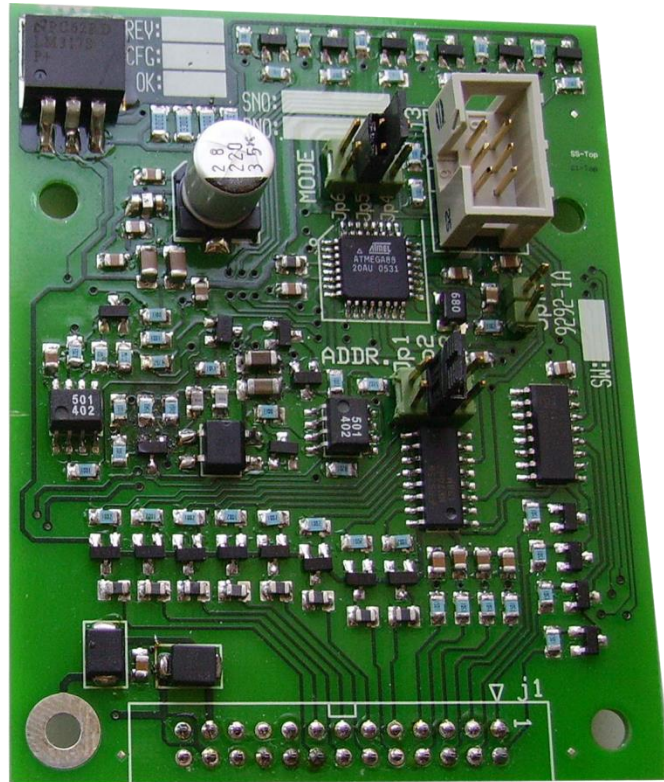


PANASONIC FIRE ALARM SOLUTIONS TECHNICAL DESCRIPTION 4582



I/O MATRIX BOARD

DOCUMENT INFORMATION

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Panasonic Fire & Security Europe AB
Jungmansgatan 12
SE-211 11 Malmö
Sweden
Tel: +46 (0)40 697 70 00
Internet: www.panasonic-fire-security.com

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1. INTRODUCTION

1 INTRODUCTION

This document describes the I/O Matrix board, type number 4582.

The document contains information about the product and instructions on how to mount and connect it.

“EBL system” refers to either of the two control units EBL 128 or EBL 512 G3.

2. ABBREVIATIONS

2 ABBREVIATIONS

C.i.e.	Control and indicating equipment	(=Control Unit)
C.U.	Control Unit	
S/W	Software	
H/W	Hardware	
FCP	Fan Control Panel	
Generic c.i.p.	Generic control and indicating panel	
Fan c.i.p	Fan control and indicating panel	
Zone c.i.p.	Zone control and indicating panel	

3. GENERAL DESCRIPTION

3 GENERAL DESCRIPTION

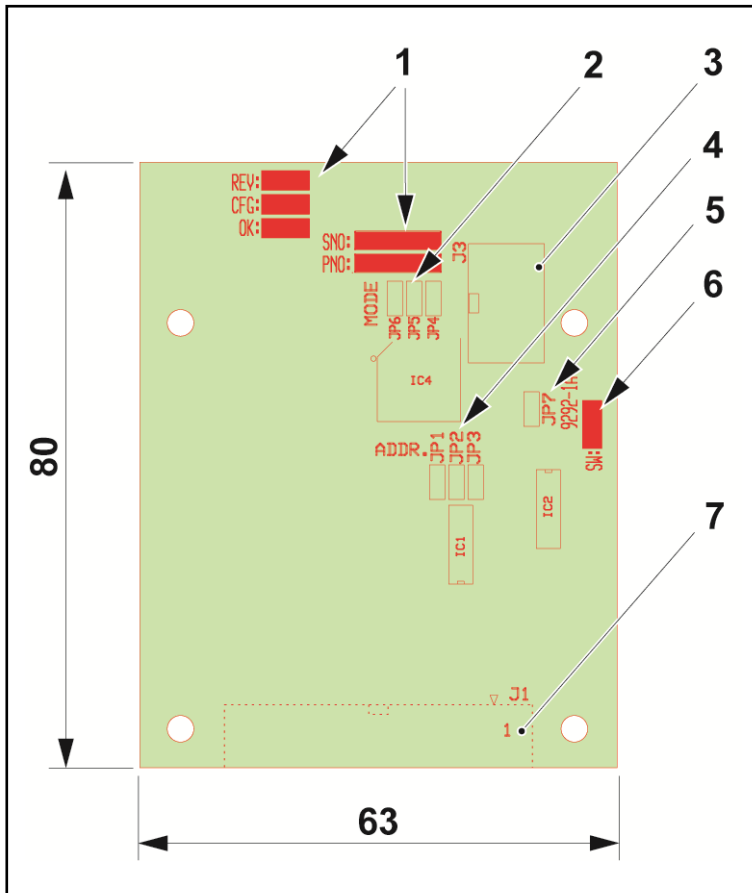
The I/O Matrix board 4582 is an interface between an EBL512 G3/ EBL128 C.i.e. and an application board for some other Control and indicating panel, for example Generic-, Fan- or Zone Control and indicating panels.

SIGNAL INTERFACE

The I/O Matrix board 4582 has 16 switch inputs and 48 LED outputs.

The I/O Matrix board 4582 is able to individually operate 16 switches (inputs) and 48 LEDs (outputs). This is done via 14 signals to a 6 x 8 LEDs matrix and 8 signals from a 4 x 4 switches matrix.

What each LED is indicating and what each switch is controlling is programmed via EBLWin for the Application board respectively.



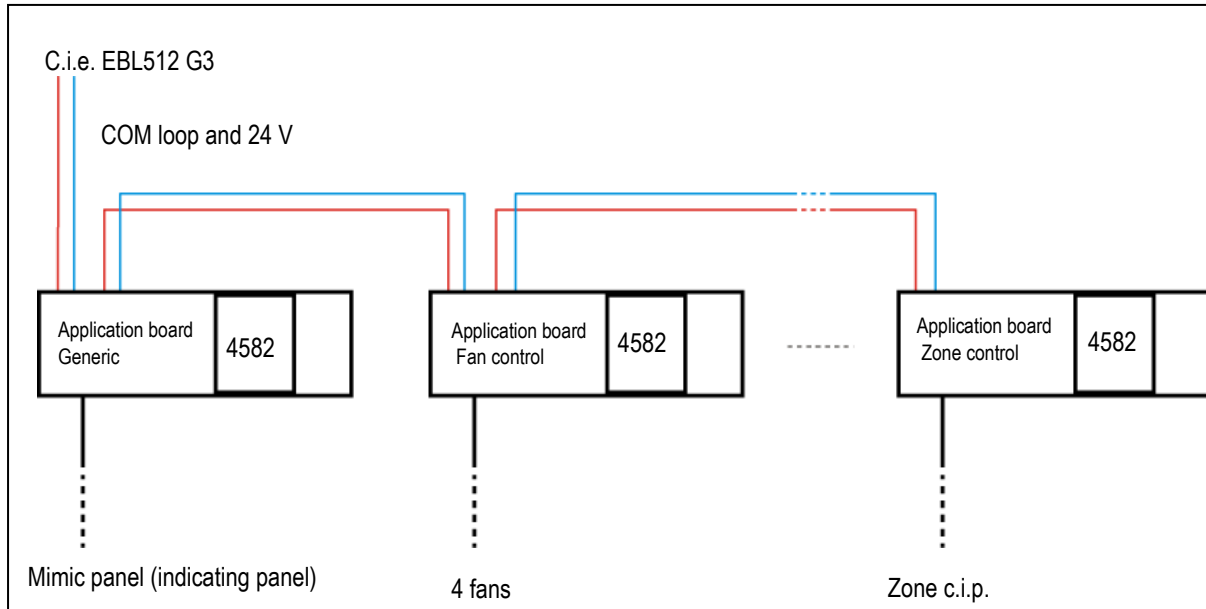
- 1) P.c.b. labels for identification
- 2) Jumpers for mode setting
- 3) J3 – For production only
- 4) Jumpers for address setting
- 5) JP7 – For production only - **not** shunted
- 6) P.c.b. label for identification
- 7) J1 - Connector for an Application board
(On reverse side)

3. GENERAL DESCRIPTION

3.1 I/O MATRIX BOARD APPLICATION OVERVIEW

The COM loop and 24 V DC are internally connected to the I/O Matrix board.

NOTE! In EBL512 G3 can totally up to 512 outputs be used, including all kinds of outputs.



3.1.1 GENERAL I/O APPLICATION BOARD 4596

This application board is made for easy connection of LEDs and push buttons to the I/O Matrix board 4582. It is used with a Mimic panel or a New Zealand indication panel

The 48 outputs can be used for 48 LEDs for indication of e.g. zones. Any programmable output trigger conditions can be used.

The 16 inputs can be used for 16 switches (push buttons, key switches etc.). Any programmable input trigger conditions can be used.

The Application board is connected to an EBL COM loop and 24 V DC power supply.

Up to 16 Generic application boards can be connected per EBL c.i.e.

Control and indication for up to 15 zones.

3. GENERAL DESCRIPTION

3.1.2 FAN CONTROL APPLICATION BOARD 4594

The Fan control panel 4593 has two Fan control application boards 4594. Each Fan control panel 4593 can control up to 8 fans.

Each fan requires one Multipurpose I/O unit 3361 (or 4461 programmed as 3361) for fan activation and feedback signals.

For each fan, LEDs are indicating; On / Auto / Off / Running / Stopped / Fault.

For each fan, push buttons are activating; On / Auto / Off.

One "Reset" switch.

There is Normal function for a "Supply air fan" or a "Standard fan". Enhanced function for a "Smoke exhaust", "Smoke spill", "Stair pressurization" or a "Supply air" fan.

The Application board is connected to an EBL COM loop and 24 V DC power supply.

It is possible to control maximum 32 fans with one EBL128.

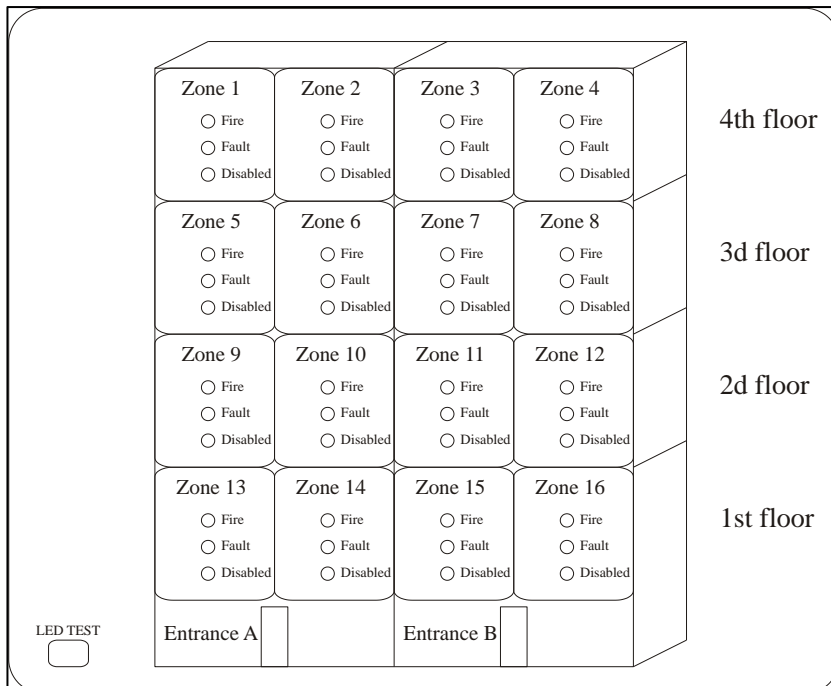
It is possible to control maximum 96 fans with one EBL512 G3.

3.1.3 ZONE CONTROL APPLICATION BOARD

The Zone type application board can be used for a Zone control and indicating panel, for example a Mimic panel.

The 48 outputs can be used for 16 zones - three LEDs per zone indicating Alarm, Fault and Disabled.

The 16 inputs can be used for 16 zones - one switch (push buttons etc.) per zone in order to Disable the zone.



Example of a Mimic panel.

NOTE! The application boards are available on the Australian and New Zealand markets only.

3. GENERAL DESCRIPTION

3.1.4 OTHER APPLICATION BOARDS

It is possible for any manufacturer to make their own, customized, application board, i.e. to use the 16 programmable switch inputs and the 48 programmable LED outputs for an application.

Chapter 9 CONNECTIONS shows how the switch inputs, LED outputs, 24 V DC and the COM loop shall be connected to the I/O Matrix board 4582.

TYPE OF BOARD

Since the **Fan** and **Zone** types of application board require special equipment and have some pre-defined not programmable functions, the **Generic** type of application board shall be used. The inputs and outputs on this board can be individually programmed.

3. GENERAL DESCRIPTION

3.2 MAXIMUM NUMBER OF I/O MATRIX BOARDS

3.2.1 EBL128

Up to 8 I/O Matrix board 4582 on the COM loop can be used.

NOTE! For each exp. board connected in the c.i.e. the number of I/O Matrix boards 4582 is reduced with one. For example 4 expansion boards results in maximum 4 I/O Matrix boards 4582.

3.2.2 EBL512 G3

Up to 6 I/O Matrix board 4582 on each COM loop can be used, i.e. $4 \times 6 = 24$ I/O Matrix board 4582.

NOTE! For each exp. board connected in the c.i.e. the number of I/O Matrix boards 4582 on COM loop 0 is reduced with one (e.g. 4 exp. boards results in max. 2 I/O Matrix boards 4582 on COM loop 0).

3.2.3 OTHER LIMITATIONS

For I/O Matrix board 4582 programmed as type Generic or Zone control, the following is valid:

EBL128: Max. 2.

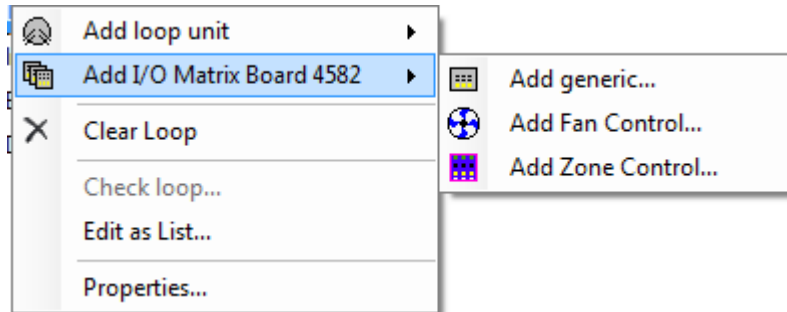
EBL512 G3: Max. 6.

4. CONFIGURATION IN EBLWIN

4 CONFIGURATION IN EBLWIN

In EBLWin, add the 4582 board as one of the following types:

- Generic
- Fan control
- Zone control

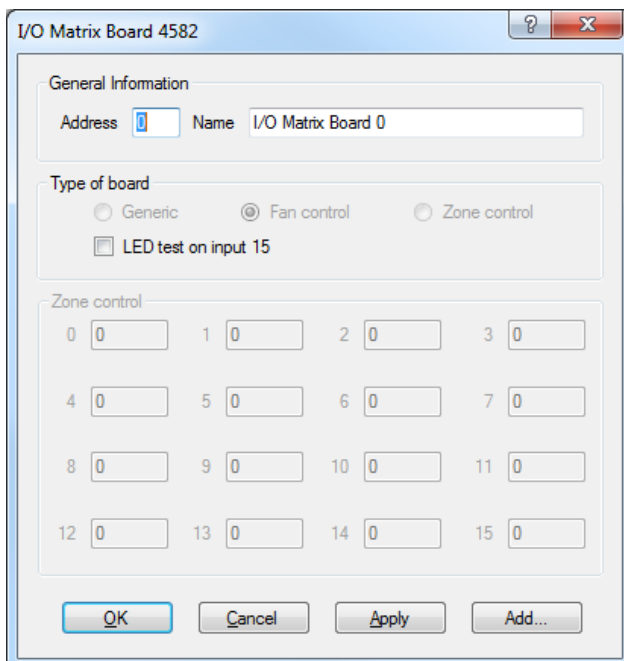


The I/O Matrix board 4582 has to be programmed regarding:

- I/O Matrix board Address.
The address (0-7) shall be the same board address as set via jumpers "JP1-JP3".
- Name (I/O Matrix Board # - normally not changed)
- LED test on Input 15 (selected or not selected)

Depending on the selected type:

- How each LED (output 0-47) shall be used
- How each switch (input 0-15) shall be used



4. CONFIGURATION IN EBLWIN

4.1 GENERIC

Used for General I/O application board 4596.

Outputs 0-47 have to be programmed via eblwin regarding:

- Output no. (0-47) - any output trigger condition can be used
- Properties, like any programmable relay output

Inputs (0-15) has to be added and programmed via eblwin regarding:

- Input no. (0-15)
- Type (of input)
- Properties, like any programmable input

4.2 FAN CONTROL

Used for Fan control application board 4592.

For each fan, also one I/O unit 3361 is required. It has to be added in EBLWin as an I/O unit for fan control 3361 and programmed regarding for example:

- Technical address (COM loop address 1-255)
- Name (Fan control I/O unit - normally not changed)
- Fan control information
- I/O Matrix fan control (Fan control / fan 0-3)
- Supervised or not supervised (Input In0)
- Output latched or not latched
- Enhanced fan control function or not.
- Fault detection time (Input In0; 30-255 seconds)
- Properties (for Re0), like any programmable output.
- Normally stopped or Normally running

NOTE! If 4461 is used as I/O for fan control, it must be programmed as 3361.

4.3 ZONE CONTROL

Used for Zone control application board

Each input (0-15) has to be programmed via EBLWin regarding:

- Zone (control) no. (0-15)

5. SET THE BOARD ADDRESS

5 SET THE BOARD ADDRESS

On the I/O Matrix board 4582 are three jumpers (JP1-3) for board address setting. The address is used in EBLWin for the programming of I/O Matrix board 4582.

I/O Matrix board address	JP1 "1"	JP2 "2"	JP3 "4"
0			
1	X		
2		X	
3	X	X	
4			X
5	X		X
6		X	X
7	X	X	X

See the position of the jumpers in section [3 GENERAL DESCRIPTION](#).

6 SET THE MODE

The three different application board types can be selected via jumpers (JP4-JP5) on the I/O Matrix board:

Type (mode) Application board	JP4 "1"	JP5 "2"	JP6 "4"
Fan control			
Zone control	X		
Generic		X	

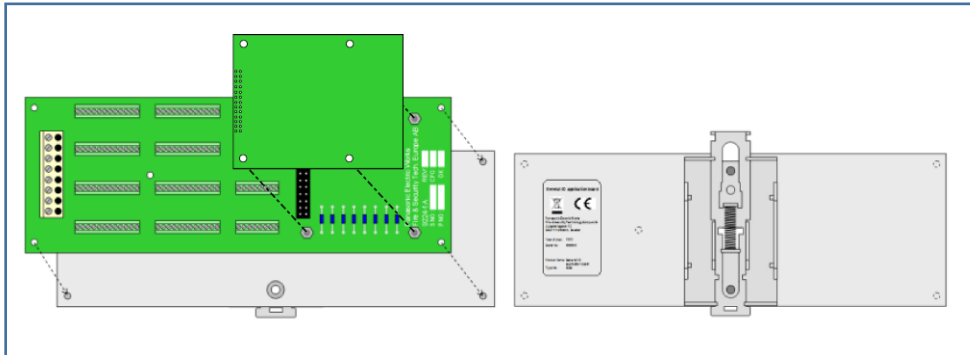
See the position of the jumpers in section [3 GENERAL DESCRIPTION](#).

7 MOUNTING

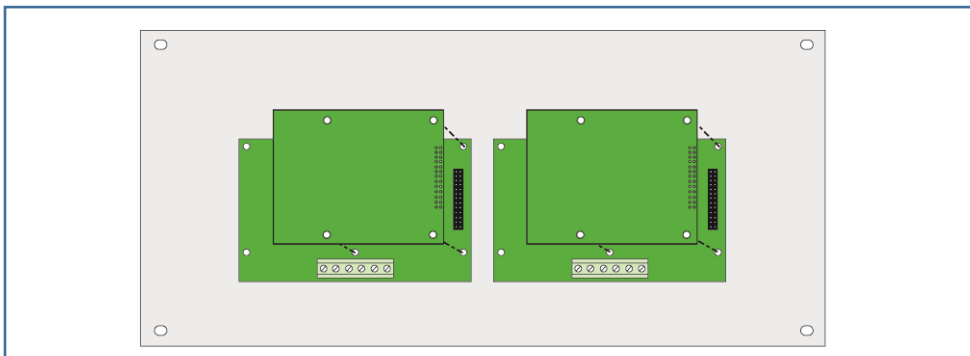
The I/O Matrix board 4582 is a p.c.b. connected to the Application board either as a piggy back p.c.b. (pin connector) or soldered directly to the board.

Example: The I/O Matrix board with the Generic application board.

The Generic application board can be mounted on a DIN-rail. The aluminum mounting plate is provided with a DIN-rail clamp for a 35 mm symmetric DIN-rail.



Example: The I/O Matrix board with the Fan control application board.



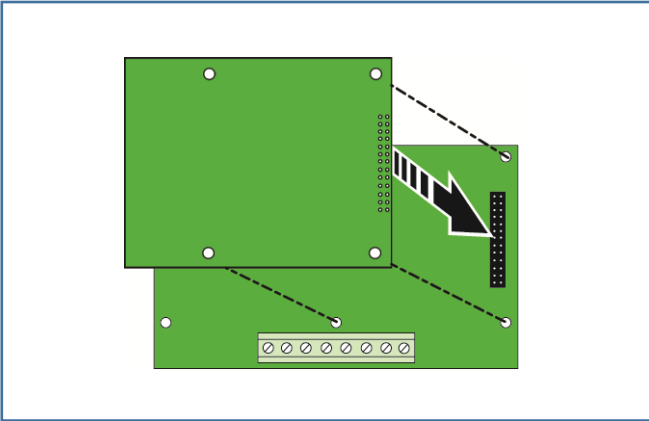
8. INSTALLATION AND WIRING

8 INSTALLATION AND WIRING

The I/O Matrix board is plugged to the Application board respectively by a pin connector ("piggy back" connection).

The connections to the COM loop and 24 V DC are done via screw connectors located on the Application board respectively, and internally connected to the I/O Matrix board 4582.

See wiring instructions for each application board respectively in separate technical descriptions.



9 CONNECTIONS

The connection diagram on the following page shows the connector "J1" and the signals between the I/O Matrix board 4582 and any Application board, i.e. how the 48 (0-47) LED outputs and the 16 (0-15) switch inputs on any control and indicating panel shall be connected to the I/O Matrix board 4582.

The connection diagram also shows the screw connectors, on any Application board, for the COM loop and 24 V DC power supply.

NOTE! The connection diagram shows the connection principles. It does not show any EMC protection etc. that might be needed.

CONNECTOR J1:

1. /Key row 0
2. /Key row 1
3. /Key row 2
4. /Key row 3
5. Key in 0
6. Key in 1
7. Key in 2
8. Key in 3
9. LD row 0+
10. LD row 1+
11. LD row 2+
12. LD row 3+
13. LD row 4+
14. LD row 5+
15. LD row 6+
16. LD row 7+
17. LD 0-
18. LD 1-
19. LD 2-
20. LD 3-
21. LD 4-
22. LD 5-
23. 0 V
24. +24 V
25. SB (C)
26. SA (L)

NOTE!

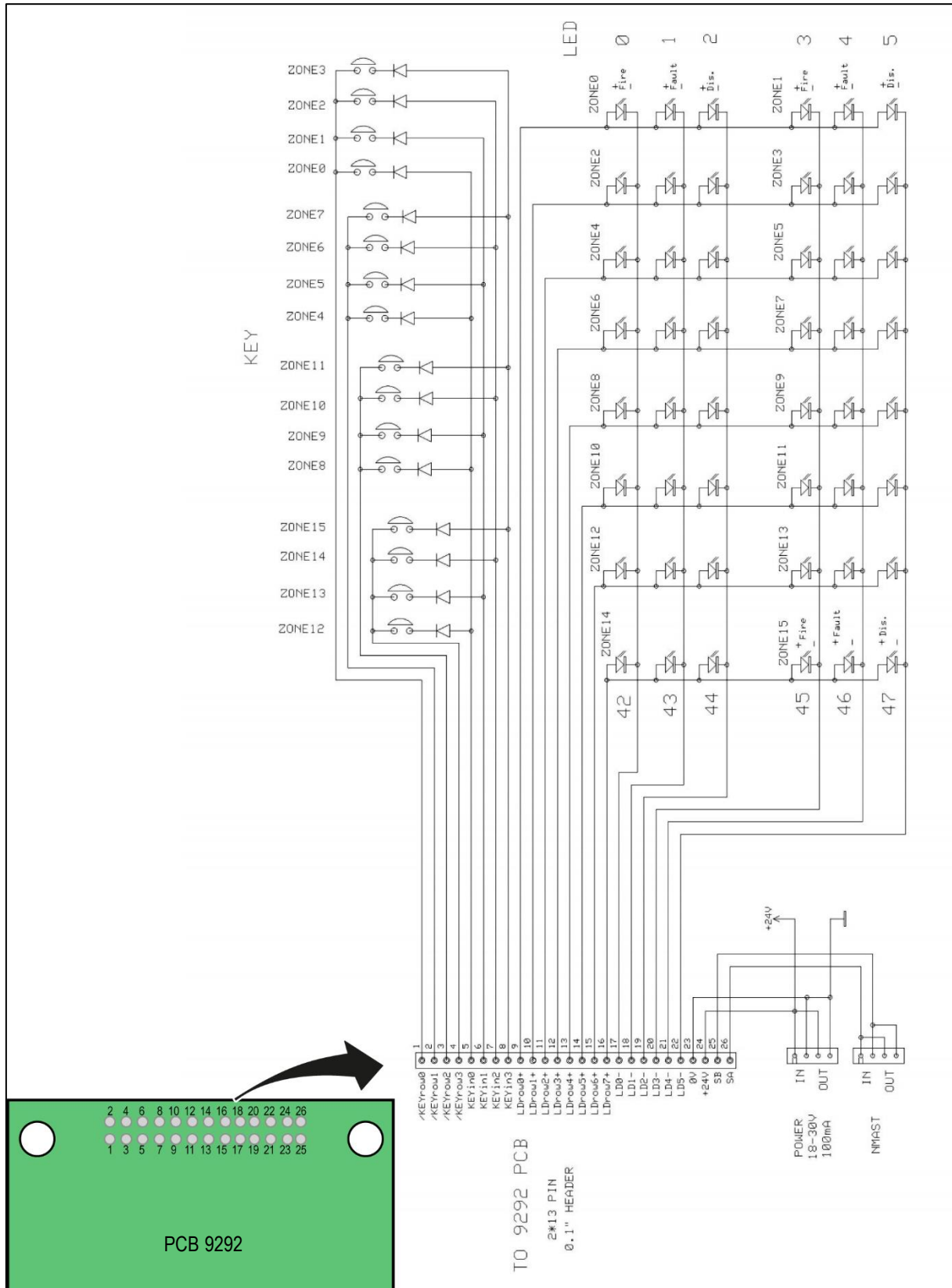
If one or more of the switches are of the latching type, all switches have to have a series diode according to the connection diagram on the following page, else not.

Type of diode: Schottky diode, e.g. BAT54 (SMD) or BAT42/43.

Latching switches require an I/O Matrix board 4582 software version > 1.0.2.

9. CONNECTIONS

An example showing how the switches and LED:s for a Zone control and indicating panel are connected to the I/O Matrix board.



10 TECHNICAL DATA

NOTE! All current consumptions are valid by nominal voltage and by 25 °C.

COM loop voltage:	
Allowed	12-30V DC
Normal	24V DC
COM loop current consumption:	
Max	6 mA
Min	4 mA
Power supply voltage	
Allowed voltage	18-30 V DC
Normal / System	24 V DC
Power supply current consumption	
Max	100 mA (Depending on number of LEDs and activated input switches – application board.)
Min	10 mA (4582)
LED matrix outputs	Approx. 15 mA (current limitation) per LED.
Address setting	With jumpers
Ambient temperature:	
Operating	-10 to +55 °C
Storage	-55 to +105 °C
Ambient humidity	Maximum 90, % RH (Non condensing)
Ingress protection rating	Not applicable. (Depending on the Application board housing etc.)
Size:	
L x W x H	80 x 63 x 17 mm (the p.c.b. incl. components) 80 x 63 x 27 mm (the p.c.b. incl. components and header mounted)
Weight	~ 25 g

11. APPROVALS

11 APPROVALS

Applicable directive / Approvals	Applicable standards	Notified body
EMC	EN61000-6-3 (Emission) EN50130-4 (Immunity)	Self declaration
RoHS	EN50581	Self declaration

