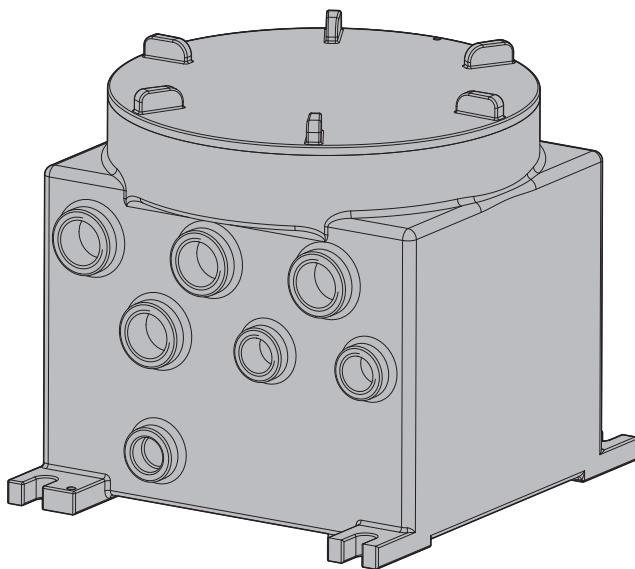


MAXIMUS MBX

Stainless steel explosion-proof box

MANUAL A



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1 About this manual

Read all the documentation supplied carefully before installing and using this unit. Keep this manual and use instructions of the box within reach for subsequent consultation.

1.1 Typographical conventions



DANGER!
Explosion hazard.
Read carefully to avoid danger of explosion.



DANGER!
High level hazard.
Risk of electric shock. Disconnect the power supply before proceeding with any operation, unless indicated otherwise.



CAUTION!
Medium level hazard.
This operation is very important for the system to function properly. Please read the procedure described very carefully and carry it out as instructed.



INFO
Description of system specifications.
We recommend reading this part carefully in order to understand the subsequent stages.

Underlined titles

Information is subject to certifications.

2 Notes on copyright and information on trademarks

The mentioned names of products or companies are trademarks or registered trademarks.

3 Safety rules



DANGER!
Explosion hazard.
Read carefully to avoid danger of explosion.

- Installation and maintenance of the appliance must be carried out by specialist technical staff in compliance with the applicable reference code EN/IEC 60079-14, EN/IEC 60079-17 and national standards.
- Installation should be carried out using adequate tools. The location in which the device is installed may require use of specific tools.
- **CAUTION!** The external equipotential connections must be set up through the eyelet on the outside of the product. Do not use as a protective terminal. Use cables with a minimum section equal to: 4mm² (11AWG).
- The equipotential connection is mandatory to avoid the risk of ignition of products installed in potentially explosive environments.
- Do not open the device when powered and in explosive atmosphere.
- Make all connections, installation and maintenance work in a non-explosive atmosphere.
- The temperature of the surfaces of the device is increased by exposure to direct sunlight. The surface temperature class of the device was determined only with ambient ambient temperature, without taking into consideration direct sunlight.
- Make sure that the unit and other components of the installation are closed so that it is impossible to come into contact with live parts.
- Ensure that the sealing of cable entry systems (if any) has been performed properly and the time of glue hardening has been observed.

**DANGER!****High level hazard.****Risk of electric shock. Disconnect the power supply before proceeding with any operation, unless indicated otherwise.**

- Before starting any operation, make sure the power supply is disconnected.
- A power disconnect device must be included in the electrical installation, and it must be very quickly recognizable and operated if needed.
- Be careful not to use cables that seem worn or old.
- This equipment is not suitable for use in locations where children are likely to be present.

**CAUTION!****Medium level hazard.****This operation is very important for the system to function properly. Please read the procedure described very carefully and carry it out as instructed.**

- Make sure the appliance is securely anchored before supplying power.
- Any change that is not expressly approved by the manufacturer will invalidate the guarantee.
- For technical services, consult only and exclusively authorized technicians.
- Comply with all the national standards during the device installation.
- The product can be installed in any position.
- All disconnected wires must be electrically isolated.
- The manufacturer declines all liability for damage to any of the apparatus mentioned in this handbook, when resulting from tampering, use of non-original spare parts, installation, maintenance and repairs performed by non-authorized, non-skilled personnel.
- This product must only be repaired by suitably trained personnel or under the supervision of VIDEOTEC personnel in accordance with the foreseen terms and conditions: IEC/EN60079-19.
- Whenever replacing the parts as indicated, always use VIDEOTEC original spare parts and meticulously follow the maintenance instructions supplied with every spare parts kit.

**INFO****Description of system specifications.****We recommend reading this part carefully in order to understand the subsequent stages.**

- For handling there are no particular instructions. It is recommended, to assigned staff, to carry out operation observing the common rules of accident prevention.
- Make sure that all precautions for personal safety have been taken.
- Before proceeding with installation, check the supplied material to make sure it corresponds to the order specification by examining the identification labels.
- Equipment intended for installation in Restricted Access Location performed by specialist technical staff.
- Since the user is responsible for choosing the surface to which the unit is to be anchored, we do not supply the fixing devices for attaching the unit firmly to the particular surface. The installer is responsible for choosing fixing devices suitable for the specific purpose on hand. Use methods and materials capable of supporting at least 4 times the weight of the device. Remember to use screws no less than M8 (ISO261) or equivalent.
- The manufacturer declines all responsibility for any damage caused by an improper use of the appliances mentioned in this manual. Furthermore, the manufacturer reserves the right to modify its contents without any prior notice. The documentation contained in this manual has been collected and verified with great care. The manufacturer, however, cannot take any liability for its use. The same thing can be said for any person or company involved in the creation and production of this manual.
- Contact the manufacturer for information on the dimensions of the flameproof joint.
- For all maintenance interventions, we recommend you return the product to the laboratory that will perform all required operations.

4 Identification

4.1 Product description and type designation

MAXIMUS MBX is a box for installation in potentially explosive atmospheres.

MAXIMUS MBX is composed of a body and cover in stainless steel AISI 316L casting.

The surface treatments further increase its resistance to corrosion.

MAXIMUS MBX is equipped with NPT or metric type threaded cable inputs depending on the model.

MAXIMUS MBX has an IP66/IP68/IP69 level of protection and can be installed in environments with temperatures from -40°C to 80°C (check the marking for each of the available models).

4.2 Product Overview

The main parts of the product are illustrated below.

1. Explosion-proof box.
2. Cover.

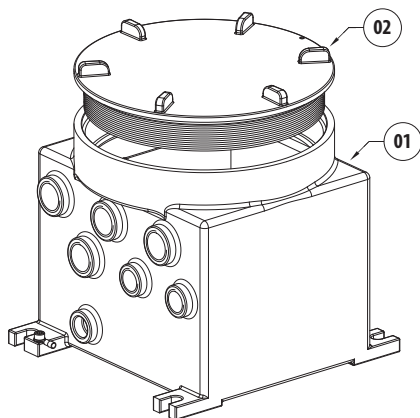


Fig. 1

4.3 Range of use

The unit is designed for use in a fixed location, for surveillance of areas classified as zone 1-21 and zone 2-22 with potentially explosive atmospheres.

The unit has been built and certified in compliance with directive 2014/34/UE and with the international standards IECEx, which define its range of application and minimum safety requirements.

4.4 Specific use conditions

Ambient temperature and Surface temperature – see instructions.

Contact the manufacturer for information on the dimensions of the flameproof joint.

Care shall be taken to prevent accumulation of electrostatic charges. See installation instructions.

4.5 Gas Group, Dust Group and Temperatures

The device is certified for the IIC group (Gas) and the IIIC group (dust).

The temperature class, the maximum surface temperature and the temperature of the cable entry depend on the features of the installable devices (Watt) and on the ambient temperature.

These features are specified for each model in manual B.

4.6 Characteristics of installable devices

All the internal components must be installed inside by the manufacturer.

4.7 Cable entry

The product is supplied with plastic caps for cable entry protection. They cannot be used for installation.

Unused cable entries shall be closed off using blanking devices Ex certified, as appropriate, with protection type "db" and "tb" suitable for the conditions of use and installed correctly..

All cable glands shall be Ex certified, as appropriate, with protection type "db" and "tb", suitable for the conditions of use and installed correctly..

When conduit is used, a suitable Ex certified stopping box shall be used, as appropriate, with protection type "db" and "tb", suitable for the conditions of use and installed correctly.

The stopping box must be fitted within 50mm (1.97in) from the enclosure entry.

The cable input temperatures are specified in the marking.

To maintain the IP level of product use cable glands with appropriate IP level and apply to threads a sealant compliant with standard IEC/EN60079-14.

4.8 Product marking

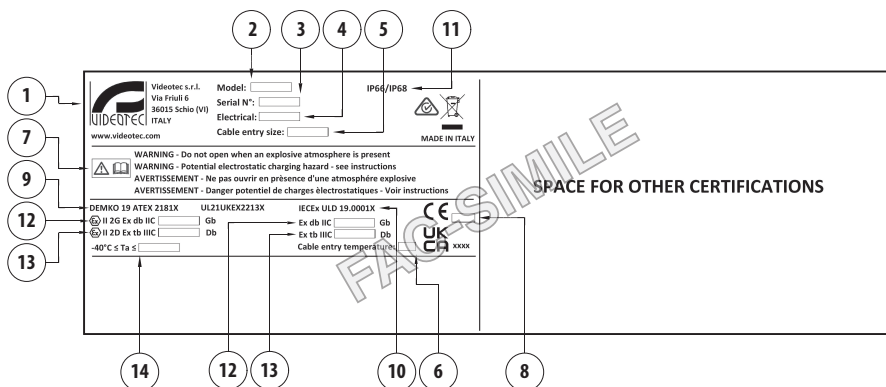


Fig. 2

- Manufacturer's name and address.
- Model.
- The serial number consists in 12 numeric characters, the second and third digits define the last two numbers of the year of manufacture.
- Electrical characteristics (V, Hz, A). Not present, if the device installed is a terminal block.
- Type, size and number of cable entries.
- Cable input temperature.
- Warnings.
- Number of the accredited body providing quality evaluation.
- ATEX marking. The Class temperature depends on the electronics installed inside and the ambient temperature.
- Marking IECEx. The Class temperature depends on the electronics installed inside and the ambient temperature.
- IP protection degree.
- T Class (Tx or Tx...Tx).
- Maximum surface temperature (Tx°C or Tx°C...Tx°C).
- Ambient temperature ($-40^{\circ}\text{C} \leq \text{Ta} \leq +\text{Tx}^{\circ}\text{C}$, $-40^{\circ}\text{C} \leq \text{Ta} \leq \text{Tx}^{\circ}\text{C}$ or $\text{Tx}^{\circ}\text{C}$ or $\text{Tx}^{\circ}\text{C}$ or $\text{Tx}^{\circ}\text{C}$).

Example:

EXAMPLE DATA				
Watt	T Class	Maximum surface temperature	Cable entry temperature	Ambient temperature
16	T4	T135°C	87.4°C	$-40^{\circ}\text{C} \leq \text{Ta} \leq 80^{\circ}\text{C}$
	T6...T5	T85°C...T100°C	77.4°C	$-40^{\circ}\text{C} \leq \text{Ta} \leq 60^{\circ}\text{C}$ or 70°C
	T6...T4	T85°C...T135°C	87.4°C	$-40^{\circ}\text{C} \leq \text{Ta} \leq 60^{\circ}\text{C}$ or 70°C or 80°C

Tab. 1

4.9 For UL/CSA standard reference only.



In the USA, the National Electrical Code (NEC) and in Canada the Canadian Electrical Code (CEC) apply to electrical equipment used on hazardous industrial premises.



The flameproof joints are not intended to be repaired.

Important safety instructions

WARNING: DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT.

AVERTISSEMENT: NE PAS OUVRIR EN PRÉSENCE D'UNE ATMOSPHÈRE EXPLOSIVE.

WARNING: POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS.

AVERTISSEMENT: DANGER POTENTIEL DE CHARGES ÉLECTROSTATIQUES - VOIR INSTRUCTIONS.

WARNING: CONDUITS MUST BE SEALED WITHIN 50MM OF CONDUIT ENTRANCE TO THE ENCLOSURE.

AVERTISSEMENT: LES CONDUITS DOIVENT ÊTRE SCELLES À DANS 50MM DE L'ENTRÉE DU CONDUIT DU CAISSON.

1. Manufacturer's name and address: Videotec s.r.l., Via Friuli 6, 36015 Schio (VI) ITALY, www.videotec.com

2. Model: IP66/IP68

3. Serial N°: [12 digits]

4. Electrical: [V, Hz, A]

5. Cable entry size: [IP66/IP68]

6. Warnings: WARNING - Do not open when an explosive atmosphere is present. AVERTISSEMENT - Ne pas ouvrir en présence d'une atmosphère explosive.

7. Ambient temperature: $-40^{\circ}\text{C} \leq T_a \leq +TX^{\circ}\text{C}$

8. T Class: [Tx or Tx...Tx]

9. Maximum surface temperature: [Tx°C or Tx°C...Tx°C]

10. Cable entry temperature: []

11. Level of protection Type: 4X, 6P

CE, UKCA, UL/US LISTED marks are present.

SPACE FOR OTHER CERTIFICATIONS

Fig. 3

1. Manufacturer's name and address.
2. Model.
3. The serial number consists in 12 numeric characters, the second and third digits define the last two numbers of the year of manufacture.
4. Electrical characteristics (V, Hz, A). Not present, if the device installed is a terminal block.
5. Type, size and number of cable entries.
6. Warnings.
7. Ambient temperature ($-40^{\circ}\text{C} \leq T_a \leq +TX^{\circ}\text{C}$, $-40^{\circ}\text{C} \leq T_a \leq TX^{\circ}\text{C}$ or $-40^{\circ}\text{C} \leq T_a \leq TX^{\circ}\text{C}$ or $TX^{\circ}\text{C}$).
8. T Class (Tx or Tx...Tx).
9. Maximum surface temperature (Tx°C or Tx°C...Tx°C).
10. Cable input temperature.
11. Level of protection Type.



The choice of connection must comply with local legislation in force.

Cable glands: select a cable gland in compliance with UL2225 with the following protection AEx d IIC and C22.2 with the following protection Ex d IIC in compliance with the marking of the product.

Conduit: it is necessary to install a sealing device within 50mm of the product input when the conduit is used.

Regulation references:

UL 60079-0, 7th Edition, Explosive atmospheres - Part 0: Equipment – General requirements

UL 60079-1, 7th Edition, Explosive Atmospheres - Part 1: Equipment Protection by Flameproof Enclosures "d"

UL 60079-31, 2nd Edition, Explosive Atmospheres - Part 31: Equipment Dust Ignition Protection by Enclosure "t"

CSA C22.2 No. 60079-0:15, Explosive atmospheres - Part 0: Equipment - General requirements

CSA C22.2 No. 60079-1:16, Explosive Atmospheres - Part 1: Equipment Protection by Flameproof Enclosures "d"

CSA C22.2 No. 60079-31:15, Explosive Atmospheres - Part 31: Equipment Dust Ignition Protection by Enclosure "t"

5 Preparing the product for use



Before carrying out any type of intervention, read the Safety standards chapter carefully in the product manual.

5.1 Safety precautions before use

If the device comes into contact with harsh substances, it is the responsibility of the user to take suitable precautions to prevent damage and not compromise the type of protection.

- **Aggressive substances:** Acidic liquids or gases that may attack metals, or solvents that may affect polymeric materials.
- **Suitable precautions:** Regular checks as part of routine inspections or establishing from the material's data sheet that it is resistant to specific chemicals.

It is the responsibility of the end users to make sure that the materials used to build the product are suitable for the intended installation site. If in doubt, contact the manufacturer.

5.2 Unpacking

When the product is delivered, make sure that the package is intact and that there are no signs that it has been dropped or scratched.

If there are obvious signs of damage, contact the supplier immediately.

When returning a faulty product we recommend using the original packaging for shipping.

Keep the packaging in case you need to send the product for repairs.

5.3 Contents

Check the contents to make sure they correspond with the list of materials as below:

- Explosion-proof box
- O-ring replacement part kit, hexagon socket set screws
- Instruction manuals

5.4 Safely disposing of packaging material

The packaging material can all be recycled. The installer technician will be responsible for separating the material for disposal, and in any case for compliance with the legislation in force where the device is to be used.

5.5 Product opening



During product opening and closing operations, be careful not to damage the flameproof joint.



The safety grub screw is used to prevent the unscrewing of the threaded cover from the connection compartment. Remove the safety grub screw before unscrewing the cover.

Remove the safety grub screw (01) before unscrewing the cover (02).

Remove all plastic caps (03), they can't be used on installation.

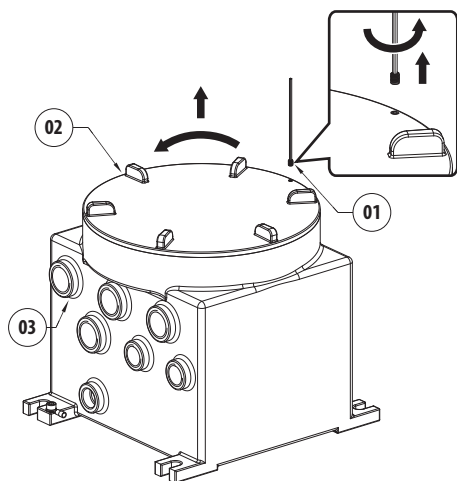


Fig. 4

5.6 Ground connection

5.6.1 Earthing equipotential connection

The equipotential connection must be carried out using an external cable with a minimum 4mm² section (11AWG).

Connect the cable for the earthing equipotential connection with the eyelet terminal supplied (suitable for cables with 4mm² up to 6mm² section).

Fix the eyelet using the screw (M5) and washer.

Characteristics of the M5 screw:

- Material: A4 Class 70
- Screw head: ISO 4762
- Length: 8mm (0.3in)

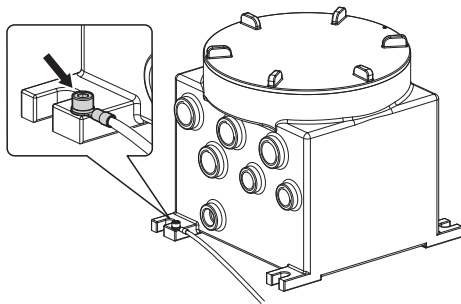


Fig. 5

5.6.2 Connection of the safety earthing

Electrically connect the safety earthing cable in one of the holes prepared on the bottom of the box (for more information to the product manual B).

5.7 Product closure



During product opening and closing operations, be careful not to damage the flameproof joint.



Before closing the cover, check the O-ring gasket. If the sealing is damaged replace it with the one supplied.

Verify that there is no dirt or debris.

Lubricate the threads with grease compliant with IEC/ EN60079-14 to facilitate screwing the cover on.

Screw the cover and ensure there is not space between the cover and the body of the box.

Fastening the safety grub screw is mandatory to complete product closure and prevent the unwanted unscrewing.

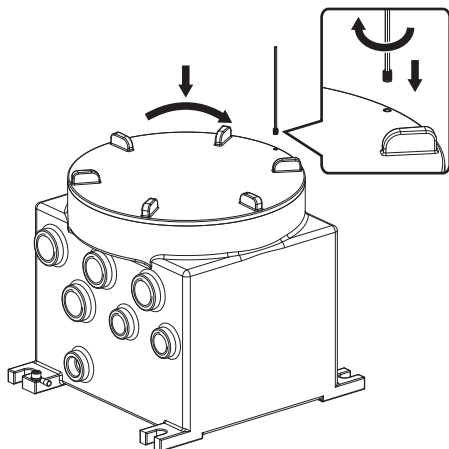


Fig. 6

6 Maintenance

When contacting VIDEOTEC for assistance please provide the serial number and the identification code of the model.

6.1 Replacement of the cover gasket

In the event of o-ring gasket deterioration replace it using the gasket supplied. Use only VIDEOTEC original spare parts.

Replace the gasket being careful to insert it correctly into its specific position.

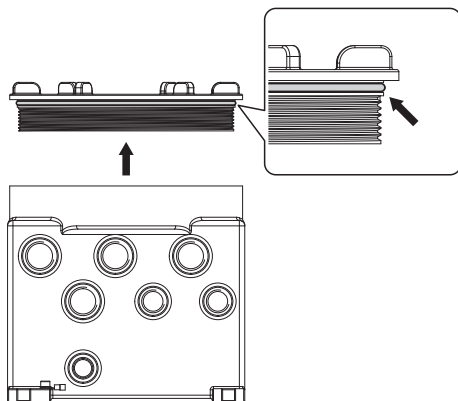


Fig. 7

7 Cleaning



Frequency will depend on the type of environment in which the product is used.

7.1 Cleaning the product



The cleaning of the product should be carried out according to the instructions in this chapter in order to prevent accumulation of electrostatic charges.



The outside surface of the product must never be covered in more than 5 mm of dust.

The device should be cleaned using a damp cloth; compressed air must not be used.

8 Information on disposal and recycling

The European Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE) mandates that these devices should not be disposed of in the normal flow of municipal solid waste, but they should be collected separately in order to optimize the recovery stream and recycling of the materials that they contain and to reduce the impact on human health and the environment due to the presence of potentially hazardous substances.



The symbol of the crossed out bin is marked on all products to remember this.

The waste may be delivered to appropriate collection centers, or may be delivered free of charge to the distributor where you purchased the equipment at the time of purchase of a new equivalent or without obligation to a new purchase for equipment with size smaller than 25cm (9.8in).

For more information on proper disposal of these devices, you can contact the responsible public service.

9 Technical data

9.1 Mechanical

- AISI 316L stainless steel construction
- Fastening slots: 4 x Ø11mm (0.43in)
- Cable gland holes: 4 x 3/4" NPT + 2 x 1/2" NPT (special version: 4 x M25 + 2 x M20)
- External dimensions (WxHxL): 220x216x240mm (8.7x8.5x9.4in)
- Unit weight: 14kg (31lb)

9.2 Environment

- For indoors and outdoors installation
- Certification temperature: from -40°C (-40°F) up to +80°C (+176°F)
- Relative humidity: from 10% up to 100%

9.3 Certifications

- IP protection degree (EN/IEC60529): IP66, IP67, IP68, IP69
- Level of protection Type (UL50E): 4X, 6P

9.4 Certifications - Explosion-proof applications

- ATEX (EN IEC 60079-0, EN 60079-1, EN 60079-31)
- IECEX (IEC 60079-0, IEC 60079-1, IEC 60079-31)
- UL listed for USA (UL 60079-0, UL 60079-1, UL 60079-31)
- UL listed for Canada (CAN/CSA-C22.2 NO. 60079-0, CAN/CSA-C22.2 NO. 60079-1, CAN/CSA-C22.2 NO. 60079-31)

10 Technical drawings



The indicated measurements are expressed in millimetres.

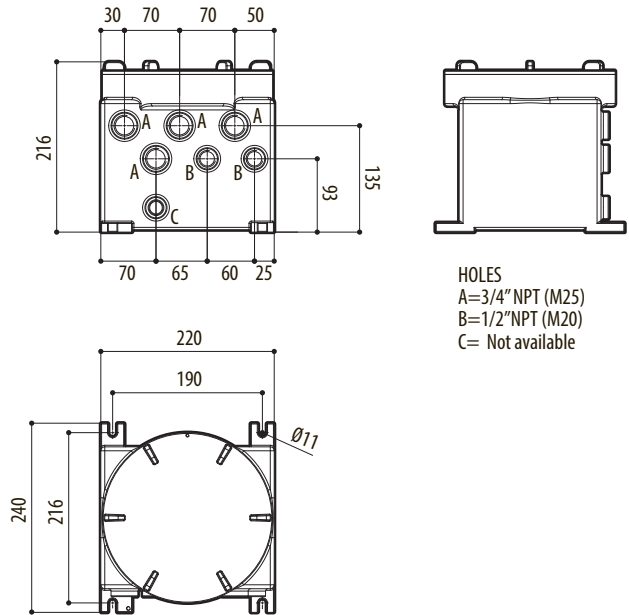


Fig. 8 MAXIMUS MBX.



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