

XJA50D - XJA50SL

ALARM MODULES

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1. GENERAL WARNING

1.1 PLEASE READ BEFORE USING THIS MANUAL

- This manual is part of the product and should be kept near the instrument for easy and quick reference.
- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device.
- Check the application limits before proceeding.
- Dixell Srl reserves the right to change the composition of its products, even without notice, ensuring the same and unchanged functionality.

1.2 SAFETY PRECAUTIONS

- Check the supply voltage is correct before connecting the instrument.
- Do not expose to water or moisture: use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to prevent formation of condensation
- Warning: disconnect all electrical connections before any kind of maintenance.
- Fit the probe where it is not accessible by the End User. The instrument must not be opened.
- In case of failure or faulty operation send the instrument back to the distributor or to "Dixell S.r.l." (see address) with a detailed description of the fault.
- Consider the maximum current which can be applied to each relay (see Technical Data).
- Ensure that the wires for probes, loads and the power supply are separated and far enough from each other, without crossing or intertwining.
- In case of applications in industrial environments, the use of mains filters (our mod. FT1) in parallel with inductive loads could be useful.

2. GENERAL DESCRIPTION

XJA50D is an acquisition module that can read up to 5 inputs at 230Vac(110Vac or 24Vac opt.) expandable to 10 with the XJA50SL slave module. By means of the serial output RS485, it can be connected to the XJ500 or a ModBUS compatible monitoring system. Modules XJA, DIN RAIL format, are without display and are programmable by means of a programming keyboard KB1 PRG.

It is also possible to program them with a programming "Hot key" and to connect them to a display device called XJA REP which shows module alarm and status. The XJA50D also has an alarm relay.

3. MODELS

The modules XJA always have a different serial address for each input. It is possible to associate to each input an alarm or a load status condition checking ON and OFF cycles.

4. PROGRAMMING KEYBOARD (KB1 PRG)

The module programming must be done with programming keyboard KB1 PRG.



SET : In programming mode it selects a parameter or confirms an operation.

▲ (UP) : In programming mode it browses the parameter codes or increases the displayed value.

▼ (DOWN) : In programming mode it browses the parameter codes or decreases the displayed value.

SECTION: **Section menu access**: By pushing and releasing this button, the section menu is entered. An instrument can have up to 10 sections, that is, it can be separated into 10 different parts, each one with different serial addresses and a completely independent parameter list.

PRG : **Display activated section**: By pushing and releasing this button, the section name is displayed.

To enter programming mode: By holding it pressed 3s, the programming mode is entered.

COPY: In section menu it allows the user to paste the list of the "Work Section" in the desired section. During normal operation it allows "UPLOADING" of the parameter list from the module to the "Hot key".

4.1 USE OF LEDS

On the modules there are three leds:

| LED | MODE | Function |
|--------|----------|-----------------------------|
| Yellow | FLASHING | serial communication is OK |
| Yellow | ON | the module receives only |
| Yellow | OFF | serial communication absent |
| Green | ON | The module is ON |
| Red | ON | ALARM signal |

N.B. There are other possible status of the LEDs. See paragraph related to programming by using the "Hot Key".

4.2 XJA REP DISPLAY

On the XJA REP the operation status of the whole module can be displayed:

All the activated inputs and the alarms are displayed continuously at 1 second intervals according to the following codes :

- If there are non-active inputs and alarms, "nOA" is displayed.
- If there is an active alarm input, "A" + ADR (Serial address) is displayed.
- If there is an active input configured as Status, "S" + ADR (Serial address) is displayed.

5. SECTION MENU

Includes the sections used in the module and the values measured by the inputs.

Access procedure :

- The section menu is entered by pushing and releasing the "Section" key. The label of the first function "Snc" will be displayed.
- The "UP" and "DOWN" keys are used to cycle backwards or forwards in the menu.

- By pressing the "Section" key on the label, the input status will be displayed.
- By pressing the "Section" key again the following section label will be displayed.

5.1 LIST OF FUNCTIONS IN THE SECTION MENU:

- "Snc" Number of sections.
- "Se0" Includes Input 0 operation status.
- "Se1" Includes Input 1 operation status.
- "Se2" Includes Input 2 operation status.
- "Se3" Includes Input 3 operation status.
- "Se4" Includes Input 4 operation status.
- "Se5" Includes Input 5 operation status.
- "Se6" Includes Input 6 operation status.
- "Se7" Includes Input 7 operation status.
- "Se8" Includes Input 8 operation status.
- "Se9" Includes Input 9 operation status.
- Pr1 Includes module general parameters.
- "Out" exits from menu

5.2 HOW TO SET THE NUMBER OF SECTIONS "SNC"

By entering Section menu, the first label "Snc" appears.

- By pressing "Section" key, the number of sections enabled appear. (Default =1)
- By ▲ or ▼ the user modifies the number of sections enabled.
- By pushing "Section" key, the number of sections will be memorised, and the main visualisation will be displayed. (The number of sections blinks for 3 times when the "Section" key is pressed)
- If the number of sections is not modified, by pressing the "Section" key again, label "Se0" will be displayed.

5.3 INPUT STATUS DISPLAY

When the section number setting is executed, a number of "SeX" labels equal to the number of sections programmed will appear in the Section menu.

- By pushing and releasing the "Section" key on the label "SeX", the state of the input is displayed.
- By pushing and releasing the "Section" key, the label of the following section is displayed.
- If no keys are pressed for 10 sec. or "Section" is pressed on the label "Out", the main visualisation will be displayed.

5.4 "WORK SECTION" ACTIVATION

- By pushing the "Section" key for 3 sec. on the label "SeX" in the Section menu, "work section" will be activated. (factory setting Se0).

N.B. It is possible to enter the "work section" parameter list only

5.5 GENERAL PARAMETERS PR1

There are two general read-only parameters that give some useful information on the module. To be able to display them:

- press the "Section" key
- select the label "Pr1" in the Section menu and press "Section".

rEL Software release (read-only)
 Ptb Parameter list (read-only)

5.6 EXIT

If no key is pressed for more than 15 seconds, the instrument reverts to main display mode.

6. SECTION PARAMETERS PROGRAMMING

6.1 TO ENTER THE PARAMETER LIST

To enter the parameter list of the "work section", press PRG key for 2 seconds.

6.2 HOW TO CHANGE THE PARAMETER VALUE

Each parameter is identified by a special alphanumeric code (label).

To change the parameter value, do as follows:

- Enter the "parameter list" by pressing PRG key for 2 sec.
- Browse the parameter list by using "UP" or "DOWN" until the required parameter is displayed.
- Press the "SET" key to display its value.
- Use "UP" or "DOWN" to change its value.
- Press "SET" to store the new value and skip to the following parameter.

TO EXIT: Press "SET" + "UP" or wait 15s without touching any key. **NOTE**: the set value is stored, even when the procedure is exited, by waiting the timeout to expire without pressing "SET".

7. COPY FUNCTION

To facilitate module programming operations, it is possible to copy the parameter list from "work section" to another.

1. Enter the section menu ("Section" key).
2. Browse by using the "UP" and "DOWN" keys, the list of sections until the label of the section to program is displayed.
3. By pushing the "COPY" key until the code of the section flashes, the parameter list of the "work section" is pasted in the new one.

8. SERIAL SETTING

In the factory setting the serial address of Se0 is 1. After changing the serial address of section "Se0" the ones that follow will take the next addresses.

N.B. Automatic configuration happens only during the first installation.

9. LIST OF PARAMETERS

- i1F Power supply input configuration:**
Sta = status; ALL = alarm
- i1P Power supply input polarity:** ; CL: the input is activated if the power supply is present. oP: the input is activated if the power supply is not present; nP: the input is not present.
- dd1 Power supply input delay:** (0÷120min.) delay between the activation of the input and its signalling.
- nPS Pressure switch activation number:** (0÷15) Number of activation of the pressure switch during "dd1" interval, before signalling the alarm event.
- ArE Alarm relay enable** (0÷1) 0 = In alarm condition the relay is not activated. 1 = In alarm condition the relay is activated.
- Adr Serial address** (1÷247): Identifies the instrument when it is connected to a monitoring system.

10. XJA-REP & KB1 PRG & HOT KEY

The XJA has a connector on the front to connect the programming keyboard KB1 PRG which can be used to program the modules, the XJA-REP to display the input status or the "Hot Key".

10.1 USE OF THE PROGRAMMING "HOT KEY"

10.1.1 DOWNLOAD (From the "Hot Key" to the module)

If the programming key is plugged in, when the instrument is switched ON, the automatic DOWNLOAD of the parameters list from the "Hot Key" to the instrument will start. During this phase, the two Leds (RED and GREEN) are turned on fixed.

At the end of the data transfer phase the module displays the following messages:

- Green Led "ON": right programming.
- Red Led "ON" failed. programming.

If the programming has failed, the instrument has to be switch OFF and ON to repeat the operation or to start the normal regulation. (Starting to normal regulation remove the "Hot Key").

10.1.2 UPLOAD (From the module to the "Hot key")

The module can UPLOAD the parameters list from own E2 (internal memory) to the "Hot Key".

The programming keyboard has to be connected and the module switched ON. During the normal display, push "COPY" key for 5sec. until the label "uPL" will appear.

Pressing "SET" key, the module gets ready to the operation of UPLOAD.

Removing the keyboard and inserting the "Hot Key" within 30sec the UPLOAD will start.

At the end of the data transfer phase the module displays the following messages:

- Green Led "ON": right programming.
- Red Led "ON" failed. programming.

After removing the "Hot Key" the instrument waits 30sec. If another "Hot key" is plugged in the UPLOAD will be done again.

11. ALARM OUTPUT

L'XJA50D has an alarm relay which is switched ON in alarm condition in accordance to ArE parameter.

12. INSTALLATION AND MOUNTING

XJA modules shall be mounted on an omega DIN rail (3). The ambient temperature range allowed for correct operation is 0 ÷ 60 °C. Avoid places subject to strong vibrations, corrosive gases, excessive dirt or humidity. The same recommendations apply to probes. Let air circulate by the cooling holes.

13. ELECTRICAL CONNECTIONS

The instruments are provided with screw terminal block to connect cables with a cross section up to 2,5 mm². Before connecting cables make sure the power supply complies with the instrument's requirements. Separate the input connection cables from the power supply cables, from the outputs and the power connections. Do not exceed the maximum current allowed on each relay, in case of heavier loads use a suitable external relay.

14. SERIAL COMMUNICATION

All the alarms, the states and the data measured by the modules XJA can be sent by serial RS485 to the XJ500 or a ModBUS-RTU compatible monitoring system.

15. TECHNICAL DATA

15.1 XJA50D

- Housing:** self extinguishing ABS.
- Case:** 4 DIN modules 70x85 mm; depth 61mm.
- Mounting:** DIN RAIL mounted in a omega (3) din rail .
- Connections:** Screw terminal block ≤ 2,5mm² wiring.
- Power supply:** 230Vac, ± 10% 50/60Hz
115Vac, ± 10% 50/60Hz
24Vac, ± 10% 50/60Hz
- Power absorption:** 1,5VA max.
- Inputs:** 5 inputs at 115 / 230 Vac (depending on power supply).
(or 5 inputs at 24Vac optional)
- Relay alarm :** relay SPST 5A
(The voltage is the same as the power supply)
- RS485 output :** RS485 serial output with ModBUS-RTU protocol.
- Data storing:** on the non-volatile memory (EEPROM).
- Operating temperature:** 0÷60 °C.
- Storage temperature:** -30÷85 °C.
- Relative humidity:** 20÷85% (no condensing)

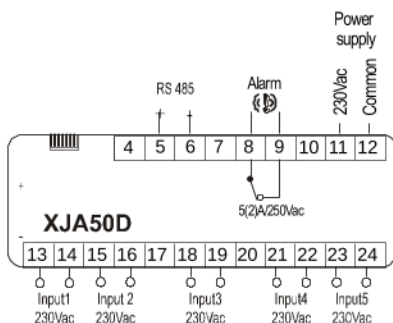
N.B. To respect the safety standards the alarm relay must be used with the same voltage as the power supply.

15.2 XJA50SL

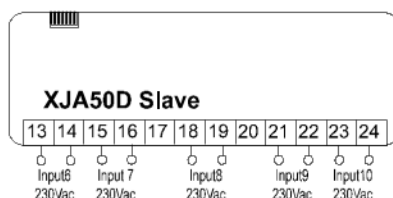
- Housing:** self extinguishing ABS.
- Case:** 4 DIN modules 70x85 mm; depth 61mm.
- Mounting:** DIN RAIL mounted in a omega (3) din rail .
- Connections:** Screw terminal block ≤ 2,5mm² wiring.
- Power supply:** from XJA50SL
- Power absorption:** 1,5VA max.
- Inputs:** 5 inputs at 115 / 230 Vac. (depending on power supply).
(or 5 inputs at 24Vac optional)

16. CONNECTIONS

16.1 XJA50D



16.2 XJA50D SLAVE



17. DEFAULT SETTING VALUES

| SECTION PARAMETERS | | | |
|--------------------|-----------------|-----------------------------------|--|
| LABEL | Default Se0÷Se9 | PARAMETERS | RANGE |
| i1F | ALL | Digital input configuration | Sta = status ALL= alarm |
| i1P | CL | Digital input polarity | CL = close oP= open nP = not present |
| dd1 | 0 | Digital input delay | 0 ÷ 120 |
| nPS | 0 | Pressure switch activation number | 0 ÷ 15 |
| ArE | YES | Alarm relay enable | no = disable YES = enable |
| Adr | 1 | Serial address | 1 ÷ 247 |