SV SISTEMI DI SICUREZZA

ITALIA

EXFIRE360

CPU360 – TECHNICAL SPECIFICATION

DATASHEET
REVISION 04 DTD. 26/01/2012
TS-0003-EN-REV04

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REVISION INDEX

Revision index	Description	Date
Revision 01	Preliminary	17/01/2010
Revision 02	Revised for certification scope	27/03/2010
Revision 03	Revised for certification scope	20/10/2010
Revision 04	Revised for certification scope	26/01/2012

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1 GENERAL INFORMATION

1.1 CODES AND STANDARDS

Design of hardware and software have 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.
Enclosure type	19" rack-mounted units, 40U cabinet with IP30 protection degree.

Components of the extinguishing modules were selected on the basis of the performance required and are suitable to operate when the ambient conditions on the external surface of the cabinet are of 3K5 class as per EN 60721-3-3.

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.

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2 TECHNICAL SPECIFICATION OF EXCPU360 MODULE

EXFIRE360 panel is controlled by two redundant CPUs. An LPC2468 processor is mounted onboard the EXCPU360 modules, which is also equipped with two RS485 ports, two CAN Bus interfaces, 1 USB port for local programming and 1 Ethernet interface.

The interface between the CPU and the panel functions is executed through a series of read/write instructions at predefined addresses in the I/O memory map of the CPU. The following block diagram defines the interfaces between the CPU and the peripherals.
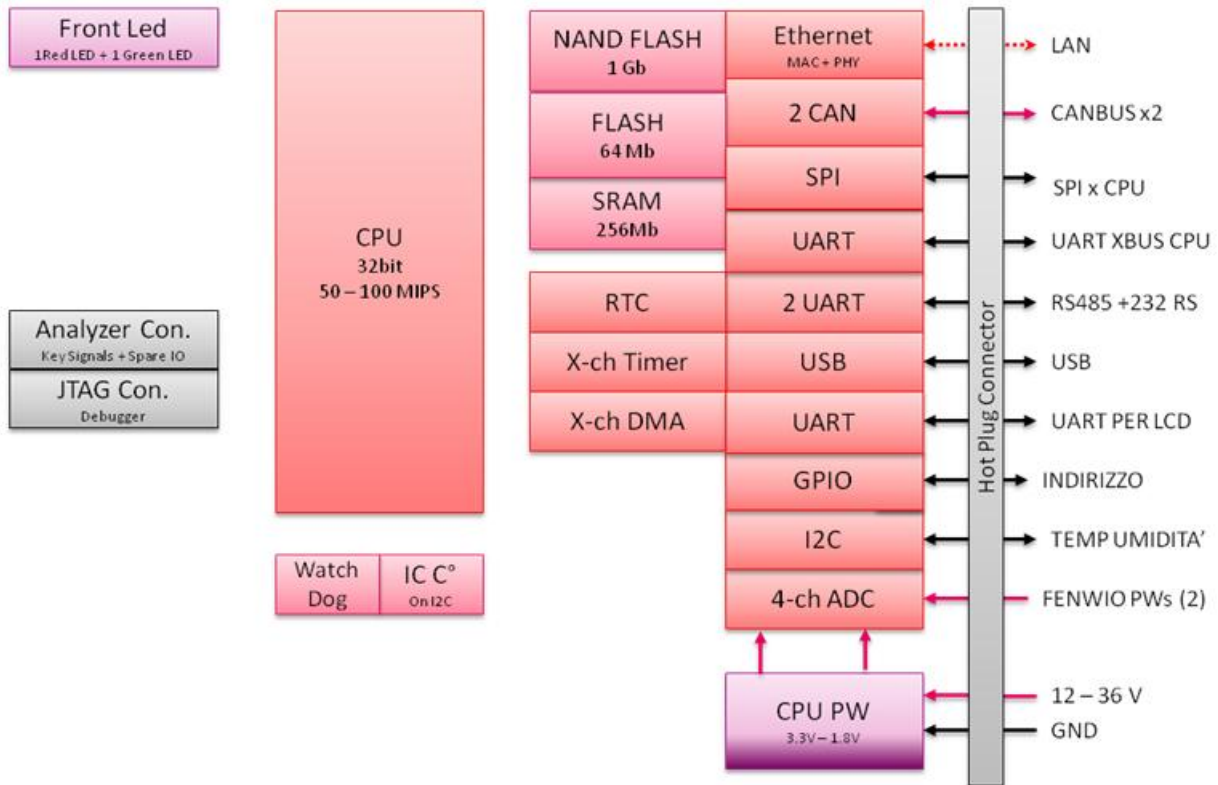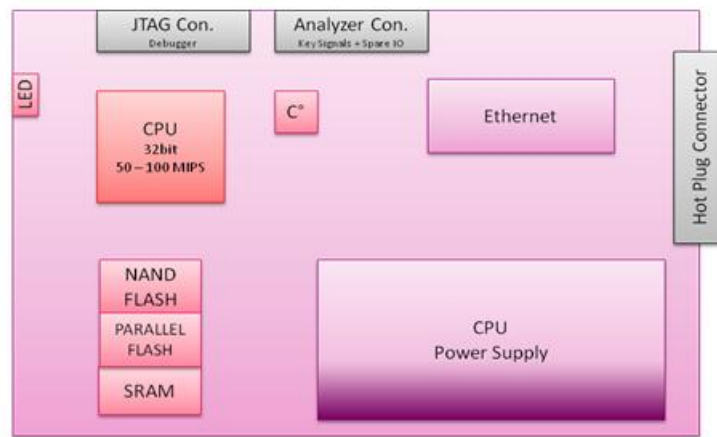
2.1   MAIN TECHNICAL SPECIFICATIONS

- Self diagnostics of 13 hardware blocks
- 72-pole connector with hot plug capability
- Plugged into a mating connector on BUSCPU backplane
- 32 bit microprocessor
- 1 Ethernet port
- 1 USB port for panel programming with "Protection" application
- Status information with high-intensity light emitting indicators
- 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
- Operating modes programmable by software
- Power supply voltage: 21-30 Vdc
- Quiescent current draw at 24 Vdc: 200 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 size: 160mmx100mm

2.2   DESCRIPTION OF LEDS

EXCPU360 front panel has six Leds with the following function:

DL1 (green color): CPU is powered on

DL2 (green color): CPU is identified as "Master"

DL3 (yellow color, on steadily): CPU has detected a fault in any I/O module of the panel

DL4 (red color): the CPU is being initialized

DL5 (green color): Ethernet link is operating normally

DL6 (green/red color): indicates if the CAN Bus communication is operating (green) or not (red)

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2.3   CPU360 REDUNDANCY

Master/slave configuration is controlled by the CPUs on the basis of the diagnostic tests. Each CPU controls internal electronic components and communication and electrical parameters of the backup CPU.
If any operating failure is detected in the active (or Master) CPU, the backup module will take over the process and become active. The former CPU will therefore be switched to slave.
In normal conditions, both the CPUs receive signals from the I/O modules, but only the active CPU controls the processes. The secondary unit is configured to execute the process in case of fault of the primary unit, without any data loss.

2.4   DIAGNOSTIC FUNCTIONS OF CPU360

The following error codes are displayed on "Card diagnostic" menu of the panel:

HARDWARE FAULT OF THE MODULE
ADC 1 CONVERSION   "Analogue to digital conversion (normal status)"
HW IN STATUS   "Abnormal input status"
CAN BUS COM   "Communication status of CAN Bus Rx messages"
RS 485 COM   "Communication status of RS485 link"
HW REDUND   "Redundant CPU available"
BLOCCO HW TEM/HUM   "Abnormal operation of temperature/humidity sensor"
POWER   "Backup unit is powered on"

3   MAINTENANCE

EXCPU360 modules can be replaced while the panel is operating; once a CPU is removed, the panel will show the CPU failure message. Wait at least 30 seconds before reconnecting the same CPU to the panel (in case of tests), in order to avoid electrical damages to electronic components.
When the backup CPU is plugged in the BUSCPU backplane, the panel should identify the module and the fault condition shall be automatically reset.

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