IFP-2.32 Manual

1) DESCRIPTION

IFP-2.32 is a microprocessor controlled Fire Panel with 2 loops intended either for privat Homes & Apartments or larger installations. The two loops are balanced by 2k7 Ohm resistor mounted at the last detector in each loop. The device is named as IFP-Y.X, where Y describes number of loops and X number of detectors in the loop. **IFP-2.32** can handle 32 detectors of standard 12V Icas detectors type 500-IDx or Icas type CHOR-E (9V) in each loop.

Connection of Detectors:

- 500-IDx detectors have integrated sirene but the sirene are triggered from the Fire Panel. A 4 wire solution is used to activate the integrated sirene. An external siren can also be used. The siren is controlled by the IFP-2.32 Fire Panel. The alarm relay of IFP-2.32 can be used for external siren control.
- CHOR-E detectors (9V detector) can be connected only “Alarm in one Alarm in all” function.

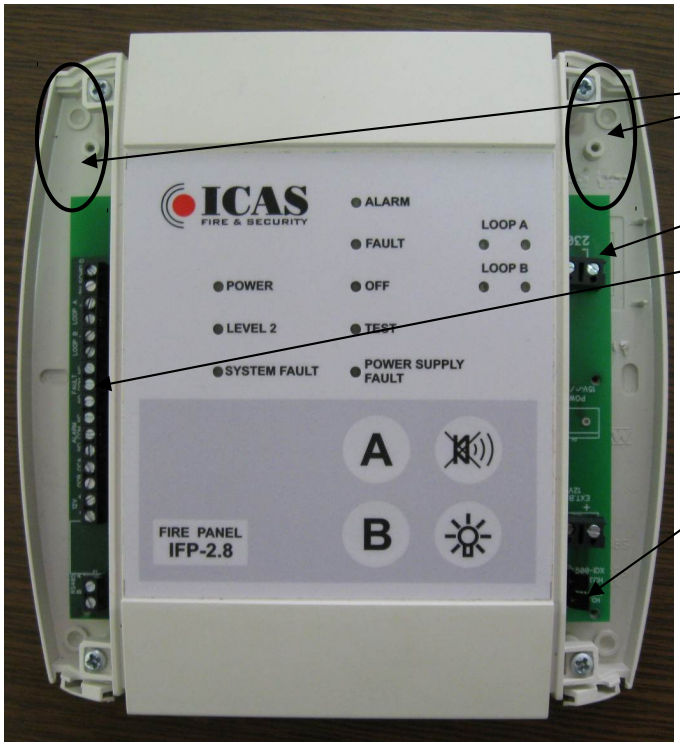
The different functions are chosen by use of jumper.

The IFP-2.32 is supplied by 230V AC and the internal backup **12V/0,8Ah.** The IFP-2.32 is equipped with one internal siren, fault relay, alarm relay and 2 open collectors, each for one loop. The IFP-2.32 is controlled by 4 underlighted pushbuttons. In the IFP-2.32 is possible to control each loop separately by the functions for Switch OFF/ON loops, also Switch OFF/ON the Test of loops, remove Alarm and Fault in loops. The IFP-2.32 includes also complete functions for battery testing and firmware testing.

When the Alarm is triggered, the internal siren of IFP-2.32 and siren of detectors / External sirenes can be silenced with pushbutton SIREN. This will stop the sirens of detectors. Removing of Alarm and other control functions are described in chapter Button Functions.

2) INSTALATION IFP-2.32 AND SMOKE DETECTORS

Place the Fire Panel in vertical position near a power outlet. Use minimum 2 screws in upper part of the Fire Panel box for fixing to the wall. Install the Fire Panel at least 0.5m from fuse box or other electrical appliances. Be aware that EMC can harm the Fire Panel.



Recomended place for Fire Panel fixing

230V Terminal

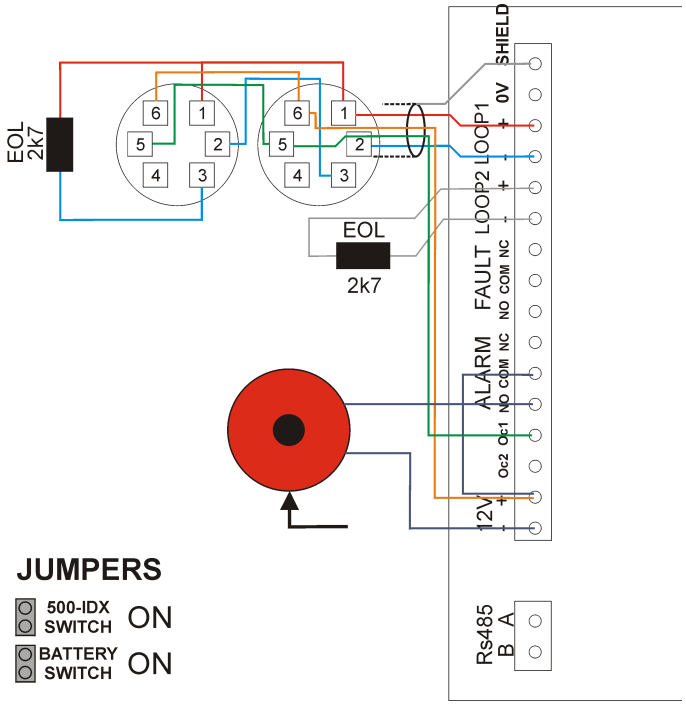
Low power terminals side

Battery Switch jumper

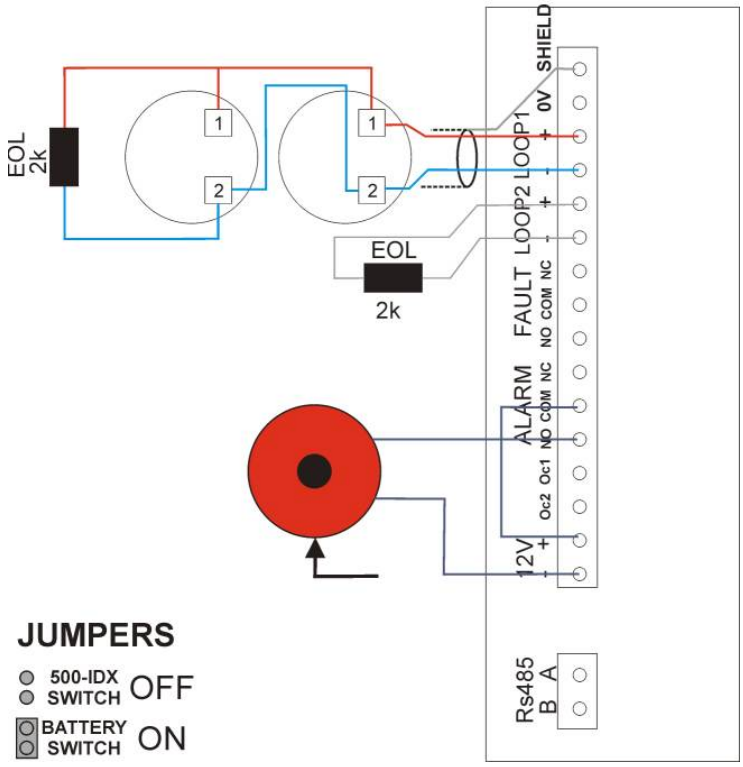
Connect the 230V into the terminal on the left side of the IFP-2.32. Connect the Detectors and siren. Follow pictures on the page 2 and page 3.
The recommended detector cable type is AF CEI 20-22 IEC 332 or VD-04 shielded cable, or equivalent type. Shield of the cable has to be terminated in the 0V in all the Detectors and to Shield terminal in the Fire Panel.
Set all jumpers in correct position. Switch the Jumper for backup battery (Battery Switch) and it shall always be on!

IFP-2.32 shall be powered from a separate circuit protected by overvoltage protection level II and by an automatic Fuse. This fuse shall be tripped to disconnect the Fire Panel when work is to be done. IFP-2.32 is equipped with automatic 0.125A overcurrent protection.

“CONNECTION 500-IDX SMOKE DETECTORS”



“CONNECTION CHOR-E SMOKE DETECTORS”
(Connection meets EN52-2 with only the exception of clause 8.2.4. - Removal of a point)



JUMPERFIX:

500-IDX SWITCH Shorted – 12V loop output voltage
Open – 9V loop output voltage

BATTERY SWITCH Shorted – Backup battery connected (Normal operation).
Open – Backup battery is not connected (The Detectors do not work after power cut).

FUNCTION:

If IFP-2.32 main power on and battery switch is open, the power supply fault occurs. IFP-2.32 is started right when battery switch is shorted and main power on. The IFP-2.32 waits to establish the current in the loops 3 min (Establishing signalization). Then the current loop is detected. The right loop current (EOL has right value, any shorts and any opens) is signalized by the 2 flashes of the blue LED and by 2 short beeps (LOOPS GUARD MODE). The IFP-2.32 is in Active mode from this moment.
Fire alarm is detected in the loop when current is higher than 12 mA. Fault alarm is detected when the loop is open or when the loop is shorted. If the battery is very low and starts to be undercharged and main power is off, the IFP-2.32 is switched off.

3) LED SIGNALIZATION

Power	Dark, No light, power is OFF; blinking – powered from Battery; Lights – main power is ON
Level 2	Lights for button functions in level 2
System Fault	Software error , memory error
Alarm	Main Alarm
Fault	Main Fault
Off	Main Off
Test	Main Testing
Power supply fault	If lights, the charger does not work, the battery is not connected, or the battery is low
Loop A	Red = Alarm, Yellow blinking = Fault, Yellow and Off lights = Loop is off, Yellow and Test lights = Loop in Test
Loop B	Red = Alarm, Yellow = Fault, Yellow blinking and Off lights = Loop is off, Yellow blinking and Test lights = Loop in Test

ALARM:

- one of the loops is in alarm state, < 12mA – 160mA > current detected
- can be switched off only in level 2
- sound signalization can be suppressed in level 1

FAULT:

- Loop open or short – Loop A or Loop B
- When the fault is removed – The signalization can be switched off manually only in level 2 or automatically in 1 min.
- sound can be suppressed in level 1

SYSTEM FAULT:

- undefined runs in program or reset of the unit, or flash memory error
- could be switched off only by switching off the unit

POWER SUPPLY FAULT:

- the battery charger does not work, battery is disconnected or the battery is low
- POWER SUPPLY FAULT led signalization is dark (reset) after the battery is fully charged – it can not be reset in another way

OFF:

- The loop is switched off/on only in level 2
- The actual Loop & LED is lightning

TEST:

- At least one loop is in test mode
- Can be switched off / on in level 2
- Actual Loop & LED is flashing

OK SIGNALIZATION:

- POWER LED 2x flashes and 2x short beeps
- Used for signalizing that the button command was received
- Occurs after each complete right button command

LOOPS GUARD MODE:

- 2x blue LED flashes and 2x short beeps
- occurs after 3 min, when the loop is established and there is any loop fault

ESTABLISHING SIGNALISATION:

- 1x blue flash and the loop which is establishing is signalized by 1x yellow flash
- flashing occurs after some fault or reset of the loop, where the loop needs to be established
- it continues 3 min, and is followed by LOOPS GUARD MODE signalization

4) BUTTON FUNCTIONS

There are two levels of the manual control. Following tables can be used for simple guide to control IFP-2.32 unit.

“Button Function 1-Level 1 Control”:

Button function 1 - LEVEL 1 Control	
Button	**LEVEL 1**
A	-
B	-
A+B at the same time	Enter into LEVEL 2
Siren	Silent of sounds
Lamp	All LEDs light control

In the level 1 buttons A and B have any function. The user can press also A+B at the same time and enter into level 2.
Buttons Lamp and Siren has only one function. Siren is for silent of the sound and Lamp is for test LEDs lights.

“Button Function 2-Level 2 Control”:

The table **“Button function 2 – ALARM RESET**” can be used step by step to Reset the alarm in loops. NOTE! The detectors in the loop is **not** in alarm (the current in the loop is lesser than 12 mA).

1. First step is entering into LEVEL 2 – Press A+B at the same time – If received OK Signalization occurs (step 1).
2. Press and hold A (B) (step 2).
3. Then hold A(B) and press 1x B (A) for Alarm Reset Choice in the loop. The control choice can be checked by ALARM blinking LED. Do not release the button A(B). The control choice is confirmed by A(B)+Lamp button – If received OK Signalization occurs (step 3).
4. Release All buttons (step 4).

Button function 2 - ALARM RESET LOOP A			
1	**A+B at the same time**		Enter into LEVEL 2
2	**Press and hold A**		LOOP A Choice
3	**Hold A** →	**1x B + 1x LAMP**	ALARM LOOP A Reset Choice (Button LAMP is used at the end as confirmation of the action)
4	**Release Buttons**		FAULT LED is dark

Button function 2 - ALARM RESET LOOP B			
1	**A+B at the same time**		Enter into LEVEL 2
2	**Press and hold B**		LOOP B Choice
3	**Hold B** →	**1x A + 1x LAMP**	ALARM LOOP B Reset Choice (Button LAMP is used at the end as confirmation of the action)
4	**Release Buttons**		FAULT LED is dark

The table **"Button function 3 – FAULT RESET"** can be used step by step to delete fault manually in loops. Important! The fault of the loop has been fixed. In case that the Loop-fault has been removed, the Fault-Alarm is Reset automatically, or manually.

1. First step for manual removing The Fault-Alarm is entering into LEVEL 2. – Press A+B at the same time – If received OK Signalization occurs (step 1).
2. Press and hold A (B) (step 2)
3. Then hold A(B) and press 2x B(A) for Fault Reset Choice in the loop. The control choice can be checked by FAULT blinking LED. Do not release the button A(B). The control choice is confirmed by A(B)+Lamp button – If received OK Signalization occurs (step 3).
4. Release All buttons (step 4).

Button function 3 - FAULT Reset LOOP A			
1	**A+B at the same time**		Enter into LEVEL 2
2	**Press and hold A**		LOOP A Choice
3	**Hold A** →	**2x B + 1x LAMP**	FAULT LOOP A Reset Choice (Button LAMP is used at the end as confirmation of the action)
4	**Release Buttons**		FAULT LED is dark

Button function 3 - FAULT Reset LOOP B			
1	**A+B at the same time**		Enter into LEVEL 2
2	**Press and hold B**		LOOP B Choice
3	**Hold B** →	**2x A + 1x LAMP**	FAULT LOOP B Reset Choice (Button LAMP is used at the end as confirmation of the action)
4	**Release Buttons**		FAULT LED is dark

The table **"Button function 4 – LOOP ON/OFF"** can be used step by step for switch on or switch off the loop.

1. First step is entering into LEVEL 2. – Press A+B at the same time – If received OK Signalization occurs (step 1).
2. Press and hold A (B) (step 2)
3. Then hold A(B) and press 3x B (A) for Switch Off/On Choice in the loop. The control choice can be checked by OFF blinking LED. Do not release the button A(B). The control choice is confirmed by A(B)+Lamp button – If received OK Signalization occurs (step 3).
4. Release All buttons (step 4).
5. Press Lamp+Siren at the same time for LEVEL 2 switching off. LEVEL 2 can be switched off also automatically by waiting 30s (step 5).

Button function 4 – LOOP A OFF/ON			
1	**A+B at the same time**		Enter into LEVEL 2
2	**Press and hold A**		LOOP A Choice
3	**Hold A** →	**3x B + 1x LAMP**	LOOP A is in Off / On Choice (Button LAMP is used at the end as confirmation of the action)
4	**Release Buttons**		FAULT LED is dark
5	**LAMP+SIREN at the same time, or wait 30 s**		Exit LEVEL 2 and return into LEVEL 1

Button function 4 – LOOP B OFF/ON			
1	**A+B at the same time**		Enter into LEVEL 2
2	**Press and hold B**		LOOP B Choice
3	**Hold B** →	**3x A + 1x LAMP**	LOOP B is in Off / On Choice (Button LAMP is used at the end as confirmation of the action)
4	**Release Buttons**		FAULT LED is dark
5	**LAMP+SIREN at the same time, or wait 30 s**		Exit LEVEL 2 and return into LEVEL 1

The table **"Button function 5 – LOOP TEST ON/OFF"** can be used step by step for switch on or switch off the test of the loop.

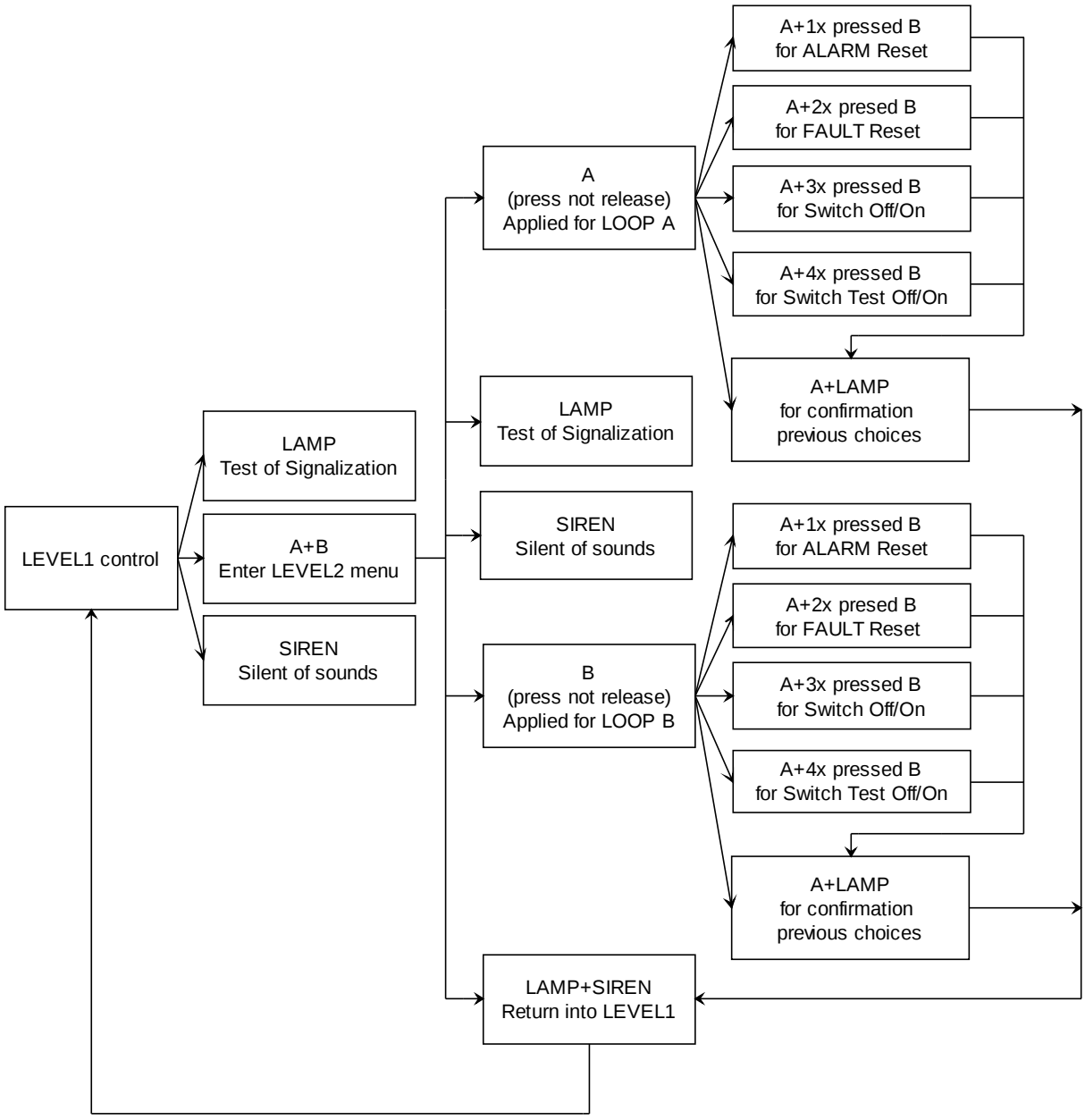
1. First step is entering into LEVEL 2. – Press A+B at the same time – If received OK Signalization occurs (step 1).
2. Press and hold A (B) (step 2)
3. Then hold A(B) and press 4x B (A) for Switch Off/On Test Choice of the loop. The control choice can be checked by TEST blinking LED. Do not release the button A(B). The control choice is confirmed by A(B)+Lamp button – If received OK Signalization occurs (step 3).
4. Release All buttons (step 4).
5. Press Lamp+Siren at the same time for LEVEL 2 switching off. LEVEL 2 can be switched off also automatically by waiting 30s (step 5).

Button function 5 - LOOP A TEST OFF/ON			
1	**A+B at the same time**		Enter into LEVEL 2
2	**Press and hold A**		LOOP A Choice
3	**Hold A** →	**4x B + 1x LAMP**	LOOP A is in Test Off / On Choice (Button LAMP is used at the end as confirmation of the action)
4	**Release Buttons**		FAULT LED is dark
5	**LAMP+SIREN at the same time, or wait 30 s**		Exit LEVEL 2 and return into LEVEL 1

Button function 5 - LOOP B TEST OFF/ON

1	**A+B at the same time**		Enter into LEVEL 2
2	**Press and hold B**		LOOP B Choice
3	**Hold B** →	**4x A + 1x LAMP**	LOOP B is in Test Off / On Choice (Button LAMP is used at the end as confirmation of the action)
4	**Release Buttons**		FAULT LED is dark
5	**LAMP+SIREN at the same time, or wait 30 s**		Exit LEVEL 2 and return into LEVEL 1

“Simple Map of Button functions”:



5) PARAMETERS

POWER SUPPLY

Power supply:	230V (+ 10% / - 15%) ~ 50Hz
Operating voltage:	14 V
Power consumption normal:	<60 mA
Minimal load (Imin)	32 mA
Maximal load (Imax a)	480 mA
Maximal load without charging (Imax b)	600 mA

BATTERY SUPPLY

Backup batteries:	Pb, 12V / min. 0,8 Ah
Backup time:	24 h / 15 min in alarm
Charger current:	<0.2 A
Power consumption normal:	<20 mA
Battery cut-off voltage:	10.5V +/- 0.2V
Fault battery internal resistor:	>1Ω

DETECTION LOOPS

Number of loops:	2
Max. number of detector in loop:	32 (max. 0.64 mA)
Max. possible number of detector:	64
Max. possible number of sirens:	23 detectors 500-IDX type
End of line resistor:	2k7 Ohm / (CHOR-E 2k Ohm)
Current in loop for alarm detection:	min. 12mA - max. 160mA (max. 8 detectors 500-IDX)
Output loop voltage:	12 V (+/– 20%) / (for CHOR-E 9.5V (+/– 5%))

OUTPUTS

Fault relay:	1x 125VAC / 0.5A, 24VDC / 1A
Alarm relay:	1x 125VAC / 0.5A, 24VDC / 1A
Transistor outputs (OC):	2x 14V / 0.1A
Power output for external device:	12 V (+/– 20%) / 5mA 9.5V (+/– 5%)) / 5mA – CHOR-E SET-UP

FUSES

Fuses for the loops:	2x Resettable fuse PFRA.030 (0.6A)
Fuse for the power output:	Resettable fuse PFRA.030 (0.3A)

MECHANICAL SPECIFICATION

Plastic box material:	UL 94 V-0
Colour:	RAL9002
Size:	200mm x 210mm x 48mm
Weight:	1.25 kg
IP-Class:	IP40
Temperature:	-10 to +50 °C
Humidity:	95% RH
Cable terminals:	2.5 mm2

REQUIRED TIMES FOR SIGNALIZATION

Operation	Time
Loops start up time of the IFP-2.32 and switching into Active Mode	3 min
Automatical Fault Alarm reset	< 20 s
Fire Alarm detection	< 10 s
Fault Alarm detection	< 100 s
Battery test	< 15 min
Test of program memory	< 7 min

SPECIFICATION

Certified according to standard: EN54-2 & EN 54-4

1293

ICAS AS, Grini Naeringspark 15
1361 Oesteraas, Norway

13

1293-CPD-0372

EN54-2:1999, EN54-2:2007/A1
EN54-4:1999, EN54-4:2003/A1, EN54-4:2007/A2
Control Unit for electrical fire alarm systems for buildings
Power Supply for electrical fire alarm systems for buildings

IFP-2.32

Optional requirements: State Test
Documentation: IFP-2_32-Manual_EN.pdf ver.04/2013
IFP-2_32-Manual_EN.doc ver.04/2013

6) MAINTENANCE

WARNING!!! SERVICING INSTRUCTIONS ARE FOR THE USE OF SERVICE – TRAINED PERSONNEL ONLY. TO AVOID DANGEROUS ELECTRIC SHOCK, DO NOT PERFORM ANY SERVICING UNLESS QUALIFIED TO DO SO.

BATTERY VOLTAGE AND CHARGER CHECKS

Open the right side of the IFP-2.32.
Warning! High Voltage of 230V is connected to P1 230V terminal.
Measure the voltage at P10 terminal (EXT BAT 12V). This should be 13.5V +/- 0.2V. Switch off the primary power supply and check that the battery voltage at P10 terminal does not drop significantly.
Close the right side of IFP-2.32 and lock.

BATTERY CHANGE

Open the right and left side of the IFP-2.32.
Warning! Remove the Power before battery change.
Remove the top cover of the IFP-2.32. Switch off the battery switch jumper on the right side. Remove the battery out of the box and plug it out. Plug in the new battery with right polarization and place it in the box. Switch on the battery switch jumper. Close the top cover of the IFP-2.32.
Close the right and left side of the IFP-2.32 with locks.
Switch on the mains.

NOTE: BATTERIES MUST BE REPLACED PERIODICALLY IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. ALWAYS USE SEALED LEAD ACID BATTERIES (YUASA NP0.8-12 12V 0.8Ah).

LOOPS CHECKS

Set the TEST function in IFP-2.32 for LOOP A and B. For further instruction see section 5 in chapter 4. Activate the alarm of the detector in the loop. The Fire Panel shall detect alarm in the correspondent loop. Repeat the previous action for the other loop as well.
Now test open loop fault. Remove the detector in alarm from the socket. The Fire Panel shall detect fault alarm in the correspondent loop. Repeat the previous action for the other loop as well.
Place the detector back into the socket in accordance with point 3 of the 500-IDx installation manual.
Switch off the fire alarm and fault alarm of the IFP-2.32 in both loops. See section 2 and 3 of chapter 4. Wait until loops are in LOOPS GUARD MODE.
Switch off the TEST function in loop A and B. Follow section 5 in chapter 4.

SIGNALISATION CHECK

Press the LAMP button (the section 1 in chapter 4). All LED signalizations and buzzer shall go on for approximately 2s.

POWER OUTPUT VOLTAGE CHECK

Open the left side of the IFP-2.32.
Measure the voltage at P5 terminal (+12V-). The value should be 12 V (+/– 20%).
Close the left side of the IFP-2.32.