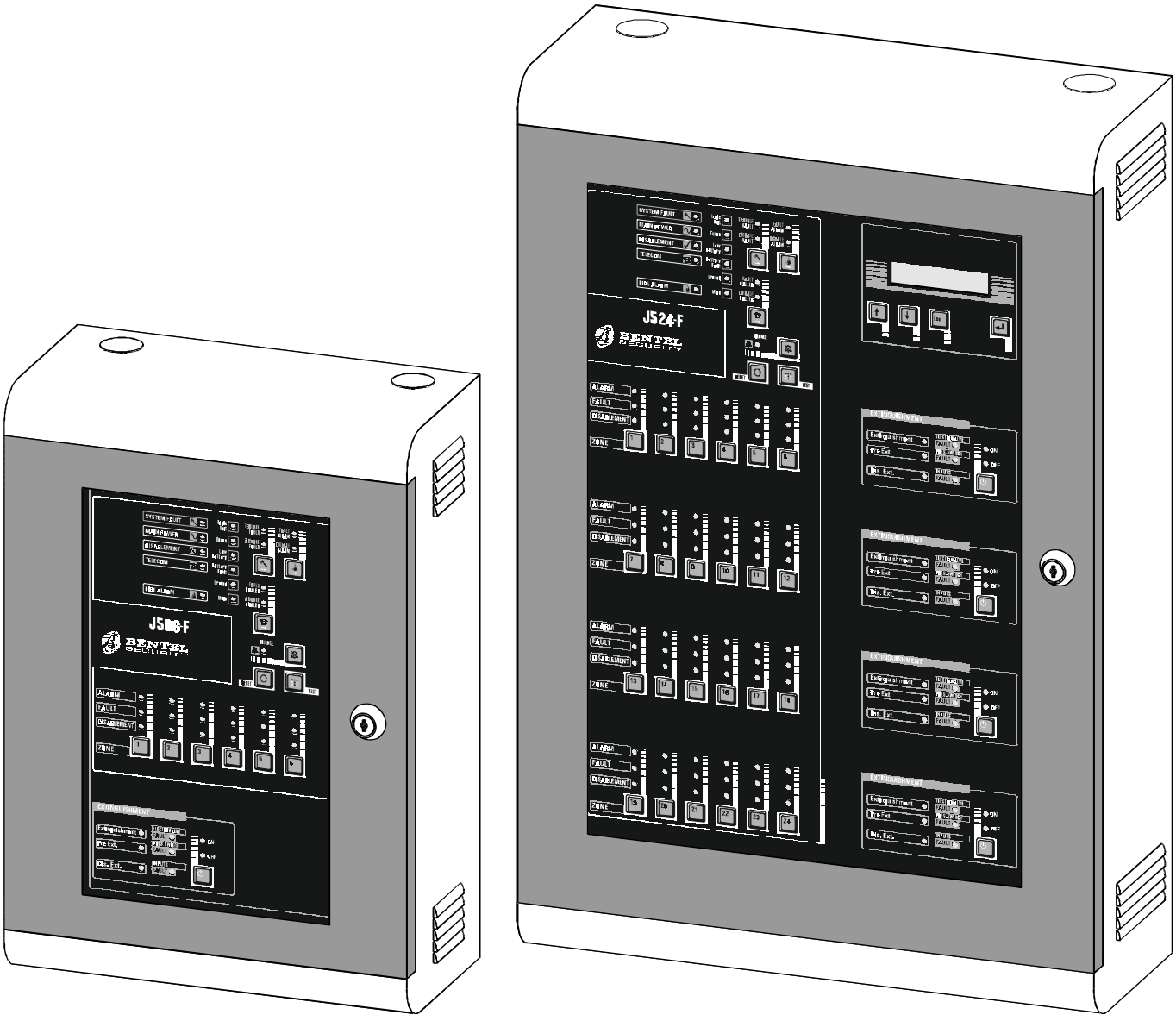
FIRE CONTROL PANELS

J524-F J506-F



INSTALLATION AND USE MANUAL

V4.2 BUSQ 0.1 230199

BENTEL SECURITY

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CONFORMITY DECLARATION

We certify that the fire control panels

J254-F *and* **J506-F**

comply with the guidelines as given in the following standards

Emission:

- ***EN 50081-1/1992***

Immunity:

- ***EN 50082-1/1992***

Low voltage:

- ***EN 60950:1996 + A4:1997***

Fire alarm:

- ***EN 54 part 2***
- ***EN 54 part 4***

CE

J506-F: DAT no. **U0859**
J524-F: DAT no. **U0860**

Grottammare (AP)
26/09/1997

INDICE

GENERAL FEATURES

MAIN BOARD

- ❒ 6 CONTROLLED/BYPASSABLE input zones.
- ❒ Up to 21 devices can be connected to each zone: conventional fire detectors, alarm buttons and gas detectors.
- ❒ One alarm-repeat output for each input zone.
- ❒ NON-CONTROLLED/NON-SILENCEABLE/NON-BYPASSABLE fire-alarm outputs at 24 V⎓ plus Free Voltage Exchange.
- ❒ CONTROLLED/SILENCEABLE/BYPASSABLE fire-alarm outputs at 24 V⎓ and at 12 V⎓.
- ❒ CONTROLLED/SILENCEABLE/BYPASSABLE fault-warning output at 24 V⎓.
- ❒ Connection terminals for the JS24 annunciator panel.
- ❒ **J524-F:** connector for the 6 zone JES56-F expander board.
- ❒ **J524-F:** connector for the serial interface.
- ❒ Visual (LED's) and acoustic (buzzer) function-status signals.
- ❒ **J506-F:** incorporated power supply/battery-charger 27.6 V⎓, 1.1 A.

SWITCHING POWER-SUPPLY

- ❒ Power supply/battery-charger 27.6 V⎓, 2.5 A.

EXPANDER BOARD

- ❒ 6 CONTROLLED/BYPASSABLE input zones.
- ❒ Up to 21 devices can be connected to each zone: conventional fire detectors, alarm buttons and gas detectors.
- ❒ One alarm-repeat output for each input zone.

CONTAINER

- ❒ Commands protected by lockable door.
- ❒ Holes for externally laid cable and and chased cable conduit.
- ❒ Removable door.
- ❒ **J524-F:** supports up to 3 expander boards (24 zones), and display module.
- ❒ **J524-F:** compartment for two 12 V, 17 Ah batteries.
  J506-F: compartment for two 12 V, 7 Ah batteries.

J524-F and J506-F control panels

The J5024-F and J506-F control panels have been developed and manufactured according to the high standards of quality, reliability and performance of all BENTEL SECURITY srl products.

The parts of the J524-F and J506-F control panels are at their best when the environmental conditions, external to their containers, comply with the 3k5 category of the IEC 721-3-3:1978.

The J524-F and J506-F control panels are basically similar: both have a main board with 6 CONTROLLED/BYPASSABLE input zones; CONTROLLED/SILENCEABLE/BYPASSABLE fire and fault-alarm outputs, and other outputs without these features.

The J524-F model is suitable for large installations, it supports up to 3 expander boards for a total of 24 zones, and a display module; it also has an RS232 interface for PC connection, a 2.5 A switching power-supply, and houses two 12 V, 17 Ah batteries.

The J506-F model is suitable for medium sized systems, it has a 6 zone main board, and is powered by an on-board 1.1 A linear power-supply, and holds two 12 V, 7 Ah batteries.

Both models have terminals for the connection of an annuciator panel.

Optional items

JES56-F This is an *expander board* with 6 input zones, for the connection of fire detectors, and connectors for a main board and other expander boards. By means of these connections, the expander boards communicate the status of their inputs to the main board, which in turn activates the signalling and control devices. Several expander boards may be connected, thus, permitting total customization.

JLCD5-F This is a display module with a backlit LCD, with two rows of 16 characters each. By means of the 4 buttons under the display, it is possible to obtain detailed information on the warnings signalled on the LED's on the front panel of the J524-F model. Only the J524D-F is equipped with the display module, but it is possible to install the module in the J524-F model.

JS24 This is a *annunciator panel* which can be connected, by means of **just 5 wires,** to the **J524-F** and **J506-F** control panels. It is for the repetition of all the visual and acoustic signals, and can be installed **up to 100 metres** away from the control panel.

Software The software runs in Windows environment, and controls the status of the **J524-F** control panel connected via RS-232 serial to the PC. It also permits control panel programming, event logging and print-out.

Inputs

The control panel has specified inputs for fire detection devices (detection zones), for the connection of the conventional fire detectors. These inputs act as open contacts during standby status, and as resistors during alarm status. Therefore, devices with the same features as fire detectors, such as alarm buttons and gas detectors can also be connected.

☞ Do not connect more than 21 devices to each zone.

These are normally-balanced inputs with a 2,700 ohm resistor, and can detect and signal fire, lines in short-circuit (possibly generated by detector fault), and tamper-on-line (caused by the removal of a detector from its base).

Outputs

The outputs of the J506-F and J524-F control panels can be divided into two groups: ***CONTROLLED/SILENCEABLE*** and **NON-CONTROLLED/NON-SILENCEABLE**.

The first group (CONTROLLED/SILENCEABLE) consists of:

- an output with the positive (27.6 V⎓) in the event of an alarm (terminals 30-31[AT+]);
- an output where the positive (27.6 V⎓) fails in the event of an alarm (terminal 32[AT-]);
- an output where the positive (13.8 V⎓) fails in the event of an alarm (terminal 34[F]), this is particularly suitable for the connection of telephone diallers which function at 12 V.

The control panel can detect and signal short-circuits and interruption on these outputs, and has silence buttons to disable them; silencing effects only these outputs, and does not effect NON-CONTROLLED/NON- SILENCEABLE outputs.

The [AT+] and [F] outputs comply with the EN54-2 standard.

The second group (NON-CONTROLLED/NON-SILENCEABLE) consists of:

- a specific output for the connection of intrinsically safe devices, such as the self-powered sirens at 24 V⎓ (terminal 27[+N]);
- a specific output for the connection of piezoelectric sirens, fire bells, flashers and similar devices which function at 24 V⎓ (terminal 26[+A]);
- a free exchange (terminals 23[NO] 24[COM] and 25[NC]) which, by means of simple wiring, permits control of all the devices which cannot be connected directly to the other two outputs.

☞ Only devices which function with SELV current (Safety Extra Low Voltage) can be connected to the NON-CONTROLLED/NON-SILENCEABLE outputs.

A repeat output ([Ox] terminal) is assigned to each input zone, for selective management in the event of fire, and activates only the devices in the zone which generated the alarm.

The first group (CONTROLLED/SILENCEABLE) has an output that is activated in the event of fault: the negative is on this output (terminal 28[-G]) during this event.

Functioning

In the event of alarm on an armed detection zone, the control panel activates the devices connected to the alarm outputs.

The alarm status is indicated:

- by the solid **ALARM** LED assigned to the zone that has generated the alarm;
- by a **quick intermittent** sound emitted by the control-panel buzzer;
- by the solid FIRE ALARM LED on the front panel;
- by the message [Fire Al. F=Ø1|T. Al.=Ø1 L=Ø1 ↵] on the display of the J524D-F model (see "Fire alarm" on page 29);
- by the connected terminals 24[COM] and 23[NO];
- by Voltage (27.6 V⎓) on the terminals 26[+A] and 31[+AT+].
- by Voltage failure (27.6 V⎓) on the terminal 27[+N] and 32[AT-];
- by Voltage failure (13.8 V⎓) on the terminal 35[F].
- Press the SILENCE button to stop the silenceable alarm-outputs momentarily, this status will be held until the button is pressed again.

  Press the **RESET** button to stop the alarm cycle completely.

CONTROLLED terminals Terminals assigned to the input zones, and to certain fire and fault-alarm outputs are **CONTROLLED**, therefore, in standby status they must be connected to ground with a 2,700 ohm resistor (red-purple-red-gold), if however, they are short-circuited or open they will generate a fault alarm, indicated:

- by an **intermittent sound** (0.5 s) on the control panel buzzer;
- by the solid SYSTEM FAULT LED on the front panel of the control panel;
- by the solid fault LED assigned to the zones and/or the outputs in short-circuit or open (see LED's: **TROUBLE FAULT**, **FAULT ALARM**, **FAULT DIALLER** and **FAULT**);
- by the message[FAULT F=Ø1|T.Flt=Ø1 L=Ø1 ↵] on the display of the J524D-F model (see " Fault alarm" on page 29);
- by the negative on terminal 28[–G];

  The fault-alarm output (28[–G]) will return to standby status spontaneously, when the fault status ends, **unless the fault is on this output, in which case it will remain active until the SILENCE or RESET button is pressed**.

Even when fault status ends spontaneously, faults are *signalled* **until the control panel is rearmed. Memorized faults are signalled by:**

- a **brief acoustic signal** (1 s) followed by a **very long pause** (9 s);
- **flashing** of the relevant LED's;
- the message `[Fault memory !|Signalling ON]` on the display of the J524D-F model.

SILENCEABLE Terminals By pressing the **SILENCE** button on the front of the control panel, it is possible to force the silenceable alarms into standby status; the standby status is held until the button is pressed again, or a new alarm status occurs (fire or fault). This status is signalled by:

- a **brief acoustic signal** (1 s) followed by a very long pause (9 s);
- the solid **SILENCE** LED.

BYPASSABLE terminals The terminals assigned to the input zones, and to certain fire and fault-alarm outputs can be disabled by means of the specific buttons on the front of the control panel (see **DISABLEMENT**, **DISABLE FAULT**, **DISABLE ALARM** and **DISABLE DIALLER**). The disabled input zones cannot generate any alarms (neither fire nor fault), and the disabled alarm outputs will not be activated in the event of fire or fault.

☞ The BYPASSABLE outputs can be disabled only when they are inactive. Furthermore, if they are enabled during alarm status (fire or fault) they will be activated immediately. The input zones can be bypassed even when they are active, in this case, however, the corresponding alarm output (terminal [Ox]), and the fault-alarm outputs will be disabled (that is, if the fault is on the bypassed zone only!). If the input zones are enabled during fire or fault status, the fire or fault-alarm outputs will be activated immediately.

The disabled status is signalled by:

- the solid **DISABLEMENT** LED on the front panel;
- the solid **DISABLED** LED relevant to the disabled zones or outputs (see LED's: **DISABLEMENT**, **DISABLE FAULT**, **DISABLE ALARM** and **DISABLE DIALLER**).

Rearming Press the **RESET** button to force all outputs (CONTROLLED/SILENCEABLE and NON-CONTROLLED/NON-SILENCEABLE) into standby status.

☞ The outputs will return to standby status when rearming has been completed (10 seconds after pressing the button), unless there are still zones in alarm status and/or faults.

When rearming has been completed, the memory will be cleared and the SILENCE command, if active, disabled.

Interface

Visual signals The control panel status is shown by the coloured LED's on the front of the panel. Solid green LED's indicate normal status; a solid amber LED indicates that a specific function has been activated or a fault condition is present; a solid red LED signals alarm status.

Memory Event signalling is held until the control panel is rearmed, even after the event has ended. A memorized event is signalled by:

- a **brief acoustic signal** (1 s) followed by a very long pause (9 s), emitted by the control panel buzzer;
- **flashing** of the LED assigned to the event;
- the message `[Fault Memory!|Signalling ON]` or `[Alarm Memory!|Outputs ON]` on the display of the J524D-F model.

Acoustic signals The table below shows the ***buzzer*** signals for the different conditions.

ACOUSTIC SIGNAL	CONDITION
Rapid Intermittent	Alarm
Intermittent (0,5 s)	Fault
Brief (1 s) and very long pause (9 s)	Silencing or memory
Continuous	Rearm or test LED's

Test The buzzer and all the LED's, including those on the connected annunciator panel, can be checked by pressing the **TEST** button.

Display The J524D-F model has a backlit display with 2 rows of 16 characters each, which besides showing the written details of the warnings signalled on the LED's, also supplies information regarding the cause of faults on inputs and outputs (short-circuit or interruption).

Annunciator panel and PC Both models provide for the connection of a JS24 annunciator panel, for the repetition of all the visual (LED) and acoustic (buzzer) signals, which can be installed up to 100 metres away from the control panel. The J524-F can be connected to a PC equipped with the necessary software (supplied on request), for remote control of the control panel, alarm and fault signal logging and detailed print-out. The software also permits parameter programming and, if need be, the creation of a customer file for data storage.

Access to signalling and commands

There are 4 access levels to signalling and commands, as required by the regulations in force.

Level 1 The plexiglas door permits viewing of the control panel status.

Level 2 The lock allows command access to authorized personnel only (key bearers).

Level 3 Access to the internal parts of the control panel, for maintenance or battery substitution, must be carried out by authorized personnel with the necessary qualifications, and is possible only when the screws securing the inner door have been removed.

Level 4 Repairs on the electronic board (e.g. substitution of the microcontroller) must be carried out by the manufacturer only, and are possible only when the screws securing the inner door have been removed.

Power supply

The power supply systems on the J524-F and J506-F control panels comply with the EN54-4 standard.

Both the control panel models are powered by the mains (230 V~, 50 Hz):

- the **J506-F** model has an on-board linear power-supply, capable of supplying up to 1.1 A at 27.6 V⎓;
- the **J524-F** model has a switching power-supply inside the container, capable of supplying up to 2.5 A a 27.6 V⎓.

Both models can house two 12 V batteries which supply a 24 V standby current to the control panel, and to all connected devices during black-out, and also supply the pickup currents that exceed the power-supply capacity:

- the **J506-F** model can house two 7 Ah batteries (YUASA NP 7-12 FR model or similar, case flame class UL94-V2 or over);
- the **J524-F** model can house two 17 Ah batteries (YUASA NP 17-12 FR model or similar, case flame class UL94-V2 or over).

The control panel can detect, signal and log the following power-supply faults: burnt fuses (**FUSES** LED); low batteries (**LOW BATTERY** LED), battery failure (**BATTERY FAULT** LED), ground fault **(GROUND** LED) and mains failure (**MAIN** LED). These faults are dealt with in the same way as those of the CONTROLLED terminals, for further details see the relevant paragraph.

☞ "Mains failure" may be signalled with a short delay (the time necessary for the filter capacitors to run down), whilst "battery failure" may be signalled with a 2 minute delay (Battery check cycle).

LED's

The following is a description of the LED's on the front of the control panel. The normal (standby) status (column NOR.), and the alarm status (column DESCRIPTION) are described for each LED.

☞ ***Flashing*** of certain LED's is not mentioned in the following table, as it signals that the event, assigned to the LED, occurred and ended before the last rearming operation.

LED	NOR.	DESCRIPTION
GENERAL FAULT	OFF	When **SOLID** one of the following faults has occurred: control panel blocked, burnt fuse, low batteries, battery failure, loss towards ground, external power-supply failure, fault-output open or in short-circuit, fault on one or more zones.
MAIN POWER	**SOLID**	**OFF** indicates external power-supply failure (230 V): power must be restored before the batteries run-down.
DISABLE-MENT	OFF	**SOLID** indicates that one of the BYPASSABLE inputs or outputs has been disabled, by means of the relevant button.
TELECOM	OFF	**SOLID** indicates that the output for telephone devices is active (terminal 34[F] open).
FIRE ALARM	OFF	**SOLID** indicates alarm status: the control panel will activate the alarm outputs that are not disabled.
LOGIC UNIT	OFF	**SOLID** indicates that the control panel is *blocked*: ask your retailer for assistance.
FUSES	OFF	**SOLID** indicates a burnt fuse (fuse **23**, **24** or **25**): the display of the J524D-F model also indicates the fuse concerned.
LOW BATTERY	OFF	**SOLID** indicates low batteries, and therefore, proper functioning of the control panel cannot be guaranteed in the event of black-out: wait several hours, if the LED remains solid, the batteries are no longer rechargeable, and must be replaced.
BATTERY FAULT	OFF	**SOLID** indicates that the batteries are completely down or not present: check fuse **25**
GROUND	OFF	**SOLID** indicates a Voltage leak towards ground: check insulation of all the connections.
MAIN	OFF	**SOLID** indicates Mains Voltage Failure (230 V): power to the control panel is provided by the standby batteries. This LED is in addition to the green MAIN LED, and signals the fault even after power has been restored (memory).
TROUBLE FAULT	OFF	**SOLID** indicates that the fault-alarm output (terminals 28-29[G]) is in short- circuit or is open.

DISABLE FAULT	OFF	**SOLID** indicates that the fault-alarm output (terminals 28-29[G]) has been disarmed, by means of the assigned button ", and therefore, will not be activated in the event of fault.
FAULT ALARM	OFF	**SOLID** indicates that at least one of the CONTROLLED/SILENCEABLE fire-alarm outputs, (terminals 30-31[AT+], 32[AT-]) is in short-circuit or is open.
DISABLE ALARM	OFF	**SOLID** indicates that the CONTROLLED/SILENCEABLE fire-alarm outputs, (terminals 30-31[AT+], 32[AT-]) have been disabled, by means of the assigned button, and therefore, will not be activated in the event of fire alarm status.
FAULT DIALLER	OFF	**SOLID** indicates that the telephone-dialler output (terminal 34[F]) is in short circuit or open.
DISABLE DIALLER	OFF	**SOLID** indicates that the telephone-dialler output (terminal 34[F]) has been disabled, by means of the assigned button, and therefore, will not be activated in the event of fire alarm status.
SILENCE	OFF	**SOLID** indicates that the CONTROLLED/SILENCEABLE outputs (terminals 28-29[G], 30-31[AT+], 32[AT-] and 34[F]) have been forced into standby status, by means of the assigned button: silence status will be held until the **SILENCE** button is pressed again.
ALARM	OFF	**SOLID** indicates fire detection on the corresponding zone.
FAULT	OFF	**SOLID** indicates that the corresponding zone is in short-circuit or open, and therefore, unable to detect fire.
DISABLE-MENT	OFF	**SOLID** indicates that the corresponding zone has been disarmed, by means of the assigned button, and therefore, cannot generate fire alarm.

Parts description

P.	DESCRIPTION
1	*Main board.*
2	*Screw Holes.*
3	*Hole for externally laid cables.*
4	*Battery connectors.*
5	*Fuse to protect power supply:* ***J506-F*** *= F 500mA 250V;* ***J524-F*** *= F 3.15A 250V.*
6	*Terminal board for mains connection : 230 V∿, 50 Hz.*
7	*Hole for chased cables .*
8	*Compartment for two 12 V 7 Ah batteries (not supplied).*

P.	DESCRIPTION
9	*Jumper for the series connection of batteries.*
10	*Bag with:* **a)** *fuses;* **b)** *2 keys;* **c)** *two 1N400 (2 or 7);* **d)** *jumper* **9**.
11	*Display module (optional).*
13	*Flat cable for display module connection.*
14	*Flat cable expander board connection.*
15	*Switching power supply/battery charger.*
16	*Compartment for two 12 V 17 Ah batteries (not supplied).*
17	*Expander board (optional): the letters next to the numbers indicate the setup order.*

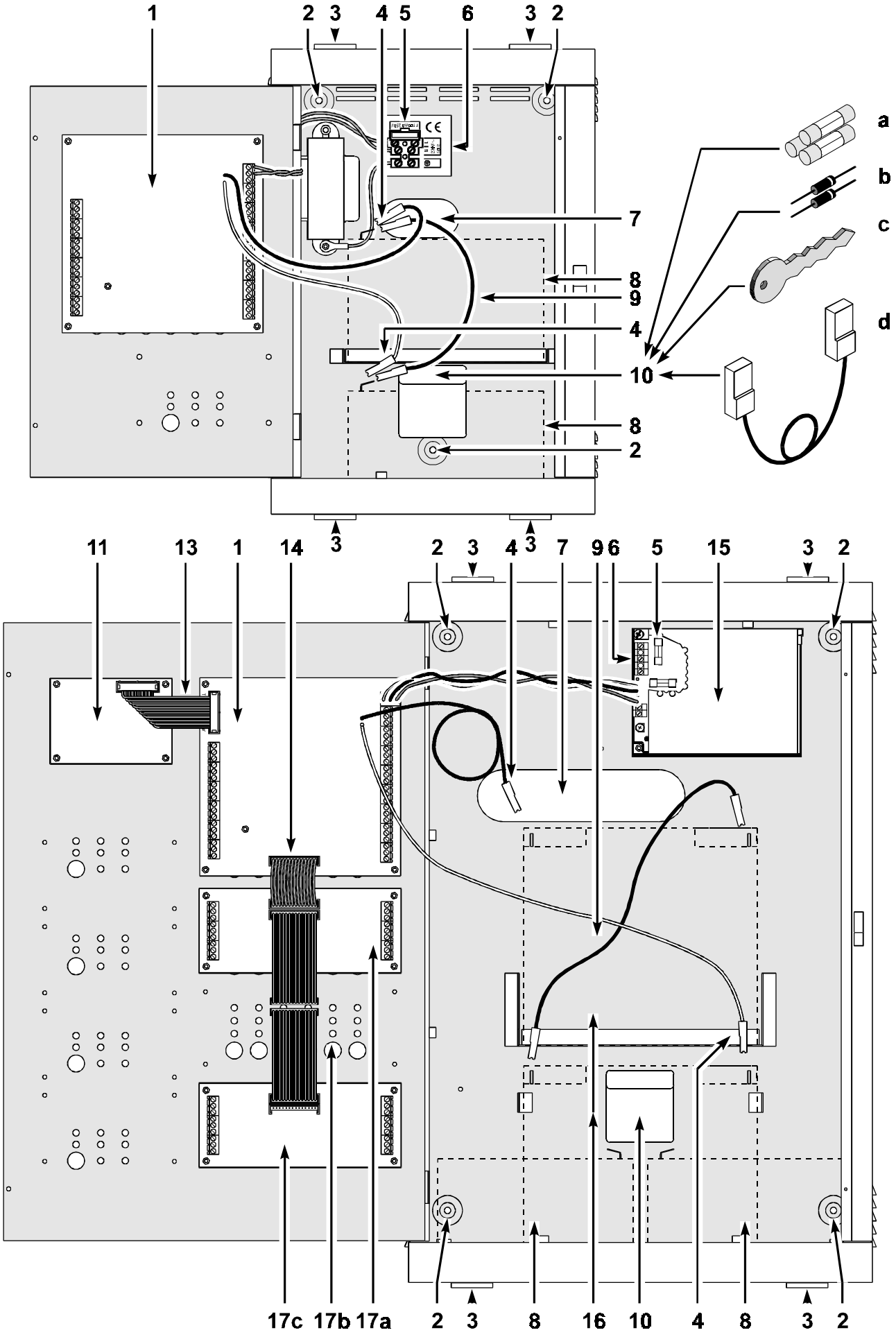


FIGURE 1 *Control panel parts.*

P.	DESCRIPTION
18	*Connector for display module.*
19	*Terminal board for connections.*
21	*Microprocessor.*
22	***Output** connectors for expander board connection.*
23	*Connector for serial interface.*
24	*F 500mA 250V protection fuse for the 12 V (13.8 V) outputs.*
25	*F 3.15A 250V protection fuse for to the 24 V (27.6 V) outputs.*
26	*F 6.3A 250V protection fuse against battery polarity inversion.*
27	*Connector for the switching power supply*

P.	DESCRIPTION
28	*Reserved jumper.*
29	*Warning LED for Voltage presence on the switching power-supply output.*
30	*Fine adjustment trimmer for the output Voltage of the switching power supply.*
31	*24 V (27.6 V) power-supply output.*
32	*Screws to close the switching power - supply cover.*
33	*Plastic rivet to secure the switching power-supply cover.*
35	***Input** connectors for the expander boards.*

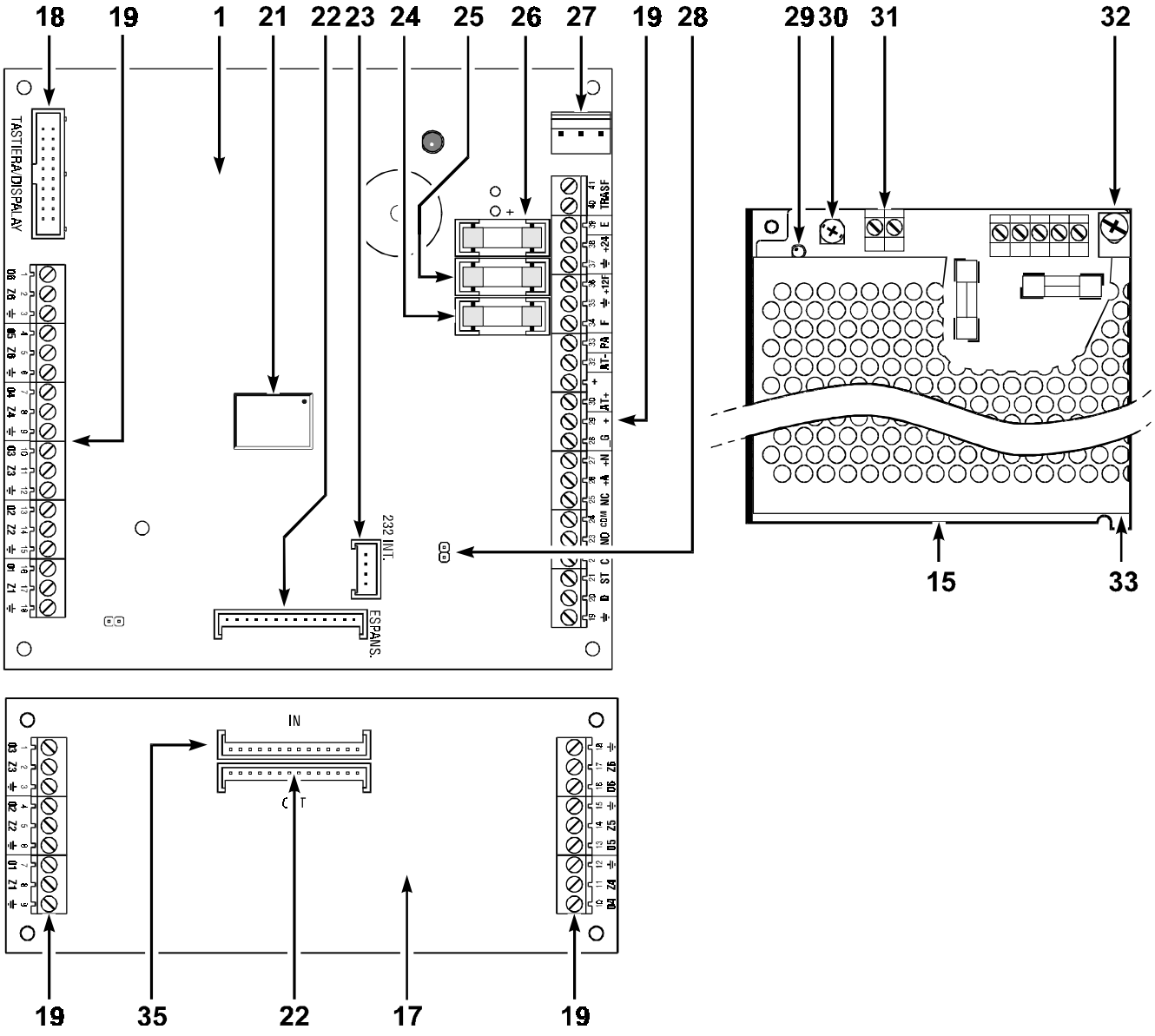


FIGURE 2 *Main board, expander board and switching power-supply parts.*

P.	DESCRIPTION
36	*Removable hinges.*
37	*Screws to close panel.*

P.	DESCRIPTION
38	*Lock.*
39	*Display module.*

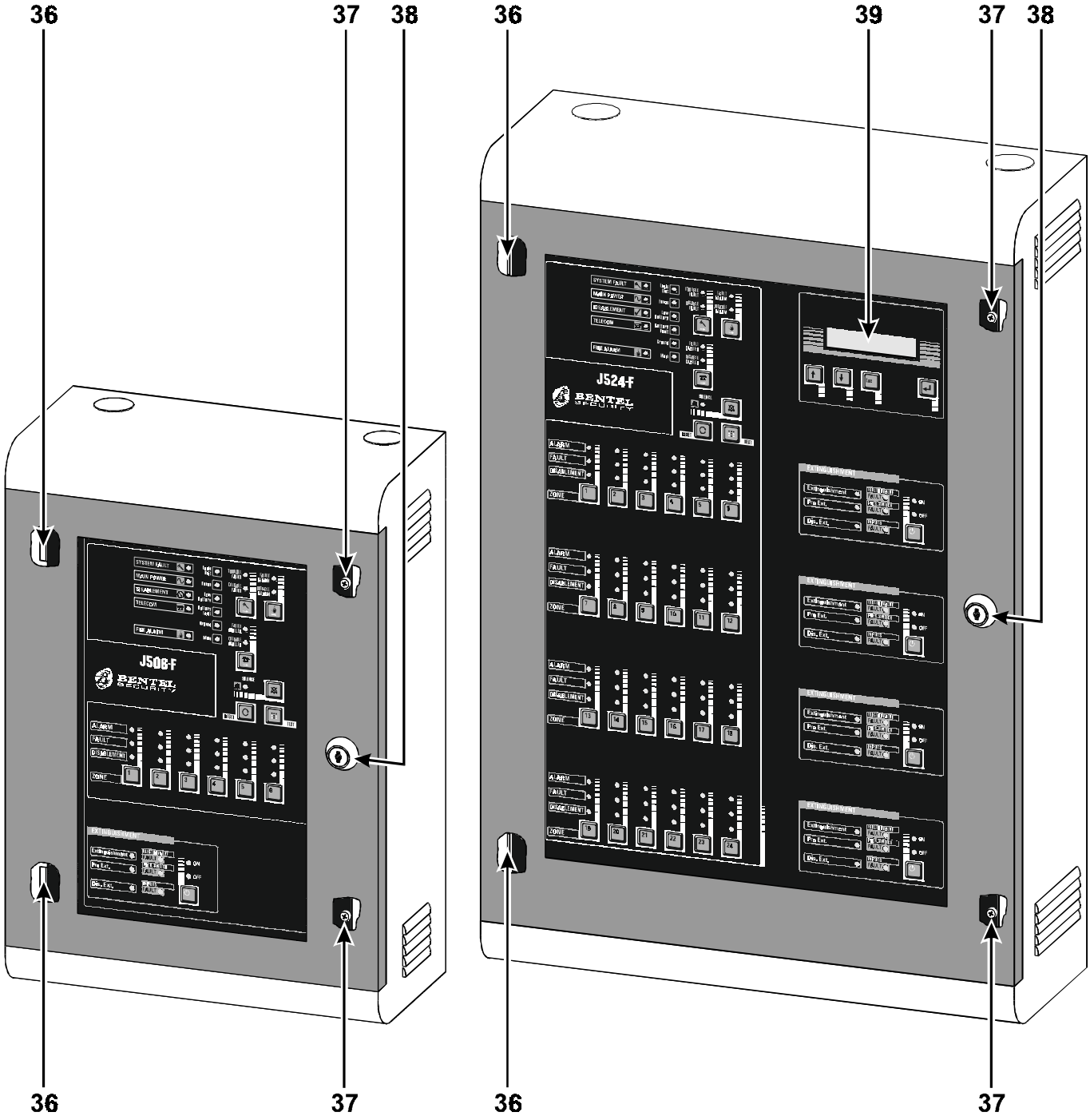


FIGURE 3 *Front panel parts.*

Description of the buttons

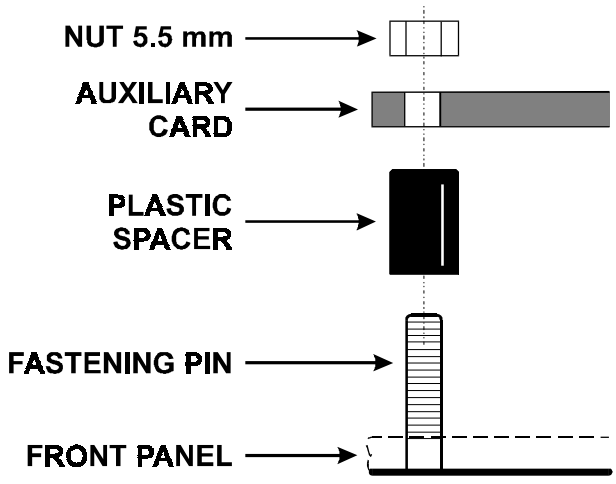
BUTTON	DESCRIPTION
DISABLE FAULT	Disable button for the BYPASSABLE fault-alarm outputs (terminals 28-29[G]).
DISABLE ALARM	Disable button for the BYPASSABLE fire-alarm outputs (terminals 30-31[AT+] and 32[AT-]).
DISABLE DIALLER	Disable button for the BYPASSABLE telephone device output (terminal 34[F]).
SILENCE	Silence button for forcing the CONTROLLED/SILENCEABLE outputs (terminals 28-29[G], 30-31[AT+], 32[AT-] and 34[F] into standby status: this status is held until the silence button is next pressed.
RESET	Reset button for fire detectors and for forcing all the outputs (CONTROLLED/SILENCEABLE and NON-CONTROLLED/NON-SILENCEABLE, and the alarm zone outputs) into permanent standby.
TEST	Test button for the control panel buzzer and LED's: on pressing this button all the warning LED's should light up and the buzzer should emit a continuous sound.
1/2/3/ ...	Disarm buttons for the corresponding zones: the fire and fault status on the disarmed zone will be memorized and displayed, but the zones will be unable to activate any outputs (status will not be displayed in written form on the J524D-F model).

ATTENTION Control panel installation must be carried out according to the instructions below, and in accordance with the laws in force.

For control panel installation proceed as follows.

- Select the place of installation for the control panel, the detectors, the signalling and control devices and other fire prevention devices.
- Lay the necessary cables between the control panel and the listed devices.
- Install supplementary boards (expander boards).
- Mount the control panel.
- Carry out the necessary connections, leaving the power-supply connections until the last.
- Carry out system testing (detection devices, control panel, signalling and auxiliary devices).

Installation of supplementary boards



The display module, and any expander boards should be installed before mounting the control panel.

These are to be positioned as shown in the diagram on page 13: use the *plastic spacers* and the *nuts* supplied, as illustrated in the diagram on the left.

Use the *flat cables* (supplied) for expander board connection, as illustrated in the diagram on page 13.

To install the display module, replace the non-transparent film that covers the hole on the panel, with the transparent film (supplied).

☞ The transparent film must be used, as it isolates the display from the control panel container. When connecting the display module to the main board, place the flat cable **13** (supplied), as illustrated in the diagram on page 13.

Control panel mounting

Remove the sealing caps and pass the externally laid cables through the holes **3**, pass chased cables through the cable passage **7**, use the screw holes **2** for control panel mounting.

☞ The cable conduit union with the box (through holes 3) should be secured by **HB flame class (or over)** *lock nuts*.

ATTENTION Before drilling the necessary holes check for electrical wiring or water pipes. The display of the J524D-F model should be just above average eye level.

Connections

☞ Use shielded cable with one end connected to the control panel ground and the other left free. The words CONTROLLED, SILENCEABLE and BY-PASSABLE, used to define the terminals, are explained in page 7.

ATTENTION Separate the Low Voltage leads (12 and 24 V) from the High Voltage leads (230 V), and make two bunches using the bands, in this way, if a lead is disconnected accidentally it will remain in position, and will not come into contact with other leads or parts of the control panel.

Main board and expander board terminals

[O6] ... [O1] **Bypassable zone alarm outputs.** These terminals are normally open (open-collector). They are grounded when the corresponding zone goes into alarm status, and remain so, even after the cause of activation has ceased. These are NON-CONTROLLED and NON-SILENCEABLE and can only be placed in standby status, by bypassing the corresponding zone or rearming the control panel.
It is possible to use these terminals for selective intervention.
☞ ***The zone alarm outputs are not activated if the corresponding zones are disabled, whereas, they are activated when the corresponding zones, in alarm status, are rearmed.***

[Z6] ... [Z1] **CONTROLLED/BYPASSABLE detection zones.** Terminals for the connection of fire detectors. **Up to 21 devices can be connected to each zone**: conventional fire detectors such as the **RF501t** optical smoke detector, the **RT 101/102** rate-of-rise temperature detectors, alarm buttons and gas detectors.
☞ Do not connect more than 21 devices to each zone.
☞ Do not connect more than 3 gas detectors to the control panel.

These terminals should be connected to the ground, with a 2,700 resistor (red-purple-red-gold); when there is a 680 ohm resistance parallel to this resistor (normalized value for the fire detectors in alarm status), the corresponding alarm zone output is grounded, whilst the enabled fire-alarm outputs will be activated immediately.

[⏚] ... [⏚] **Ground for detectors.**

Main board terminals

[⏚] [D] [ST] [CK] **Annunciator panel.** Terminals for annunciator panel connection.

[NO] [COM] [NC] **NON-CONTROLLED/NON-SILENCEABLE fire-alarm output.** Free exchange for the connection of devices which are not to be silenced, and that cannot be connected directly to the [+A] or [+N] terminals:
- in standby status the [COM] terminal is closed on the [NC] terminal;
- in the event of fire alarm the [COM] terminal closes on the [NO] terminal.

[+A] **NON-CONTROLLED/NON-SILENCEABLE positive fire-alarm output** Terminal for the connection of devices which are not to be silenced, and are activated by the positive (24 V⎓):
- this terminal is normally open;
- the positive (27.6 V⎓) is on this terminal in the event of fire alarm status.

[+N] **NON-CONTROLLED/NON-SILENCEABLE intrinsically safe fire-alarm output**. Terminal for the activation of devices which are not to be silenced, and are activated by the failure of the positive (24 V⎓):
- normally the positive (24 V⎓) is on this terminal;
- this terminal is open in the event of fire-alarm status.

☞ Outputs [NO] [COM] [NC], [+A] and [+N] are connected to a normally energized relay; therefore, in the event of complete power failure (mains and standby battery failure) the self-powered or externally powered devices connected to these outputs will be activated.
Only devices which function with SELV current (Safety Extra Low Voltage) may be connected to outputs [NO] [COM] [NC], [+A] and [+N].

CONTROLLED outputs Outputs 28-29[G], 30-31[AT+], 32[AT-] and 34[F] are CONTROLLED, therefore, the control panel can detect and signal whether the output connections are short-circuited or interrupted. These terminals must always be connected to the ground with a 2,700 ohm resistor/balance resistor (red-purple-red-gold); which must always be connected to the last device connected to the CONTROLLED output, as shown in fig. 4.

☞ The diodes (1N4002 or 1N4007) must be used for the connection to the 30-31[AT+] output, as shown in figure 5. The diodes can be found in the plastic bag on the back of the control panel.

[–G] [+G] **CONTROLLED/SILENCEABLE/BYPASSABLE negative fault-alarm output**. Terminals for the connection of CONTROLLED/SILENCEABLE devices activated by the negative:

- the negative is on the [-G] terminal in the event of fault (zone failure, control panel blocked, burnt fuse, low batteries or batteries not present, leakage to ground, no external power-supply, CONTROLLED output in short-circuit or open).
- This output can be bypassed by means of the **DISABLE FAULT** button.

☞ **This output is activated when complete power failure occurs on the control panel**.

[–AT+] [+AT+] **CONTROLLED/SILENCEABLE/BYPASSSABLE positive fire-alarm output**. Terminals for the connection of CONTROLLED/SILENCEABLE devices activated by the positive (24 V⎓):

- in the event of fire, the positive (27.6 V⎓) is on the [+AT+] terminal, and the negative is on the [–AT+] terminal.
- This output can be bypassed by means of the **DISABLE ALARM** button.

☞ ***The diode (1N4002) must be connected in series to the devices connected to this output, as shown in figure 6. Terminal 30 [–AT+] must be used <u>exclusively</u> for "closing" the connections carried out on the 31 [+AT+] terminal.***

[AT–] **CONTROLLED/SILENCEABLE/BYPASSABLE negative fire-alarm output**. Terminal for the connection of CONTROLLED/SILENCEABLE devices activated by the positive drop (24 V⎓) or by the negative.

- normally the positive (27.6 V⎓) is on this terminal;
- in the event of fire, the ground is on this terminal.
- This output can be bypassed by means of the **DISABLE ALARM** button.

[PA] **Reserved terminal**.

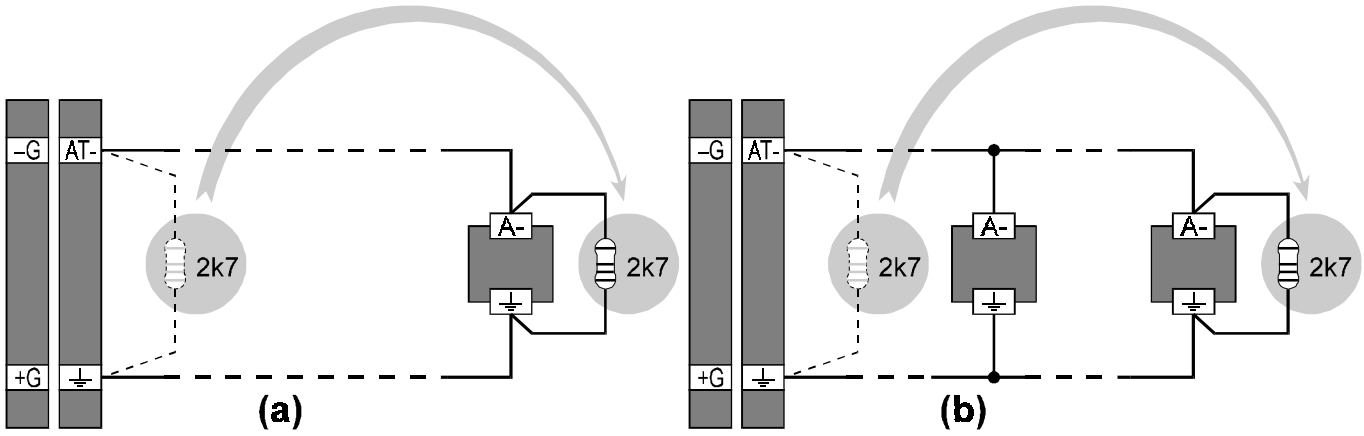


FIGURE 4 *General diagram for the connection of a single device (a), and of more than one device (b) to the CONTROLLED outputs: presuming the device is activated by the ground on the [A-] terminal.*

[F] **CONTROLLED/SILENCEABLE/BYPASSABLE fire-alarm output for telephone devices**. Terminal for the connection of CONTROLLED/SILENCEABLE devices activated by failure of the positive (12 V⎓):
- normally the positive (13.8 V⎓) is on this terminal;
- in the event of fire this terminal is open.
- Activation of this output is signalled by the **TELECOM** LED.
- This output can be bypassed by means of the **DISABLE DIALLER** button.

[⏚] [+12F] **Auxiliary power supply at 12 V⎓.** Power supply for devices functioning at 12 V⎓ (e.g. telephone dialler) protected by the fuse **24** and guaranteed by the standby batteries:
- the positive (13.8 V⎓) is on terminal [+12F];
- the negative is on terminal [⏚].

[⏚] [+24] **Auxiliary power supply at 24 V⎓.** Power supply for devices functioning at 24 V⎓ protected by the fuse **25** and guaranteed by the standby batteries:
- the positive (27.6 V⎓) is on terminal [+24];
- the negative is on terminal [⏚].

[E] Reserved terminal.

[TRASF] **Transformer connection (only on the J506-F model).** These terminals are already connected to the transformer output of J506-F model.

Connection example

A typical installation, showing the J524-F and J506-F control panels, is illustrated in figure 6, and described in the following paragraphs.

Fire detector connection The conventional fire detectors are connected in parallel to terminals [Z1 ... Z6] and [⏚]. The resistor (2,700 ohm) between these terminals must be removed and connected to the terminals indicated in the instructions of the last detector on the zone.

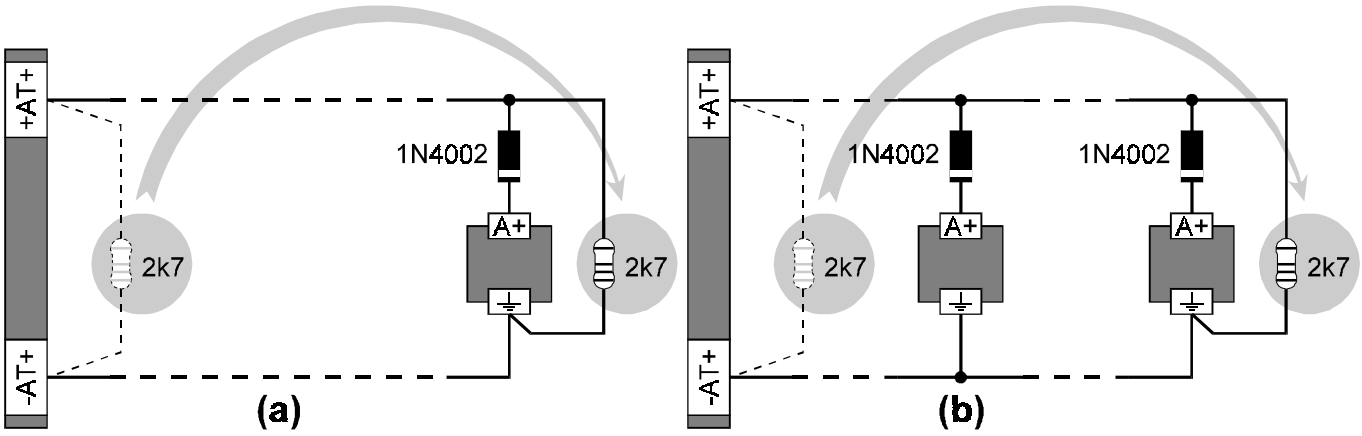


FIGURE 5 *General diagram for the connection of a single device (a) and of more than one device (b) to the CONTROLLED, polarized outputs: presuming that the device is activated with the positive on the [A+] terminal.*

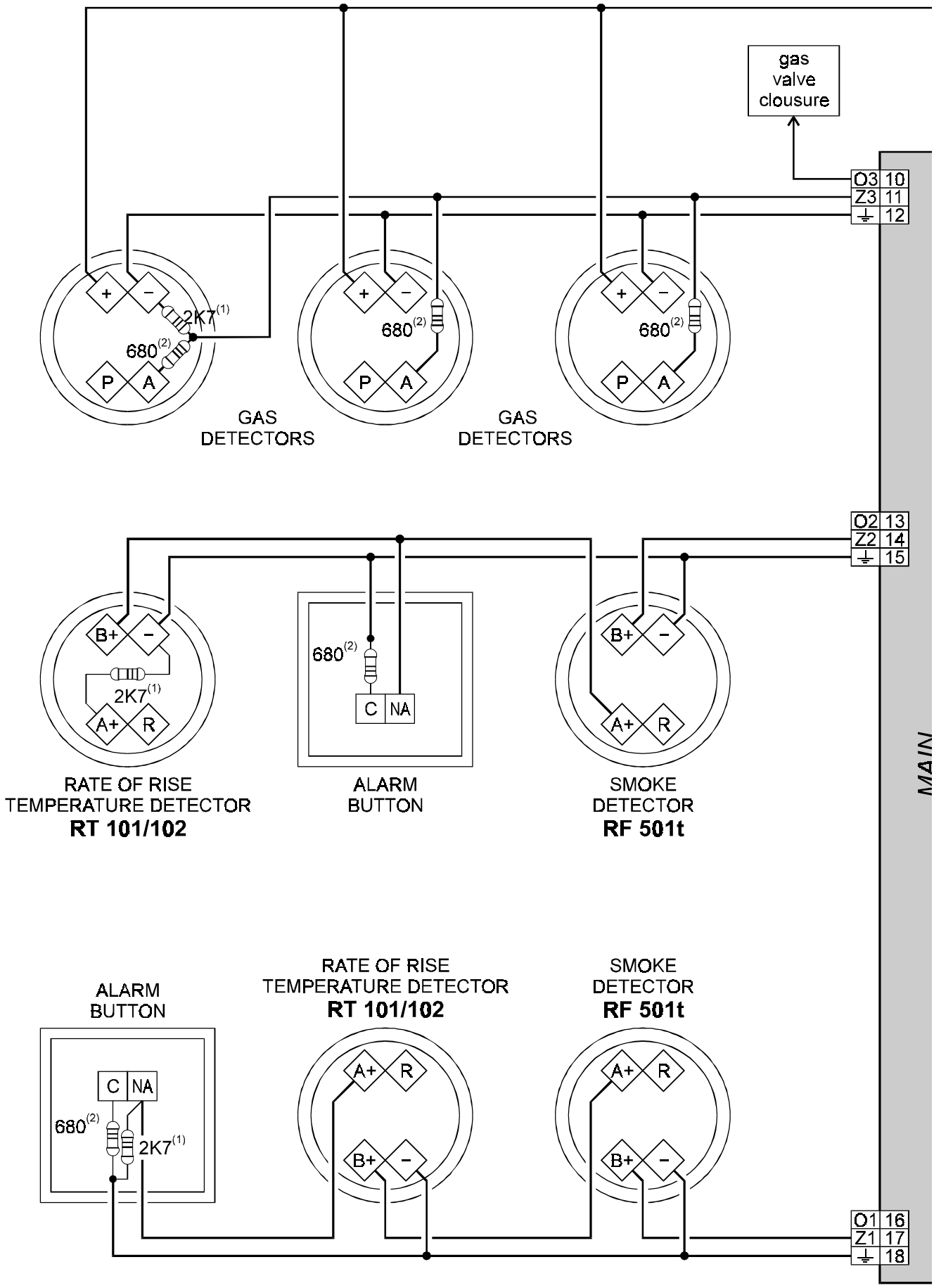
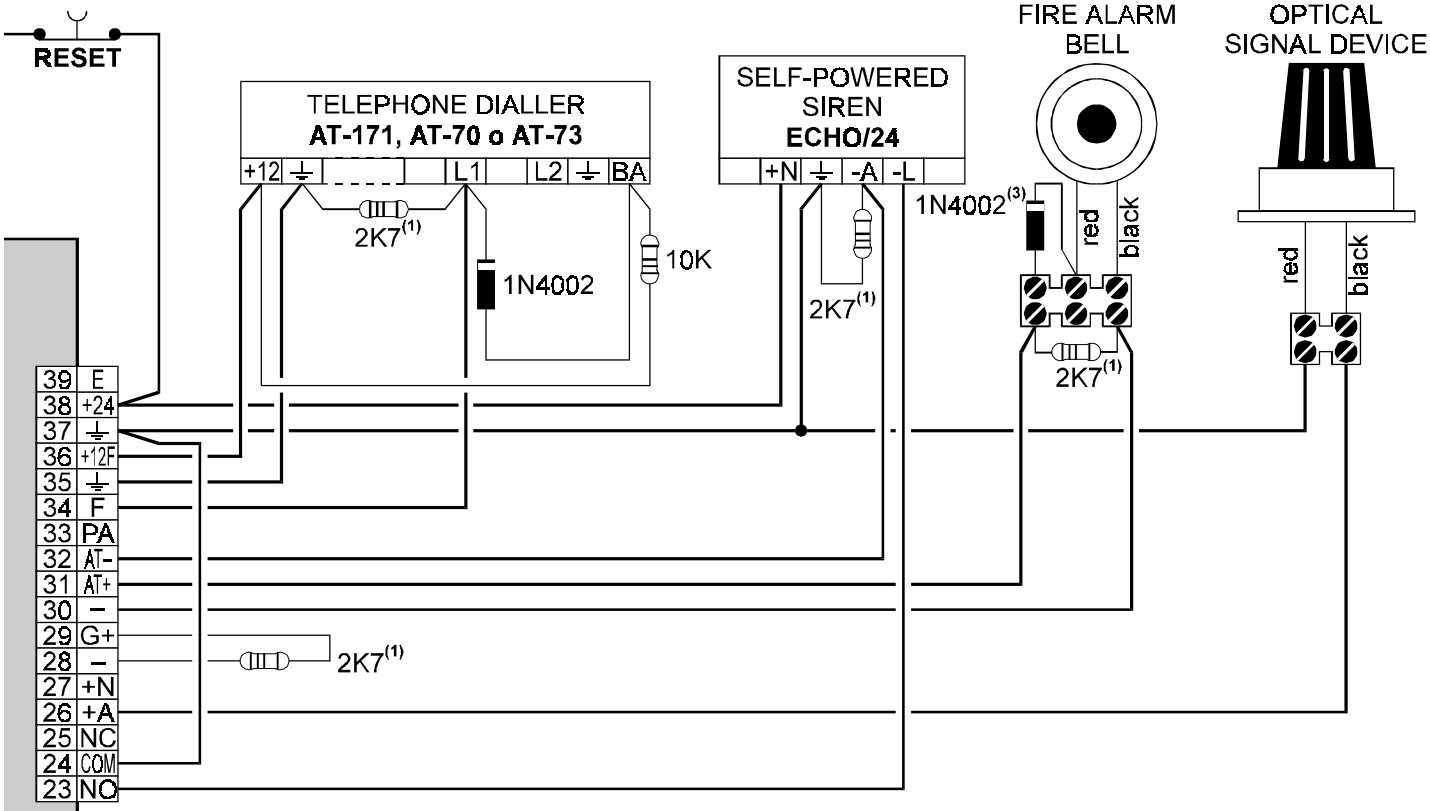


FIGURE 6 *Connection example.*



(1) - balancing or end line resistors (2K7 =2,700 ohm =red- purple-red-gold), these resistors are supplied connected to the controlled terminals.
(2) - unbalance or activation resistors (680 ohm= blue- grey-brown-gold). This resistor must be added only to the buttons where it is not incorporated.
(3) - end line diodes (IN4002 or IN4007): two diodes of this type are in the bag fixed to the back of the control panel.

The diodes have a direction indicated by the white band of colour on their body, therefore be careful to turn this as indicated in the connection diagrams.

28[-]-this terminal must be used exclusively for "closing" the connections made on terminal 29[G+].
30[-]-this terminal must be used exclusively for "closing" the connections made on terminal 31[AT+].

Alarm button connections

The Common and Normally Open terminals of the alarm buttons must be connected in parallel to the terminals [Z1 ... Z6] and [⏚]; when the button is pressed it **must be a 680 ohm resistance and not a short-circuit;** if the button used, does not have an incorporated 680 ohm resistor, one must be added externally, as shown in the figure 6. If the alarm button is the last device on the detection zone, the balance resistor must be connected as illustrated in the connection example for zone Z1.

Gas detector connection

The functioning principle of gas detectors is different from that of the fire detectors. These usually have an open-collector output, which closes to ground in the event of an alarm. The latter must be connected to terminals [Z1…Z6] by means of a 680 ohm resistor, as illustrated in the connection example for zone Z3 (see [A] of the gas detectors). The power supply, however, must be external, for example, from terminals [+24] and [⏚], and must be interrupted for several seconds when the detectors require resetting (see RESET button). Lastly, the balance resistor must be connected as illustrated in the figure 6 (see zone Z3).

☞ Do not connect more than 21 devices to each zone, and do not connect more than three gas detectors to the control panel.

Balance resistor

To allow the control panel to detect zone power failure and short-circuit, the 2,700 ohm balance resistor (red-purple-red-gold) between terminals [Zx] and [⏚] of the zone, must be moved to the last device connected to that zone.

Connection of signalling devices

The control panel has alarm outputs of 12 and 24 V for fire signalling. Some of these outputs can be SILENCED by means of the SILENCE button. In this way, it is possible to silence acoustic alarm devices, and allow the flashers to continue signalling alarm status until the alarm has ended. In accordance with this principle, figure 6 shows a flasher connected between terminals 26[+A] and 38[⏚]; a fire bell between terminals 31[+AT+] and 30[–AT–]; the ECHO/24 flasher lamp to terminal 23[NO] and the siren to terminal 32[AT–]; one telephone-dialler line to terminal 34[F]. In this way, a fire alarm will activate the flasher, the fire bell, the self-powered siren and also the telephone dialler, which will dial the programmed numbers and send an alarm message, for example <<Fire alarm at...>>. By pressing the **SILENCE** button, it is possible to stop the bell, the ECHO/24 siren and the telephone dialler, the flasher and the ECHO/24 flasher lamp, however, will continue to signal fire status until the **RESET** button is pressed.

☞ Even when the [F] alarm output restores the Voltage on terminal [L1] of the dialler, the latter will continue to carry out the programmed calls ; therefore, to silence the dialler, it is necessary to connect terminal [BA] of the dialler (Alarm Stop), as illustrated in figure 6.

Connection of the power supply

The power systems of the J524-F and J506-F control panels comply with the EN54-4 standard.

The external power supply of 230 V∿, 50 Hz, must be applied to the terminals [L] and [N] of the terminal board **6**.

ATTENTION In order to comply with safety standards, the ***line conductor*** must be connected to terminal [L] and terminal [⏚] must be connected to the ***ground conductor***. Furthermore, in accordance with the safety laws in force, there must be an adequate isolating switch (bipolar), and protection against the mains network of the building (e.g. circuit breaker).

☞ Rearming occurs each time the control panel is powered.

The batteries must be housed in their proper places **8** or **16** and connected in series with the jumper, as illustrated in figure 7. The terminals that remain free must be connected to the connectors **4** coming from the main board.

☞ **J524-F:** batteries from 12 V - 17 Ah YUASA model NP 17-12 FR;
J506-F: batteries from 12 V - 7 Ah YUASA model NP7-12 FR;
or equivalent with case flame class UL94-V2 (or over).

☞ In order to connect 17 Ah batteries, it is necessary to replace the connectors **4** and those of the jumper.

☞ Take care not to invert the connection polarity: if this should happen, replace the fuse **26** of 6.3 A, 250 V.

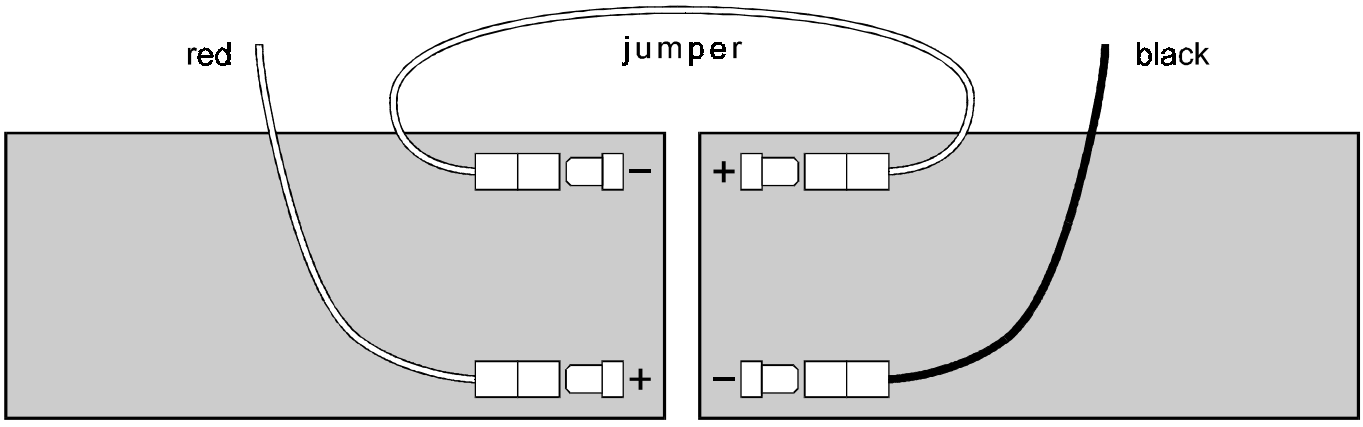


FIGURE 7 *Diagram of a series connection of two 7 Ah batteries.*

Installation table

The last page of this manual holds a table that should be filled in with all the installation details of the J524 or J506 control panel. This summary is useful for both the installer and the user, and is explained as follows.

Table 1 The DESCRIPTION column is for the signalling devices which are connected to the terminals indicated in the TERMINALS column. In this way, the user will have information on the devices which the LED's on the front panel refer to (LED's column), on certain messages that appear on the display of J524D-F model (DISPLAY column), and on the buttons to press to disable the BYPASSABLE devices (ESC column) or to silence them (SILEN. column). Furthermore, in the DESCRIPTION column, "name" is assigned to each output, and is used, in the "USE" chapter, to identify the outputs.

Table 2 The MONITORED environment (DESCRIPTION column), and the devices connected to its alarm repeat output (OUTPUT column) must be indicated for each input zone in the ZONE column.

Maintenance

The operations stated below should be carried out periodically.

A Remove dust from the control panel with a damp cloth (do not use solvent of any type!).

B Clean the inside of the plexiglas window with a damp cloth (do not use solvent of any type!): do not clean the inside of the control panel, as commands may be activated accidentally.

C Press the TEST button to check proper functioning of the LED's and buzzer.

D Check the battery charge, and if necessary, replace them.

E Check the efficiency of the conductors and the connections.

F Check that the inside of the control panel is free of unwanted objects.

☞ Points **A**, **B** and **C** may be carried out by authorized users, whereas, points **D**, **E** and **F** must be carried out by qualified personnel only.

This quick guide is for installers with knowledge of the J524-F and J506-F control panels, fire control panels in general. This chapter holds all the necessary installation details.

Technical features

Some of the technical features, regarding the terminals on the main and expander boards, are described in the following paragraph.

MODEL	J524-F	J506-F
Main voltage	*230 V~ 50 Hz ±10%*	
Maximum current	*0.7 A*	*0.36 A*
Power	*60 W*	*50 W*
Maximum current available ...(1)	*1.5 A*	*0.5 A*
Low voltage range	*19.0 ÷ 27.6*	*19.6 ÷ 27.6*
Low voltage ripple	*1 %*	*2 %*
Suitable batteries: ***make*** ***model***	*two 12 V - 17 Ah* *YUASA* *NP 17-12 FR*	*two 12 V - 7 Ah* *YUASA* *NP 7-12 FR*
	or equivalent with case flame class UL94-V2 or over	
Temperature range	*-5 ÷ +40 °C*	
Dimensions (W*H*D)	*364*539*136 mm*	*254*359*125 mm*
Weight	*19.7 Kg(2)*	*10.4 Kg(3)*

(1) ... for the power supply of the external devices.

(2) With two 12 V, 17 Ah batteries and 3 expander boards.

(3) With two 12 V, 7 Ah batteries.

Description of the terminals

The terminals of the main and expander boards are described briefly in the following table: the standby (normal) status isthe first, followed by the alarm status. Moreover, the Voltage present during the different operating conditions is indicated for each terminal, as well as the maximum current (in amps) that can circulate:

(4) The sum of the currents absorbed by terminals [Z1], [Z2], ..., [Z24], [+A], [+N], [G], [AT+], [F], [+12F] and [+24] must not exceed: 1.5 A for the J524-F control panel; 0.5 A for the J506-F control panel.

TERM.	DESCRIPTION	v(V)	i(A)
MAIN BOARD			
[⏚ D ST CK]	**ANNUNCIATOR PANEL TERMINALS.**	—	—
[NO] **[COM]** **[NC]**	**FIRE-ALARM OUTPUT** **NON-CONTROLLED, NON-SILENCEABLE, NON-BYPASSABLE:** on standby ➔ terminal [COM] connected to [NC] and [NO] open; with fire alarm ➔ terminal [COM] connected to [NO] and [NC] open.	—	3
[+A]	**POSITIVE FIRE-ALARM OUTPUT** **NON-CONTROLLED, NON-SILENCEABLE, NON-BYPASSABLE:** on standby ➔ terminal open; with fire alarm ➔Voltage on terminal.	27.6	1
[+N]	**INTRINSICALLY SAFE FIRE-ALARM OUTPUT** **NON-CONTROLLED, NON-SILENCEABLE, NON-BYPASSABLE:** on standby ➔ Voltage on terminal; with fire alarm ➔ terminal open.	27.6	1
[–G] [G+]	**NEGATIVE FAULT-ALARM OUTPUT** **CONTROLLED, SILENCEABLE, BYPASSABLE:** in the event of fault ➔ negative on [–G].	0	1
[–AT+] **[AT+]**	**POSITIVE FIRE-ALARM OUTPUT** **CONTROLLED, SILENCEABLE, BYPASSABLE:** with fire alarm ➔ positive on [+AT+] and negative on [–AT+].	27.6	1
[AT–]	**NEGATIVE FIRE ALARM OUTPUT** **CONTROLLED, SILENCEABLE, BYPASSABLE:** with fire alarm ➔ ground on terminal.	0	0.1
[PA]	**RESERVED TERMINAL.**	—	—
[F]	**FIRE ALARM OUTPUT for telephone devices** **CONTROLLED, SILENCEABLE, BYPASSABLE:** on standby ➔ positive on terminal; with fire alarm➔ terminal open.	13.8	0.1
[⏚ +12F]	**AUXILIARY POWER SUPPLY AT 12 V.**	13.8	0.2
[⏚ +24]	**AUXILIARY POWER SUPPLY AT 24 V.**	27.6	(4)
[E]	**RESERVED TERMINAL.**	—	—
MAIN BOARD and EXPANDER BOARD			
[O6] ↓ **[O1]**	**ZONE ALARM REPEAT:** corresponding zone on standby ➔ terminal open; enabled zone in alarm ➔ terminal grounded.	0	0.1
[Z6] ↓ **[Z1]**	**DETECTION ZONE:** balanced zone with 2,700 ohm ➔ control panel in standby; unbalanced zone ➔ fire alarm output activation; zone in short-circuit or open ➔ fault alarm output activation;	23	0.06
[⏚]	**GROUND FOR THE DETECTORS.**	0	—

Fire alarm

Fire alarm is signalled by the devices connected to the ***fire alarm outputs*** (see table 1 page 33). Fire alarm is also signalled on the front of the control panel by the **FIRE ALARM** LED and the **ALARM** LED, assigned to the zones that generated the alarm status.

Even after the zones have returned to standby, their **ALARM** LED's flash until the control panel is rearmed.

☞ The fire alarm-outputs remain active even after the cause of their activation has ceased; in order to force them back into standby status it is necessary to rearm the control panel.

Fault alarm

Faults on the control panel are signalled by the activation of the ***fault-alarm output***; by the **SYSTEM FAULT** LED***;*** by the relevant fault LED (**LOGIC UNIT, FUSES, LOW BATTERY, BATTERY FAULT, GROUND, MAIN, TROUBLE FAULT, FAULT ALARM, FAULT DIALLER, FAULT**); and by a slow intermittent acoustic signal.

Even after all faults have been eliminated, fault memory is still signalled by the flashing of the above listed LED's; by a brief acoustic signal followed by a long pause; by the message `[Fault Memory! Signalling ON]` on the display of the model J524D-F.

☞ Unlike the fire-alarm outputs, the fault-alarm outputs return to standby status when faults are no longer present, that is, unless the fault is on the output itself; in this case, the control panel must be rearmed, in order to stop alarm signalling.

Silence

Once the alarm status has been acknowledged, it is possible to force the SILENCEABLE outputs into standby status (see table 1 page 33), by pressing the **SILENCE** button: press the button again to reset the alarm signals (fire and fault).

☞ The Silence command is cleared automatically each time a new alarm status occurs (fire or fault).

Disable

If an input zone generates false alarms or fault (**FAULT** LED lit), it is possible to bypass the zone by pressing the corresponding button, in this way, the input zone will be unable to generate any kind of alarm whatsoever.

☞ Input zones may be bypassed even when they are in alarm status; in this way, the corresponding alarm output (terminal [Ox]) is disabled, as are the fault alarm outputs (if the fault is on the bypassed zone!). If the input zones are rearmed during a fire alarm or fault status, the fire alarm and fault outputs are activated immediately.

The signalling devices connected to the ***bypassable alarm-outputs*** can also be bypassed by means of the **DISABLE FAULT**, **DISABLE ALARM** and **DISABLE DIALLER**. (see table 1 page 33): bypassed devices are not activated in the event of an alarm.

☞ The bypassable signalling devices may only be bypassed during standby status. If these devices are rearmed during alarm status they will be activated immediately.

Rearming

Alarm status can be interrupted by pressing the **RESET** button.

☞ Rearming lasts 10 seconds, therefore, the alarm outputs will be disabled after this period, that is, if alarm or fault status has ended.

Test

Proper functioning of the control panel LED's and buzzer should be checked periodically, by means of the **TEST** button.

The display module

The display module is dealt with separately in this paragraph, as only the J524D-F model comes with the display module already installed. The display module has a backlit display (green) with 2 rows of 16 characters each. By means of the 4 buttons under the display, it is possible to obtain detailed information on the warnings, signalled on the LED's on the front of the control panel. The display gives step by step instructions for the required action; however, in general, the ↑ and ↓ buttons scroll of the menu headings, the **Esc** button quits the menu and the ↵ button selects the displayed heading.

When on standby the top line of the display will show the message [Scanning Zones] whilst the bottom line will show alternating information regarding the control panel status, at intervals of 5 seconds, as follows:

[No Alarm];

[No Fault];

[Silence OFF] or [Silence ON] indicates whether the silenceable devices are active or not.

From this status, by pressing the button ↵ it is possible to access the main menu that contains the headings described below. Display of these headings is obtained by pressing the ↓ or ↑ button. If no button is pressed after 15 seconds, the display will quit the main menu automatically, and return to automatic message display.

Control Panel Settings

When the ↵ button is pressed again, the display will show the message [Scanning ON] and, by pressing the ↓ or ↑ buttons it will show whether the silenceable signalling devices are active or not [SILENCE: (OFF or ON)].

Zone Alarm Menu

When all zones are in standby status this item shows the message [Alarm zone: No Zone]. However, if there are zones in alarm status, this menu will show them in **alarm order**, with the message [Alarm Zone: ZONE=Ø1] (in this example Zone 1 was the first to go into alarm status), it is possible to display all the other zones in alarm status, by using the ↓ button.

Fault on zone

On pressing the ↵ button this menu will display the message [Fault zone: No Zone] that is, if there are no zones in short-circuit or open. However, if there are zones in fault status, this menu will show the first in **numerical order** and the type of fault with the message [Fault Zone: ZONE=Ø1 (OPEN or SHORT-CIRCUITED)] (in the example ZONE 1 was the first to go into fault status), it is possible to display all the other zones in fault status, by using the ↓ button.

General faults

On pressing the ↵ button this menu will display the message [General Faults:No Fault] that is, if no faults are present. However, if there is a general fault (a fault that does not concern the zones), this menu will indicate the type of fault with the following messages:

[Battery Fuse] fuse **26** is missing or burnt-out;

[Fuse 27 V] fuse **25** is missing or burnt-out;

[Fuse 12 V] fuse **24** is missing or burnt-out;

[Low Battery] the Voltage supplied by the batteries is less than 21 V;

[No Battery] there are no batteries or they are low, or fuse **26** is burnt-out;

[Ground Fault] there is current leakage towards ground;

[No Main] failure on Mains Voltage (230 V~);

[Out. Flt (Open or Short-circuited)] the line connected to the ***Fault alarm output*** is disconnected or in short-circuit

[Out. +A (Open or Short-circuited)] the line connected to the ***Positive Fire alarm output*** is disconnected or is in short-circuit;

[Out. -A (Open or Short-circuited)] the line connected to the ***Negative Fire alarm output*** is disconnected or in short-circuit;

[Out. FD (Open or Short-circuited)] the line connected to the ***Dialler Fire alarm output*** is disconnected or in short-circuited.

Zone Status Menu

On pressing the ↵ button the status of ZONE 1 will be shown [ZONE=Ø1 (SERVICE or OUT OF SERVICE)]; by pressing the ↓ or ↑ button, it is possible to scroll the list to check the status of the other zones.

Output Status Menu

On pressing the ↵ button the status of the *BYPASSABLE fire alarm outputs* (terminals 30-31[AT+] and 32[AT-]) will be shown: [Sil.Alarm Output. (SERVICE or OUT OF SERVICE)]; by pressing the ↓ or ↑ button the message [Dialler Outputs (SERVICE or OUT OF SERVICE)] shows the status of the ***dialler output*** (terminal 34[F]) whilst, the message [Fault Output (SERVICE or OUT OF SERVICE)] shows the status of the ***fault output*** (terminals 28-29[G]).

Fire alarm

As soon as a fire alarm occurs, the automatic signals will be substituted by a message of the following type [FIRE AL. F=Ø1 T.Al.=Ø1 L=Ø1] **F** shows the first zone that went into alarm status. **T.Al.** shows the number of zones in alarm status, and **L** shows the last zone to go into alarm status: from this display, by pressing the ↵ button it is possible to access the **Zone Alarm Menu** described above.

If all the zones return to standby status, the display will show the fire alarm memory with the message [Alarm Memory! Outputs ON] which is also a reminder that the outputs are still active: from this display, pressing the ↵ button will give access to the main menu.

Fault alarm

In the same way, if a fault occurs, the automatic signals will be substituted on the display by a message of the type [Faults F=Ø1 T.Flt.=Ø1 L=Ø1] as described above, except that **F** and **L** can assume also the **GEN** value, indicating a general fault or a fault on the CONTROLLED outputs. If the last fault regards a zone, the ↵ button gives automatic access to the **Zone Fault** menu; if, instead, it regards a general fault, access to the General Fault menu will occur: both menus are described above.

Even when there are no faults, the display memorizes the event with the message [Fault Memory! Signalling ON]: from this display, pressing the ↵ button accesses the main menu.

☞ If a fault and a fire alarm should occur simultaneously, the display signals the latter only: select the appropriate heading on the main menu to check the fault warning.

Summary

After filling in Tables 1 and 2 with the necessary information, this page should be cut out of the manual and coated in plastic or protected by a plastic cover. It is advisable that it be kept near to the control panel as a reference.

The actions that must be carried out when the control panel LED's go from standby status into alarm status are explained, for each LED, on the back of this page: when in standby status only the Mains LED should be lit.

☞ Some of the LED's indicated on the back of this page, as well as being ON or OFF, may also flash to indicate memory of the event they are assigned to.

Following is an explanation the tables.

Table 1 The fault warning LED's (LED's column) and the abbreviations used to identify them on the display of the J524-D model (DISPLAY column), are shown for each alarm output in the DESCRIPTION column, whereas, the ESC. and TACIT columns, show respectively, the buttons that must be pressed in order to bypass or silence the BYPASSABLE/SILENCEABLE outputs.

Table 2 The environment monitored by the input zone (DESCRIPTIONS column), and the devices the input zone activates when in alarm status (OUTPUT column), are shown for each input zone indicated in the ZONE column.

TERMINALS	LED's	DISPLAY	DESCRIPTION	ESC.	SILEN.
23-24-25 [NO COM NC]	*not controlled*	*not controlled*	Free exchange for fire alarm	*not excludable*	*not silenced*
26[+A]			Positive fire alarm output		
27[+N]			Intrinsically safe fire alarm output		
28-29[G]	**TROUBLE FAULT**	**Out.Flt**	Fault alarm output	**DISABLE FAULT**	**SILENCE**
30-31[AT+]	**FAULT**	**Out. +A**	Positive Fire alarm output	**DISABLE**	
32[AT–]	**ALARM**	**Out. -A**	Negative Fire alarm output	**ALARM**	
34[F]	**FAULT DIALLER**	**Usc. FD**	Dialler fire alarm output	**DISABLE DIALLER**	

TABLE 1 *Description of the alarm outputs*

TECHNICAL ASSISTANCE	FIRE DEPARTMENT
☎	☎

SYSTEM FAULT *ON indicates that one or more faults are present: check the other LED's and/or the display to find out which faults are concerned.*

MAIN POWER *If OFF check for local black-out, otherwise call assistance; power to the control panel is guaranteed by the incorporated batteries. If mains failure lasts for many hours, the standby batteries will run-down, and the self-powered devices, connected to the* ***intrinsically safe fire alarm output****, will be activated.*

DISABLEMENT *ON indicates that at least one zone is disabled, and cannot generate fire alarms: check the DISABLEMENT LED's of the zones and/or the display in order to check which zones are disabled.*

TELECOM *ON indicates that the devices assigned to fire alarm signalling via telephone have been activated.*

FIRE ALARM *ON indicates that at least one zone is in alarm status (check the ALARM LED's of the zone and/or the display in order to check which zones are in alarm status); check for false alarm, if there is a real danger, spread the alarm, otherwise press the SILENCE button to silence momentarily the* ***silenceable fire alarm outputs*** *or press the* ***RESET*** *button to disable all the* ***fire alarm outputs****.*

LOGIC UNIT *ON indicates that the Control panel is blocked: call assistance.*

FUSES *ON indicates the presence of a burnt fuse, which might be the fuse protection against accidental inversion of the battery polarity, the 24 V power supply protection fuse or the 12 V power supply protection fuse (the display indicates exactly which fuse is concerned); in this case, the devices connected to these outputs will not function (for example the telephone dialler): call assistance.*

LOW BATTERY *ON indicates that the control panel batteries are low, and in the event of a black-out cannot guarantee proper functioning of the control panel; wait several hours to see if they recharge, otherwise, call assistance.*

BATTERY FAULT *ON indicates either no batteries present or low batteries, therefore, in the event of black-out the control panel will cease to function: call assistance.*

GROUND *If ON call assistance.*

MAIN *As for the MAIN POWER LED, except that it is solid during mains failure, and has a memory.*

TROUBLE FAULT *ON indicates that the devices assigned to* ***fault signalling*** *are unable to function: call assistance.*

DISABLE FAULT *ON indicates that the devices assigned to* ***fault signalling*** *have been bypassed, by means of the relevant button: to unbypass press the same button again.*

FAULT ALARM *ON indicates that the* ***CONTROLLED/SILENCEABLE*** *devices assigned to* ***fire signalling*** *are unable to function: call assistance.*

DISABLE ALARM *ON indicates that the* ***CONTROLLED/SILENCEABLE*** *devices assigned to* ***fire signalling*** *have been bypassed, by means of the relevant button: to unbypass press the same button again.*

FAULT DIALLER *ON indicates that the devices assigned to* ***fire signalling via telephone*** *are unable to function: call assistance.*

DISABLE DIALLER *ON indicates that the devices assigned to* ***fire signalling via telephone*** *have been bypassed, by means of the relevant button: to unbypass press the same button again.*

SILENCE *ON indicates that the* ***SILENCEABLE*** *devices have been silenced: to unbypass press the SILENCE button. Silenced devices are unbypassed automatically at the next alarm status.*

ALARM *ON indicates that the corresponding zone is in alarm status. Check for false alarm, if there is real danger spread the alarm; otherwise, press the RESET button to stop signalling.*

FAULT *If ON call assistance.*

ZONE	DESCRIPTION	OUTPUT
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

ZONE	DESCRIPTION	OUTPUT
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		

TABLE 2 *Description of the input zones and of the Alarm zone outputs (terminals [Ox]).*