TELETEK

iRIS8

Addressable Fire Alarm Control Panel

Installation Manual

CE
1293

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DoP No: 138

Teletek Electronics JSC

Bulgaria, Sofia 1220, 2 Iliyansko shose Str., Tel.: +359 2 9694 800
e-mail: info@teletek-electronics.bg

EN 54-2:1997; EN 54-2:1997/AC:1999; EN 54-2:1997/A1:2006
EN 54-4:1997; EN 54-4:1997/AC:1999
EN 54-4:1997/A1:2002; EN 54-4:1997/A2:2006

IRIS8 Series

Big Box: IRIS8 B, iRIS8 B
Small Box: IRIS8 S, iRIS8 S
Extension Box: IRIS8 Ext
Repeater panel: IRIS/SIMPO Repeater

Intended for use in fire detection and fire alarm systems in and around buildings.

Essential Characteristics	Performance
Performance under fire conditions	Pass
Performance of power supply	Pass
Response delay (response time to fire)	Pass
Operational reliability	Pass
Durability of operational reliability and response delay: temperature resistance	Pass
Durability of operational reliability: humidity resistance	Pass
Durability of operational reliability: vibration resistance	Pass
Durability of operational reliability: electrical resistance	Pass

Optional Functions with Requirements	
Output to the fire alarm device	Yes
Output to fire alarm routing equipment	Yes
Output to fire protection equipment – output type C	Yes
Fault monitoring of fire protection equipment	Yes
Delay to outputs	Yes
Dependencies on more than one alarm signal – type B dependency	Yes
Fault signals from points	Yes
Output to fault warning routing equipment	Yes
Disablement of addressable points	Yes
Test condition	Yes

GUARANTEE

The guarantee terms are determined by the serial number (barcode) of the electronic device!

During the guarantee period the manufacturer shall, at its sole discretion, replace or repair any defective product when it is returned to the factory. All parts replaced and/or repaired shall be covered for the remainder of the original guarantee, or 6 months, whichever period is longer. The original purchaser shall immediately send manufacturer a written notice of the defective parts or workmanship.

INTERNATIONAL GUARANTEE

Foreign customers shall possess the same guarantee rights as those any customer in Bulgaria, except that manufacturer shall not be liable for any related customs duties, taxes or VAT, which may be payable.

GUARANTEE PROCEDURE

The guarantee will be granted when the appliance in question is returned. The guarantee period and the period for repair are determined in advance. The manufacturer shall not accept any product, of which no prior notice has been received via the RAN form at: http://teletek-electronics.com/en/ran-form

The setup and programming included in the technical documentation shall not be regarded as defects. Teletek Electronics bears no responsibility for the loss of programming information in the device being serviced.

CONDITIONS FOR WAIVING THE GUARANTEE

This guarantee shall apply to defects in products resulting only from improper materials or workmanship, related to its normal use. It shall not cover:

- Devices with destroyed serial number (barcode);
- Damages resulting from improper transportation and handling;
- Damages caused by natural calamities, such as fire, floods, storms, earthquakes or lightning;
- Damages caused by incorrect voltage, accidental breakage or water; beyond the control of the manufacturer;
- Damages caused by unauthorized system incorporation, changes, modifications or surrounding objects;
- Damages caused by peripheral appliances unless such peripheral appliances have been supplied by the manufacturer;
- Defects caused by inappropriate surrounding of installed products;
- Damages caused by failure to use the product for its normal purpose;
- Damages caused by improper maintenance;
- Damages resulting from any other cause, bad maintenance or product misuse.

In the case of a reasonable number of unsuccessful attempts to repair the product, covered by this guarantee, the manufacturer's liability shall be limited to the replacement of the product as sole compensation for breach of the guarantee. Under no circumstances shall the manufacturer be liable for any special, accidental or consequential damages, on the grounds of breach of guarantee, breach of agreement, negligence, or any other legal notion.

WAIVER

This Guarantee shall contain the entire guarantee and shall be prevailing over any and all other guarantees, explicit or implicit (including any implicit guarantees on behalf of the dealer, or adaptability to specific purposes), and over any other responsibilities or liabilities on behalf of the manufacturer. The manufacturer does neither agree, nor empower, any person, acting on his own behalf, to modify, service or alter this Guarantee, nor to replace it with another guarantee, or another liability with regard to this product.

UNWARRANTED SERVICES

The manufacturer shall repair or replace unwarranted products, which have been returned to its factory, at its sole discretion under the conditions below. The manufacturer shall accept no products for which no prior notice has been received via the RAN form at: http://teletek-electronics.com/en/ran-form. The products, which the manufacturer deems repairable, will be repaired and returned. The manufacturer has prepared a price list and those products, which can be repaired, shall be paid for by the Customer. The devices with unwarranted services carry 6 months guarantee for the replaced parts. The closest equivalent product, available at the time, shall replace the products, the manufacturer deems un-repairable. The current market price shall be charged for every replaced product.

STANDARDS AND CONFORMITY

The addressable fire alarm control panels IRIS8 series are designed according and with conformity to EN 54 – 2/4 standard.
Conforms and approved in accordance with CPR (Construction Products Regulation).

DOCUMENTATION FEEDBACK

If you have any comments or suggestions on our products' manuals or installation instructions you can email us on: info@teletek-electronics.bg
Your feedback on product documentation will help us to improve the contents of our manuals and stickers and keep them up-to-date.
Please, include in your feedback email the product name, the revision of the manual or instruction (8-digit number with Revision and date of issue) and the page number.

1. INTRODUCTION

1.1. Basic Information

iRIS8 is an addressable fire alarm control panel for detection, indication and signalization in case of fire alarm situation in the protected premises. The panel provides coverage of 200 zones and connection of 8 loop expander modules (iRIS8 TTE Loop expander). An arbitrary number of devices can be added to each zone, thus ensuring the easy adaptation of the system to any type of configuration. iRIS8 supports operation with Teletek Electronics communication protocol.

Attention: Every iRIS8 TTE Loop provides up to 250 devices!

iRIS8 can operate as single panel or in a network with up to 64 panels, including IRIS/SIMPO Repeater, iRIS4 and SIMPO fire alarm panels. The connection in the network between the panels can be realised via LAN or RS485 communication protocol. Only one type of connection can be used in a single network.

The iRIS8 fire panel is equipped with back-up supply battery in case of main power supply failure. The built-in 3V pill battery supports the uninterruptable operation of the real-time clock even in case of mains and back-up power supply failure at the same time.
A TFT touch screen and LED indication provide information about the current system status and activated zones.

To avoid or significantly diminish problems when mounting the system, it must be carefully planned prior to installation. This includes: establishing an address for every device and planning a name of maximum 40 digits (including the spaces) for each address, thereby ensuring easy access to the device.
According to the acting standards for establishing fire systems and the plan of the building, the devices must be grouped in zones.

1.2. Panel Versions

iRIS8 is available in two model versions: in big and small metal box. The control PCB and the communication boards are protected with front metal cover with key-lock for limited access only from technical support engineers.

- **iRIS8 B** - The panel is mounted in a big metal box secured with two key-locks. The full hardware configuration of 8 loops is organized in the panel's box.
- **iRIS8 S** - The panel is mounted in a small metal box secured with one key-lock. The full hardware configuration of 8 loops is achieved with mounting of addition expansion panel iRIS8 Ext.

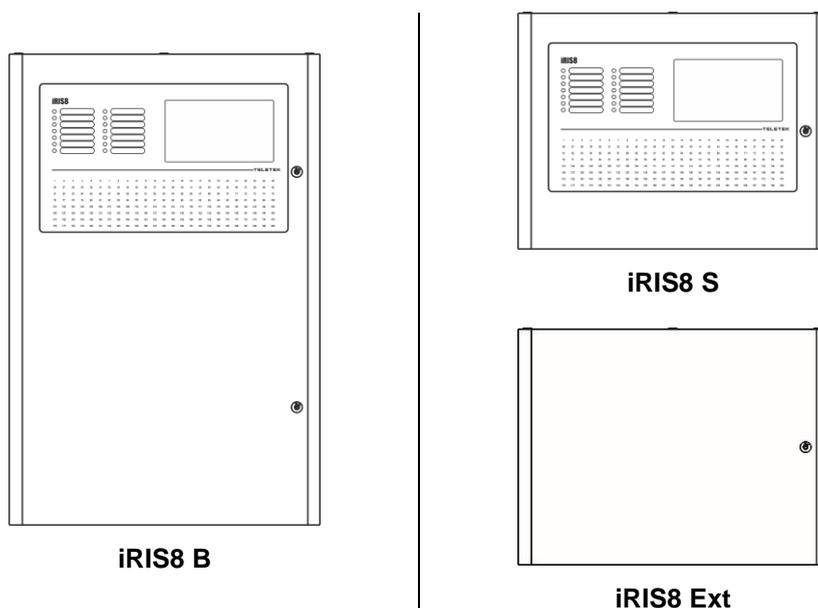**iRIS8 S**

iRIS8 B

iRIS8 Ext

Figure 1. Front view of iRIS8 series.

The metal boxes of iRIS8 S and iRIS8 Ext can be easily mounted to each other in a module structure with all hardware connections hidden inside - see for details item 2.4.
The small metal boxes are also designed for built-in mounting in 25mm thick drywalls - see for details item 2.3.

1.3. General Specifications

The iRIS8 front panel consists of graphic TFT touch screen display (dimensions 800x480) and a light-emitting diode (LED) indication for system status. Separate operator and engineer passwords provide access to the functions of the panel.

Up to 8 loop controllers (iRIS8 TTE Loop expander) can be supplemented to the iRIS8 B outputs control modules, and up to 4 to the iRIS8 S and iRIS8 Ext PCBs.

The system can be expanded by connecting up to 64 fire panels Teletek Electronics production (iRIS8 and IRIS/SIMPO Repeater TFT) to the Ethernet network, using TCP/IP for communication between them.

iRIS8 has a built-in real time clock and calendar, allowing day and night time modes of operation. Switching over between the day and night operation modes can be automatic or manual.

Events like FIRE, RESET, fault, etc., are saved in an event log memory file. It contains the time and date, the address of the device, the type (module, detector, sounder or periphery device), the name of the device, the zone, the name of the zone, etc.

1.3.1 General Technical Specifications

- Loops - from 1 to 8 loops
- Up to 250 devices per one iRIS8 TTE Loop expander
- Max. number of devices - 2000
- Zone Number - 200 max.
- Zone Groups - 127 max.
- TTE Communication protocol
- Memory log for 10000 events
- Monitored relay outputs:

iRIS8 B	iRIS8 S	iRIS8 Ext
2, Sounder, 24V/1A	1, Sounder, 24V/1A	1, Sounder, 24V/1A
1, Fire Protection, 24V/0.1A	1, Fire Protection, 24V/0.1A	
1, Fire, 24V/0.1A	1, Fire, 24V/0.1A	
1, Fault, 24V/0.1A	1, Fault, 24V/0.1A	

- Non monitored relay outputs (iRIS8 B and iRIS8 S):
  - o 4, Relay type (programmable), 10A@24VDC
  - o 1, Fire Protection (VdS 2540)

- Auxiliary output (terminals +24V and GND - see items 4.3.1 and 4.4):

iRIS8 B	iRIS8 S	iRIS8 Ext
1, Auxiliary, 24V/0.3A	1, Auxiliary, 24V/0.3A	1, Auxiliary, 24V/0.5A
1, Auxiliary, 24V/0.5A		

- Specialized inputs for extinguishing (iRIS8 B and iRIS8 S):
  - o **PrConf** (**Pr**otection **Conf**irmation) – Input for monitoring of signal "Confirmation for extinguishing started in the site" sent by extinguishing control panel.
  - o **FltPr** (**Fa**u**lt Pr**otection) – Input for monitoring of signal "Fault" sent by extinguishing control panel.
  - o **AlConf** (**Al**arm **Conf**irmation) – Input for monitoring of signal "Alarm confirmation" sent by extinguishing control panel.

- Display - 800/480 TFT
- Real time clock
- Up to 250 programmable Inputs/Outputs per panel
- Built-in RS485 and RS232 interface
- Comprehensive day/night mode facility
- 2 Steps of alarm levels (T1 and T2)
- Automatic synchronization of all loop sounders for better alarm signal
- Based on Windows graphical configuration utility via Ethernet or USB
- Simple Http monitoring utility
- Thermal printer (optional)
- Connection of Voice EVACUATION panels (optional)
- Multi-language support
- Easy software update
- Could ready (SW1.1.1 and higher)
- Certified according EN 54-2/4, EN 54-13, BOSEC

1.3.2 Working Environment
- IP30
- Operation temperature: -5ºC up to +40ºC
- Relative humidity: up to 95% (without condense)
- Storage temperature: -10ºC up to +50ºC

1.3.3 Weight and Dimensions
- Weight (without battery/batteries):

iRIS8 B	iRIS8 S	iRIS8 Ext
~15 kg	~7 kg	~6 kg

- Dimensions:

iRIS8 B	iRIS8 S	iRIS8 Ext
430x660x120 mm	430x330x120 mm	430x330x120 mm

1.3.4 Electrical Characteristics
- Cable: 4-wire
- Cross section: up to 2.5mm^2
- Up to 1000m long distance

Earth Connection
The earth connection has to be realized in accordance with the rules for the electrical safety with the total resistance in the circuit lower than 10Ω. It is mandatory to connect the main power supply cable to the middle input of the fire panel terminal – *see also item 4.1 Main Power Supply connection.*

Main power supply
In normal operating conditions the fire panel is powered from the mains voltage line. In case of mains voltage line loss the fire panel is designed to operate with back-up power supply – one or two batteries according the model. The characteristics of the main power supply are as follows:
- Main Power Supply: .... 110÷230VAC
- Frequency: 50/ 60Hz
- Electrical output:
  - For 4 loops connected.. ~15A
  - For 8 loops connected.. ~30A

Backup Battery Power Supply
- Current output (I):.. max. 20A
- Internal resistance of the accumulator battery Ri............... < 0.3 Ohm
- Number of Batteries:
  - iRIS8 B: .... 2 x 12V/ 18Ah (or 2 X 12V/17Ah); 2 x 12V/22Ah*
  - iRIS8 S and iRIS8 Ext .... 1 x 12V/ 18Ah (or 1 X 12V/17Ah); 1 x 12V/22Ah*

      NOTE: Not certified by EVPU

- Battery Size:... 167x181x76mm
- Battery type:... rechargeable, sealed lead-acid type
- Type of the Battery connection: .... with a flat terminal lug - Ø5mm (M5)

Consumption
From the main power supply in standby mode:
- For 1 loop configuration: .... 65 mA AC
- For 2 loops configuration:... 75 mA AC
- For 3 loops configuration:... 85 mA AC
- For 4 loops configuration:... 95 mA AC

From the backup power supply in FAULT mode and generated message "AC loss":
- For 1 loop configuration: .... 285 mA DC
- For 2 loops configuration:... 360 mA DC
- For 3 loops configuration:... 435 mA DC
- For 4 loops configuration:... 510 mA DC

List of the fuses

- General Power Supply, T Type:...4A
- Outputs, PTC Type:
  - Fire Protection, Fire, Fault....................................3x0.1A
  - Auxiliary...1x0.3A
  - Auxiliary...1x0.5A
  - Sounder..2x1A
- Battery, PTC Type:..4x15A

⚠ **ATTENTION: Do not install the fire panel near power electromagnetic fields (radio equipment, electric motors, etc.)!**

List of spare parts kits:

No	Element	Description	iRIS8 B	iRIS8 S	iRIS8 Ext
1		Resistor 10k ±1%, 0.25W	2 pcs	2 pcs	1 pc
2		Resistor 3.3k ±1%, 0.25W	1 pc	1 pc	-
3		Resistor 680 ±1%, 0.25W	1 pc	1 pc	-
4		Jumper	-	2 pcs	-
5		Screw 4.2x38, cross slot, DIN7981 (wall mounting – item 2.2)	6 pcs	4 pcs	4 pcs
6		Anchor 6x30mm (wall mounting – item 2.2)	6 pcs	4 pcs	4 pcs
7		Screw M4x40, cross slot, DIN7985 (built-in mounting in 25 mm drywall – item 2.3)	-	4 pcs	-
8		Screw M4x30, cross slot, DIN 965 (built-in mounting in 25 mm drywall – item 2.3)	-	2 pcs	-
9		Washer M4 DIN 522, ø12mm (built-in mounting in 25 mm drywall – item 2.3)	-	4 pcs	-
10		Screw M4x12 DIN 966 (built-in mounting in 25 mm drywall – item 2.3)	-	6 pcs	-
11		Screw M5x10 DIN 7985 A2 (for modular structure building – item 2.4)	-	-	6 pcs
12		Washer ø5,3 DIN 125 (for modular structure building – item 2.4)	-	-	12 pcs
13		Nut M5 DIN934 (for modular structure building – item 2.4)	-	-	6 pcs
14		Fuse 4A, glass time-delay type 5x20mm (for the main power supply terminal)	1 pc	1 pc	1 pc
15		Cable tie, 2.5/160mm	2 pcs	2 pcs	2 pcs
16		Serial connection cable, ~800mm (between iRIS8 S and iRIS8 Ext – items 4.4 and 4.8)	-	-	1 pc
17		Keys	4 pcs	2 pcs	2 pcs

⚠ **ATTENTION!**
Qualified specialists only should install the panel.
The electronic components of the panel are vulnerable to electrostatic discharge.
Never add or turn off components which are being power supplied!

2. INSTALLATION

The panel must be installed in a clean dry place and must not be subjected to impacts or vibrations (Figure 2). It must be situated far from heating appliances. The temperature must be within -5ºC and + 40ºC. The fire panel is not water-proof!

Attention: The front cover of iRIS8 panels is mounted to the box bottom with hinges fixed with dismountable rivets. The angle of opening of the front cover must not be greater than 110° - see Figure 3!
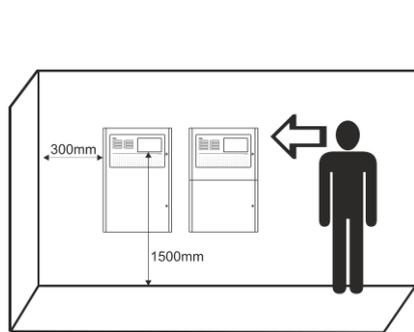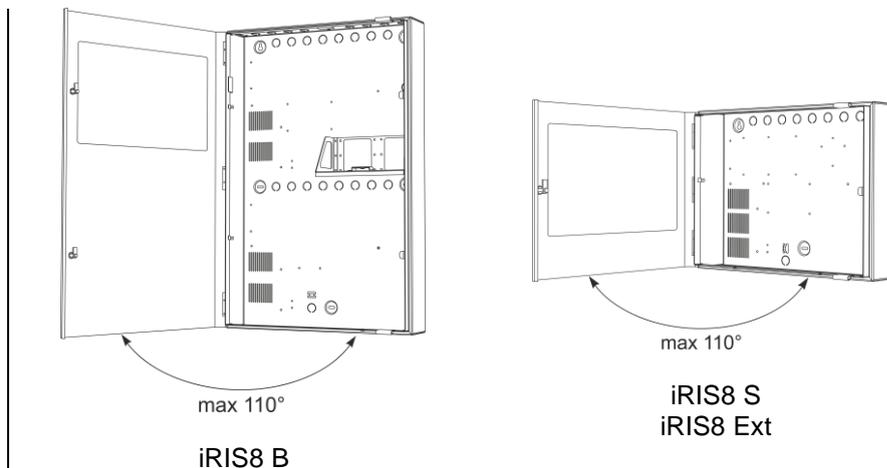

Figure 2

max 110°

iRIS8 B

iRIS8 S
iRIS8 Ext

Figure 3

2.1. Installation Steps

- Remove the packing and observe the panel for any damages during the transportation. If there are visible defects, contact your local distributer immediately and cancel the installation.
- Perform wall mounting (see item 2.2), built-in mounting (see item 2.3) or wall mounting in modular structure (see item 2.4) according the type of installation.
- Choose inlets for the cables of the main power supply, loops, sounders, control devices, etc. Remove the metal cap element just from those holes for cable running (Figure 5).
- Route the external cables onto the metal bottom, BUT DO NOT make any connections at this stage. ENTER THE MAINS CABLE THROUGH ITS OWN CABLE ENTRY POINT AND KEEP MAINS WIRING AWAY FROM SYSTEM AND OTHER LOW VOLTAGE WIRING.
- Connect the mains supply and earth wire to the power supply terminal and make sure that the connections are tight and stable (see item 4.1) BUT DO NOT apply the main electrical supply at this stage.
- Position the accumulator battery/batteries in an upright position and fix the metal clamp - Figure 14, position 4.
- When you finish with power up and testing steps, and the panel is in normal operation mode, close and lock the front cover with the securing key/keys.
- Keep the keys in a safe place for authorised access of technical personnel only.

Attention:

- **The drawings further in this installation manual are illustrative and simplified for better presentation.**

- **The front door of the panel cannot be dismounted or removed during the installation process.**

- **Take care about all factory mounted components like PCBs, power supply unit, power terminals, grounding points, etc, to not be harmed during the installation!**

- **The loop expander boards, the interface and network boards, and the power supply unit are protected with factory mounted transparent plastic screens with special form. The screens are fixed to the bottom carriers with screwed metal spacers M3. The protective screens must be removed only in case a new loop expander or network board are added to the system configuration! See also item 3.4 for details.**

2.2. Wall Mounting

- For wall mounting, use the drilling paper template to mark the mounting holes – Figure 4.
- For mounting of iRIS8 B, drill holes Ø8mm and for mounting of iRIS8 S – Ø6 ÷ Ø8mm.
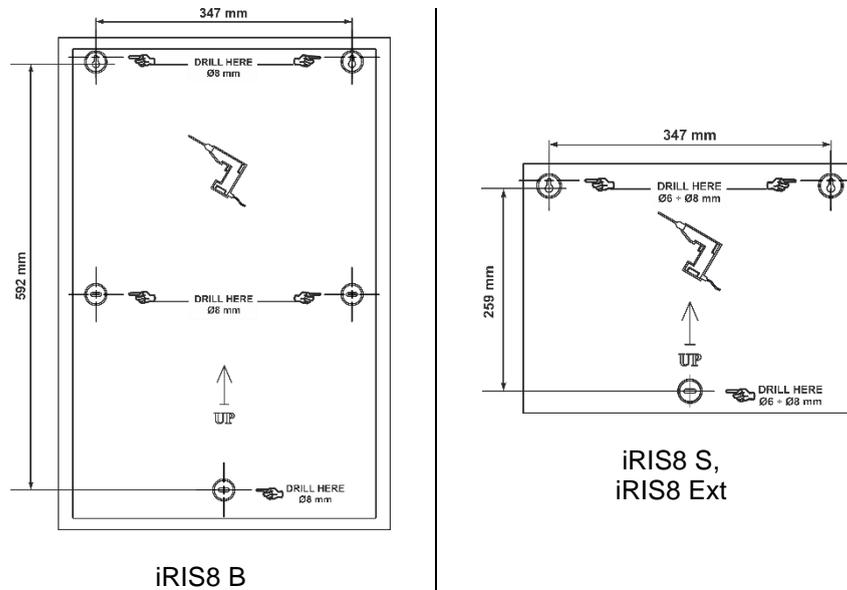

iRIS8 B

iRIS8 S,
iRIS8 Ext

Figure 4

- Fix the box bottom with the supplied anchors and mounting screws.
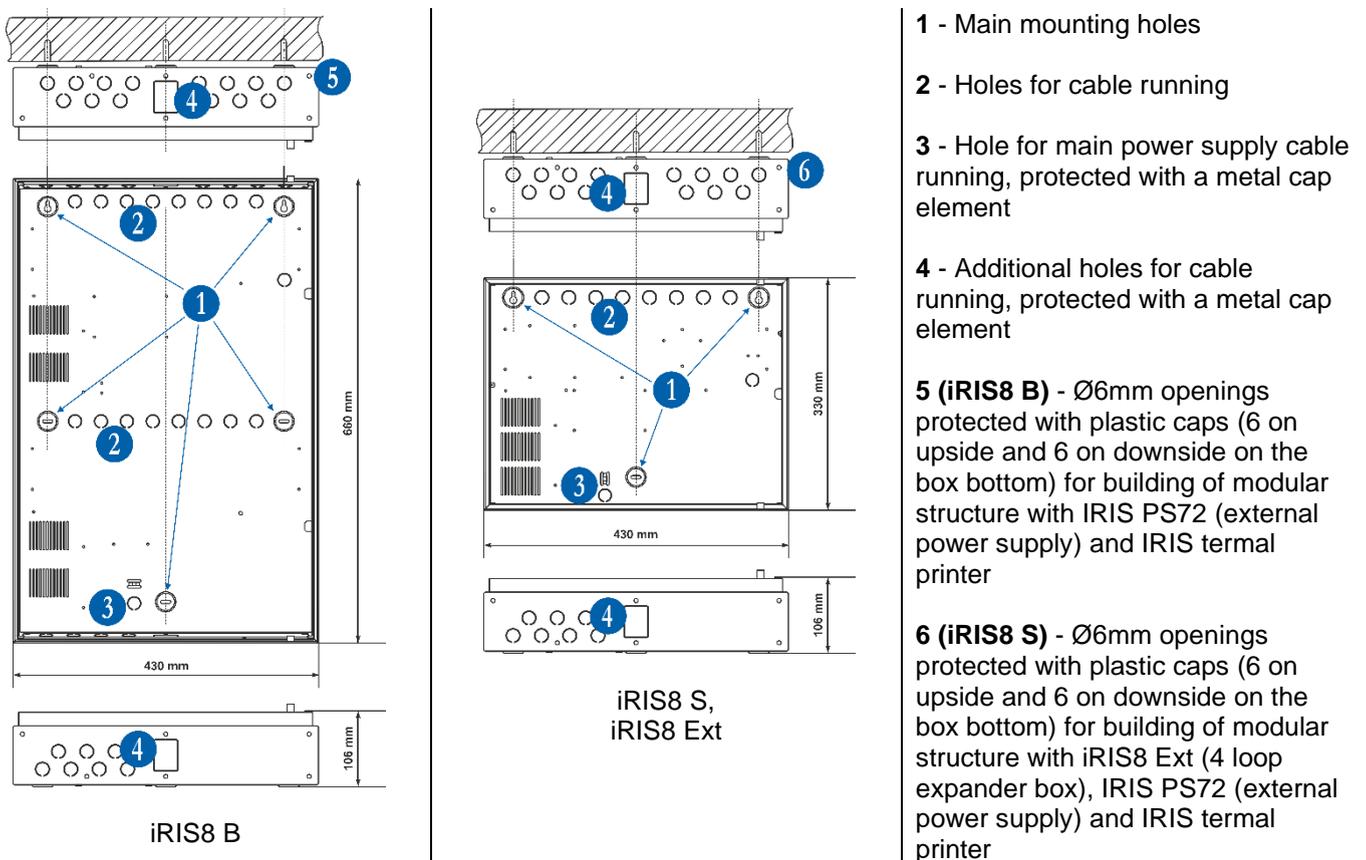- The elements of the metal box bottom are described on Figure 5.

iRIS8 B

iRIS8 S,
iRIS8 Ext

1 - Main mounting holes

2 - Holes for cable running

3 - Hole for main power supply cable running, protected with a metal cap element

4 - Additional holes for cable running, protected with a metal cap element

5 (iRIS8 B) - Ø6mm openings protected with plastic caps (6 on upside and 6 on downside on the box bottom) for building of modular structure with IRIS PS72 (external power supply) and IRIS termal printer

6 (iRIS8 S) - Ø6mm openings protected with plastic caps (6 on upside and 6 on downside on the box bottom) for building of modular structure with iRIS8 Ext (4 loop expander box), IRIS PS72 (external power supply) and IRIS termal printer

Figure 5

2.3. Built-in Mounting

The built-in mounting is designed for iRIS8 S panel box and it is applied in 25mm thick drywalls. The built-in mounting is performed with special kit containing: metal base, metal decorative frame and set of fixing elements – Figure 6.

Metal base

Metal frame – front side

Metal frame – back side
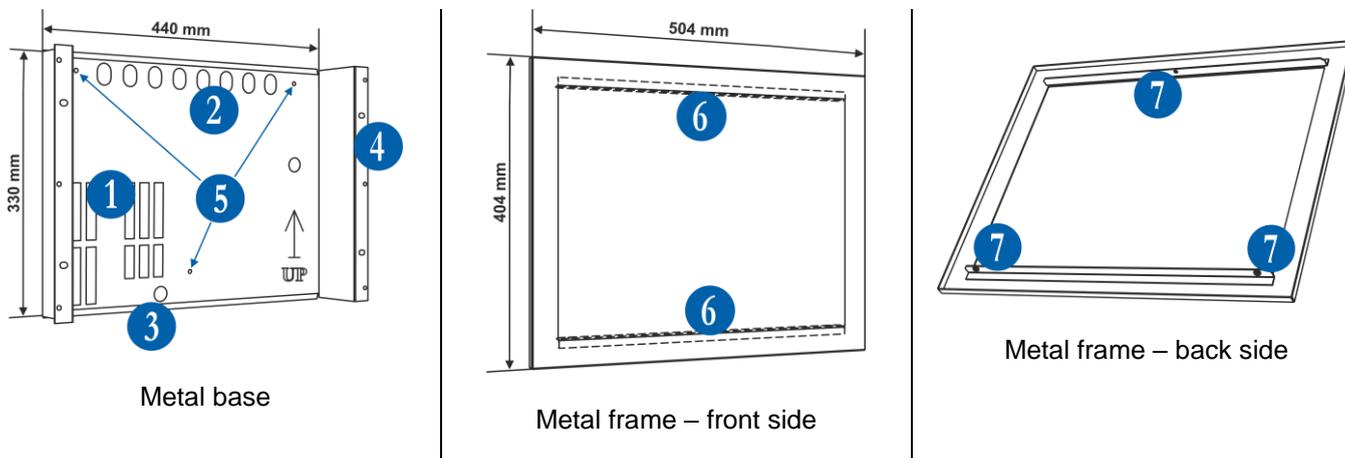
Elements' description:
1 - Ventilation holes
2 - Holes for cable running
3 - Hole for main power supply cable running
4 - Mounting holes to the 25mm thick drywall
5 - Mounting holes for iRIS8 S metal bottom
6 - Metal strips for joining the frame to the box bottom of iRIS8 S
7 - Holes M4 for fixing the frame to the box bottom of iRIS8 S

Set of fixing elements:
4 pcs - Screw M4x40, DIN7985
4 pcs - Washer M4 DIN 522, ø12mm
2 pcs - Screw M4x30, DIN 965
6 pcs - Screw M4x12 DIN 966

Figure 6

- Cut a mounting hole in the drywall at the place of installation.
- Insert the metal base in the mounting hole and fix it to the drywall with the screws.
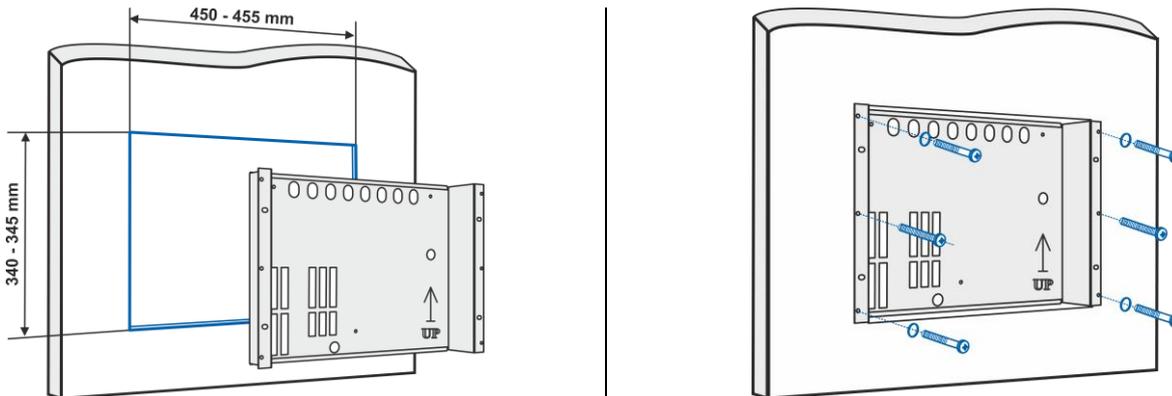
The mounting hole in the drywall must be a little greater than the dimensions of the metal base.

Use the screws M4x40 (DIN7985) and washers M4 ø12mm (DIN 522) for fixing the up and bottom corners. Use the screws M4x30 (DIN 965) for fixing the base in the middle.
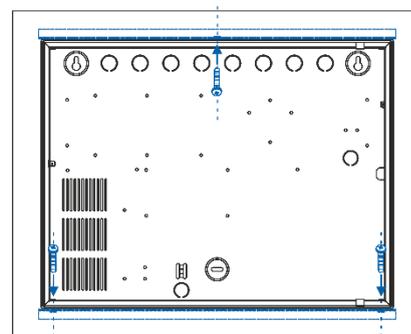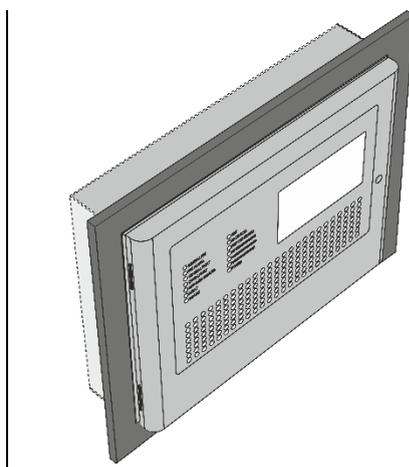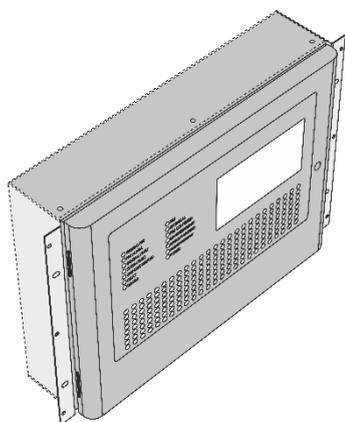
Figure 7

- Remove the first row plastic caps from the top and bottom side of iRIS8 S box.
- Insert the metal bottom of iRIS8 S into the metal base and fix them to each other it with the screws.
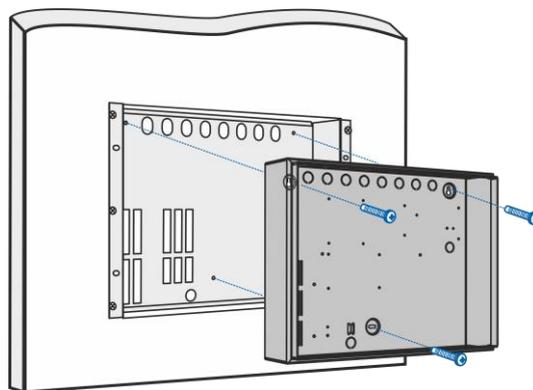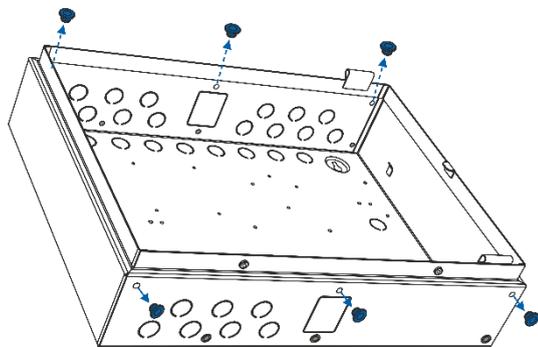
Use 3 pcs of screws M4x12 (DIN 966) for fixing the metal box of iRIS8 S to the metal base.

Figure 8

- Close the front door of the panel.
- Place the metal decorative frame over the front door and push forward until it is located around the iRIS8 S box bottom. The fixing holes on the back strips of the frame must align with the holes (on the top and bottom side) of the iRIS8 S box. **The hinges of the front door must be visible after installing the frame. The front door of the panel must be opened freely.**
- Open the front door of iRIS8 S and fix the frame to the box bottom with the screws.

Use 3 pcs of screws M4x12 (DIN 966) for fixing the metal frame to the iRIS8 S box bottom.

Figure 9

2.4. Module Structures

The building of module structures with the standard metal boxes of iRIS8 panels is flexible solution for any installation. The boxes are easily mounted to each other as all the hardware connections between the panels remain hidden inside. It is possible to add different peripheral panels to iRIS8 B and iRIS8 S main box. The peripheral panels IRIS series, available in standard small metal box suitable for building of modular structures, are IRIS Printer, IRIS PS72 (external power supply unit) and iRIS8 Ext (4 loop extension box).

The compatibility is as follows:

Panel	IRIS Printer	IRIS PS72	iRIS8 Ext
iRIS8 B	✓	✓	-
iRIS8 S	✓	✓	✓

The joining of the panels to each other is all and the same for all metal boxes. One module structure can be built with two, three or four boxes according the type and requirements of the fire installation. The modular structures allow expanding the capability of already existing installations at low cost and with minimum additional expenses.

The necessary fixing elements for modular structures building, are included in the spare parts kit of the peripheral panels.

- Prepare the metal boxes for mounting to each other as remove the plastic caps from the top or bottom side of the box bottom according its position in the module structure. For module structures with three or four panels you have to remove all plastic caps from the boxes mounted into the middle.
- Remove the metal caps from those holes used for running cables.

Upper box

Lower box
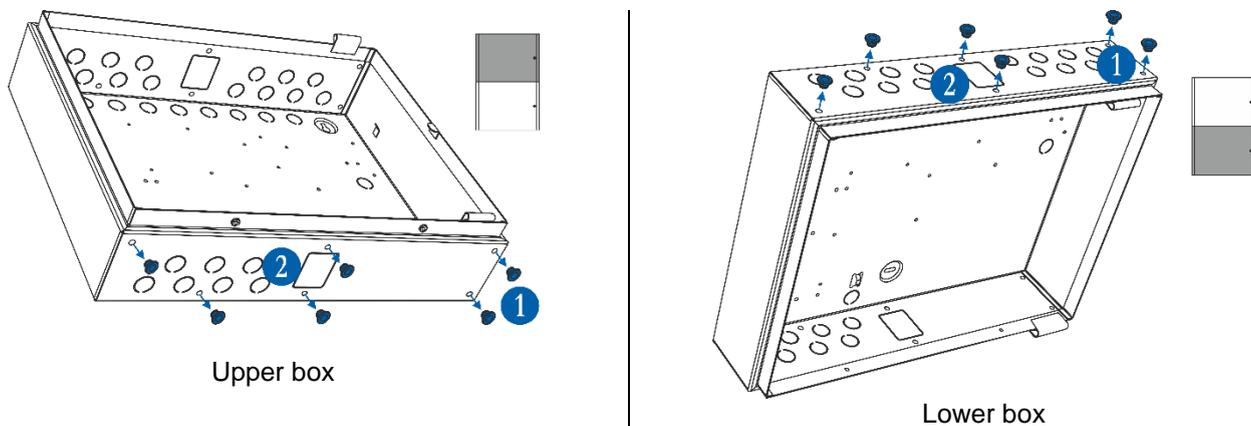
1 – Remove the plastic caps from the box bottom
2 – Remove the metal caps for running cables between the boxes.

Figure 10

- Follow the steps in item 2.2 and perform wall mounting of the boxes as locate them in module structure.
- Join the boxes to each other.
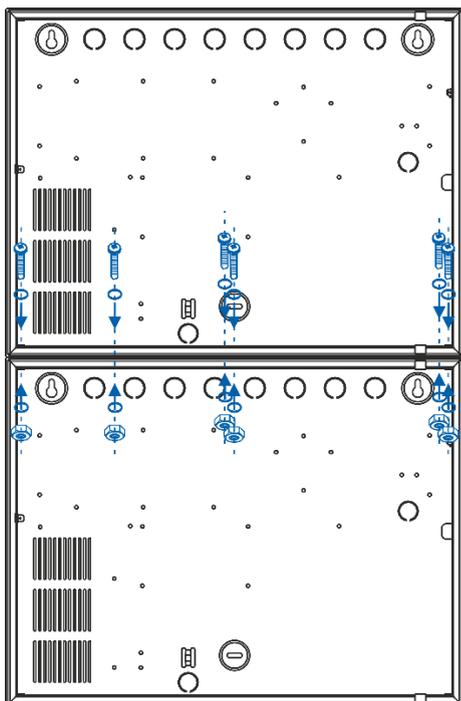
Set of fixing elements:
6 pcs - Screw M5x10 DIN 7985 A2
6 pcs - Nut M5 DIN934
12 pcs - Washer Ø5,3 DIN 125

In case of module structure with three or four panels, fix the boxes in the middle from both sides – up and down – to the upper and lower box.

Figure 11

3. SYSTEM COMPONENTS

3.1. Front Panel

The front panel of iRIS8 presents detailed information of the current system status (1) and activated zones (2) via LED indication. The operation, control and programming of the panel is via the TFT screen (3) – Figure 12.
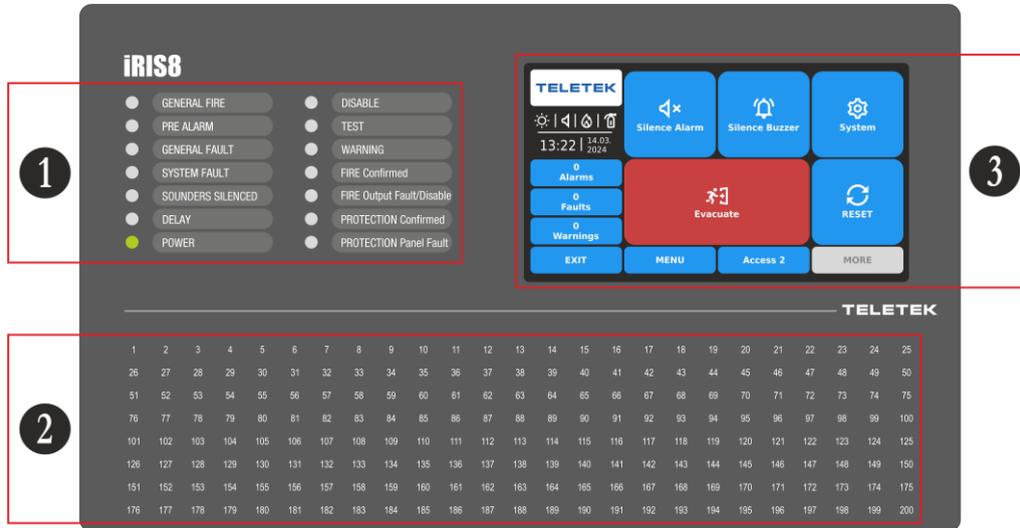

Figure 12

3.2. LED Indication for the System Status

The LED indication supports Users in operation with iRIS8 and presents a quick review of the system status without reviewing the programming menus.

The system status descriptions are printed on two separate paper labels and can be replaced if needed, including for language change. The paper labels (numbered 1 and 2) are placed in two special openings on the back side of the front door, over the Main control module PCB – see Figure 14.

Note: The front door of iRIS8 addressable fire panel is secured with special key-lock (1 pc in iRIS8 S; 2 pcs in iRIS8 B) for limited access only from technical support specialist.
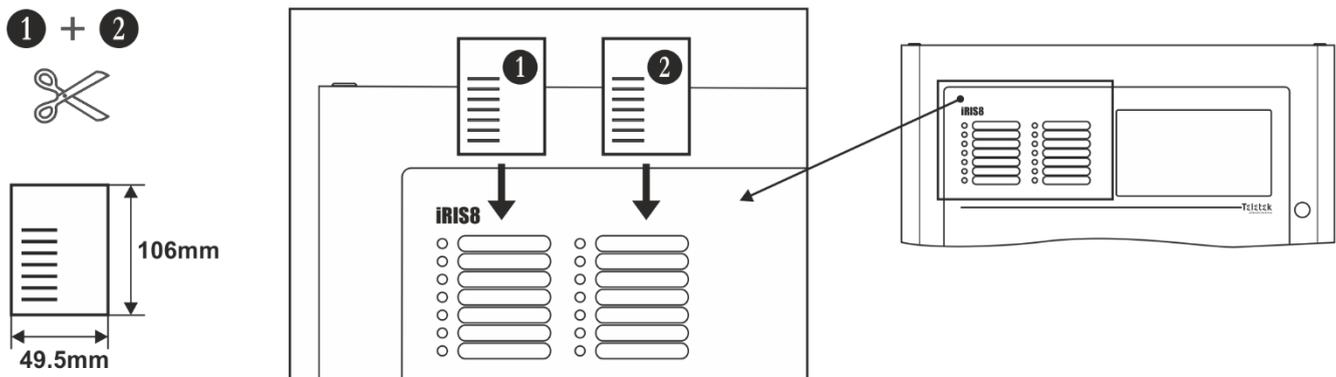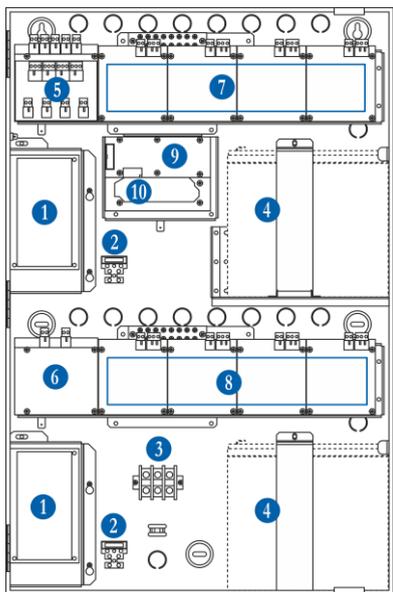

Figure 13

The system status is displayed also with color LEDs. In case of fire alarm, common or system faults, settings for delays or disablements, tests or warnings, the LED is lighting on permanently. In case of fault in Fire Output on the main control PCB the respective LED is blinking.
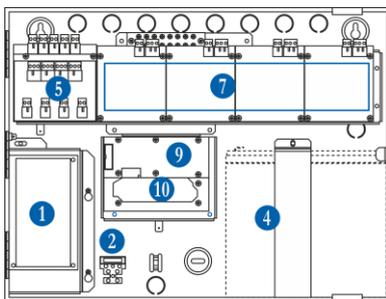
Note: The detailed description of LED indication for system status is available in "iRIS8 Engineer Programming Manual".
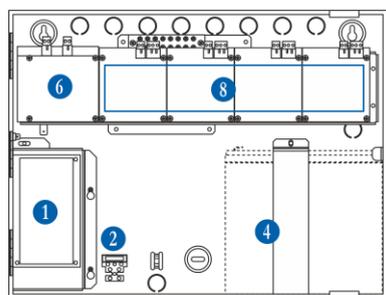
3.3. Configuration of the Basic Modules

The iRIS8 series panels are designed with a range of basic modules organized in factory configuration according the model – Figure 14.
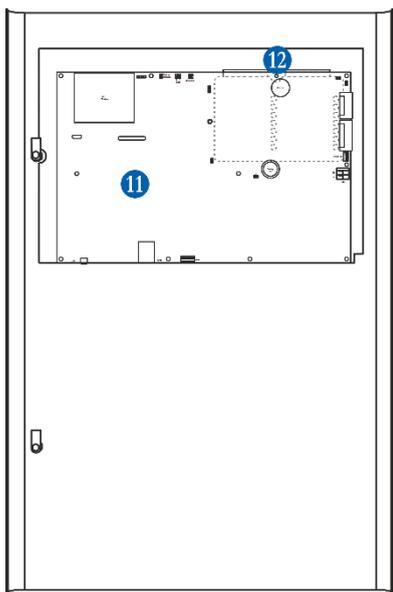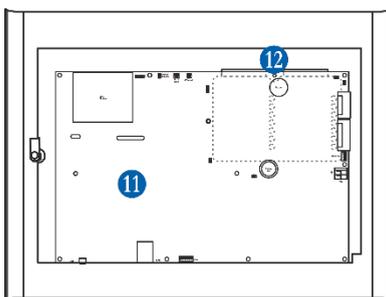
iRIS8 B – Box bottom

iRIS8 S – Box bottom

iRIS8 Ext – Box bottom

iRIS8 B – Front door back side

iRIS8 S – Front door back side

Elements' description:
1 - Main power supply unit - see item 4.1.
2 - Terminal for connection between the main power supply and a power source. A slow type fuse 4A is situated into the terminal - see item 4.1.
3 - Modular terminal block with wiring orientation 180° (wire-to-wire) - see item 4.2.
4 - Place for accumulator battery with vertical supporting tightening clamp - see item 4.1.
5 - Monitored Outputs Control Module (OUT1) with suplementary, factory mounted, Relay Module - see item 4.3.
6 - Monitored Outputs Control Module (OUT2) - see item 4.4.
7 - Loop expanders 1-4 - see item 4.5.
8 - Loop expanders 5-8 - see item 4.5.
9 - Interface communication module - see item 4.6.
10 - Place for connection of Redundant network module - see item 4.6.5.

11 – Main (Indication LCD and LED) control module PCB - see item 4.8.
12 - Openings for changing the text labels with description of the system status - see item 3.2.
(Note: iRIS8 panels are delivered with printed PVC text labels in different languages. The labels are cut with the pointed out dimensions and are easily replaced during the installation.)

Figure 14
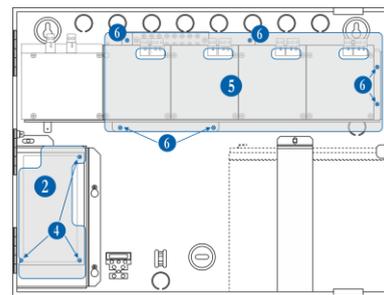
3.4. Protection Screens

The iRIS8 series panels are equipped with transparent plastic screens for protection of the electronic components of the loop controllers, interface and network modules, and the main power supply unit – Figure 14a. The screens are factory mounted and are fixed to the carrier holders via metal spacers M3. The special openings on the screens, provide direct access to the connection terminals of the modules. The screens must be dismounted only in case of adding or removing modules from the system configuration.
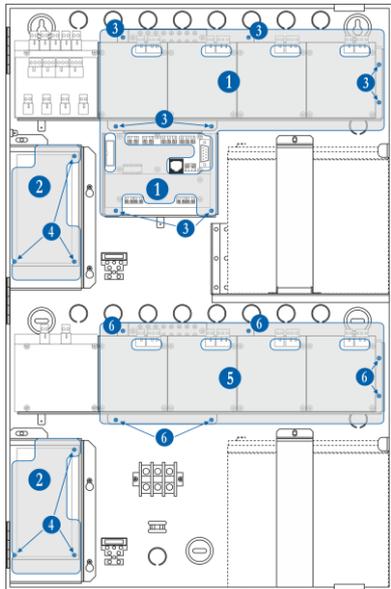
iRIS8 B – Box bottom
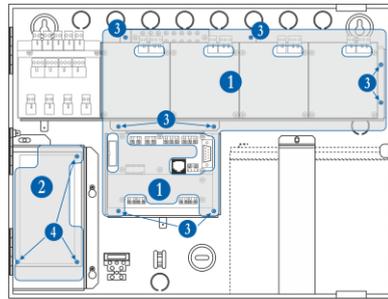
iRIS8 S – Box bottom

iRIS8 Ext – Box bottom

Elements' description:
1 – Protection screen for the loop expanders, interface and network modules in iRIS8 B and iRIS8 S system configuration.
2 – Protection screen for the main power supply unit in iRIS8 B, iRIS8 S and iRIS8 Ext system configuration.
3 – Screws for fixing the protection screen for the loop controllers, interface and network modules in iRIS8 B and iRIS8 S system configuration – 8 pcs.
4 - Screws for fixing the protection screen for the main power supply unit in iRIS8 B, iRIS8 S and iRIS8 Ext system configuration – 3 pcs.
5 - Protection screen for the loop expanders in iRIS8 Ext system configuration.
6 – Screws for fixing the protection screen for the loop expanders in iRIS8 Ext system configuration – 6 pcs.

Figure 14a

4. BASIC MODULES DESCRIPTION

The iRIS8 is delivered with plug connectors (2- and 3-position) mounted to the PCB control modules of OUT1, OUT2, Loop expander(s) and interface communication module – see Figure 14. The plug connectors are used for quick wire installation.

To unplug a connector, just pull it up from the terminal. To plug it back, press down until a click is heard.

Attention:
The basic modules are factory wired with interface and grounding cables, depending on panel configuration.
DO NOT unplug, modify or change the factory connection cables to avoid malfunctioning of the panel!
Follow the instructions for electrical safety and operation during the installation!
**Adding of any addition modules MUST be done only with main and back-up supplies off!**

4.1. Main Power Supply and Back-up Battery Connection

4.1.1 Main Power Supply Elements Description
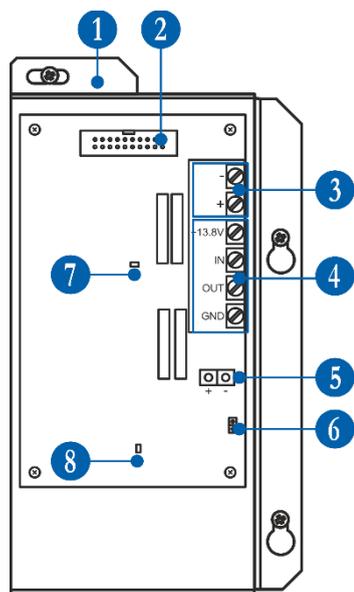
Main power supply unit

1 - Metal cover of the main power supply unit.
2 - Inrerface connector for communication with control output module (factory mounted).
3 - Power supply for control output module (factory mounted).
4 - Terminal Block for connecting to external power supply – see the description below.
5 - Wires for connection the back-up battery (factory mounted).
6 - Temperature sensor (factory mounted).
7 - Red LED for indication of 110÷230V AC power source presence.
8 - Green LED for indication the status of communication with the control output module.
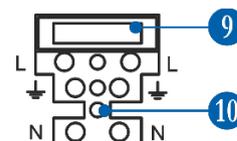
Fuse terminal block for connection to 110÷230V AC power source.

9 – Fuse 4A.
10 – Terminal body, wire-to-wire connection.

Figure 15

Terminal Block for connecting to external power supply:

Terminal	Description
+13.8V	External power supply input.
IN	Input for connecting the Fault output of the external power supply.
OUT	Fault output, turns on when a problem with the main power supply occurred. Connect it to the input (Fault In) of the external power supply.
GND	Input for connecting of external power supply EARTH.

LED Indication of Main power supply unit:

LED	Color	State	Description
Power	red	Lights on	Power supply with 110÷230V AC power source.
		Lights off	The 110÷230V AC power source is switched off or missing.
Communication	green	Blinking	Communication with the control output module (OUT1 or OUT2).
		Lights off	No communication with the control output module (OUT1 or OUT2). Fault or switched off interface cable (Figure 15, position 2).

4.1.2 Connection Diagram of Main Power Supply Unit and Back-up Battery

The connection between the accumulator battery and the main power unit has some special features. It is strongly recommended to use only battery with electrical characteristics and dimensions pointed from the manufacturer. Before connecting to the main power unit check the polarity of the battery. The battery cannot power up the panel before the mains supply has been switched on. Connect the battery after the mains supply is turned on. If the battery is new, it will take a few hours before its complete charging!

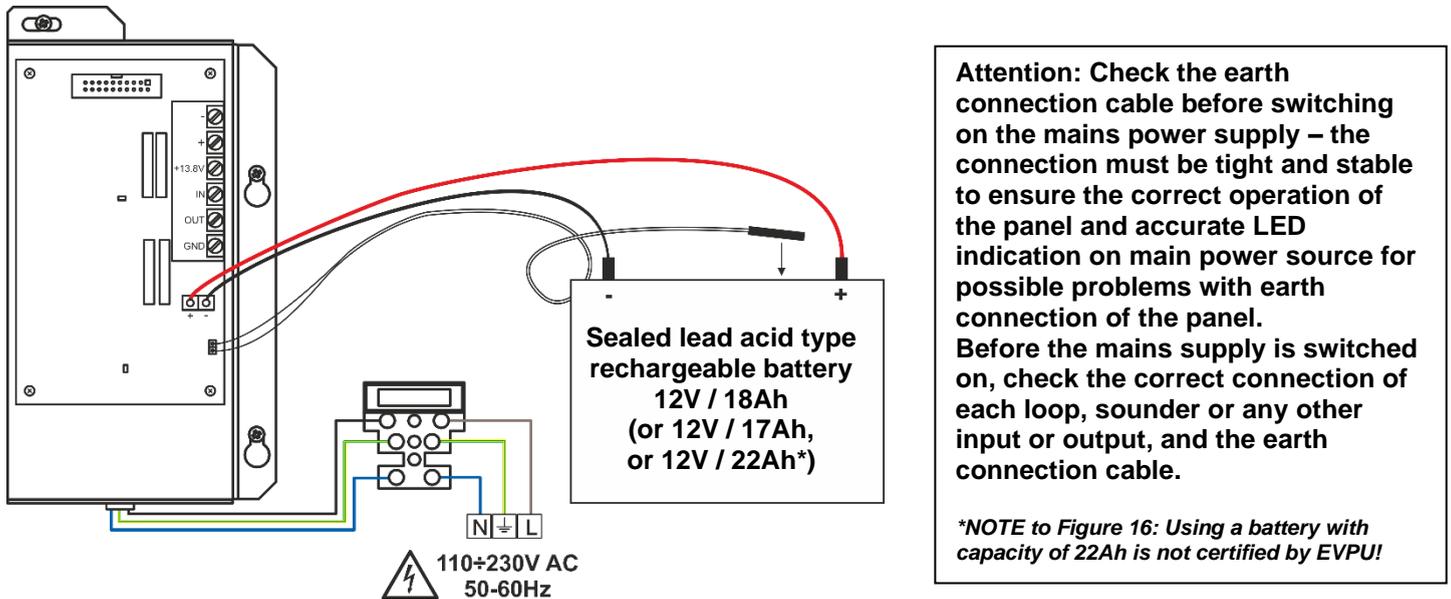The charging of the accumulator battery is done at maximum current I=2A and charging voltage U < 13.8V.

Attention: Check the earth connection cable before switching on the mains power supply – the connection must be tight and stable to ensure the correct operation of the panel and accurate LED indication on main power source for possible problems with earth connection of the panel.
Before the mains supply is switched on, check the correct connection of each loop, sounder or any other input or output, and the earth connection cable.

*NOTE to Figure 16: Using a battery with capacity of 22Ah is not certified by EVPU!

Figure 16

- Connect the 110÷230V AC power source to fuse terminal block as strictly observe the polarity.
- Connect the red cable to the positive pole of the battery, and the black cable - to the negative battery pole. Both of the cables are connected to the battery by means of a flat terminal lug Ø5mm or cable shoes.
- Place the temperature sensor behind or under the accumulator battery to provide correct measurement the battery temperature and calculation of the internal resistance value Ri.

4.2. iRIS8 B Common Modular Terminal Block

In iRIS8 B, the 110÷230V AC power source is connected to a special modular terminal, which provides the power supply to the two independent main power supply units. The connection of the power units is factory done. The installer must connect only the 110÷230V AC power source to the modular terminal.
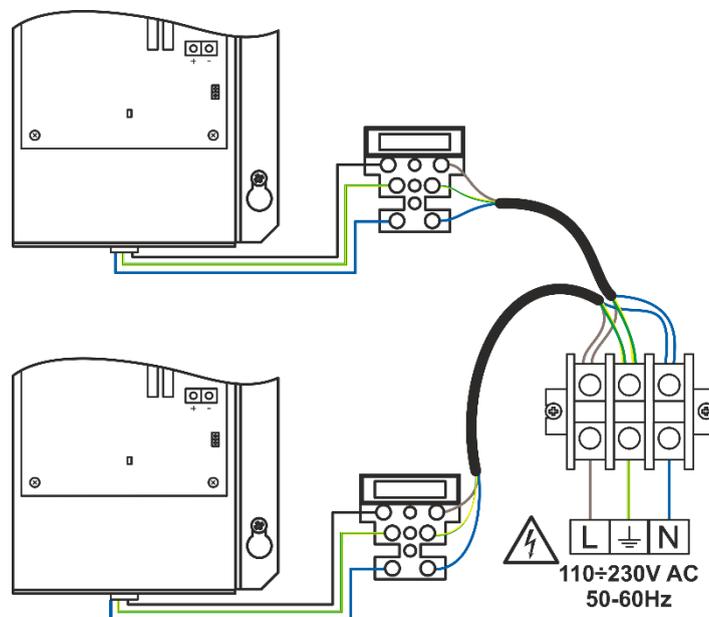

Figure 17

4.3. iRIS8 B and iRIS8 S Outputs Control Module (OUT1)

The Outputs Control module OUT1 in iRIS8 B and iRIS8 S addressable fire alarm panels is a structure of two PCBs mounted to each other via interface slot: Monitored outputs PCB and Programmable Relays PCB.

ATTENTION: The Outputs Control Module OUT1 could not work independently!
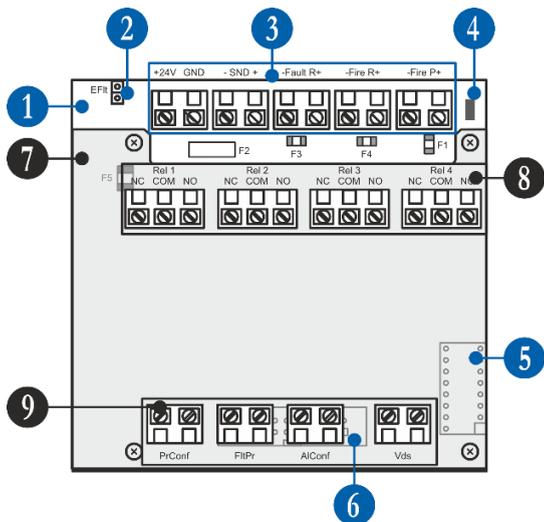
4.3.1 OUT1 Elements Description

Figure 18

1 - Monitored Outputs PCB. The PCB is under the Relays PCB. The elements are indicated with blue numbers.
2 - Jumper for enable/disable indication for earth fault (EFlt). *For example, if you want to enable the earth fault indication set a jumper.*
3 - Monitored Outputs - see the detailed description below.
4 - LED (green) – Indication for data transfer between the main microprocessor of the panel and the Output Module. In normal operation mode it is constantly blinking.
5 - Interface connector for connecting the first Loop Expander Module (on the back side of the Outputs Module).
6 - Ribbon cable interface connector from the main power suply unit and to the front panel (on the back side of the Outputs Module).
7 - Relays PCB. The elements are indicated with black numbers.
8 - Programmable volt free switching over relay contacts - see the detailed description below.
9 - Specialized inputs for extinguishing - see the detailed description below.

Monitored outputs terminals:

Terminal	Description
+24V	DC Auxiliary output, 20 VA @ 0.3A
GND	Common earth
SND	Monitored output for connecting of a sounder, 24V DC/1A
Fault R	Monitored output for connecting of auxiliary devices, 24V DC/0.1A. This output is deactivated in case of system trouble or fault.
Fire R	Monitored outputs for connecting of auxiliary devices (e.g., signaling devices), 24V DC/0.1A.
Fire P	These outputs are activated in case of a fire alarm condition.

The output SND at activation, provides 24VDC@1A to the load, and outputs FAULT R, FIRE R and FIRE P, at activation, provide 24VDC@0.1A to the load. It is necessary to connect in parallel to the last device in the line a 10k terminate resistor, so to ensure that the panel is able to detect any break or short circuit in the loop - see item 4.3.2 and item 4.3.3.

Programmable relay terminals:

Terminal	Description		NC COM NO
Rel 1-4	Programmable volt free switching over relay contacts each, 10A@24VDC. Each relay has one NO (normal open) and one NC (normal closed) contact with common lead on a terminal. When a relay output is activated the NO contact is closed and the NC contact is opened.		

Specialized terminals:

Terminal	Description
PrConf	Protection Confirmation - Input for monitoring of signal "Confirmation for extinguishing started in the site" sent by extinguishing control panel.
FltPr	Fault Protection - Input for monitoring of signal "Fault" sent by extinguishing control panel.
AlConf	Alarm Confirmation - Input for monitoring of signal "Alarm confirmation" sent by extinguishing control panel.
Vds	Protection Confirmation passive output according the requirements of VdS 2540.

4.3.2 Connection of Sounders

To the monitored output SND, could be connected several sounders - Figure 18. The maximum number of sounders that could be connected in the circuit, depends on their total current consumption, which must not exceed 1A.
Before connecting the last sounder in the circuit, parallel to it must be added resistor 10k.
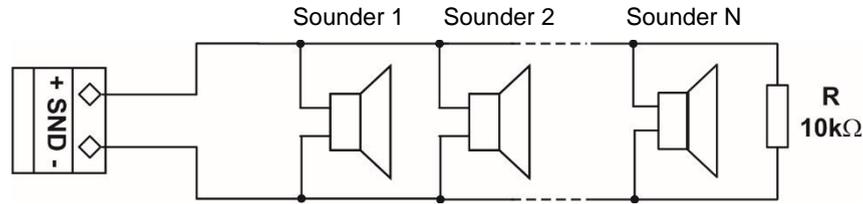*Note: The resistor R 10k is factory mounted to the SND output terminal during the production.*

Figure 18

4.3.3 Connection of Signalling Devices

To every monitored output FAULT R, FIRE R and FIRE P could be connected signalling and other control devices – Figure 19. The maximal consumption of the devices should not exceed 0.1A.
Before connecting the last device in the circuit, parallel to it must be added resistor 10k.
Note: The resistor R 10k is factory mounted to the FAULT R, FIRE R and FIRE P output terminals during the production.
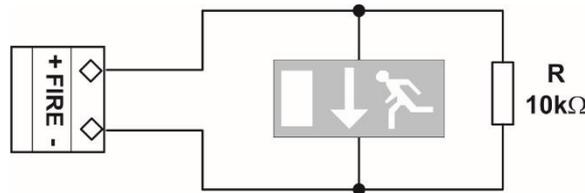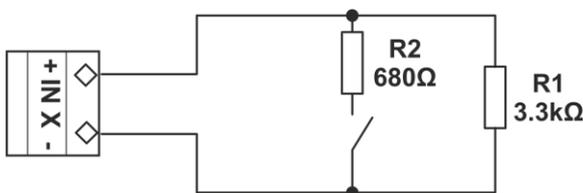

Figure 19

### 4.3.4 Connection to Specialized Inputs

The specialized inputs PrConf (Protection Confirmation), FltPr (Fault Protection) and AlConf (Alarm Confirmation) are designed for operation with an extinguishing control panel.
The example connection diagrams are presented on Figure 20 a) and b).
Note: The resistor R1 3.3k is factory mounted to the PrConfig, FltPr and AlConf input terminals during the production.
The resistor R2 680Ω for realization of the presented connection diagrams is in the spare parts kit of the panel.

a) Connecting diagram of relay
contact to the input
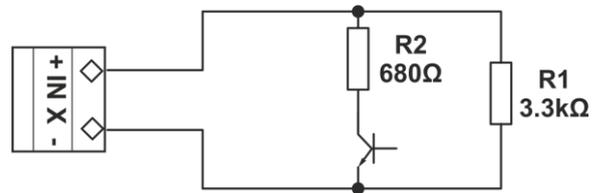
b) Connecting diagram of open
collector to the input

Figure 20

4.4. iRIS8 B and iRIS8 Ext Outputs Control Module (OUT2)

The OUT2 control module is the second outputs module in configuration of iRIS8 B and iRIS8 Ext panels. **The module cannot work independently.** OUT2 module must be connected to Main (Indication LCD and LED) control module PCB for proper operation of the connected loop expanders.
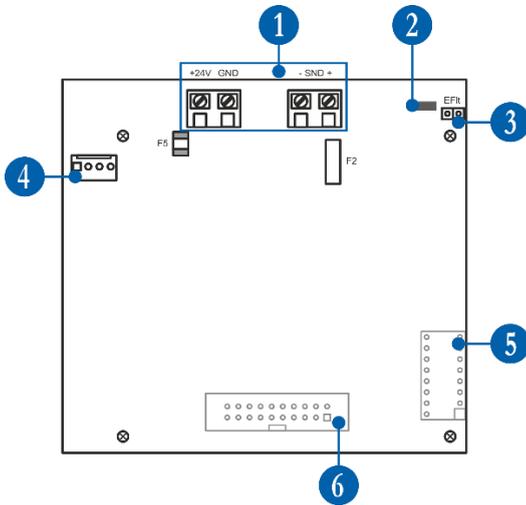

Figure 21

1 - Monitored Outputs - see the detailed description below.
2 - LED (green) – Indication for data transfer between the main microprocessor of the panel and the OUT2 Module. In normal operation mode is constantly blinking.
3 - Jumper for enable/disable indication for earth fault (EFlt). *For example, if you want to enable the earth fault indication set a jumper.*
4 - Interface connector for communication with Main control module PCB. The connection is realized with a 4-wire serial cable, which is connected to P60 interface connector on the Main control module PCB – see item 4.8.
Note: The interface connection between OUT2 module and Main control module PCB is factory done in configuration of iRIS8 B panel. In case of existing installation with iRIS8 S, expanded with iRIS8 Exp panel with more 4 loops, the installer must connect the interface cable between OUT2 module and Main control module PCB during the installation. The interface cable is included in the stare parts kit of iRIS8 Ext panel.
5 - Interface connector for connecting the fifth Loop Expander Module (on the back side of the OUT2 Module).
6 - Ribbon cable interface connector from the main power suply (on the back side of the OUT2 Module).

Monitored outputs terminals:

Terminal	Description
+24V	DC Auxiliary output, 20 VA @ 0.5A
GND	Common earth
SND	Monitored output for connecting of a sounder*, 24V DC/1A

The connection of sounders is presented in item 4.3.2.
*Note: The maximal consumption of the sounders connected to OUT2 outputs module should not exceed 1A.

4.5. iRIS8 TTE Loop Expander

The iRIS8 addressable fire alarm panels operate with iRIS8 TTE Loop Expanders. The communication with connected to the loop addressable devices is via Teletek Electronics communication protocol.

The iRIS8 TTE Loop Expander (see item 4.5.2, Figure 22) realizes the connection between the Output Module (OUT1 and OUT2) and devices connected to the communication line.
The iRIS8 TTE Loop Expander has two basic functions: 1. Gathers data from the devices in the communication line and transfers it to the Output Module; 2. Receives commands from the Output Module and transfers them to the devices connected in the communication line.

Every iRIS8 TTE Loop Expander support operation with up to 250 addressable devices.

The maximum current consumption (I_{max}) of the devices in the communication line in alarm state must be up to 650mA. If the consumption exceeds this value an overload protection would be turned on.

In the configuration of iRIS8 addressable fire alarm panel could be mounted up to 8 loop expanders according the model:

Panel	Max. number Loop Expanders
iRIS8 B	8
iRIS8 S	4
iRIS8 S + iRIS8 Ext	8

Note: iRIS8 Ext panel cannot be used as stand-alone device. It can operate only in configuration with iRIS8 S panel.

4.5.1 Permissible Cable Length

The maximum length of the loop in the system could vary according to the cross-section and the ohmic resistance of the used cable.

Nevertheless, there is no specific requirement for cable description according to standard EN 54-2, the manufacturer recommends using the listed cables in installations:

No	Brand	Parameters
1	Mining Ltd Fire cable AF*	Unscreened, CEI 20/22 II IEC 60332-3, GR2, C-4 (U0=400V) CEI-UNEL-36762, $2 \times 0.8 mm^2$
2	BERICA CAVI S.P.A ITALY MULTICORE FLEX SCR	Screened, CEI 20/22 II CEI EN 60332-1-2, CL 5 CEI EN 60228 VDE 0295, 300/500V, $2 \times 0.5/0.75/1.0/1.5 mm^2$
3	TEKAB FireTEK, SA7Z1, ZA7Z1, MZA7Z1	Screened, C/W BS 6387, Class-1/Class-2 BS 6360, 300/500V, $2 \times 1.0/1.5/2.5 mm^2$
4	Atron ACFF	Screened, IEC332,2, $2 \times 1.0/1.5/2.5 mm^2$
5	Atron ACFR	Screened, IEC332,2, $2 \times 0.8 mm^2$
6	Atron PIROFREN SOZ1-K	Screened, PH90 DIN EN 50200 TS IEC 60331-2, 300/500V, $2 \times 0.8/1.5 mm^2$

*This cable is tested and approved.

ATTENTION: iRIS8 TTE loop controller supports up to 250 devices!

To ensure the correct operation of the system is necessary to make some calculations in advance:

1. To ensure the ability of the fire panel to receive the signals from the devices in the loop, calculate:	**2.** To ensure the ability of the fire panel to recognize the double addresses in the system, calculate:	**3.** To ensure the ability of the devices in the loop to receive command signals from the panel, calculate:
$$L_{C1max} \leq 123 / R_C$$	$$L_{C2max} \leq 62 / R_C$$	$$L_{C3max} \leq (12 / I_{max} - R_i) / R_C$$

Where:
L_{C1MAX}, L_{C2MAX} and L_{C3MAX} - are maximum permissible length of the used cable, [km];
R_C - is total ohmic resistance of the two wires of the used able; its value shows the magnitude of the cable resistance at length 1km [Ω/km];
R_I - is the total resistance of the isolator modules in the loop;
I_{max} - is the maximum current consumption in the loop in alarm condition - total amount of the current consumption of all devices in alarm state** in the loop.

*Note: In case of using more than 15 devices SensoIRIS series from type T110/ T110 IS, S130/ S130IS, M140/ M140IS, MCP150 and MC-Z, in calculation of I_{max} value is used the maximum current consumption in alarm state** only for those 15 devices with the highest consumption, and for the rest devices is used the consumption in stand-by mode**.*
** For the max. current consumption in alarm state and the consumption in quiescent state with communication (stand-by mode) of a device refer to its installation manual.

L_C - is the necessary length of the cable for the loop.
After calculating, the maximal length of the cable is determined according:
- If $L_C \leq L_{C2max}$ and $L_C \leq L_{C3max}$ - the fire panel will be able to communicate with the devices in the loop and also will be able to identify the presence of double address.
- If $L_{C2max} < L_C \leq L_{C1max}$ and $L_C \leq L_{C3max}$ - the fire panel will be able to communicate with the devices in the loop but will not be able to identify the presence of double addresses.

ATTENTION: Always calculate the maximal cable length according the mentioned above formulas!
IF $L_C > L_{C1max}$ or $L_C > L_{C3max}$ - the fire panel would not be able to communicate with the devices.
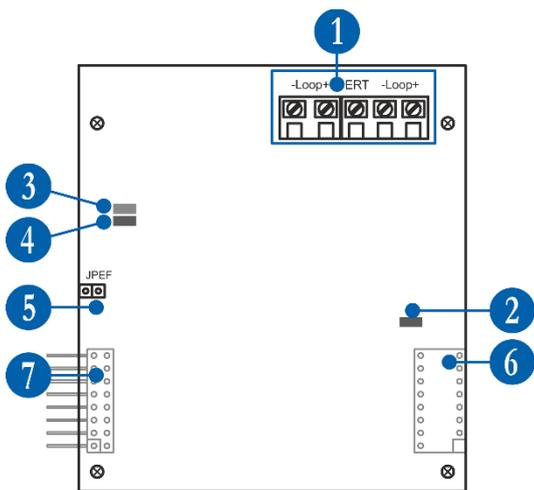
4.5.2 Loop Expander Elements Description

Figure 22

1 - Interface for connection of the loop line – see item 4.5.3.
2 - LED (red) – Indication for power supply of the Loop expander. In normal operation mode it is constantly lighting on.
3 - LED (green) – Indication for data transfer between the main microprocessor of the panel and the Loop expander. In normal operation mode it is constantly blinking.
4 - LED (red) – Indication for scanning the devices connected to the Loop expander. In normal operation mode the LED lights on continuously in 10 seconds intervals.
5 - Jumper for enable/disable indication for earth fault (JPEF). *For example, if you want to enable the earth fault indication set a jumper.*
6 - Interface connector for connecting the next Loop expander (on the back side of the Loop expander).
7 - Interface connector for connecting the Loop expander to the Output Module or to other (previous in order) loop expander (on the back side of the Loop expander).

4.5.3 Loop Line Connection

Connect the loop line to the iRIS8 Loop expander as strictly observe the polarity. The "Channel A" is the starting point for addressing the connected devices, and "Channel B" is the end point. The addressing methods are described in item 5.2. To avoid faults and malfunctioning of the system, **the loop line must be connected to the Loop expander only when the main and back-up supplies of the panel are off**!
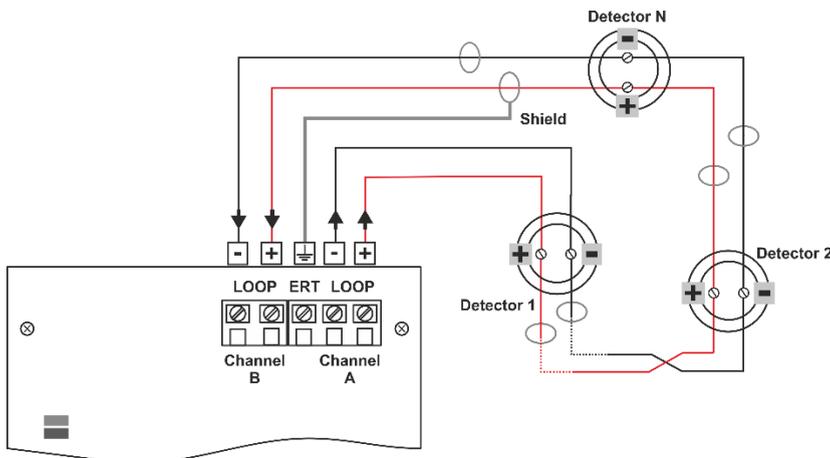

Figure 23

4.5.4 Adding Loop Expanders and Possible Configurations

The loop expanders are periphery devices in iRIS8 system configuration. According the physical place of mounting, every loop expander takes a *system factory address that cannot be changed* – see item 5.1 for general information about the periphery devices addressing. *In case of connected panels in a network, is possible to set a specific number of every loop expander* according planned system configuration*.
The connection between the loop expanders is via interface connectors for coupling the modules to each other, as first the installer must dismount the protective screen – see item 3.4.
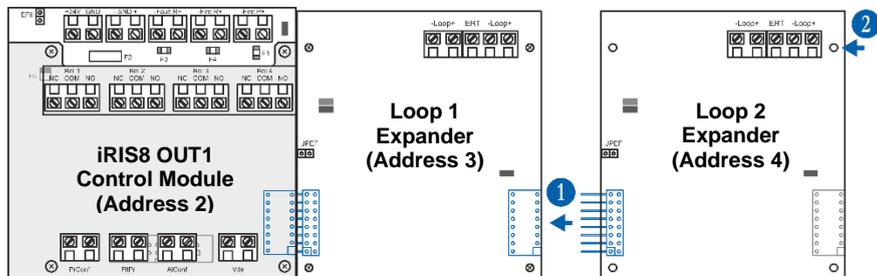
1 - Connect the interface connectors of the first and the second loop expanders.
**2** - Fix the second loop expander to the metal carrier of the panel.

The Loop expanders must be added or removed from the system configuration only when the main and back-up power supplies are off!

Figure 24

In iRIS8 B can be added up to 8 loop expanders, distributed in two series – Loop expanders 1-4 connected to OUT1 control module and Loop expanders 5-8 connected to OUT2 control module.
The same organization is applied in configuration of panels iRIS8 S + iRIS8 Ext.

It is possible to distribute the Loop expanders to OUT1 and OUT2 control modules in random configuration depending on the system organization. Note that, the ***iRIS8 panel will recognize the mounted loop expanders with their factory set addresses***, which may not be consecutive. Later, the engineer can set new numbers for the loops, according the system configuration.
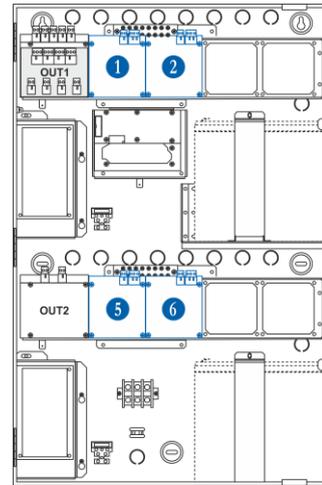
Examples:
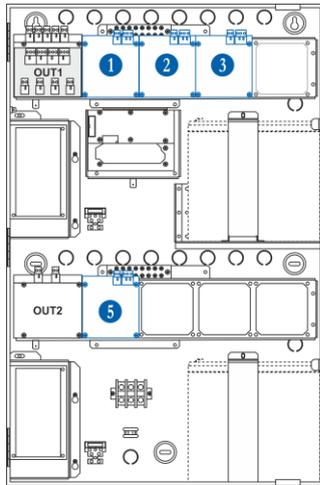
The iRIS8 will recognise 4 loop expanders – 3 connected to OUT1 (numbers from 1 to 3) and 1 connected to OUT2 (number 5).
The loops will be set with the factory addresses:
- Loop 1 – Address 3
- Loop 2 – Address 4
- Loop 3 – Address 5
- Loop 5 – Address 7

The iRIS8 will recognise 4 loop expanders – 2 connected to OUT1 (numbers 1 and 2) and 2 connected to OUT2 (numbers 5 and 6).
The loops will be set with the factory addresses:
- Loop 1 – Address 3
- Loop 2 – Address 4
- Loop 5 – Address 7
- Loop 6 – Address 8

Figure 25

4.5.5 Finding Short-Circuit in the Loop Line

The connection diagram shown on Figure 26, gives the possibility to provide operation of the loop in case of short-circuit fault, using devices with built-in isolator modules. For example, short-circuit in section 2 will not influence the operation of sections 1 and 3. The isolator modules at the both ends of section 2 will isolate it, and section 1 and 3 will continue working properly, as section 1 will operate by supply from the channel "A" and section 3 - by supply from channel "B". Since the fire panel will not be able to communicate with the devices from section 2, it will generate an alarm signal for lost devices and open circuit.
The maximum recommended number of devices between two isolator modules (module isolator device or using the built-in module isolator in a device) is 30!
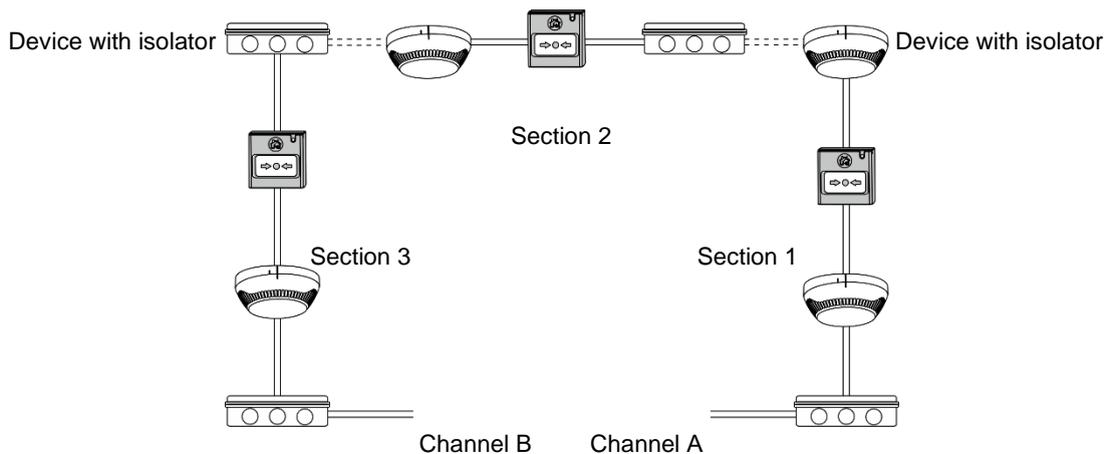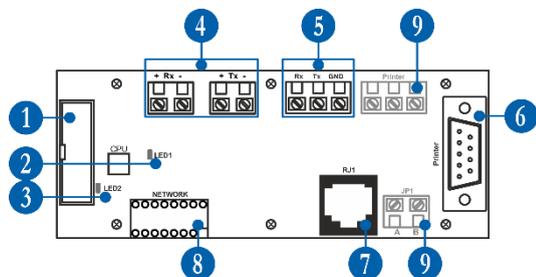

Figure 26

4.6. Interface Communication Module

The interface communication board is an additional basic module included in configuration of iRIS8 B and iRIS8 S panels. **The interface module is not a periphery device.** Its purpose is to provide a connection to external panels and devices with different functionality via specific communication protocols.

4.6.1. Elements of Interface Communication Module

*Note to positions 4 and 5:
The using of communication protocol is enabled from the installer programming menus at level 3:
System-Programming-Panel-FAT/FBF&ESPA444.
You can program operation with only one of the communication protocols, *respectively you can use only one interface connection.*

1 – Interface ribbon cable connected to Main control module PCB (factory mounted).
2 - LED (red) – Communication between the module and the fire panel.
3 - LED (red) – Communication between the module and the connected external panel/device.
4 - Terminals for connection with panels/devices using RS485 communication protocol*.
5 - Terminals for connection with panels/devices using RS232 communication protocol*, for example FAT/FBF or ESPA444 - see item 4.6.3 for details about connecting of FAT/FBF panels.
6 - DB9 interface connector for connecting a thermal printer see item 4.6.2.
7 – RJ1 connector for connecting EVAC panels for voice evacuation – see item 4.6.4.
8 - Interface for connection of redundant network module – see item 4.6.5.
9 - For future use.

Figure 27

4.6.2. Thermal Printer Connection

The thermal printer allows the technician to print the log file for the alarm and fault events, warnings and changes during programming. The capacity of log file is 10 240 events, which are saved with date and time of occurring.

iRIS8 panels support operation with the following thermal printers types:
- Canon 9 type external printers, models Kafka and Datecs (EP1000), stand-alone devices.
- IRIS Printer, situated in a metal box, suitable for building of a modular structure.

You can use only one printer connected to the iRIS8 panel. The type of printer is selected from the installer programming menus at level 3: *System-Programming-Panel-Printer.*

For connecting the iRIS8 panel to Canon type thermal printer, you have to prepare a special cable for the purpose – connect two male DB9-DB9 (for model Datecs printer) or DB9-DIN5 (for model Kafka printer) type connectors as shown on Figure 28.
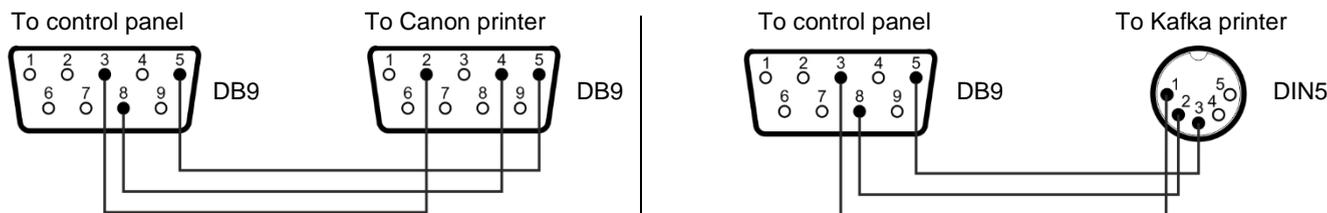

Figure 28

The connection of iRIS8 panel to IRIS Printer is with a flat interface 800 mm long cable, supplied in the spare parts kit of IRIS Printer - connector types DB9 to DC10. Connect the DB9 connector to Printer terminal of the interface module and the IDC10 to IRIS Printer PCB.
Before printing (access level 2 or 3), make sure that the thermal printer is connected to the Printer terminal of the interface module and the printer is powered on.
To start printing enter menu: *System-Maintenance-View Log and press Print button.* If the thermal printer is unavailable or off, the button will be not operable.

4.6.3. FAT/FBF Panels Connection

The iRIS8 addressable fire alarm panel can be used in systems for announcing a fire brigade unit for a fire alarm situation in the protected site. Such systems are mainly used in Germany, as the fire panel is connected to FAT/FBF (Fire Brigade indication panel with integrated Fire Brigade operation panel) type control panels via standard serial interface. The general system configuration, according the German standards, includes: Fire alarm panel, FAT/FBF control panel, Dialer - (GSM, GPRS, PSTN or similar transmission equipment), key safe and adapter box for the key safe.

Compatible German Fire Brigade Panels – Schraner

FAT-KÜ - German Fire Brigade Control and Indicator Panel (Feuerwehr-Anzeigetableau combined with a Feuerwehr-Bedienfeld). A red metal housing (dimensions 360 x 250 x 60 mm) with a door. A key is required to open the door, which has a Plexiglas ahead of the front. It has cable inlets on the back side and is intended to be wall mounted. The function, Display information, LED indicators and push buttons on the front are in accordance with DIN 14661 / 14662. The front's designation texts are in German. The FAT-KÜ must be connected to a redundant network created by the SM3-RM redundancy module to guarantee the correct operation with iRIS8 fire alarm panel.
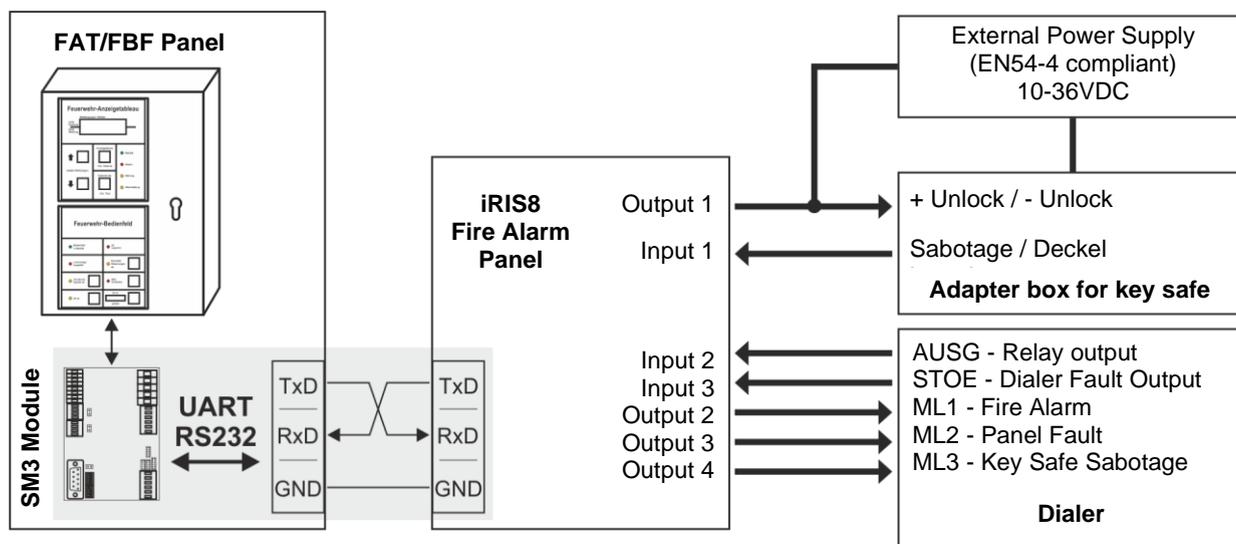
Block Diagram

Figure 29

Notes:
- *The connections between iRIS8 fire panel and the adapter box for key safe, and the Dialer are realized using the addressable modules with inputs and outputs (MIO22, MIO22M, MOUT, MINP, MIO04, MIO40, MiniOUT), as for the outputs can be used also the panel's programmable relay outputs – Figure 18. Different combinations are possible according the system configuration.*
- *The programming of the inputs and outputs controlling the operation of the adapter key safe and the dialer is available in menu (access level 3 - System-Programming-Panel-FAT/FBF&ESPA444, select the option FAT/FBF, press Apply button and then press MORE button).*
- *The connection is realized to RS232 terminals of the interface board – Figure 27, position 5.*
- *A jumper must be set on the top position of the JP-4 terminal.*

The UART connection is realized between iRIS8 fire panel and SM3 redundancy module. The internal connection between the redundancy module and FAT/FBF fire brigade panel is presented in Figure 30.
ATTENTION: The connection cable UART/RS232 must be protected or not visible (for example, placed in conduit)! The connection cable must be less than 3m!
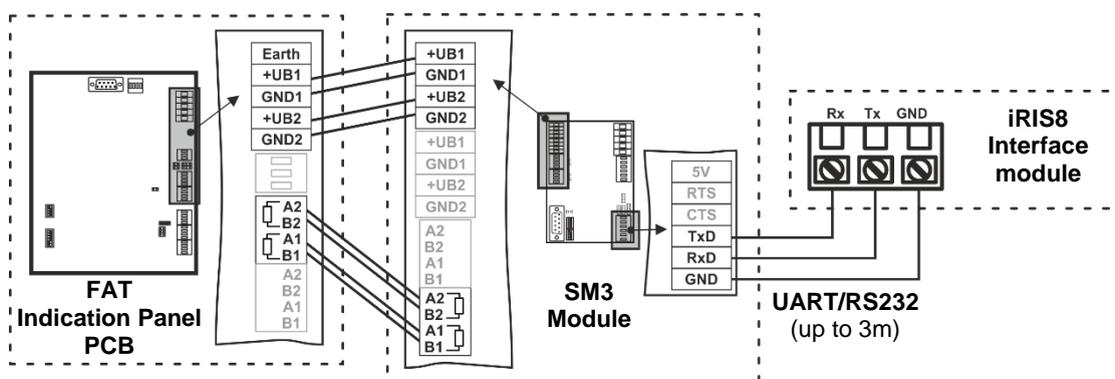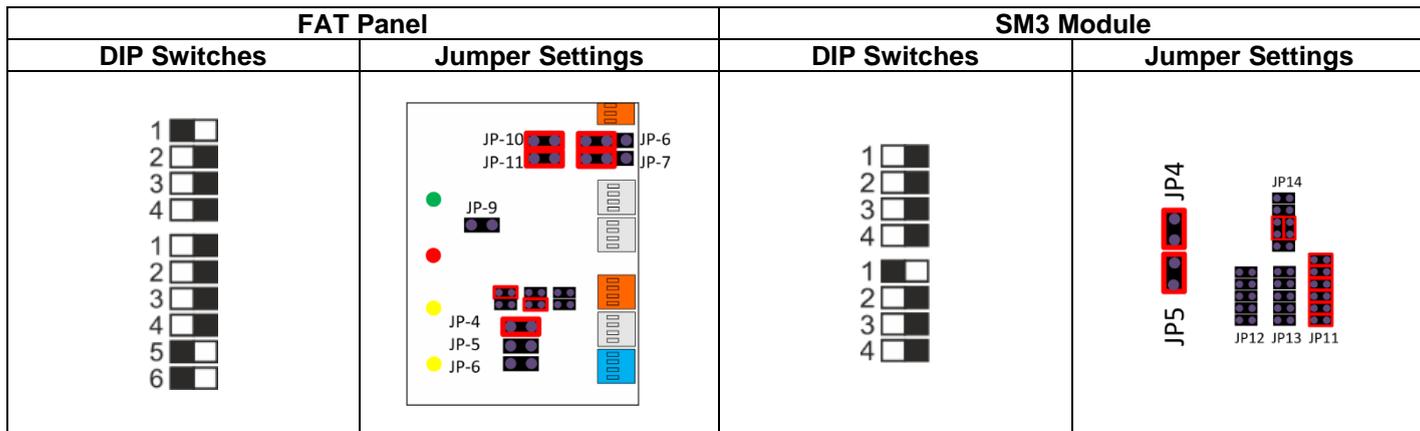

Figure 30

For the correct operation of the system configuration with iRIS8 panel, is obligatory also to set the DIP switches and jumpers of the FAT indication panel and SM3 redundancy module in the following way:

FAT Panel		SM3 Module	
DIP Switches	**Jumper Settings**	**DIP Switches**	**Jumper Settings**

Note: The detailed description and documentation for FAT-KÜ control panel, SM3-RM module and other suitable products is available at the site of the manufacturer - https://www.schraner.de

General Description

The performed above configuration of iRIS8 and FAT/FBF control panel is realized at the protected site. In case of a fire alarm situation the dialer sends an alarm signal to the Fire Brigade Unit. The Fire Brigade Unit receives the signal and confirms it (via a special switch installed at Fire Brigade Site, according German standards*). The iRIS8 panel receives the signal from the Fire Brigade and unlocks the adapter box with key safe. (The key safe keeps all the keys for the rooms in the protected site.) The Fire Brigade Officer unlocks the key safe (with own key) and takes all the keys for the rooms. When the fire is extinguished, the Fire Brigade Officer returns all the keys back to the key safe and locks it. Now the iRIS8 panel must be reset to normal operation mode. After resetting, the adapter of the key safe is locked, the Dialer is returned to stand-by mode, and all of the messages for alarms and warnings are cleared.

* For detailed information about the system requirements according the German standards and the operation of iRIS8 panel connected to FAT/FBF (Fire Brigade Indication and Operation Panel) you can ask your distributor.

4.6.4. EVACUATION Panels Connection

The addressable fire alarm panel iRIS8 is designed with option for connection to specialized panels for voice evacuation and/or sound management systems. The EVACUATION (SPIKA or PASO series) panels are connected to iRIS8 panel via RJ1 terminal of the interface module (Figure 27, position 7).

To use the Evacuation Voice system, the installer must program a number of parameters in menu (access level 3): *System-Programming-Panel-Sounders Mode-MORE-Evac Zones.*

The communication is based on RS485 interface.

Attention: Connection of max. 6 panels, numbered from 0 to 5, in a network (5 EVACUATION panels and 1 iRIS8 panel)!
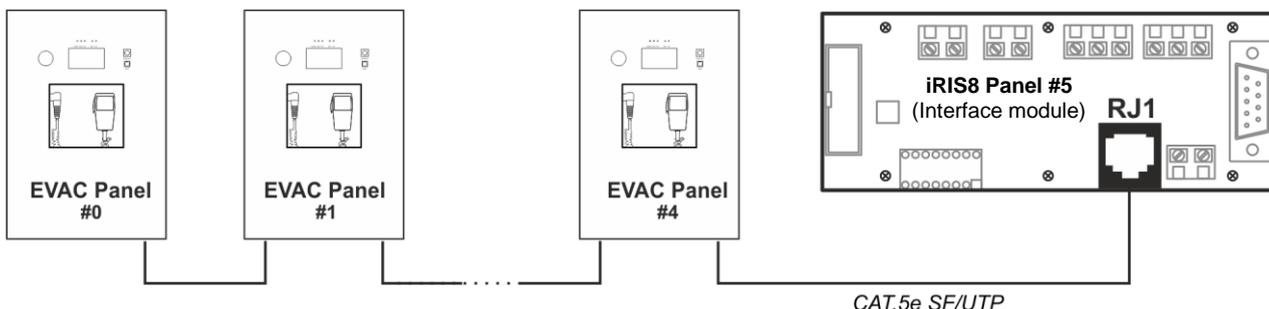**iRIS8 panel always takes the last number in a network with EVACUATION panels!**

Figure 31

4.6.5. Redundant Network Module

The iRIS8 addressable fire alarm panel is designed with option for connection in a redundant network with other iRIS8, iRIS4, SIMPO and IRIS/SIMPO Repeater panels (up to 64). The redundant network is based on RS485 interface.

The Redundant Network Module is an additional interface board, sold separately. The module is mounted to Network connector of iRIS8 Interface module, as first the installer must dismount the protective screen – see item 3.4.
The additionally mounted PCB should be fixed with screws to the metal supporting frame. The maximum cable length between two network modules and/or repeater panel should not exceed 1000m.

To use the redundant module, the installer must set the Network type for all connected panels as "RS485" in installers menus (access level 3): *System-Programming-Panel-Network-Network Settings-Network Type.*
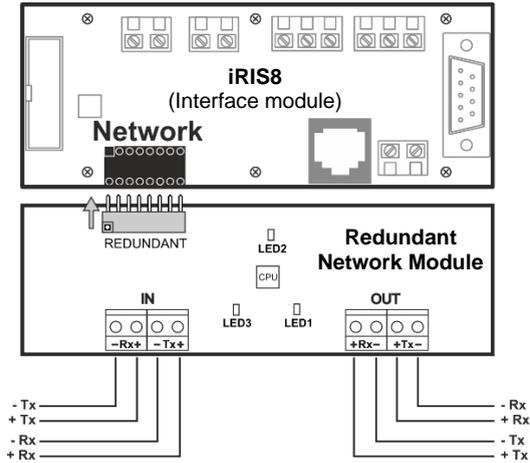
Redundant Network Module Basic Information

Technical Characteristics:
Communication - RS485
Twisted pair cable:
- Length - max. 1000m (between two modules)
- Cross Section - 0.5 - 2.5mm^2

LED Indication:
LED1 - Output communication
LED2 - Panel-Module communication
LED3 - Input communication

Operation Modes:
Normal - Blinking LEDs
Trouble - Lighting on LEDs

Figure 32

4.7. Connection of a Repeater Panel

The Repeater panel is a control panel for remote indication of fire alarm, fault, trouble, warning, and other type of events, reported from iRIS8, iRIS4, SIMPO and other Repeater panels connected into one common network. The IRIS/SIMPO Repeater can operate only as a part of a network. It repeats the status of the connected fire panels and informs for events.

Up to 64 panels can operate in a single network, including IRIS/SIMPO Repeater, iRIS8, iRIS4 and SIMPO fire alarm panels. According the used Repeater model, the connection in the network between the panels can be realised via RS485 interface or LAN:
- Model IRIS/SIMPO Repeater TFT – RS485 interface or LAN
- Model IRIS/SIMPO Repeater – RS485

Only one type of connection can be used in a single network.

RS485 Interface

The RS485 interface is built-in the repeater panel and the connection with iRIS8 is realized via Redundant network module (Figure 32) connected to "NETWORK" connector on the interface module of iRIS8.

The following table represents the correspondence of Tx/Rx terminal connections for IN and OUT communication lines.

Observe the polarity of the RS485 interface connection!			IRIS/SIMPO Repeater							
			IN				OUT			
			Tx		Rx		Tx		Rx	
			+	-	+	-	+	-	+	-
Redundant Network Module	IN	Rx	-						▓		
			+					▓			
		Tx	-								▓
			+						▓		
	OUT	Rx	+	▓							
			-		▓						
		Tx	+			▓					
			-				▓				

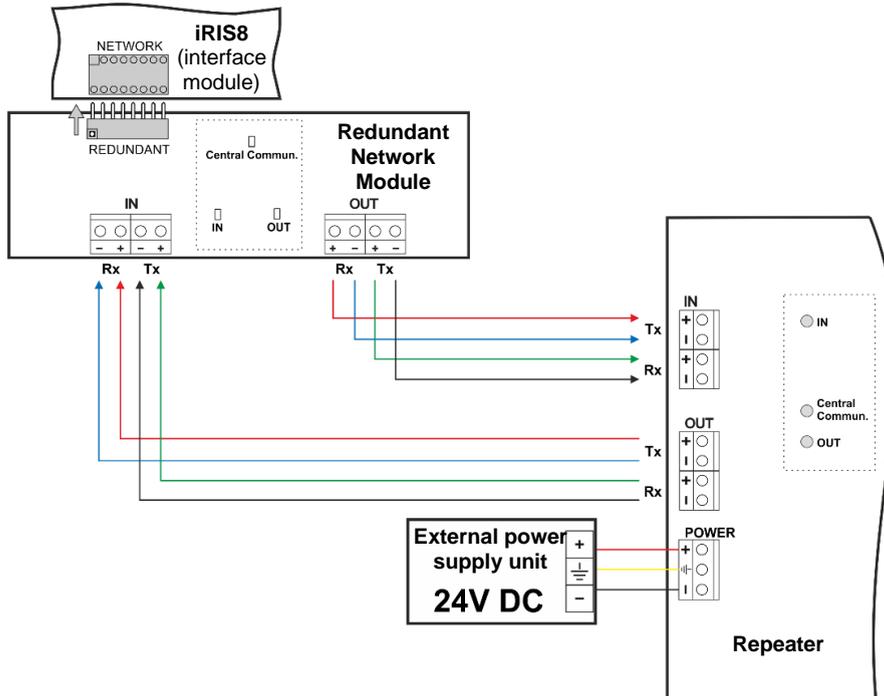The repeater panel is powered up from an undependable external power supply 24 VDC - Figure 33.

Figure 33

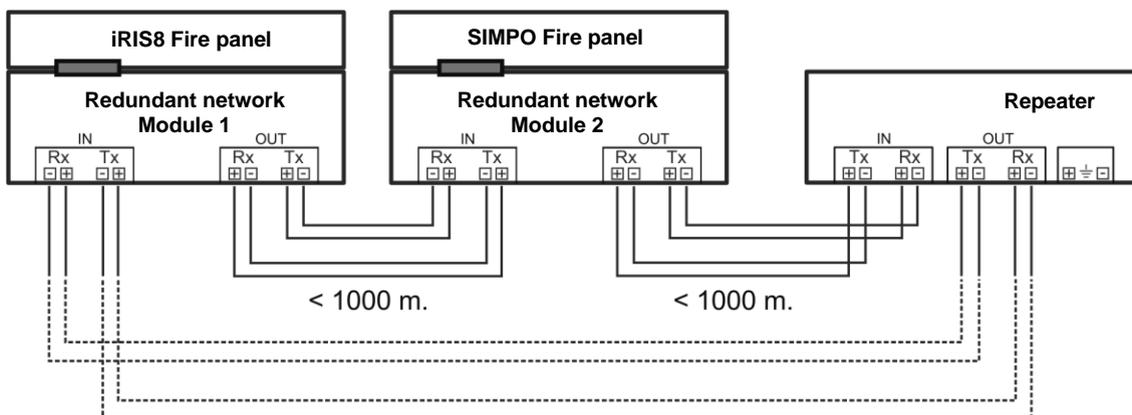The maximum cable length between two network modules and/ or repeater panel is 1000m.

Figure 34

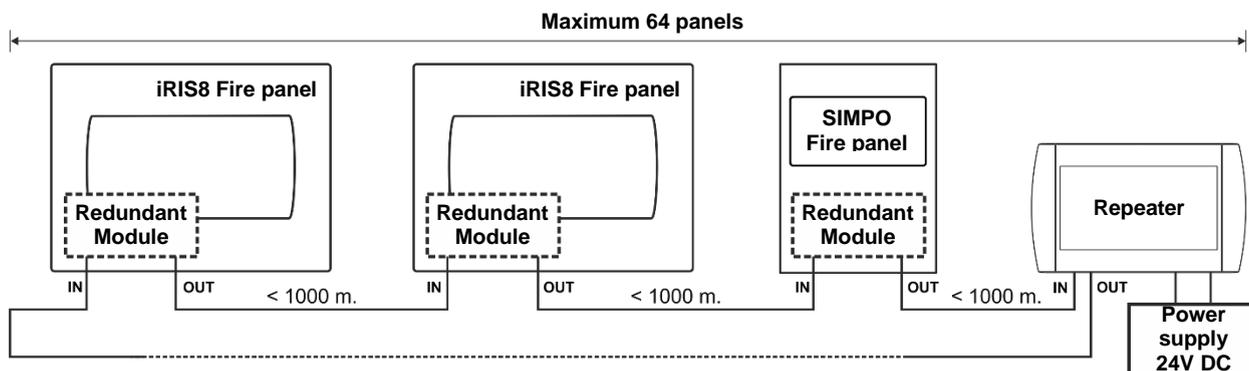Up to 64 panels can be connected in a common redundant network.



Figure 35

LAN Interface

Model IRIS/SIMPO Repeater TFT supports operation also via LAN network. Note: The LAN connector is accessible after removing the left and right side covers and the front panel of the enclosure box. The general connection diagram for LAN network is presented in item 4.9.

4.8. Main control module PCB

The Main control module is situated on the back side of the front cover – Figure 14. On the Main control module is factory integrated a control module - uPC Module, for control of the panel functions and operations.
The Main control module PCB is not a periphery device.

Attention: The iRIS8 panel is delivered with factory set jumpers and interface connections on the Main control module PCB. DO NOT CHANGE the jumper settings and interface connections to avoid faults and malfunctioning of the panel.
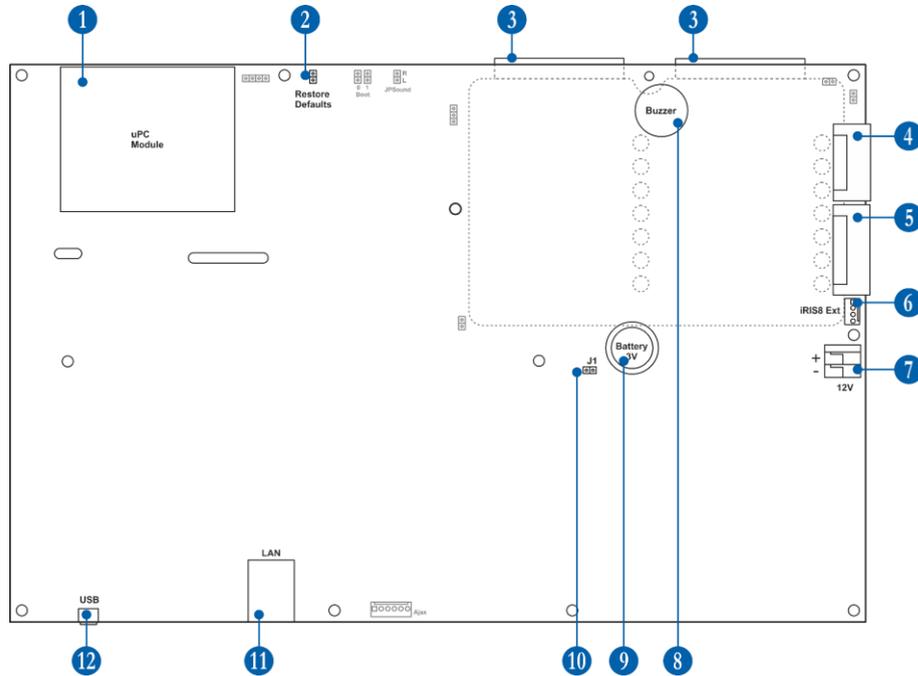
1 - CPU Control module integrated to the Main PCB.
2 - Restore Defaults Jumper for resetting the panel with default parameters.
3 - Openings under the Main PCB for PVC text label with description of the LEDs indication.
4 - Connector to the Interface Module (factory connected).
5 - Connector to the Outputs Control module OUT1 (factory connected).
6 - Interface connector for connection to the Outputs Control module OUT2 – see item 4.4.
7 - ±12V - Additional power supply.
8 - Buzzer for sound signalization.
9 - Built-in 3V backup battery for the real-time clock.
10 - Jumper J1 for battery activation. The jumper J1 is factory set and must not be removed.
11 - LAN interface connector.
12 - Micro USB port for software and firmware update.

Figure 36

4.9. LAN connection

The realization of LAN network is possible only for Repeaters TFT model and iRIS8 series addressable fire alarm panels (up to 64). The LAN connection can be direct panel-to-panel or by means of a HUB via TCP/IP protocol.
To operate in LAN network with other iRIS8 and Repeater TFT panels the installer must set for all panels "LAN" type of the communication protocol.
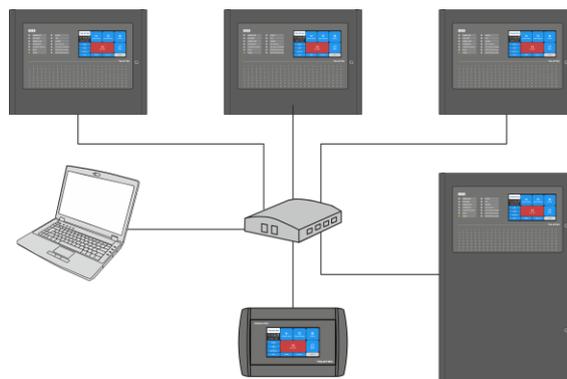

Figure 37

5. SUPPLEMENTARY INFORMATION

5.1. Periphery Devices
All "functional modules" connected to the control panel configuration are defined as Periphery Devices, and have special programming and settings.
*Attention: The Interface module and Main control module PCB are not periphery devices!*

Up to 12 periphery devices can be added to the system configuration of iRIS8 panel. The number and type of the functional modules depend on the panel's model.

Periphery Device	Model and max. number of supported periphery devices		
System name and description	**iRIS8 S**	**iRIS8 S + iRIS8 Ext**	**iRIS8 B**
PSU – Main power supply	1	2	2
OUT – Outputs module	1	2	2
LOOP – Loop controller (expander)	4	8	8

The periphery devices have factory set address numbers that cannot be changed. The following diagram shows the position and the set factory addresses. The loop controllers always take factory addresses from 3 to 10. The loops can be freely numbered in case of network connection between the panels.

The following drawing of the hardware configuration of iRIS8 panel models and table represent the ***fixed factory addresses*** of the periphery devices, and set by default loop numbers, which must be assumed during the initial power up and programming of the whole system.
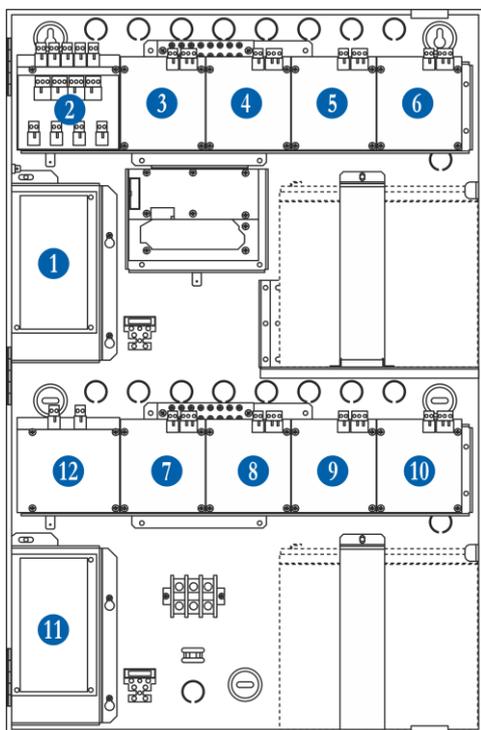
Model iRIS8		System Name	Periphery Device	Factory Address	Loop Number
iRIS8 S + iRIS8 Ext	iRIS8 S	PSU	PSU 1	1	n.a.
		OUT	OUT 1	2	n.a.
		LOOP	LOOP 1	3	1*
		LOOP	LOOP 2	4	2*
		LOOP	LOOP 3	5	3*
		LOOP	LOOP 4	6	4*
	iRIS8 B	LOOP	LOOP 5	7	5*
		LOOP	LOOP 6	8	6*
		LOOP	LOOP 7	9	7*
		LOOP	LOOP 8	10	8*
		PSU	PSU 2	11	n.a.
		OUT	OUT 2	12	n.a.

The free addresses for periphery devices are presented as EMPTY.

* *Freely programmable from 1 to 255, according system configuration. Setting the loop number is available after connecting (adding) and saving (SAVE button) the loop expander module to the panel hardware configuration.*

Figure 38

5.2. Methods for Addressing Loop Devices from the Panel

After connection the loop line(s) to the loop expander(s) and powering up the fire panel, iRIS8 automatically recognizes the type of connected devices and shows them in the order of finding them along the loop line. The Installer can choose if to Save the devices with automatically set numbers, or to address them according the requirement of the installation specific for every protected site. The installer can use three approaches for adding and addressing devices to the system configuration.

• **The devices are directly connected to the panel via iRIS8 TTE Loops.** The panel will recognize them and gives automatically addresses according the order of the devices in the line. The panel will start with the first free address in the system configuration. The installer can SAVE the new devices one-by-one or all at the same time with SAVE button from the Programming main screen.

• **SELF ADDRESSING.** The new devices are prepared for connection to the system configuration - the loop line is ready but the devices are not installed (the detectors and sounders are not mounted to the bases, the call points and modules are not connected to the loop). The installer enters (access level 3): System-Programming-Devices-Addressing-Start Self Addressing menu. The panel shows the first free address for every of the available iRIS8 TTE loops. Now the installer can start mounting detectors and modules one-by-one. The panel will set the displayed address number to the mounted device and automatically proceeds with next free address in the system.

• **AUTO ADDRESSING.** The auto addressing feature of iRIS8 panel has the purpose to make the installation of the addressable systems easier. By using it the installer could mount all devices without setting address and then do it automatically by a single click in the panel. There are two main ways for auto addressing: by ID number of the devices, and by isolators.

The direction of auto-addressing procedure by isolator module, according the positive and negative lines of the iRIS8 TTE Loop expander, is shown on Figure 39:
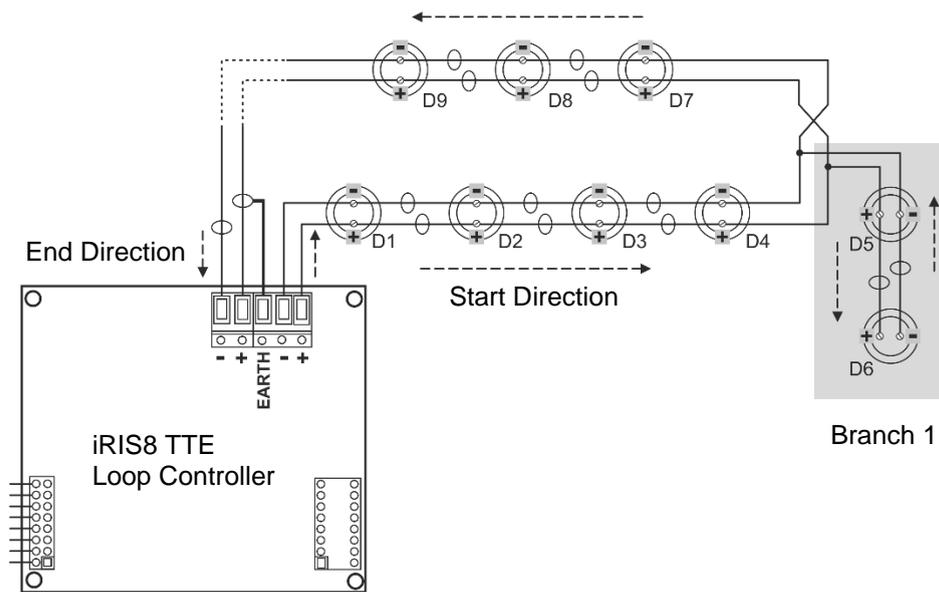

Figure 39

Routine Maintenance

iRIS8 S and iRIS8 B control panels do not require any specific maintenance. To clean the panel's surface, use a dry cloth. Detergents or solvents should not be used to clean the panel and care must be taken that water does not enter the enclosure.

The control panels contain sealed lead acid batteries (12V/18Ah; 12V/17Ah; 12V/22Ah*) to provide standby power in the event of mains failure. This battery has a life expectancy of around 4 years. It is recommended that this battery be annually tested in accordance with the battery manufacturer's recommendations to determine its suitability for continued standby applications.

Routine testing of the fire alarm system in accordance with EN54-14 will identify any malfunction of the control panel and any malfunction should be reported to the fire alarm maintenance company immediately.

Detection devices are automatically calibrated on a daily basis and any devices that fail the detector manufacturer requirements will be notified as a maintenance fault. The contamination status menu is also useful in determining detection devices that are approaching their working range limits.

Care of the TFT Screen

iRIS8 is equipped with TFT control screen, presenting clear view and user-friendly interface for operation. It is recommended to use touch pen to avoid damage and contamination of the sensitive TFT screen during operation. Do not use sharp instruments for pressing the screen, like screwdrivers, tweezers or pliers, because they can scratch or break the plastic surface of the screen and the panel to become not operational!

Attention: The enclosure box is not waterproofed! Clean the metal surface with a dry cloth only, and the TFT screen with cleaning sprays or foams containing no solvents (alcohol, acetone, ammonia, etc.).

* NOTE: Not certified by EVPU.

TELETEK