

# LX Traffic Square



## *Installation manual*

- LX navigation -

May, 2025



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# Document information

## 0.1 Abstract

This document represents the installation manual for the LX Traffic Square. The user manual, release notes, dataport and additional info can be found on [www.lxnavigation.com](http://www.lxnavigation.com).

## 0.2 Document status

**Document status: PUBLIC**

| Document status | Explanation   |
|-----------------|---|
| Internal        | Intended only for LX navigation staff                             |
| Public          | Available publicly to all   |
| Personal        | Intended for a specific person and/or company, noted on this page |
| Dealer          | Intended for a specific dealer, noted on this page                |
| Manufacturer    | Intended for a specific manufacturer, noted on this page          |

## 0.3 List of applicable products

| Device            | HW Version |
|-------------------|------------|
| LX Traffic Square | 1.1        |

## 0.4 Revision history

| Document name | Document revision | Date      | Revised by | Approved by | Notes           |
|---------------|-------------------|-----------|------------|-------------|-----------------|
| LX_SQIM       | R1                | 10.1.2023 | A.S.       | N.S.        | initial release |

## Overview

The LX Traffic Square is a **collision avoidance flight display** compatible with **all** types of **Flarm devices**. It is commonly used in gliders, ultralights and experimental aircraft. Additional to providing **audio and visual collision avoidance warnings** and a **Flarm radar display**, the Traffic Square offers the pilot **two dedicated moving map navigation pages**. These pages offer simultaneous navigation to a **Turnpoint** and **Airport**.

Using a Flarm device with an **ADS-B module** will offer the pilot ADS-B warnings as well.

It offers the same functionality of the LX Traffic Monitor, but in a more compact square package.

The device features a transfective technology display.

The device is designed for simple pilot operation with a single 4-way push-button that features both short and long-press functions.

The unit has the capability of being updated to any later firmware release free of charge.  
(Visit [www.lxnavigation.com](http://www.lxnavigation.com) and look for Software updates)

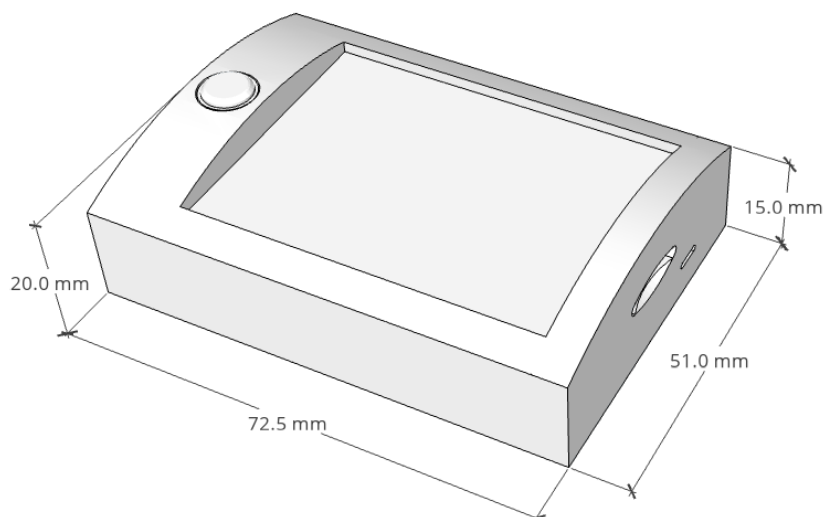


Figure 1. Device overview

# Mounting

Tools needed:

- Philips screw driver,

LX Traffic Square is mounted on the front side of the instrument panel with two screws tighten from the back side of the panel.

There are two mounting options to achieve this:

- directly on a flat surface of the instrument panel,
- with usage of standard 57 or 80 mm cut-out mounting adapter sold separately.

## 2.1 Direct mounting on instrument panel

Besides holes for screws, additional opening for FLARM and Audio output connectors have to be made. Please refer to [Cut-out drawing](#) to ensure fitting.

Follow the steps below:

1. Unscrew the two regular M2.5 Phillips head screws from the device.
2. Place the device into its future place in the instrument panel.
3. Check that all of the holes are properly aligned and use M2.5 Phillips head screws to fix the device in place. Use the supplied screws only.

## 2.2 Using mounting adapters

### Standard 80 mm mounting adapter (PN LX02091)

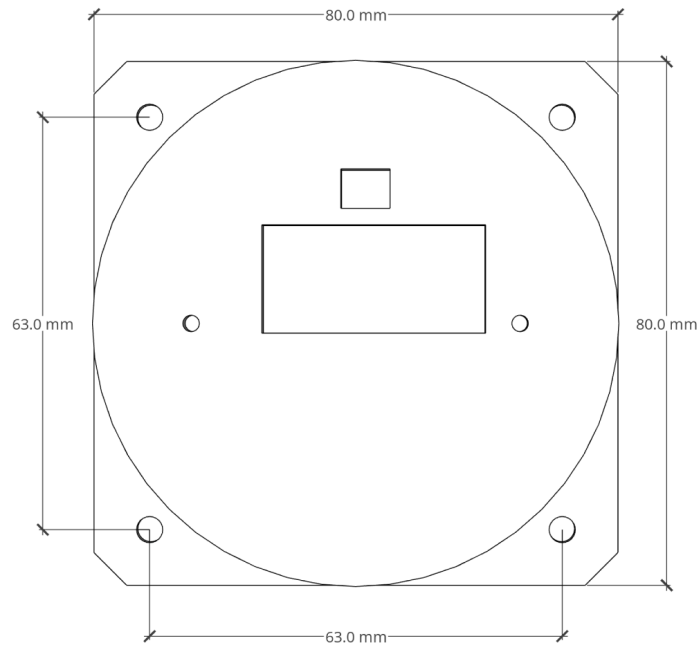


Figure 2. 80 mm adapter dimensions

### Standard 57 mm mounting adapter (PN LX02090)

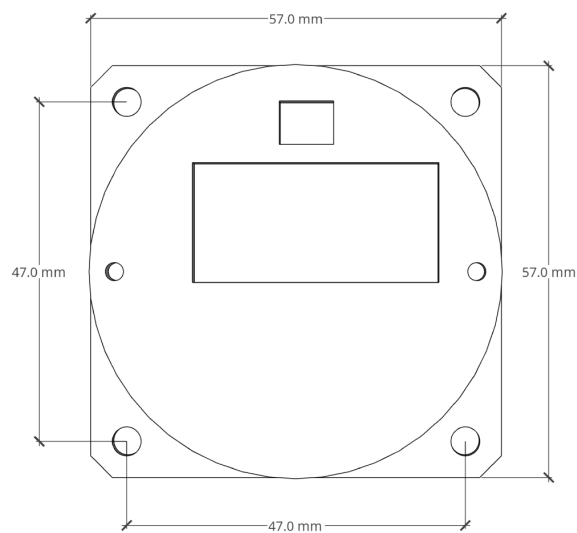


Figure 3. 57 mm adapter dimensions

All dimensions are in millimeters.

## Wiring

All needed cables are in the package. Some connections might not be available on your device and are optional upgrades.

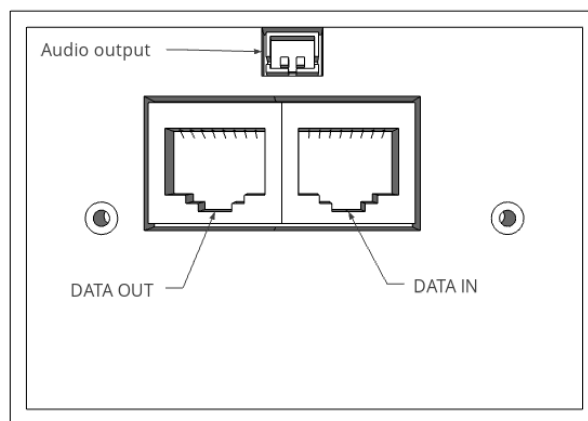


Figure 4. Instrument connections

### DATA IN port (RJ45)

| Pin number | Description    |
|------------|----------------|
| 1          | power input    |
| 2          | power input    |
| 3          | not used       |
| 4          | GND            |
| 5          | RS232 data in  |
| 6          | RS232 data out |
| 7          | GND            |
| 8          | GND            |

### DATA OUT port (RJ45)

| Pin number | Description    |
|------------|----------------|
| 1          | power input    |
| 2          | power input    |
| 3          | not used       |
| 4          | GND            |
| 5          | RS232 data out |
| 6          | RS232 data in  |
| 7          | GND            |
| 8          | GND            |

#### NOTE

Mind reversed RS232 data pins on DATA IN and DATA OUT ports.

### 3.1 Power supply

System requires DC power input in a range between 9 and 32 V DC. Power is supplied via any of the two FLARM data/power ports (RJ45). Check figure 5 for pinout or use provided Power adapter.

Use external fuse or circuit breaker, as there is no fuse inside the unit. Manually resettable circuit breakers are strongly recommended. These circuit breakers allow for individual devices to be switched without compromising other systems on the same power bus. 3 Amp circuit breaker is recommended.

Prior to connecting the power to the device make sure that cables are tight and there is not short-circuits between wires. Plug the connector to the device. The device will turn on as soon as the main power supply is available.

### 3.2 FLARM power and data ports (DATA IN and DATA OUT)

LX Traffic Square is capable of interfacing with other FLARM compatible devices via two power and data ports.

DATA IN is used for connection to FLARM device like LX PowerFLARM Eagle.  
DATA OUT can be used for connection to another FLARM compatible display.

The serial inputs/outputs conform to RS-232C (EIA Standard) with a positive and a negative output voltage of at least 5V when driving a standard RS-232 load.

It is not sufficient that power supply ground on both devices is connected to aircraft ground. An additional direct ground connection is mandatory.

Although any 6 or 8 pin 1:1 FLARM cable may be used, the use of a 4 twisted pair shielded cable, is highly recommended. With this cable both data wires, GND reference and power supply can be connected using a single cable.

### 3.3 Audio

Connect the unit to aircraft intercom/audio panel or build-in speakers using the 3.5mm jack connector Audio output. LX Traffic Square features active audio amplifier which is capable of delivering 1W of continuous power to 8 ohm passive speakers.

#### **NOTE**

After finishing the installation, check that the device is completely working, prior to closing the instrument panel cover.

RJ45 FLARM data port

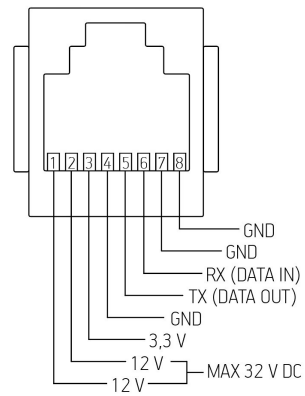


Figure 5. RJ45 FLARM 1 and FLARM 2 port pinout

**NOTE**

If you run into any issues, contact us at [info@lxnavigation.com](mailto:info@lxnavigation.com) for assistance.

## Cut-out drawing

LX Traffic Square uses two mounting screws for fixing the unit on the flat surface. Print this page on a regular or transparent paper to transfer the cut-out to the instrument panel.

Before cutting make sure, the dimensions are correct according to given dimensions indicated below. All dimensions are in milimeters.

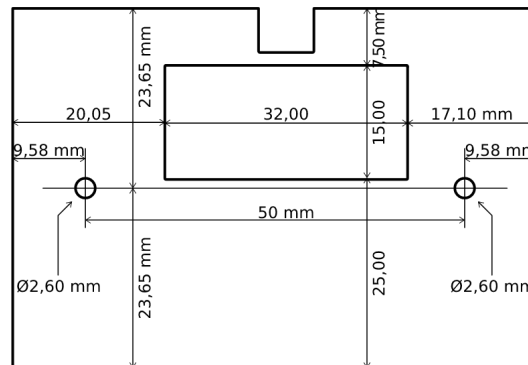


Figure 6. Cut-out template



## Technical specification

| Description                           | Unit   | Value              |
|---------------------------------------|--------|--------------------|
| Dimensions                            | [mm]   | 72.5 x 51.0 x 26.3 |
| Power supply                          | [V DC] | 9.0 - 29.0         |
| Nominal Voltage                       | [V DC] | 13.8               |
| Average Power Consumption             | [W]    | 1.2                |
| Mass                                  | [g]    | 65                 |
| Depth Behind Panel without Connectors | [mm]   | 5                  |
| Depth In Front of Panel               | [mm]   | 21.3               |
| Ground Survival Temperature           | [°C]   | -55 - +85          |
| Operating Temperature                 | [°C]   | -20 - +55          |
| Relative Humidity                     | [%]    | 0 - 98             |
| Max. Operational Altitude             | [ft]   | 45,000             |
| Operational Shock                     |        | 6 g                |
| Crash Safety Shock                    |        | 20 g               |
| Vibration                             |        | DO-160D U F/F1     |

## Environmental data

| Description                                | Section | Category | Conditions   |
|--|---------|----------|--|
| Temperature / Altitude                     | 4.0     | D1       |  |
| Low Ground Survival Temperature            | 4.5.1   | D1       | -55 °C   |
| Low Operating Temperature                  | 4.5.1   | D1       | -40 °C   |
| High Ground Survival Temperature           | 4.5.2   | D1       | +85 °C   |
| High Short Time Operating Temperature      | 4.5.2   | D1       | +70 °C   |
| High Operating Temperature                 | 4.5.3   | D1       | +55 °C   |
| In Flight Loss of Cooling                  | 4.5.4   | Z        | No auxiliary cooling required                              |
| Altitude                                   | 4.6.1   | D1       | 45,000 ft  |
| Temperature Variation                      | 5.0     | B        |  |
| Humidity                                   | 6.0     | A        |  |
| Shock                                      | 7.0     | B        |  |
| Vibration                                  | 8.0     | U/U2     | Vibration curve F/F1<br>(robust vibration, helicopter)     |
| Explosion Proofness                        | 9.0     | X        | not tested   |
| Water Proofness                            | 10.0    | X        | not tested   |
| Fluids Susceptibilities                    | 11.0    | X        | not tested   |
| Sand and Dust                              | 12.0    | X        | not tested   |
| Fungus Resistance                          | 13.0    | X        | not tested   |
| Salt Spray                                 | 14.0    | X        | not tested   |
| Magnetic Effect                            | 15.0    | Z        | less than 0.3m   |
| Power Input (DC)                           | 16.0    | B        |  |
| Voltage Spike Conducted                    | 17.0    | B        |  |
| Audio Frequency Conducted Susceptibility   | 18.0    | B        |  |
| Induced Signal Susceptibility              | 19.0    | X        | not tested   |
| Radio Frequency Susceptibility             | 20.0    | T        | Radiated Susceptibility T                                  |
| Conducted Susceptibility Emission of RF    | 21.0    | M        |  |
| Lightning Induced Transient Susceptibility | 22.0    | A2XXX    |  |
| Lightning Direct Effects                   | 23.0    | X        | not tested   |
| Icing                                      | 24.0    | X        | not tested   |
| Electrostatic Discharge (ESD)              | 25.0    | A        |  |
| Fire, Flammability                         | 26.0    | X        | enclosure made of<br>aluminum (Al) sheet and<br>nylon PA12 |

Environmental tests are performed in accordance with RTCA DO-160.

# Conformity

Declaration of CE Conformity

## Identification of product

LX Traffic Square (all variants)

## Manufacturer

LX navigation d.o.o.  
Tkalska ulica 10  
SI-3000 Celje  
Slovenia

## Related standards

EMC directive 2004/108/EC

This product is designed to comply with standards/regulations and technical specifications stated above. This certificate is granted subject to the LX navigation quality rules on product certification.

## Remark

The product is designed to comply with LX navigation standards and standards harmonized with directive 2004/108/EC: EN 55022:1998+A1:2000+A2:2003, class A; EN 55024:1998+A1:2001+A2:2003; EN 61000-3-2:2000+A2:2005; EN61000-3-3:1995+A1:2001+A2:2005

# Contact

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