

MatrixBox MX075

Hardware Manual

Revision 2023.2.6

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1 Introduction

MX075 is a rack for the matrix (scanner) cards, connection of the measuring devices and connection of the testing adapter with DUT.

To control MX075 from the FPC funTEST software is necessary the plugin. For reference, see the MX075 Programmer's Manual.

In this hardware manual are described all available cards including the internal connection to the MX075.

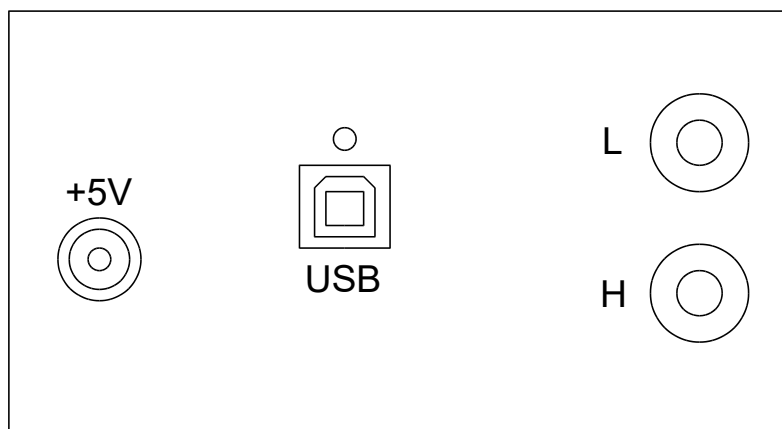


2 Main

2.1 Features

- Compact size box
- Up to 3 MX400 series cards (typically used with DIN or DOUT cards)
- USB connection
- Power via AC/DC adapter
- Low-cost

2.2 Rear panel



MX075 rear panel

+5V

The main power of MX075. Use AC adapter +5V/3A. The connector's center tip is positive (+).

USB

USB connection to the host computer. FTDI drivers are required.

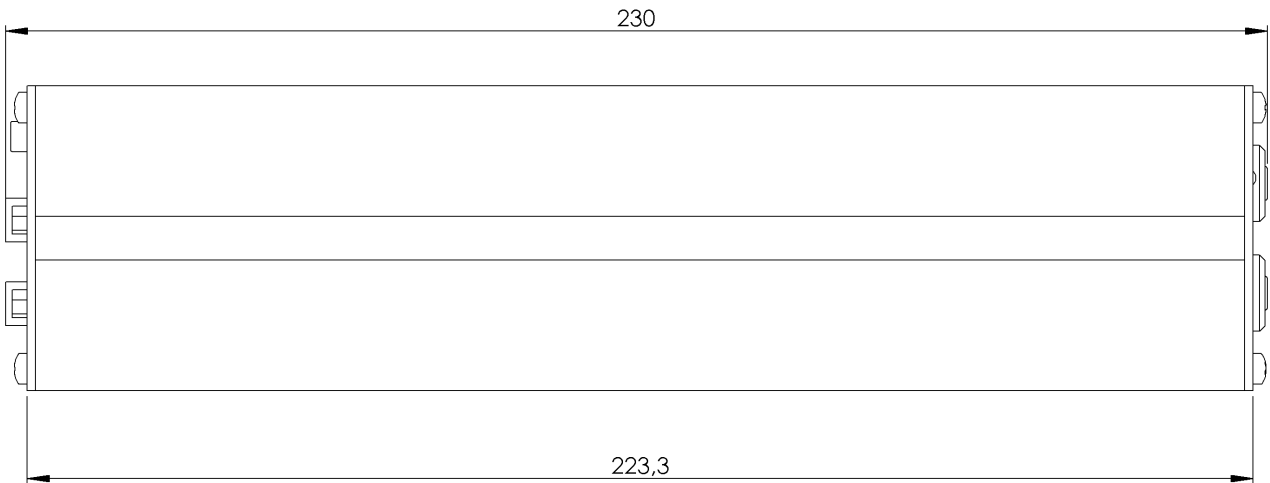
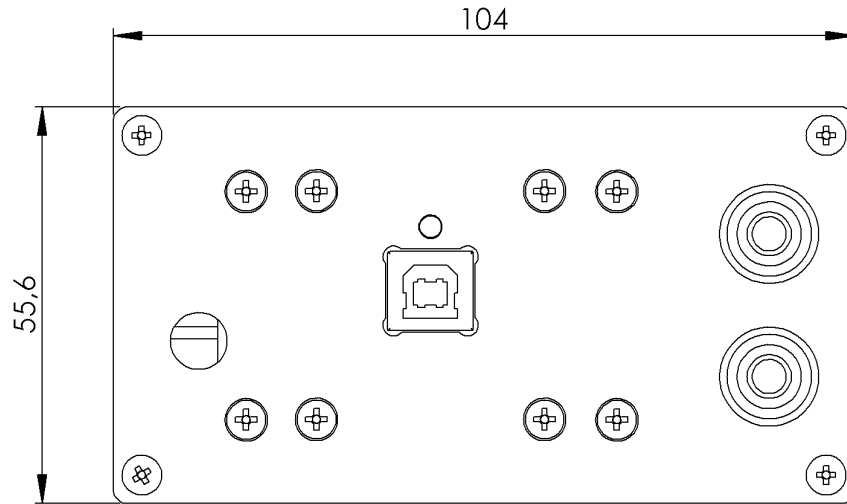
L & H

Internal LOW and HIGH buses output. Applicable when MX cards are used.

2.3 Supported cards

Catalog name	Catalog number	Description
MXC-CARD-LCMX	BOM-0052-01-A	Low-current MX card with 25TP
MXC-CARD-DI-60	BOM-0096-01-A	60 digital inputs card
MXC-CARD-DO-60	BOM-0102-01-A	60 digital outputs card

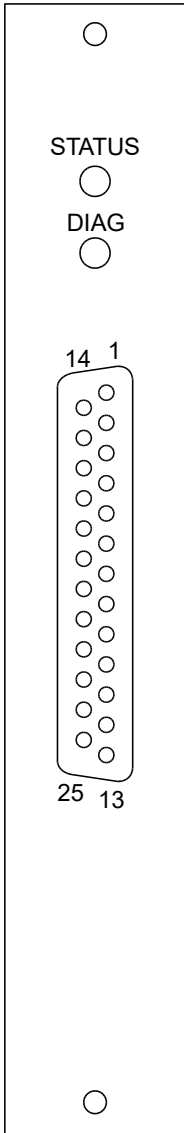
2.4 Dimensions



3 Cards

3.1 MXC-CARD-LCMX

Low-current/low-voltage matrix card (up to 500mA/50V) with 25 test-points. The card features a diagnostics functionality, which can identify permanently shorted or open any TP relay.



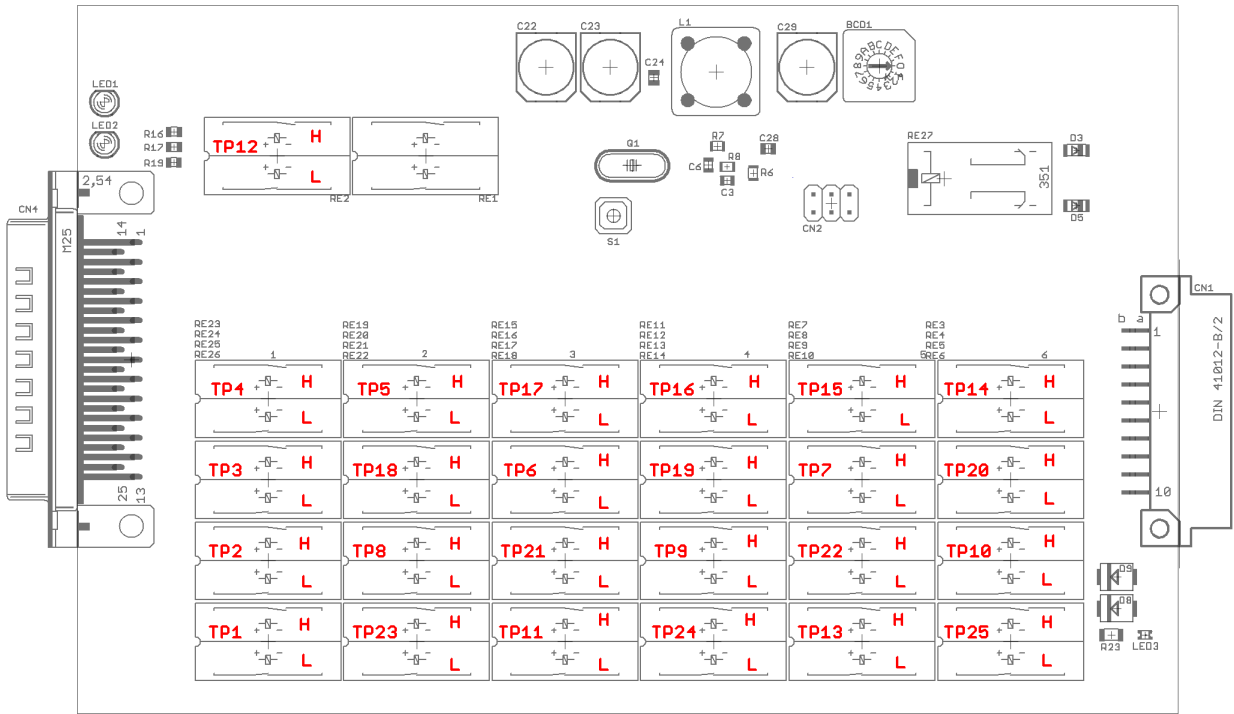
STATUS Status LED
DIAG Result of last diagnostics (TP relays only)

Up to 500mA can be switched with this LCMX card.

Test-point connector:

14	TP14	1	TP1
15	TP15	2	TP2
...
...
24	TP24	12	TP12
25	TP25	13	TP13

3.1.1 Relay placement

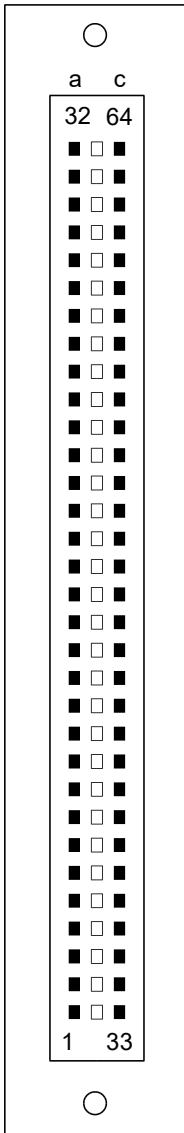


Top view on the LCMX card

Relay	Count	Description
TPnL, TPnH	50	Test-point relays. Each test-point consist of two relays - TPnL and TPnH, where n is the test-point number (1 to 25). Relays ending by "H" connects specified test-point to HIGH bus and "L" to LOW bus.

3.2 MXC-CARD-DI-60

Card with 60 isolated digital inputs. Input voltage capability is from 7V to 30V DC.

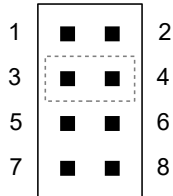


Interface connector

32	N/A	64	COM+
31	COM-	63	COM-
30	IN59	62	IN58
...
2	IN3	34	IN2
1	IN1	33	IN0

- **COM+** Positive common signal
- **COM-** Negative common signal
- **IN0..IN59** Input signals 0 to 59

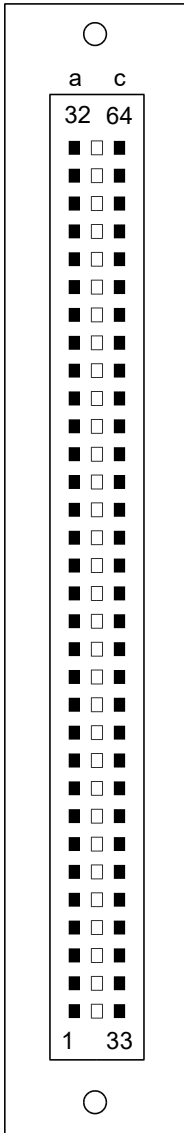
JP2 configuration



- **1-2:** NA (cannot be used)
- **3-4:** COM- is connected to internal COM signal of inputs (typical configuration), any input can be activated by applying positive voltage between COM- and any INx
- **5-6:** COM- and COM+ must be connected to an external +24V power supply (COM- => negative, COM+ => positive), any input INx can be activated by applying negative (-) or positive (+) voltage (relative to COM+/COM-)
- **7-8:** COM+ is connected to internal COM signal of inputs, any input can be activated by applying ground on any INx (relative to COM+)

3.3 MXC-CARD-DO-60

Card with 60 isolated digital outputs. Outputs are open-collector type. Output capability is up to 30V/2A per channel.



Interface connector

32	COM	64	N/A
31	COM	63	COM
30	OUT59	62	OUT58
...
2	OUT3	34	OUT2
1	OUT1	33	OUT0

- **COM** Common signal
- **OUT0..OUT59** Output signals 0 to 59