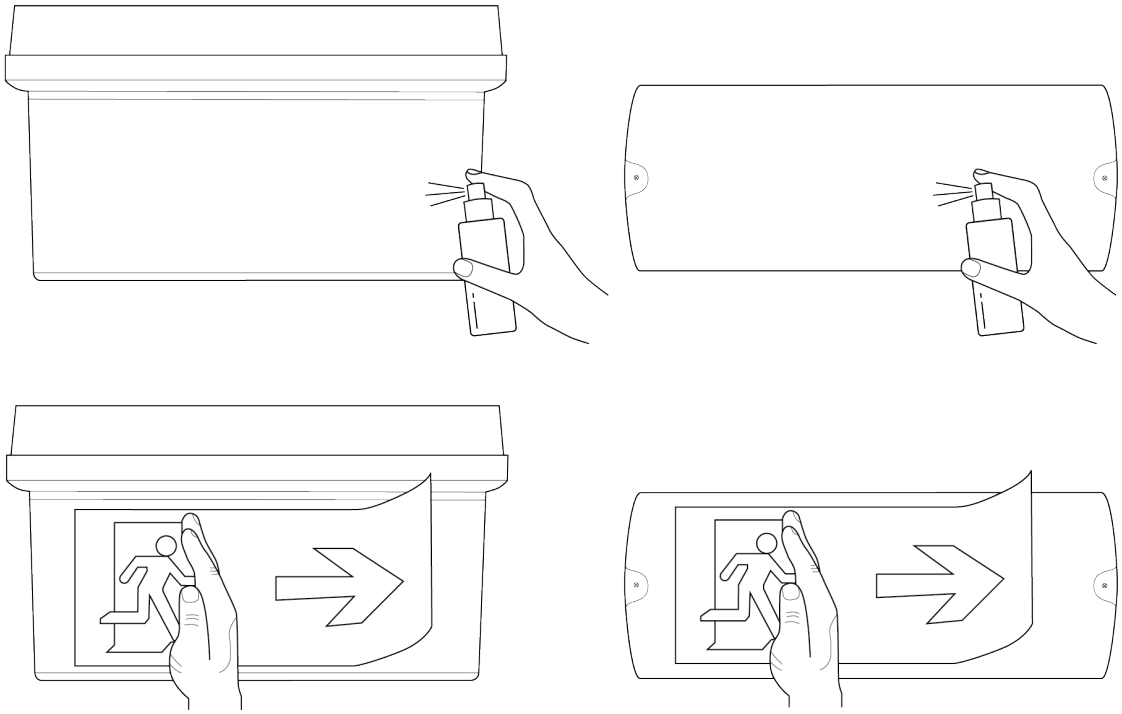


6. Connect the battery cable.

7. Connect the COM loop wires to connectors SA and SB.
8. Connect operating voltage to connectors E+ and E-.
9. Select Exit or Emergency light mode, see chapter 3.6.1. EXIT OR EMERGENCY LIGHT MODE on page 13.
10. Put back the middle part.

PLACE THE PICTOGRAM

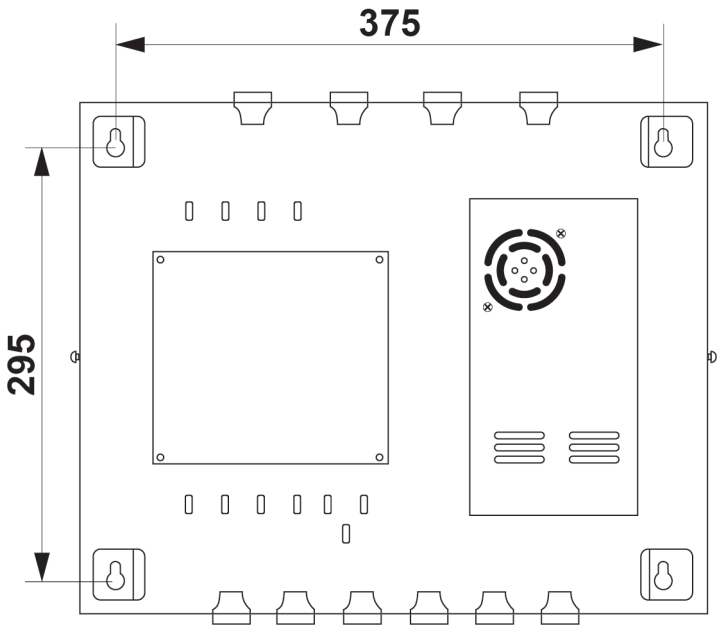
11. Spray water on the cover / double sided cover.
12. Peel off a piece of the protective plastic and place the pictogram on the cover.
13. Continue to peel off the protective plastic one piece at a time and use the hand to press it in place.
14. Use a straight edged tool such as a credit card to press out all the water and small bubbles.



15. Mount the cover / double sided cover on the housing with the two screws.

10.7. MX POWER BOX

MX Power box must be mounted on the wall.



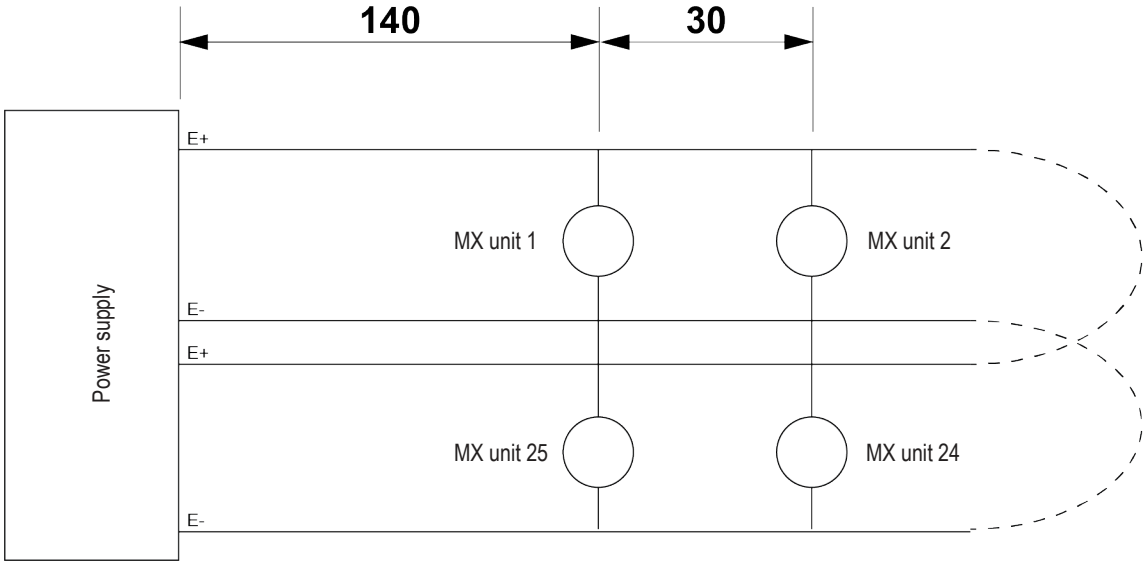
(Measures in mm)

10.8. SUPPLY LINE LENGTH

Up to 35-40 units per supply line is recommended.

	Number of units	Supply line length between system to unit	Supply line length between units	Total supply line length
MX25	25	280 m (2x140)	30 m	1000 m
MX40	23	340 m (140+200 m)	30 m	1000 m
MX IP65	23	340 m (140+200 m)	30 m	1000 m

Example of maximum supply line length.



(Measures in meter)

The table below shows calculated examples of maximum supply line length.
If you have a different cable diameter than in the examples, you have to recalculate it yourself with the help of Ohm's law.
Voltage (V) = Current (I) x Resistance (R)
Power (P) = Voltage (V) x Current (I)

In the calculations it is assumed that the distance from system to units is same as the distance between units.

Copper wire diameter	Total power consumption of loop units	Minimum supply line voltage	Distance between units and the system to first unit	Maximum supply line length
0.8 mm 1)	40 W (50 pcs. MX25)	31 v	8 m	400 m
1.0 mm 2)	40 W (50 pcs. MX25)	31 v	13 m	650 m
0.8 mm 1)	32 W (40 pcs. MX25)	31 v	12 m	480 m
1.0 mm 2)	32 W (40 pcs. MX25)	31 v	17.5 m	700 m
0.8 mm 1)	24 W (30 pcs. MX25)	31 v	20 m	600 m
1.0 mm 2)	24 W (30 pcs. MX25)	31 v	31.5 m	945 m
0.8 mm 1)	50 W (50 pcs. MX40 / MX IP65)	31 v	5 m	250 m
1.0 mm 2)	50 W (50 pcs. MX40 / MX IP65)	31 v	8 m	400 m
0.8 mm 1)	40 W (40 pcs. MX40 / MX IP65)	31 v	8 m	320 m
1.0 mm 2)	40 W (40 pcs. MX40 / MX IP65)	31 v	11.5 m	460 m
0.8 mm 1)	30 W (30 pcs. MX40 / MX IP65)	31 v	16 m	480 m
1.0 mm 2)	30 W (30 pcs. MX40 / MX IP65)	31 v	24 m	720 m

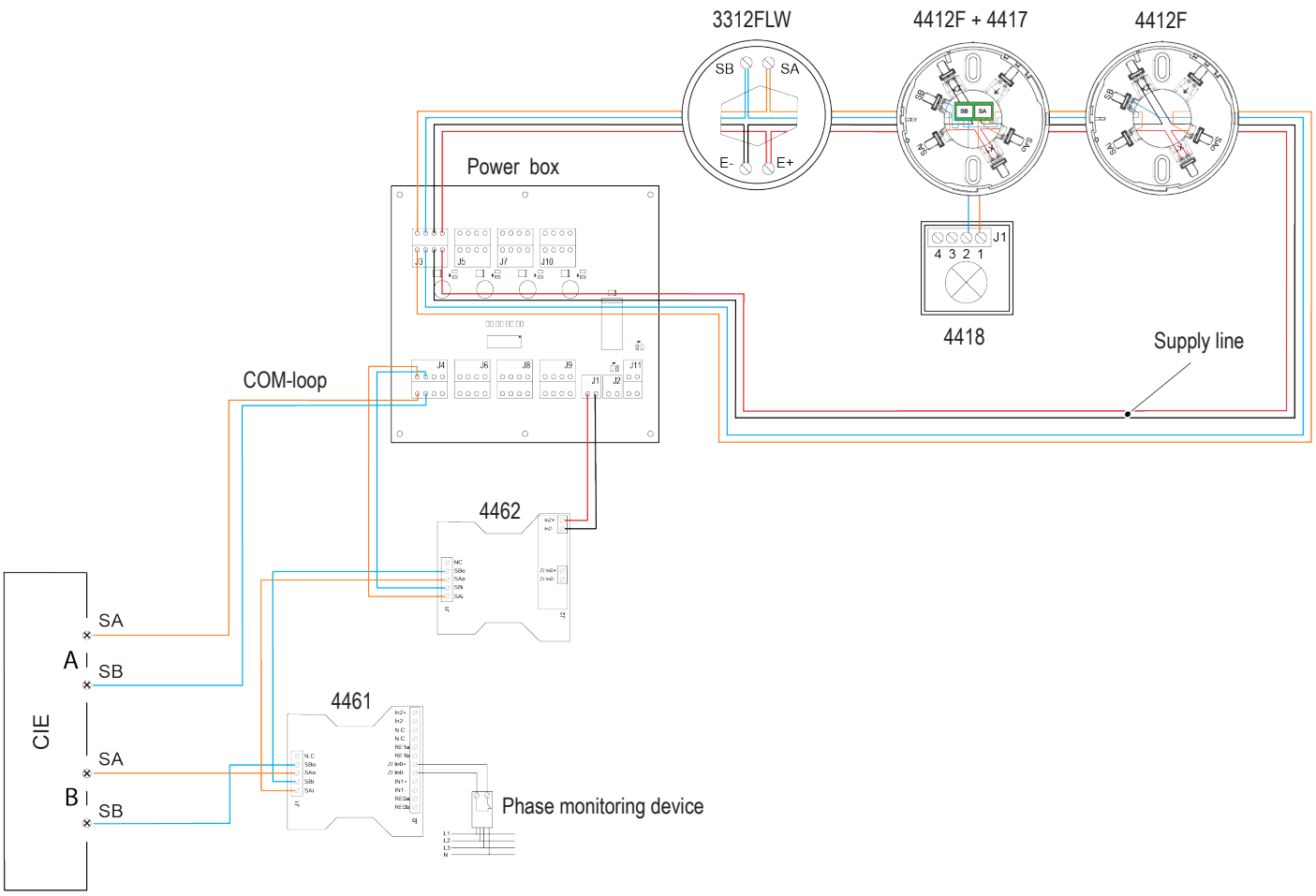
1) Wire resistance approx. 36.4 Ω/km

2) Wire resistance approx. 24.5 Ω/km

11. INSTALLATION AND WIRING

The MX unit is plugged in an analog base 3312FLW / 3312W. The supply line and the COM-loop are connected to the analog base.

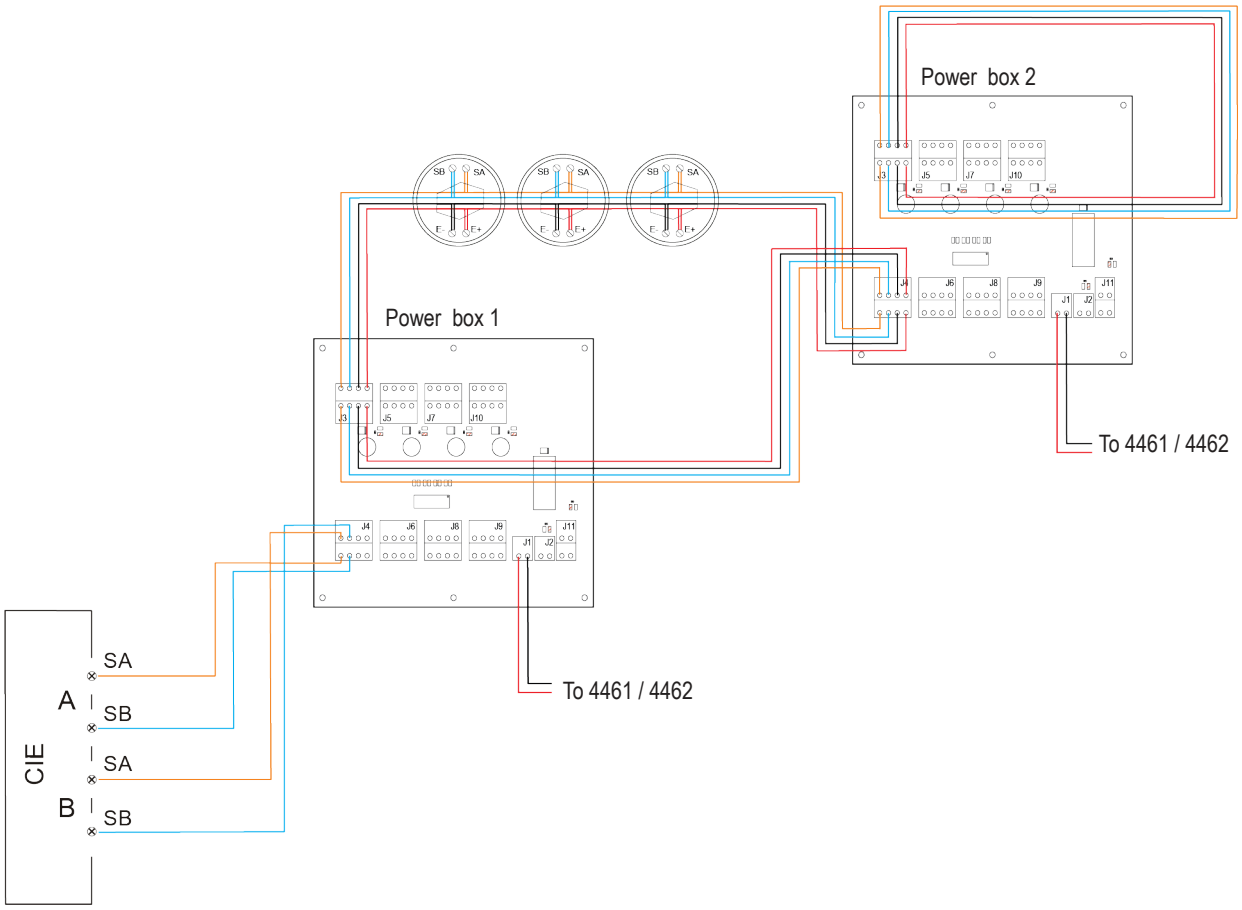
Screen wire termination is not provided.



Wire size (Min)	Ø 0.6 mm (0.3 mm²)	Ø 0.6 mm (0.28 mm²)
Wire size (Max)	Ø 1.6 mm (2 mm²)	Ø 1.25 mm (1.2 mm²)

11.1. WIRING AS EXTENDED

The power box can be used as a supply line extender for operating voltage.
Each Power box CONTROL OUT need to be connected to a 4461 / 4462 input.



12. TECHNICAL DATA

All current consumptions are valid by nominal voltage and by 25 °C.

MX25 and MX40		
Voltage: Allowed Normal Current: Quiescent Active: MX25 MX40		 12 – 32.0 V DC 24V DC 4 mA 31 mA 42 mA
COM loop Voltage: Allowed Normal COM loop Current:		 12 - 30V DC 24V DC 2.3 mA
Power consumption when charging: MX25 MX40	 0.8 W 1.0 W	 (batteries fully charged) (0.4 w) (0.6 W)
Operating time in emergency mode: MX25 MX40		 1 h 1 h
Address range		001-253
Address setting		With address setting tool
Short circuit isolator		No
Internal battery		Yes
Material		PC polycarbonate
Ambient temperature: Operating Storage		 0 to +55 °C 0 to +55 °C
Ambient humidity		Maximum 95 % RH (Non condensing)
Ingress protection rating		IP41
Size: H x W x D MX25 MX40		 102 x 261 x 215 mm 102 x 411 x 290 mm
Weight (including batteries): MX25 MX40		 390 g 705 g
Colour		White

MX Light		
Voltage: Allowed Normal Current: Quiescent Active		 12 – 32.0 V DC 24V DC 4 mA 24 mA
COM loop Voltage: Allowed Normal COM loop Current:		 12 - 30V DC 24V DC 2.3 mA
Power consumption when charging: MX Light	 0.6 W	 (batteries fully charged) (0.2 W)
Operating time in emergency mode: MX Light		 1 h
Address range		001-253
Address setting		With address setting tool
Short circuit isolator		No
Internal battery		Yes
Material		PC polycarbonate
Ambient temperature: Operating Storage		 0 to +55 °C 0 to +55 °C
Ambient humidity		Maximum 95 % RH (Non condensing)
Ingress protection rating		IP41
Size: H x W x D		 102 x 102 x 50 mm
Weight (including batteries):		136 g
Colour		White

MX OUTDOOR		
Voltage: Allowed Normal		12 – 32.0 V DC 24V DC
Current: Quiescent Active		4 mA 42 mA
COM loop Voltage: Allowed Normal COM loop Current:		12 - 30V DC 24V DC 2.3 mA
Power consumption when charging: MX IP65	0.6 W	(batteries fully charged) (0.2 W)
Operating time in emergency mode: MX IP65		3 h
Address range		001-253
Address setting		With address setting tool
Short circuit isolator		No
Internal battery		Yes
Material		PC polycarbonate
Ambient temperature: Operating: MX IP65 Outdoor luminaire MX IP65 electronic box Storage		 -30 to +45 °C -20 to +45 °C 0 to +45 °C
Ambient humidity		Maximum 95 % RH (Non condensing)
Ingress protection rating		IP65
Size: H x W x D MX IP65 Outdoor luminaire MX IP65 electronic box		 72 x 45 x 50 mm 104 x 104 x 48 mm
Weight (including batteries): MX IP65 Outdoor luminaire MX IP65 electronic box		 159 g 242 g
Colour		White

MX IP65 Exit / Emergency light		
Voltage: Allowed Normal	 12 – 32.0 V DC 24V DC	
Current: Quiescent Active	 4 mA 42 mA	
COM loop Voltage: Allowed Normal COM loop Current:	 12 - 30V DC 24V DC 2.3 mA	
Power consumption when charging: MX IP65 Exit MX IP65 Emergency	 1.0 W 0.6 W	 (batteries fully charged) (0.2 W)
Operating time in emergency mode: MX IP65 Exit MX IP65 Emergency	 3 h 3 h	
Address range	001-253	
Address setting	With address setting tool	
Short circuit isolator	No	
Internal battery	Yes	
Material	PC polycarbonate	
Ambient temperature: Operating Storage	 -20 to +45 °C 0 to +45 °C	
Ambient humidity	Maximum 95 % RH (Non condensing)	
Ingress protection rating	IP65	
Size: H x W x D MX IP65	 79 x 136 x 356 mm	
Weight (including batteries): MX IP65	 930 g	
Colour	White	

13. APPROVALS

Applicable directive/ Approval	Applicable standards	Notified body
EMC	EN 55014-1 (Emission) EN 55014-2 (Immunity)	Declaration made by manufacturer (Emex)
LVD	EN 60335-2 EN 60334-2	
RoHS	EN IEC 63000	

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