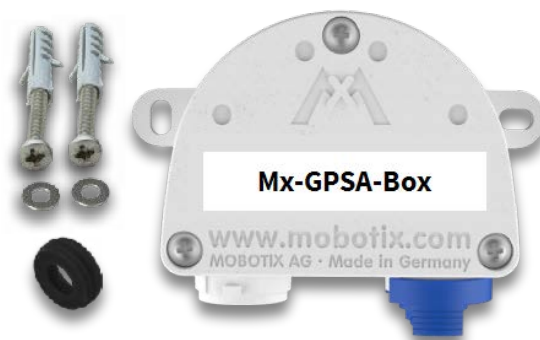# Quick Installation

Mx-GPSA-Box

Reliable GPS time base for MOBOTIX systems via USB cable that also provides position and speed information. Uses WAAS and EGNOS data for augmented precision (correction system for GPS data for the US and Europe, respectively).

- For MOBOTIX cameras with firmware MX-V7.0.0.0 or higher

- GPS time base including WAAS/EGNOS support

- New camera alarms available (position, speed)

- Protection class IP66, –30 to 60 °C/–22 to 140 °F

- Remote installation (max. 5 m/16.4 ft cable length)

- Complete set including mounting supplies

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Scope of Delivery

| Count	Part Name
1	Mx-GPSA-Box Order Code: Mx-F-GPSA
2	Stainless steel PZ head screws 4 x 40 mm
2	Stainless steel washers
2	Plastic dowels
1	Silicone sealing ring for USB connector, black

Installation Instructions

> **NOTE!**
> - The MOBOTIX Mx-GPSA-Box is to be used only for providing sensor data (GPS position/velocity) for MOBOTIX cameras in IP66 environments.
> - The GPS data's precision changes due to external factors (e.g. number of currently received satellites, weather).
> - Make sure that you adhere to all relevant laws, regulations and that you fulfill all certification requirements for the intended use.
> - Reception sensitivity: –180 dBm
> - Torque for cover screws: 0.4 Nm.
> - Torque for fastening screws: 0.4 Nm.
> - Do not exceed the overall length of the USB cable of 5 m/16.4 ft.

Find a suitable mounting position

To guarantee optimum reception of the GPS signals by the Mx-GPSA-Box, you should find a spot on the outside of a building, which provides a clear view of the sky (max. 5 m/16.4 ft cable length between the MOBOTIX camera and the Mx-GPSA-Box).
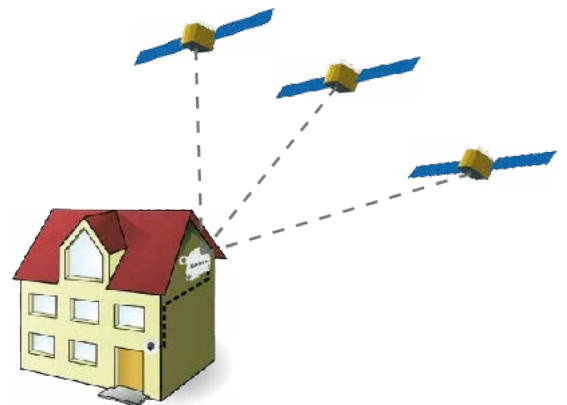
Attach the box

Attach the Mx-GPSA-Box at the mounting position with the cable ports pointing downwards (max. torque 0.4 Nm).

> **NOTE!** If you need a drilling template, please see .

Connect the USB cable

Exchange sealing of USB connector

Since the opening in the Mx-GPSA-Box for the USB connector is wider than the installed sealing, you need to exchange the slim sealing ring of the connector by the supplied wider sealing ring.

1. Remove the slim sealing ring of the USB connector that will go into the Mx-GPSA-Box.

2. Pull the delivered black sealing ring over the plug, so that the smaller opening points into the same direction as the plug's contacts.
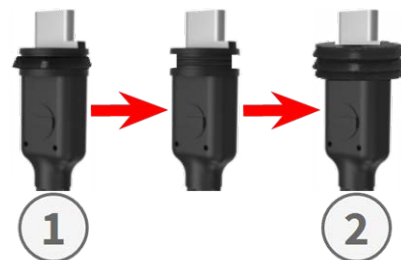
Insert USB connector into Mx-GPSA-Box

1. Remove the blue bayonet catch of the Mx-GPSA-Box and pull out the blue plug.

2. Plug the USB connector with attached sealing ring into the Mx-GPSA-Box.

3. Secure the connector using the blue bayonet catch.

NOTE! Please refer to the corresponding *Quick Installation* guide on how to connect the USB cable to the MOBOTIX camera.

Initializing the Mx-GPSA-Box

Open the MOBOTIX camera's user interface in the browser

- Enter the IP address of the camera that is connected to the Mx-GPSA-Box in the browser (admin access rights required):

    `http://<camera IP address>`

- Click on the ☰ menu icon in the Live screen of the camera.

- Open **Admin Menu > Hardware Configuration > Manage Hardware Expansions**.

- In the **USB Connector** section, click on the **Connect** button in the **USB GPS Device** row.

- After about 15 to 20 seconds, the status changes to *New device(s) available*, the **Device Type** shows *GPS Module* with the status **Addressable** in the **Devices** section.

- Click on **Set**, then on **Close** and permanently store the configuration when asked.

Set the Mx-GPSA-Box as time base

Once you have connected the Mx-GPSA-Box, the Mx-GPSA-Box uses GPS as time base for the entire MOBOTIX system.

Checking the operating status

- Click on the ☰ menu icon in the Live screen of the camera.

- Open **Admin Menu > Camera Administration > Time & Date**.

- Check the **Local NTP Service** section. You should now see the "`.GPS.`" entry in the **refid** column.

- If other cameras should use this camera as a time server, activate the **Use Camera as Time Server** checkbox.

  > **NOTE!** Enter the IP address of this camera as NTP time server in the corresponding dialog for all other cameras.

- Click on **Set**, then on **Close** and permanently store the configuration when asked.

Set up additional events for GPS position and velocity

Using these events, the connected MOBOTIX camera can trigger an alarm if it leaves or reaches the defined position, exceeds or goes below the defined speed:

- Click on the ≡ menu icon in the Live screen of the camera.

- Open **Setup Menu > Event Control > Event Overview**.

- In the **Environment Events** section, click on the **Edit** button.

- Click on **Add new profile** at the bottom of the dialog, select the desired **Event Sensor Type** and enter a new name for the profile (e.g. GP for **GPS Position**).

- Set the parameters of the selected sensor as required (e.g. use the current position as **Anchor Position** by clicking on the **Set to Current Position** button).

- Continue to define the other events you need by creating individual profiles with descriptive names (click on ⑦ to see the help topic for this dialog).

- Click on **Set**, then on **Close** and permanently store the configuration when asked.

> **NOTE!**
>
> **Using "GPS Position" as Event**
>
> When using **GPS Position** as environment event, you need to consider the precision of the GPS data, which also changes due to external factors (e.g. number of currently received satellites, weather). You should thus set a value for **Distance** that is large enough to avoid false alarms. In order to get a suitable value, click on ⓘ in the top right corner of the browser and determine the precision in the **Sensors > GPS Position** section of the **Camera Status** dialog.

Define actions for additional events

- Click on the ☰ menu icon in the Live screen of the camera.

- Open **Setup Menu > Event Control > Action Group Overview**.

- Click on the **Add new group** button at the bottom of the dialog.

- Enter a descriptive name for the group, then click on the **Edit** button in this line.

- Highlight the corresponding events in the **Event Selection** list and add the desired actions by clicking on **Add new action** (see help topic for this dialog by clicking on ⑦).

- Click on **Set**, then on **Close** and permanently store the configuration when asked.

Store the camera configuration

- Click on the ☰ menu icon in the Live screen of the camera.

- Open **Admin Menu > Configuration > Store** and permanently store the camera configuration on the camera (no reboot necessary).

- Open **Admin Menu > Configuration > Save** and save the camera configuration to the local computer. This will allow you to load the configuration when replacing the camera, for example.

USB Cables

NOTE!

- Only use MOBOTIX USB cables for connecting the Mx-GPSA-Box to a MOBOTIX camera! Using cables without integrated sealing will lead to moisture damaging the attached devices!

- USB cables are not part of the delivery and are to be ordered separately!

MX-CBL-MUC-MU-1/5	Mx-CBL-MUC-AN-MU-1/5	Mx-A-S7A-CBL01/02	Mx-A-S7A-CBL01/02-AN
USB-C straight to Mini USB straight	USB-C angled to Mini USB straight	USB-C straight to USB-C straight	USB-C straight to USB-C angled
1 or 5 m/3.3 or 16.4 ft	1 or 5 m/3.3 or 16.4 ft	1, 2, or 3 m/3.3, 6.6, or 9.9 ft	1, 2, or 3 m/3.3, 6.6, or 9.9 ft

LED Signals

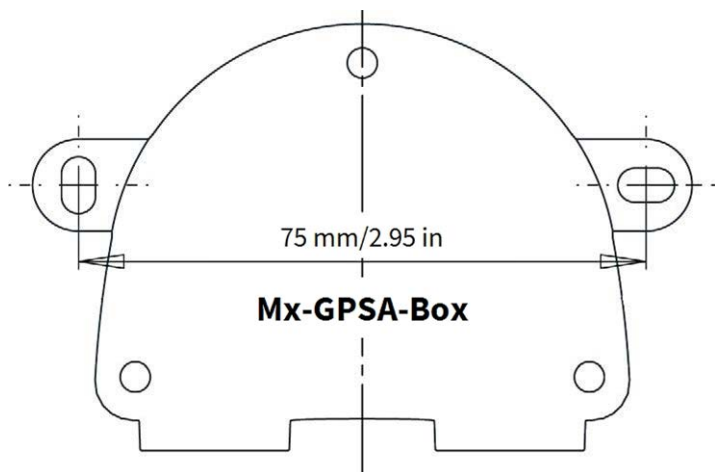| LED		Meaning
GPS Signal (white LED)	◯	Not connected
	◑	No satellite reception
	◑	GPS data available

Dimensions/Drilling Template

Fig. 1: Mx-GPSA-Box: All measurements in mm

NOTE! When printing this page at 100% of the original size (no scaling) you can use this page as drilling template.

Technical Specifications

Order Code:	Mx-F-GPSA
Chip set	u-blox 8 multi GNSS
Power Supply	USB-powered (by MOBOTIX camera)
Power Consumption	Typ. 1 W/200 mA
Max. Cable Length	5 m/16.4 ft
Channels	72
Sensitivity	-167 dBm
Frequency	GPS: L1, 1575.4200 MHz BEIDOU COMPASS: B1, 1561.0980 MHz GALILEO: E1, 1575.4200 MHz GLONASS: G1, 1602.5625 ~ 1615.5000 MHz
Target precisions	Position horizontal: GPS/SBAS/QZSS+GLONASS: 2.5 m CEP Time: 1 microsecond synchronized with GPS time Speed: 0.1m/s
Date	WGS-84
Protocols	NMEA-0183 V3.01 GGA, GSA, GSV, RMC, VTG
Detection rates	Cold start 26 s average Hot start 1 s average Re-Acquisition: 1 s average
Update rate	single GNSS: 18 Hz (for example GPS solo) multi GNSS: 10 Hz (for example GPS+GLONASS)
Dynamic prerequisites	Acceleration limit: smaller than 4g Height limit: 50000 m Speed limit: 500 m/s
Protection Class	IP66
Operating temperature	–30 to 60 °C/–22 to 140 °F

Order Code:	**Mx-F-GPSA**
Dimensions (width x height x depth)	86 x 56 x 31 mm/3.39 x 2.20 x 1.22 in (without rubber plugs)
Weight	70 g

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