

SV SISTEMI DI SICUREZZA

ITALIA



EXFIRE360

EX8D I/O – TECHNICAL SPECIFICATION

DATASHEET

REVISION 04 DTD. 28/12/2012
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REVISION INDEX

Revision index	Description	Date
Revision 01	Preliminary	27/02/2010
Revision 02	Revised for certification scope	14/06/2010
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1 GENERAL INFORMATION

1.1 CODES AND STANDARDS

Design of hardware and software has been developed according to the following reference standards.

Construction Products Directive (CPD) – Directive 89/106/EEC

“Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products.”

EN 54-2:1997 + A1:2006

“Fire detection and fire alarm systems - Part 2: Control and indicating equipment”

EN 54-4:1997 + A1:2002 + A2_2006

“Fire detection and fire alarm systems - Part 4: Power supply equipment”

EN 12094-1:2003

“Fixed firefighting systems - Components for gas extinguishing systems - Part 1: Requirements and test methods for electrical automatic control and delay devices (only for EX6EV-C card)”

1.2 DESIGN REQUIREMENTS

Mechanical requirements

Environmental classification: Class A -5° +40° C.

Standard Eurocard (160x100) with rack mounting kit.

Manual controls

Manual controls are identified for their specific purpose. Master display is equipped with a graphical symbol to provide access to the menu. By pressing “menu” key, the operator will read the electrical parameters of each channel as well as the diagnostics of the modules.

Visible indications

Alarm, fault and other supervisory or monitoring indications are visible on the Master display, light emitting indicators adjacent to the display and on ModLcd displays installed on each module.

Touch-screen operations on Master display give access to the panel functions (at access levels 1/2/3).

Visible indications are clearly identified at access level 1 for their specific function.

Distinct light indications

Mandatory visible indications could be fully tested through “Test LED” function available at level 1 or 2.

Visible indications are clearly identified at access level 1 for their specific function.

Indications shown on alphanumeric displays

EXFIRE360 panel is designed with an alphanumeric display, which shows system information, and a set of light emitting indicators that provide the following conditions: “Power”, “Alarm”, “Fault”, “Isolate”, “Test”, “Supervisory”, “Output activated”, etc.

The same conditions are repeated on the module’s Lcd displays.

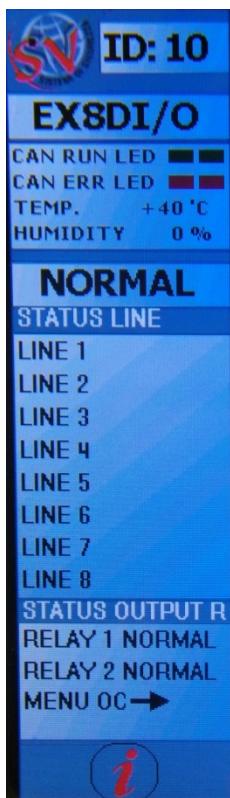
2 TECHNICAL SPECIFICATION OF EX8D I/O

2.1 OPERATING DESCRIPTION OF EX8D I/O

EX8D I/O controls 8 digital input lines and 8 digital open collector outputs, which can be in active or disabled condition. EX8D I/O shows on frontal display input lines conditions.

Notification appliances, fire alarm and fault warning routing equipment and fire protection systems cannot be connected to EX8D I/O, because input lines are not supervised.

2.2 MAIN CHARACTERISTICS



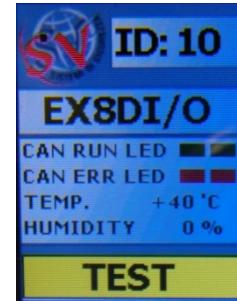
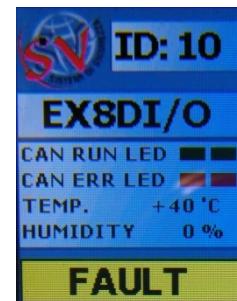
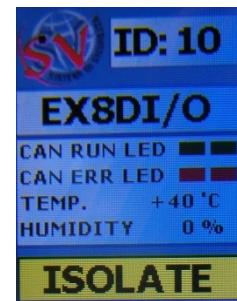
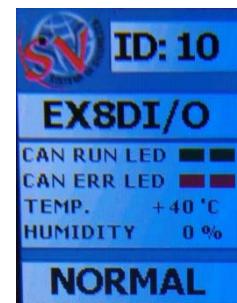
- Self diagnostics
- Hot swap capability (with the panel in operation)
- Automatic addressing of the modules
- Installation on 19" subrack (8 TE) with fixing screws
- Monitoring of 8 digital input lines
- Activation of 8 OC outputs
- Activation of 2 relays outputs NC or NA
- Monitoring of card temperature during operation
- Monitoring of card humidity during operation
- Real time supervision of CAN Bus communication
- Monitoring of 24 Vdc/5 Vdc/3.3 Vdc voltages
- Power supply voltage: 21-30 Vdc
- Quiescent current draw at 24 Vdc: 50 mA
- Quiescent current draw with fault energized relay: 70 mA
- Maximum load of O.C. outputs: 500 mA
- Operating temperature: from -5 to +40°C
- Storage temperature: from -10 to +50°C
- Relative humidity: <= 95% (non condensing)
- Eurocard Dimensions: 160mm x 100mm

3 VIEW MENU

3.1 NORMAL CONDITION

In normal condition, the module display shows:

- Card address and identification
- Addressable input devices status
- CAN Bus communication status
- Card temperature and humidity
- Status of digital inputs
- Status of OC outputs
- Status of relays outputs
- Access to Info menu



3.2 ALARM CONDITION

In fire alarm condition, the module display shows:

- Activation of input/output lines
- Status and identification of OC activated
- Status and identification of the output lines in alarm
- Card temperature and humidity

3.3 DISABLED CONDITION

If a circuit or device is disabled, the card display shows:

- Card temperature and humidity
- Identification of the disabled input(s) or output(s)

3.4 FAULT WARNING CONDITION

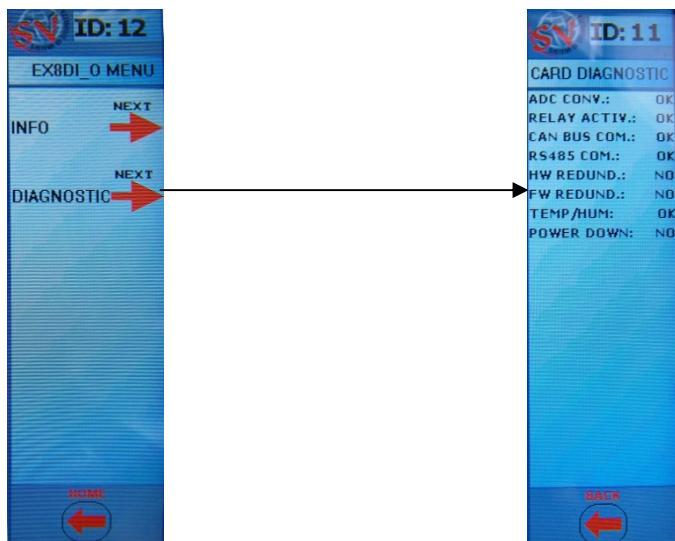
In case of fault, the card display shows:

- Card temperature and humidity
- Fault warning indication, which may correspond to:
 - Can Bus error
 - Abnormal power supply voltage (24vdc, 5vdc, 3.3vdc)
 - Fault of hardware blocks.

3.5 TEST CONDITION

Test condition is superimposed on other conditions of the module, inhibiting output circuits. Signal priority in the visualisation of messages is: alarm, disabled, fault and test.

4 CARD MENU



4.1 CARD DIAGNOSTICS OF EX8D I/O MODULE

Card diagnostics menu of EX8D I/O's front display indicates the following messages:

HARDWARE FAULT OF THE MODULE

ADC 1 CONVERSION	“Analogue to digital conversion (normal status)”
ADC 2 CONVERSION	“Analogue to digital conversion (normal status)”
HW IN STATUS	“Abnormal status of inputs”
HW OUT STATUS	“Abnormal status of outputs”
CAN BUS COM	“Communication status of CAN Bus Rx messages”
RS 485 COM	“Communication status of RS485 link”
HW REDUNDANT	“Status of redundant hardware”
BLOCCO HW TEMP/HUM	“Abnormal operation of temperature/humidity sensor”
POWER	“Power supply of the module combined with EX8D I/O card”

5 TECNICAL FEATURES OF I/O SIGNALS

5.1 UNSUPERVISED INPUTS

According to standard EN54-2, manual call point and any type of sensor cannot be connected to these inputs, because these are unsupervised.

DIGITAL IN 1	Unsupervised digital input
DIGITAL IN 2	Unsupervised digital input
DIGITAL IN 3	Unsupervised digital input
DIGITAL IN 4	Unsupervised digital input
DIGITAL IN 5	Unsupervised digital input
DIGITAL IN 6	Unsupervised digital input
DIGITAL IN 7	Unsupervised digital input
DIGITAL IN 8	Unsupervised digital input

5.2 UNSUPERVISED DIGITAL OUTPUTS

O.C. outputs cannot be used as type "C", "E", "J", "G" (EN 54-1 and EN 54-2), therefore notification appliances, fire alarm and fault warning routing equipment and fire protection systems cannot be connected to these outputs (no line supervision is provided).

DIGITAL OUT 1	Unsupervised OC output 500mA
DIGITAL OUT 2	Unsupervised OC output 500mA
DIGITAL OUT 3	Unsupervised OC output 500mA
DIGITAL OUT 4	Unsupervised OC output 500mA
DIGITAL OUT 5	Unsupervised OC output 500mA
DIGITAL OUT 6	Unsupervised OC output 500mA
DIGITAL OUT 7	Unsupervised OC output 500mA
DIGITAL OUT 8	Unsupervised OC output 500mA

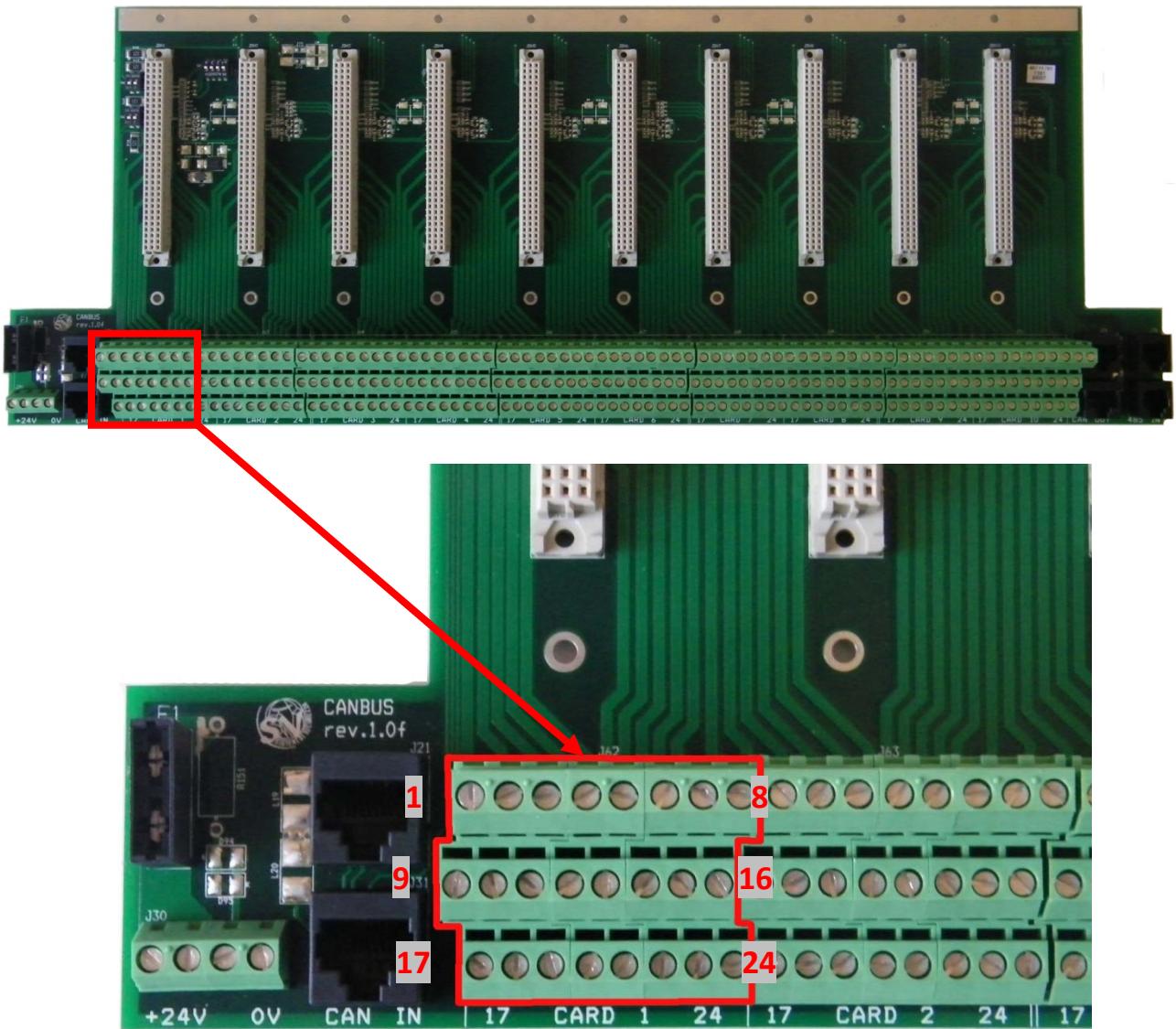
5.3 UNSUPERVISED RELAY OUTPUTS

Relays. outputs cannot be used as type "C", "E", "J", "G" (EN 54-1 and EN 54-2), therefore notification appliances, fire alarm and fault warning routing equipment and fire protection systems cannot be connected to these outputs (no line supervision is provided).

RELAY 01	N.C./N.O. relay
RELAY 02	N.C./N.O. relay

6 WIRING EX8D I/O MODULE

6.1 CANBUS TERMINAL BOARD



6.2 CANBUS TERMINAL BOARD DETAILS

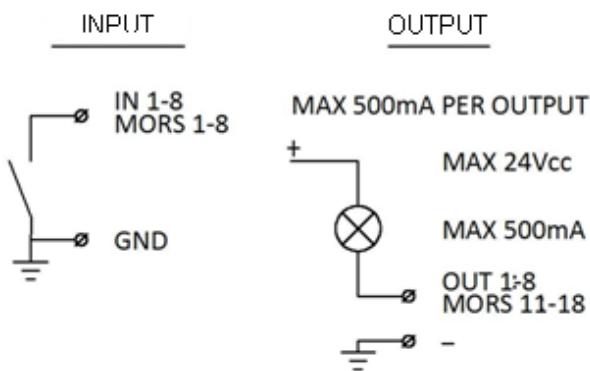
All terminals must have a power limit to ensure that, in case of an external short circuit, there is no damage for heat production. The technical requirements are:

- Input angle: horizontal.
- Maximum operating temperature: 110°C.
- Wire size: AWG 12, 14, 16, 18, 20, 22, 24 – mm² 0.05 - 2.50.
- Maximum current: 17,5A.
- Maximum voltage: 300V.

6.3 CANBUS TERMINAL BOARD EX8D I/O-E MODULE

Module	Term.	Level values of programmable functions				Signals Input / Output Open Collector
		Normal	Opening	Prealarm	Alarm	
EX8D I/O	1					Digital in 1
EX8D I/O	2					Digital in 2
EX8D I/O	3					Digital in 3
EX8D I/O	4					Digital in 4
EX8D I/O	5					Digital in 5
EX8D I/O	6					Digital in 6
EX8D I/O	7					Digital in 7
EX8D I/O	8					Digital in 8
EX8D I/O	9					Common relay 01
EX8D I/O	10					Relay 01 NO/NC
EX8D I/O	11					Common relay 02
EX8D I/O	12					Relay 02 NO/NC
EX8D I/O	13					GND_IN
EX8D I/O	14					GND_IN
EX8D I/O	15					OUT COM 1
EX8D I/O	16					OUT COM 2
EX8D I/O	17	500mA				Open Collector 1
EX8D I/O	18	500mA				Open Collector 2
EX8D I/O	19	500mA				Open Collector 3
EX8D I/O	20	500mA				Open Collector 4
EX8D I/O	21	500mA				Open Collector 5
EX8D I/O	22	500mA				Open Collector 6
EX8D I/O	23	500mA				Open Collector 7
EX8D I/O	24	500mA				Open Collector 8

6.4 CONNECTION DETAILS



7 MAINTENANCE

It is possible connect and disconnect EX8D I/O when the EXFIRE360 control panel is running. A fault message is shown by EXFIRE360, because there is not communication with the disconnected module.

After a delay of 30 seconds the EX8D I/O could be reconnected, because the on board electronic is not pre-charged.

When the EX8D I/O is connected, the EXFIRE360 control panel will identify the unique code and the fault message will be reset.