$C \epsilon$

EV92 - SLAVE
**DIGITAL INPUT
MODULE**
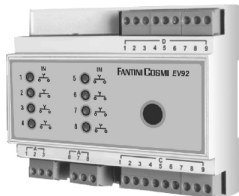
USE
The EV92 module is suitable to be used on all plants where it is necessary to acquire and to manage switching from one to eight failure or operation signalling contacts. The EV92 module is mainly suited for industrial plants, water control systems, greenhouses, heating or air-conditioning plants, etc..

OPERATION
The EV92 module features eight digital optoisolated inputs, each of which can be configured to operate in different modes and to be managed through daily time programming.

DIGITAL INPUT OPERATION PROGRAMS
All the eight inputs can be configured with the status showing when failure or signalling is activated: OPENING or CLOSING, and the operation program: FAILURE ON, FAILURE OFF and TIMED FAILURE. When selecting the Timed Failure program, the set time programming will be taken into account.

TIME PROGRAMMING
When selecting the TIMED FAILURE program, each digital input can be activated in three preset time bands equal for each day of the week.
Input is just monitored in the period falling between the three ON and the three OFF times. If one of the three time bands is excluded (to do this press the PLUS and MINUS keys of the remote keyboard to highlight the dashes --,--) input will not be monitored.
N.B. When all the three time bands are excluded, the digital input is monitored continuously as if the ALWAYS ON program is set.

DESIGN CHARACTERISTICS

6-module DIN container; removable terminal boards facilitate replacement.

Digital input signalling led

BUTTON to reset factory settings
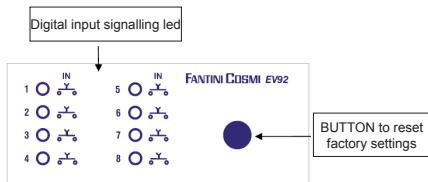
INSTALLATION

INSTALLING THE CONTROL UNIT

Mount the device onto the DIN rail inside a panel in order to provide suitable protection. Removable terminal boards facilitate wiring and replacement. Connecting leads to the control unit must have a section of at least 1 mm2 and a length of 1000 metres.
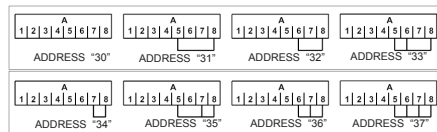
CONNECTION TO THE FANBUS

Connect the EV92 control unit to the Master EV90 through the FANBUS. Bear in mind that the bus has low voltage and it is not polarised, terminals can therefore be inverted with each other without causing malfunction.
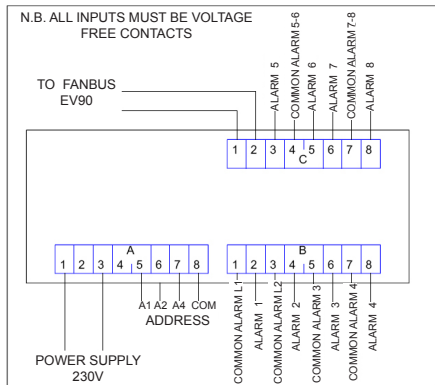
CONTROL UNIT ADDRESS

The control units must be addressed through the terminal board to work properly. The address of the EV92 unit is made up of a high part that corresponds to number "3", and a low part that may take on a value between "0" and "7". The MASTER unit starts a progressive search of SLAVES EV92 from address "30" and it will stop if it gets no reply. It is therefore necessary that connected slaves have different consecutive addresses starting from address "30".

The diagrams below show how to set the low part of the address through terminal board 'A' :

ADDRESS "30"   ADDRESS "31"   ADDRESS "32"   ADDRESS "33"

ADDRESS "34"   ADDRESS "35"   ADDRESS "36"   ADDRESS "37"

EV92 WIRING DIAGRAM

N.B. ALL INPUTS MUST BE VOLTAGE
FREE CONTACTS

TO FANBUS
EV90

ALARM 5
COMMON ALARM 5-6
ALARM 6
ALARM 7
COMMON ALARM 7-8
ALARM 8

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

C

A

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

A1 A2 A4 COM
ADDRESS

POWER SUPPLY
230V

B

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

COMMON ALARM L1
ALARM 1
COMMON ALARM L2
ALARM 2
COMMON ALARM 3
ALARM 3
COMMON ALARM 4
ALARM 4

SETTINGS AND ADJUSTMENTS

FACTORY SETTINGS
The EV92 leaves the factory with all parameters set for standard operation. Should it be necessary to reset factory parameters (default data), turn off the power supply, then turn it on again while pressing the key on the front panel. All data entered will be lost, whereas factory parameters will be reset.
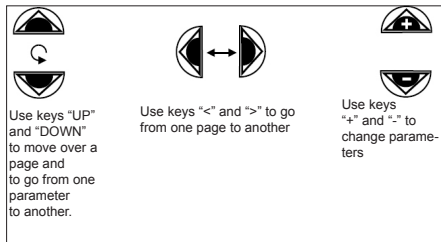
INITIALISING THE DEVICE
Each time the slave module is powered, the leds set on the front panel will start flashing simultaneously until the Master EV90 starts communicating with the relevant device by selecting its address or transmitting time data through the bus. As from this moment the salve module will start working regularly.

SETTINGS AND ADJUSTMENTS
To modify EV92 data it is necessary to use the Master EV90 that will act like the display and the remote keyboard of the EV92. Data is entered through special menus provided for the purpose which may contain a number of submenus. Press the "PLUS" "MINUS" "FORWARD" "BACK" "UP" and "DOWN" keys to scroll the different menus and to modify parameters.

COMMANDS ON THE FRONT PANEL OF MASTER EV90 FOR CONTROLLING SLAVE EV92

The highlighted cursor indicates which menu item is currently selected. Each item has a number of pages that can be scrolled through by keys "Forward/Back" (MASTER).

Use keys "UP" and "DOWN" to move over a page and to go from one parameter to another.

Use keys "<" and ">" to go from one page to another

Use keys "+" and "-" to change parameters

EV92 MODULE MENUS

```
Device Type
……………
EV90              00
GYM               10
BUILDING
SOUTH SIDE        11
SANITARY          40
BOILERS 1-2       20
BOILERS 3-4       21
INPUTS            50
OUTPUTS           30

………………
```

EV92 module
List of submenus

```
EV92--> 30
>Description
>Alarm Descr.
>Config. Alarms
>Information
>Time progr.
```
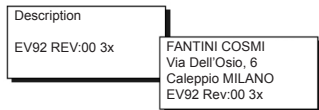
The highlighted cursor indicates which menu item is currently selected. Each item has a number of pages that can be scrolled through by keys "Forward/Back" (MASTER).

Select the parameters that can be modified by pressing the "PLUS" "MINUS" "FORWARD" "BACK" "UP" and "DOWN" keys set on MASTER EV90 front panel.
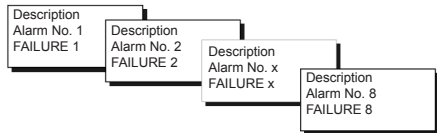
DESCRIPTION SUBMENU

It consists of two pages, one contains the plant description and the other gives the module identification data.

The plant description is a 16-character string that is sent to the MASTER when it searches the SLAVES on the bus. The first 14 characters of the string may be changed using the keys located on the EV90 front panel. ASCII characters that may be entered include numbers 0 to 9, letters 'A ' to 'Z' and other characters. Signs '<' and '>' are not included.

```
Description

EV92 REV:00 3x
                    FANTINI COSMI
                    Via Dell'Osio, 6
                    Caleppio MILANO
                    EV92 Rev:00 3x
```

ALARM DESCR. SUBMENU

This submenu consists of eight pages to be used for assigning describing names (made up of 16 alphanumeric characters) to each of the eight digital inputs.

```
Description
Alarm No. 1     Description
FAILURE 1       Alarm No. 2
                FAILURE 2     Description
                              Alarm No. x
                              FAILURE x     Description
                                            Alarm No. 8
                                            FAILURE 8
```
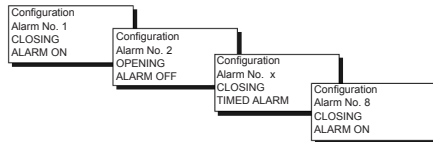
Descriptions can be modified through the remote keyboard. Use the UP and DOWN keys to move to each character and the PLUS and MINUS keys to change them.

To scroll pages press the Forward/Back keys on the remote keyboard.

CONFIG. ALARM SUBMENU

This submenu consists of eight pages to be used for setting the operating configuration of each digital input.

```
Configuration
Alarm No. 1     Configuration
CLOSING         Alarm No. 2
ALARM ON        OPENING        Configuration
                ALARM OFF      Alarm No. x
                               CLOSING        Configuration
                               TIMED ALARM    Alarm No. 8
                                              CLOSING
                                              ALARM ON
```

To set input configuration use the UP and DOWN and PLUS and MINUS keys on the remote keyboard.

To scroll pages press the Forward/Back keys on the remote keyboard.

INFORMATION SUBMENU

It consists of two submenus giving information about the status of the failure and the status of the input contact. In the first case "1" tells that a failure is present and "0" tells there is no failure. In the second case "C" tells that the input contact is CLOSED and "A" that it is OPEN.

```
    Alarm status
  1 2 3 4 5 6 7 8
  0 1 0 1 1 0 0 1      Contact status
                     1 2 3 4 5 6 7 8
                     C C A A A C C C
```

The status of each digital input is updated about every 5 seconds.

TIME PROGRAMMING SUBMENU

This submenu consists of eight pages one for each digital input and it enables to program the three daily time bands.

For daily alarm programming, use the copy function (move the cursor to Copy and press the PLUS key of the remote keyboard) that enables to copy the times set for the current alarm to the next alarm.

```
AL 1 On- Off  Copy
     07,00  22,00    AL x On- Off  Copy
     -- , --  -- , --      07,00  22,00    AL 8 On- Off  Copy
     -- , --  -- , --      -- , --  -- , --      07,00  22,00
                           -- , --  -- , --      -- , --  -- , --
                                                 -- , --  -- , --
```

REMOTE MANAGEMENT

Like with all SLAVE devices connected to the MASTER EV90, certain EV92 parameters may be changed remotely using an analog or GSM modem connected to the MASTER EV90.

When the MASTER EV90 receives a command for the EV92 control unit from the modem (analog or GSM), it will send the command to it through the FANBUS. It then waits for reply and sends it to the sender, which may be a mobile phone, if a GSM modem in voice mode is used or a PC if an analog modem or GSM modem in data mode is used.

In order to communicate properly with the required device, every command must be preceded by the address of the relevant SLAVE:
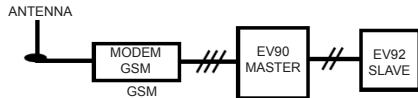
E.g.:   to communicate with SLAVE EV92 add $30: "30" followed by the command

To communicate with SLAVE EV92 add $31: "31" followed by the command

DATA CONNECTION:
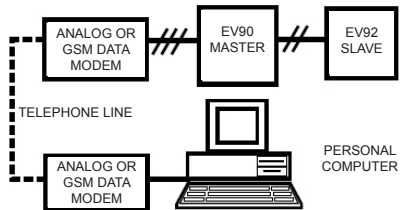
SMS CONNECTION:

N.B: Management software for Personal Computer is available in Italian language only

REMOTE MANAGEMENT COMMANDS

??? Use this command to know which commands may be sent.
EV92 replies to this question with:
<16 characters of description >
<ALL=?>
<INF=?>
<CONFX=?>
<PROGx=?>
<CONFX=AP/CHATT/DIS/TIM>
<PROGx=08.00-09.00 12.00-14.00 18.00-22.00>
example of time programming

INF=? Use this command to find out the status of the alarms and the status of the input contacts.
EV92 replies to this question with:
<16 characters of description >
<1:A=On/Off CON=Ap/Ch>
<2:A=On/Off CON=Ap/Ch>
<3:A=On/Off CON=Ap/Ch>
<4:A=On/Off CON=Ap/Ch>
<5:A=On/Off CON=Ap/Ch>
<6:A=On/Off CON=Ap/Ch>
<7:A=On/Off CON=Ap/Ch>
<8:A=On/Off CON=Ap/Ch>

CONFx=? Where 'x' identifies the alarm number (from 1 to 8). Use this command to check the configuration of each alarm.

EV92 replies to this question with:
<16 characters of description >
<ALL1=Ap/ChAtt/Dis/Tim>
<ALL2=Ap/ChAtt/Dis/Tim>
<ALL3=Ap/ChAtt/Dis/Tim>
<ALL4=Ap/ChAtt/Dis/Tim>
<ALL5=Ap/ChAtt/Dis/Tim>
<ALL6=Ap/ChAtt/Dis/Tim>
<ALL7=Ap/ChAtt/Dis/Tim>
<ALL8=Ap/ChAtt/Dis/Tim>
N.B.: Att (ON), Dis (OFF) ,Tim (timed)

PROGx=? Where 'x' identifies the alarm number (from 1 to 8). Use this command to check the time band programming of each alarm.
EV92 replies to this question with:
<16 characters of description >
<08.00-09.00>   example of time bands
<12.00-14.00>
<18.00-22.00>

CONFx=<Ap/Ch Att/Dis/Tim> where 'x' identifies the alarm number to be configured. Use this command to configure the alarm intervention mode to opening or closing (therefore enter Ap or Ch) with the first parameter, and always ON or OFF or timed (enter Att or Dis or Tim) with the second parameter. N.B. Always leave a space between the two parameters.
Characters in brackets can only take on the values

stated. The first character of both parameters must be a capital letter.

EV92 replies to this question with:

<16 characters of description >

<ALLx=Ap/ChAtt/Dis/Tim> where 'x' corresponds to the configured alarm number

PROGx=<08.00-09.00   12.00-14.00   18.00-22.00> example of time programming

Where 'x' identifies the alarm number being programmed whereas the three time bands refer to the alarm intervention when the alarm is configured in "Tim" mode.

Data in brackets can only take on preset values. When a value is not recognised, the device will reply with "Command Unknown". Time periods can be expressed with ASCII characters included between 0 and 9. The other characters should correspond to the minus sign (-) comma (,) and full stop (.)

If entered times are not congruent (E.g.: 33.00), the time band will automatically be excluded.

EV92 replies to this question with:

<16 characters of description >

<ALLx>   where 'x' identifies the programmed alarm number

<08.00-09.00>   example of time bands

<12.00.14.00>

<18.00-22.00>

ALL=? Use this command to display the description of currently active alarms. Max. 6 alarms can be sent. If all the eight alarms are active, only the first six will be sent.

EV92 replies to this question with:

<16 characters of description >

<16 characters ofalarm description n°1>

<16 characters of alarm description n°2>

<16 characters of alarm description n°....>

TECHNICAL DATA

Power supply   230V 50Hz
Consumption   5 VA
Digital inputs   8
Protection degree   IP40 (rear panel mounting)
Pollution degree   2
Max temperature   T45
Class A software
Removable terminal boards for friendly wiring
Compliance with Standards EN60730-1 Standard

NOTES

Dimensions (mm)

GB79242C   2008/05