Quick Install   MX-Output-Box

MX-OPT-Output1-EXT

Security-Vision-Systems

MOBOTIX

Weatherproof Signal Outputs for MOBOTIX Devices

MX-Output-Box
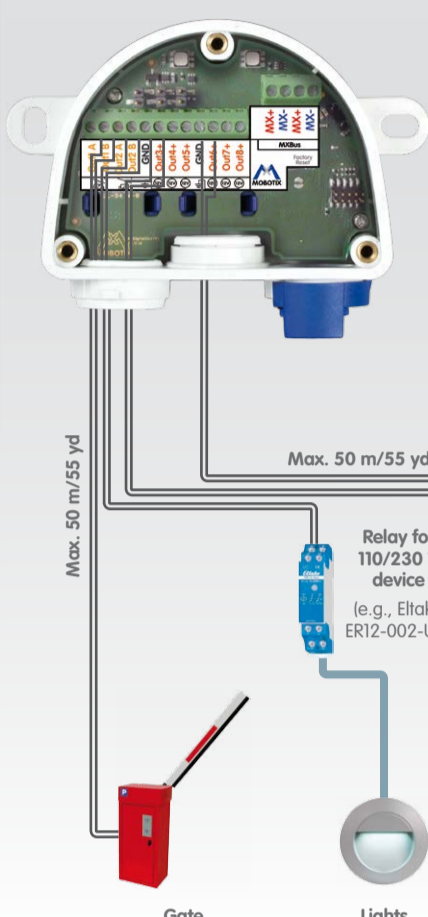
Weatherproof (IP65)
−30 to +60 °C/−22 to +140° F

- 6 powered outputs 12 V
- 2 isolated relay outputs, can be reconfigured as additional powered outputs 12 V using jumpers
- Signal output lines up to 50 m/55 yd

Event-controlled switching of external devices/systems by MOBOTIX cameras via MxBus; can switch 110/230 V devices using suitable relays

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Connection of Peripheral Devices (Examples)

Max. 50 m/55 yd

Max. 50 m/55 yd

Relay for 110/230 V device
(e.g., Eltako ER12-002-UC)

Terminal Connectors		
Out1 A	Output 1	Isolated relay outputs
Out1 B		
Out2 A	Output 2	
Out2 B		
GND	Ground (GND)	Powered outputs 12 V
Out3+	Output 3	
Out4+	Output 4	
Out5+	Output 5	
GND	Ground (GND)	Powered outputs 12 V
Out6+	Output 6	
Out7+	Output 7	
Out8+	Output 8	

Gate   Lights   Shutters   Alarm system

Jumpers of the MX-Output-Box

J1 J2 J3
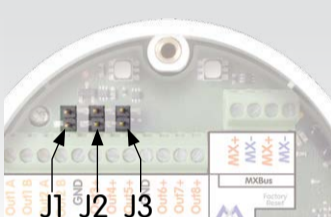
Jumper	Open	Closed
J1	**Out1** isolated (for relay)	**Out1** powered output (max. 50 mA/12 V)
J2	**Out2** isolated (for relay)	**Out2** powered output (max. 50 mA/12 V)
J3	Do not use – reserved for future extensions	

Connection to Camera via MxBus

MOBOTIX MX-Output-Box
MX-OPT-Output1-EXT

MOBOTIX D15Di DualDome
MX-D15Di-Sec-D22D22
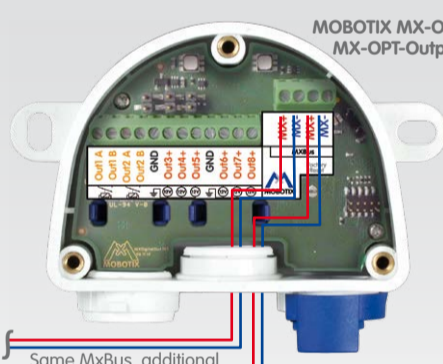
Same MxBus, additional MxBus modules...

2-wire MxBus wiring to camera (MxBus total length up to 50 m/55 yd)

Caution

One MxBus must not be connected to more than one camera!

Note

If you would like to use more than eight signal outputs, you can attach more than one MX-Output-Box module (max. of seven MxBus modules on one MxBus).
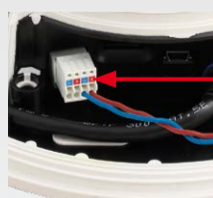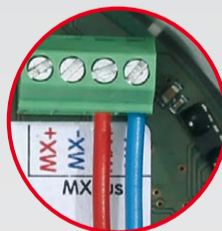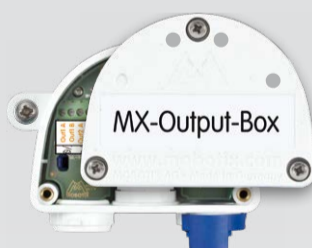

Installation Instructions

1. Attach the box

Attach the MX-Output-Box at the mounting position with the cable ports pointing downwards (torque 0.4 Nm). Next, remove the box cover (three screws).

2. Establish connection to the camera

- *Before proceeding, make sure there is no current on the MxBus wires!*
- Cut the MxBus cable to size (2-wire, 0.6 to 0.8 mm diameter). When using *wires without jacket*, strip the insulation of the wires for 5 mm and push the wires through the eight-wire plug (center).
- When using a *cable with jacket*, remove the pre-installed eight-wire plug and insert the appropriate cable plug (3 to 5 mm or 5 to 7 mm). Press the rubber plug into the casing in such a way that the rims stick out equally on both sides. Push the cable through the plug, remove the sheath on a length of 15 mm and strip the insulation of the wires for about 5 mm.
- Connect the MxBus wires to the terminals of the MX-Output-Box using the screwdriver. Make sure to maintain the polarity (see sticker in front of the terminal).
- Connect the MxBus wires as described in the corresponding manual to the MOBOTIX camera or to another MxBus module connected to a camera (e.g. KeypadRFID, MX-DoorMaster). Make sure not to exceed the overall length of the MxBus wiring (max. 50 m/55 yd).
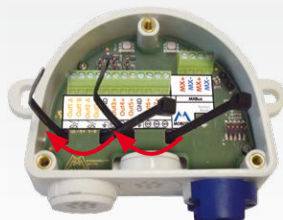
3. Connect the peripheral devices

Connect the other wires/cables as required and by using the corresponding cable plugs (outputs, MxBus).

4. Tie down the cables

Insert one or two cable ties depending on the attached cables as shown. Pull the cable ties tightly around the cables in order to provide strain relief.

5. Mount the cover

Mount the cover back onto the MX-Output-Box and tighten it using the cover screws (torque 0.4 Nm).

MX-Output-Box

MxBus

MxBus plug in MOBOTIX D15Di

LED Signaling

Operation   I/O Status

MX-Output-Box

www.mobotix.com

○ LED off
● LED permanently on
◐ LED flashing

LED			Meaning
Operation (left)		○	Not connected
		●	Regular operation
		◐	Unencrypted communication
		◑ (red)	Error during communication
I/O Status (right)		◐/◑	**As long as one of the signal outputs is closed:** Shows status of all 8 outputs one after the other, then pauses for 4 seconds. On closed signal outputs, the LED flashes green once, on open inputs blue once.

Initial Operation of the MX-Output-Box

1. **Open the MOBOTIX camera's user interface in the browser**
   - Enter the IP address of the camera that is connected to the MX-Output-Box in the browser (admin access rights required):
     `http://<IP address of camera>`

2. **Make sure the camera uses PoE class 3**
   - Open the **Admin Menu > Ethernet Interface** dialog.
   - If **Power Supply** has not been set to `Power over Ethernet (Class 3)`, click on the **Change** link, follow the steps of the wizard and activate the new class.

3. **Activate the MX-Output-Box**
   - Open the **Admin Menu > Manage Hardware Expansions** dialog.
   - If the LED icon in the line **MxBus Interface** is not green, click on **Connect**.
   - In the **Admin Menu > Manage MxBus Modules** dialog, **Devices** section, **MX-Output-Box** line, click on the **Activate** button.
   - If the **Update SW** button appears, click on it to update the software of all connected modules.
   - Click on the **MxMessageSystem Configuration** button in the same dialog.
   - Click on **Load connected devices from configuration**.
   - Click on **Edit Messages**, then on **New message** and enter a suitable name (e.g., "`Switch_lights`"). Next, click on **Save messages**.
   - Click on the **MX-Output-Box** bar, then on **Add timer** and enter the number of seconds for the timer to run. Next, click on **Save timers**.
   - Find the output you want to configure and select the *Switch_lights* message and *Timer1*.

- In the **MX-Output-Box** section at the bottom, click on **Write configuration**.
- Click on **Set**, then on **Close** at the bottom of the dialog.

4. **Configure actions**
   - Open the **Admin Menu > Message Profiles for Action Groups** dialog and click on the **Add new profile** button.
   - Enter the same name in the **MxMessageSystem Name** field you entered in step 3 above as **Message name**, i.e., "`Switch_lights`". It is recommended to use a similar name as profile name (e.g., "`SwitchLights-Profile`"). Click on **Set**, then on **Close**.
   - In the **Setup Menu > Action Group Overview** dialog, click on **Add new group** and enter a name (e.g., "`SwitchLights_AG`"). Click on the **Edit** button in this line.
   - In the **Event Selection** section, select the events that will switch the lights (e.g., *Signal: UC*).
   - Click on the **Add new action** button at the bottom of the dialog and select *MxMessageSystem: SwitchLights_Profile* as value. Add additional actions as required and close the dialog by clicking on **Set** and then on **Close**.
   For additional information on the MxMessageSystem, see the help page of this dialog (click on ❓) or on **www.mobotix.com > Support > Media Library > Compact Guides** in the document *Technical Note: MxMessageSystem*.

5. **Store the camera configuration**
   - In the Live screen of the camera, click on **Admin Menu > Configuration > Store**, permanently store the camera configuration and reboot the camera.

Resetting the MX-Output-Box

If the MX-Output-Box had been connected to a different camera before and not deactivated or reset before detaching, the left LED (MxBus status) may flash red after establishing the MxBus connection. In this case, you need to reset the connected and activated MX-Output-Box to *factory defaults*:

MxBus
Factory Reset
MOBOTIX

- Remove the box cover (three screws).
- Bridge the contact surfaces below the **Factory Reset** label (red circle in figure) using a screw driver, for example (both LEDs are flashing red/blue with increasing frequency).
- Only remove the bridge if both LEDs of the MX-Output-Box are flashing green on/off 3 times to indicate that the process has finished successfully.
- Mount the cover back onto the box (torque 0.4 Nm).
- Set up the MX-Output-Box in the camera (see *«Initial Operation of the MX-Output-Box»*).
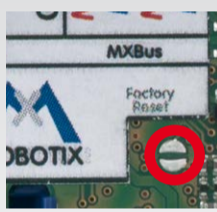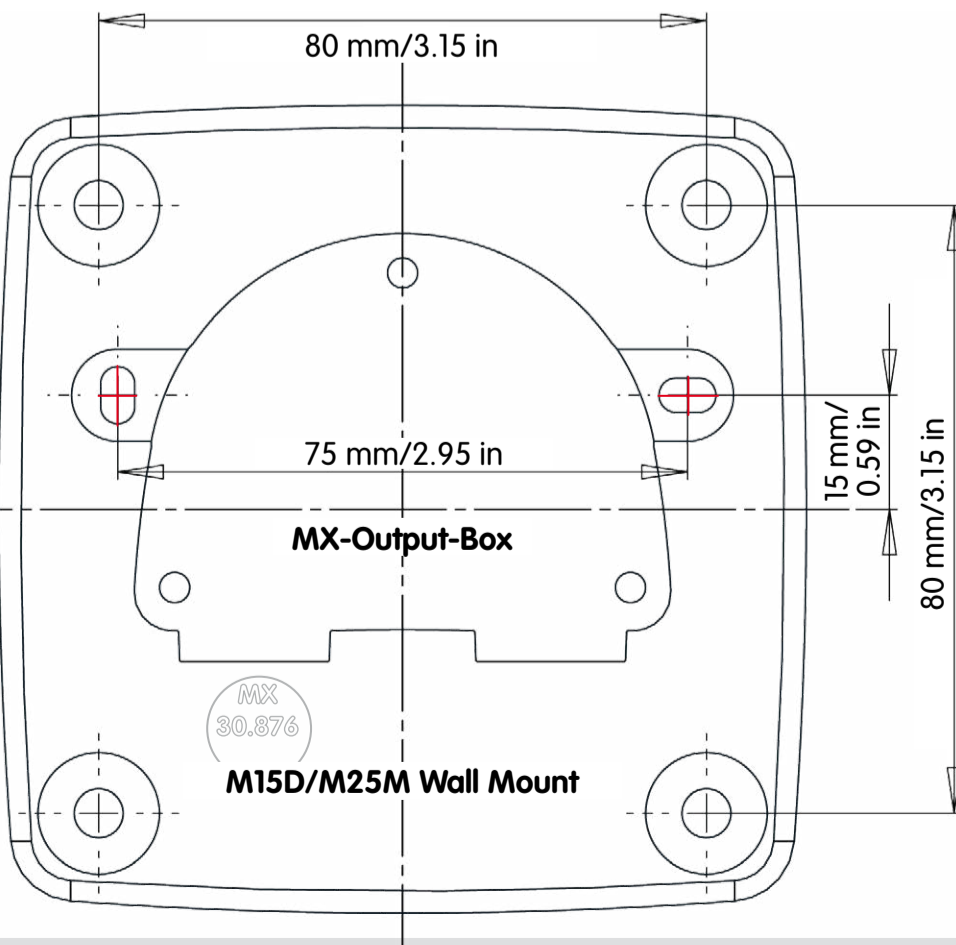
Safety Warnings

- This product must not be used in locations exposed to the dangers of explosion.
- Make sure to install this product as shown in the installation instructions above.
- Electrical systems and equipment may only be installed, modified and maintained by a qualified electrician or under the direction and supervision of a qualified electrician in accordance with the applicable electrical guidelines. Make sure to properly set up all electrical connections.
- The MOBOTIX MX-Output-Box is to be used only for providing signal outputs for MOBOTIX cameras in IP65 environments.
- Make sure that you adhere to all relevant laws, regulations and that you fulfill all certification requirements for the intended use.

- For MOBOTIX cameras with MxBus connector and software version MX-V4.1.4.11 or higher.
- Torque for all screws: 0.4 Nm.
- Press the white cable plug (eight-wire plug or cable plug 3 to 5 mm or 5 to 7 mm) into the casing in such a way that the rims stick out equally on both sides.
- The length of the entire MxBus wiring must not exceed 50 m/55 yd.
- The length of each signal output line must not exceed 50 m/55 yd.
- Diameter of all wires: 0.6 to 0.8 mm (0.8 mm = AWG 21 recommended to reduce line losses).
- The jumper will be used for future versions of the MX-Output-Box and must not be used at present.

Technical Specifications:

Interface to camera	MxBus
Powered outputs 12 V	6, max. 10 mA per output
Additional outputs	2 isolated relay outputs (AC/DC, up to 48 V/60 W/2 A) **with jumper J1/J2**: powered outputs 12 V, max. 50 mA per output (see *«Jumpers of the MX-Output-Box»*)
Max. electrical load on 12 V	1.2 W
Cross-sectional area of wires at the terminals	0.14 mm² – 0.5 mm² (AWG 21 – 26)
Protection class	IP65 (DIN EN 60529)
Operating temperature	–30 to +60 °C/–22 to +140° F (DIN EN 50155)
Power Supply	MxBus
Power Consumption	Typ. 0.5 W, max. 1.5 W

80 mm/3.15 in

75 mm/2.95 in

MX-Output-Box

MX 30,876

M15D/M25M Wall Mount

15 mm/ 0.59 in

80 mm/3.15 in

CE FC

Innovations – Made in Germany

The German company MOBOTIX AG is known as the leading pioneer in network camera technology and its decentralized concept has made high-resolution video systems cost-efficient.