XC10
Extinguishing control panels
Market package 2.1

- Advanced control panels for detection and alarming as well as for the activation of the extinguishing process
  - Microprocessor-controlled fire detection and extinguishing control panel
  - Standard version for small to medium single sector extinguishing application
  - Comfort version for medium to large single sector extinguishing application
  - 19" rack panel for multi-sectors extinguishing applications, up to 16 flooding zones
  - Easily connectable to a larger fire detection system
  - Free control logic

- Enhanced features with highest safety standard
  - Easy on-site configuration
  - Upload / download of configuration data's
  - Event logging facilitates identifying origin of events
  - Display countdown timer before extinguishing release (with comfort version)
  - Extinguishing automatic activation with various alarm combinations
  - Optional multi-sector module (with rack version)
  - 72h battery backup time (with comfort version)
  - Various system test modes
  - Automatic calibration facility for actuators control lines (solenoid or pyrotechnical actuators)
  - In compliance with EN12094-1 / EN54-2 +A1 / EN54-4 +A2
Overview

XC10 are reliable and efficient panels for detection and extinguishing control. The portfolio offers panels for both single- and multi-sector applications. The user interface provides a clear layout, so users can gain a complete system overview at a glance. XC10 can be connected to a wide range of conventional and collective fire detectors as well as with most types of extinguishing systems such as systems based on natural and chemical agents and water-combined systems.

Whether independent or integrated, the XC10 panel family can protect either a single-sector or a multi-sector application. This makes XC10 the ideal choice for applications ranging from IT rooms, data centers, generators, transformers, turbines, control rooms, clean rooms, cable ducts, storage rooms to libraries, archives and museums, etc. With up to 16 flooding zones, XC10 is the ideal choice for large applications with several extinguishing sectors. Another advantage: only one extinguishing cylinder battery is needed to protect several sectors.

XC10 can also be easily integrated into larger fire safety systems. Such integration means that XC10 can be connected with powerful control panels. This ensures comfortable visibility of both fire detection and extinguishing at a central point. As a further benefit, the fire safety system can be connected to a Siemens danger management system.

General functional principle

An extinguishing system consists of the following components:
- Control unit for evaluating, displaying and operating all functions of an extinguishing area
- Fire detectors for automatic activation of extinguishing
- Manual Release button for manual activation of extinguishing
- Emergency hold button to temporary stop the extinguishing or abort button to cancel the initiated extinguishing release as long as the pre-warning time is running
- Mechanical blocking to disable completely the extinguishing
- Alarm horn and illuminated warning panel for on-site alarm notification
- Remote transmission facility for transmitting alarms and faults
- Control device for closing doors and fire protection flaps and shutting down of ventilation
- Releasing elements for triggering the valves for activation of extinguishing
- Devices to report the flooding and the loss of extinguishing agent

Control panel

The XC10 extinguishing control unit is used for displaying, operating and monitoring the functions of an extinguishing area and its immediate environs. All detectors, alarm horn, illuminated warning panel, monitoring devices and controllers are connected to the extinguishing control unit. If a detector triggers an alarm, it is transmitted to the extinguishing control unit. At the extinguishing control unit the decision is made how the alarm is to be processed. The same applies to faults. The processing of alarms and faults is different depending on the configuration of the system.

The extinguishing control unit is connected to the power mains at all times. In the event of a mains power failure the extinguishing control unit is supplied by built-in batteries. Battery operation in the event of a mains power failure is for a limited time.
Fire Detector
Up to 32 fire detectors are consolidated into a detector zone. In the event of fire, the detector zone of the alarming fire detector is indicated on the extinguishing control unit. In the basic settings, detector zones 1 and 2 serve the automatic activation of extinguishing. The extinguishing control unit assesses the zones in a so-called cross-zoning: in order to activate extinguishing, one fire detector from each group must trigger an alarm. This principle ensures high reliability so that extinguishing is not unjustified triggered.

Manual Release Button
Extinguishing can be manually activated by using a Manual Release button.

Remote Transmission
Along with on-site alarm notification, activation of extinguishing and faults can be transmitted via a remote transmission device to an external receiving station or passed on to a fire detection system.

Fire Protection Installations
As a rule, before automatic extinguishing is triggered, building fire protection installations must be set in the correct position. For example: door holding magnets are de-energized, fire protection flaps are closed and fans and air-conditioning systems are turned off.

Activation of Extinguishing and Monitoring
Valves on the extinguishing agent cylinders are triggered for activation of extinguishing. The effected activation of extinguishing is reported to the control unit via a pressure switch located at the cylinder bank. In addition, the weight or the pressure of the extinguishing agent cylinders are constantly checked using cylinder scales or manometers that trigger a contact if the value is too low.

Extinguishing Blocking
During the pre-warning time an activation of extinguishing already initiated can be temporarily stopped by pressing the Emergency Hold Button or canceled by pressing the Emergency Abort Button. The automatic activation of extinguishing can be blocked as a precaution for maintenance work. In this instance, in the event of fire, it is possible to press the Manual Release Button for activation of extinguishing.

Mechanical Blocking Device
The mechanical blocking device is used for blocking the activation of extinguishing during maintenance work. As a rule it is used in CO₂-extinguishing systems and cannot be influenced by the extinguishing control unit. The mechanical blocking device can be set to "closed" or "open" mostly by turning a lever. Not opened position is shown on the extinguishing control unit.
XC1001-A Standard variant
The compact dimensions of XC1001-A are ideally adapted for single-sector applications, small to medium installations. It provides a full range of monitored inputs and outputs as well as digital and relays outputs.
- 2 monitored control lines for actuators (solenoid or pyrotechnical)
- 3 monitored control lines for sounders, optical warning panels or remote transmission
- 8 configurable digital outputs
- 5 configurable relay outputs which can be used to transmit information’s to an FS20/FC720 fire detection panel via FDnet/C-NET I/O modules
- 3 collective detection lines
- 1 monitored input for electrical manual triggering
- 4 configurable control inputs
- Maximum 12h backup time with battery capacity of 4,5 A/h
- Up to 512 events – such as alarms, releases, faults, disablers and tests, acknowledgements or resets – can be logged in an event memory
- Configuration settings can be downloaded in a PC and printed
- Easy and fast commissioning using 4 digit display
- 105W power supply / 3.5 A

XC1005-A Comfort variant
This variant offers the same functions and connection possibilities than XC1001-A. Thanks to the robustness of the cabinet, this variant is an ideal choice for medium size single-sector installations.
- Large and robust cabinet
- Maximum 72h backup time with battery capacity of 17 A/h
- More space inside the cabinet for optional interfaces or modules
- Display countdown timer before extinguishing release

XC1003-A 19” rack variant
This variant offers the same connection possibilities than XC1001-A. Up to 16 panels can be installed in a 19” housing and configured to control a complex multi-sector installation.
- Thanks to the optional multi-sector modules, up to 16 panels can be connected together
- A common control cylinder can be activated
- Selector valves can be controlled and their position can be monitored
- Inter-blocking functions can be configured

XT1001 / XT1002
Additional repeater terminals can be connected to the XC10 control panel for quick access to system information and immediate operation.
- Up to 16 remote terminals can be used at the same time
- Monitored line
- 2 variants whether the application needs only display of information’s or control of the XC10
Typical extinguishing single sector installations

XC10 - single-sector
Independent scenario

Flooding zone

Discharged contact

Fire detectors

Alarm sounder

Ventilation system

Optical Signaling Equipment

Over pressure flap

Gas

Repeater display XT1001-A1
Repeater terminal XT1002-A1

Loss of agent

Mechanical blocking device

Actuator

Cylinder valve

Cylinder battery

Control cylinder

XC10 control panel

Caption:
- Detector line
- Electrical lines
- Manifold (distribution pipe)
- Control pipe

Remote transmission to fire brigade

Manual release DM103-L

Emergency hold DM103-S

XC10 - single-sector
Integrated scenario

Flooding zone

Discharged contact

Fire detectors

Alarm sounder

Ventilation system

Optical Signaling Equipment

Over pressure flap

Gas

Floor repeater terminal FT2012-A1
Floor repeater display FT2011-A1

Loss of agent

Actuator

Pilot cylinder

Cylinder battery

XC10 control panel

Caption:
- Detector line
- Electrical lines
- Manifold (distribution pipe)
- Control pipe

Remote transmission to fire brigade

Manual release DM1193-L

Emergency hold DM1193-S

Danger Management System MM8000

BACnet/IP

Fire control panel
Typical extinguishing multi-sector installation
# Technical Specifications

## Power Supply (FCP1004-E)

<table>
<thead>
<tr>
<th>Primary Source (mains)</th>
<th>Voltage</th>
<th>115 / 230 VCA +10 …-15% – 50 / 60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current</td>
<td>1.75 A max.</td>
</tr>
<tr>
<td></td>
<td>Power</td>
<td>150 VA max.</td>
</tr>
</tbody>
</table>

## Secondary Source (Batteries)

<table>
<thead>
<tr>
<th>Connectable batteries</th>
<th>Voltage</th>
<th>23.4 … 27.6 V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current</td>
<td>2 x 12 V / 4.5 … 17 Ah</td>
</tr>
<tr>
<td></td>
<td>Max. resistance</td>
<td>1.3 A (with temperature compensation)</td>
</tr>
<tr>
<td></td>
<td>Min. current</td>
<td>0.05 A</td>
</tr>
<tr>
<td></td>
<td>Power</td>
<td>105 W max.</td>
</tr>
<tr>
<td></td>
<td>Switching frequency / Ripple</td>
<td>132kHz / 70 mVpp max.</td>
</tr>
</tbody>
</table>

## Output

<table>
<thead>
<tr>
<th>Voltage</th>
<th>27.3 V +/- 0.3 V (25°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. available current</td>
<td>Imax a : 2 A (batteries loading)</td>
</tr>
<tr>
<td>Min. current</td>
<td>Imax b : 3.5 A (batteries loaded)</td>
</tr>
<tr>
<td>Power</td>
<td>80 Ω max.</td>
</tr>
<tr>
<td>Switching frequency / Ripple</td>
<td>132kHz / 70 mVpp max.</td>
</tr>
</tbody>
</table>

## Main Board (XCM1002)

<table>
<thead>
<tr>
<th>Input voltage</th>
<th>22.5 … 27.6 V (25°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current consumption</td>
<td>190 mA max. without primary source</td>
</tr>
<tr>
<td>I/Os security level</td>
<td>SELV (Safety Extra Low Voltage)</td>
</tr>
</tbody>
</table>

## Detection Lines

<table>
<thead>
<tr>
<th>Type / Number of Detectors</th>
<th>Collective / 32 max. (according to detector type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compatible Detectors</td>
<td>Siemens (Algorex, Cerberus-PRO, Sinteso, Synova)</td>
</tr>
<tr>
<td>End of line element (EOL)</td>
<td>Transzorb 18 V (P6KE18CA)</td>
</tr>
<tr>
<td>Line resistance</td>
<td>80 Ω max.</td>
</tr>
</tbody>
</table>

## Manual Release Line

<table>
<thead>
<tr>
<th>Type / Number of Manual Actuators</th>
<th>DM1103-L / 32 max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>End of line element (EOL)</td>
<td>Transzorb 18 V (P6KE18CA)</td>
</tr>
<tr>
<td>Line resistance</td>
<td>80 Ω max.</td>
</tr>
</tbody>
</table>

## Monitored Inputs

<table>
<thead>
<tr>
<th>Number</th>
<th>Activation resistance</th>
<th>680 Ω or 1.2 kΩ</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>End of line element (EOL)</td>
<td>3.3 kΩ resistance</td>
</tr>
<tr>
<td></td>
<td>Line resistance</td>
<td>80 Ω max.</td>
</tr>
</tbody>
</table>

## Control Inputs (Non Monitored)

<table>
<thead>
<tr>
<th>Number</th>
<th>Activation +24 V, via contact</th>
</tr>
</thead>
</table>

## Monitored Control Outputs

<table>
<thead>
<tr>
<th>Outputs 1 to 3</th>
<th>Control voltage / current</th>
<th>24 V / 1 A max.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>End of line element</td>
<td>3.3 kΩ resistance</td>
</tr>
</tbody>
</table>

## Outputs 4 and 5

<table>
<thead>
<tr>
<th>Control voltage / current</th>
<th>24 V / 2 A max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>End of line element</td>
<td>No EOL (line calibration)</td>
</tr>
</tbody>
</table>

## Driver Outputs

<table>
<thead>
<tr>
<th>Number</th>
<th>Programmable</th>
<th>24 V / 40 mA max.</th>
</tr>
</thead>
</table>

## Relay Outputs (Contacts)

<table>
<thead>
<tr>
<th>Number</th>
<th>Programmable</th>
<th>30 V / 1 A max. / NO or NC</th>
</tr>
</thead>
</table>

## Connections

<table>
<thead>
<tr>
<th>XCM1002</th>
<th>Inputs - Outputs Type / Section</th>
<th>Plug-in screw terminal blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.5 mm² max. (X5, X5, X7)</td>
<td>1.5 mm² max. (all others)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FCP1004-E</th>
<th>Mains Input Type / Section</th>
<th>Plug-in screw terminal block / 2.5 mm² max</th>
</tr>
</thead>
</table>

## Environmental Conditions

<table>
<thead>
<tr>
<th>Operating / Storage Temperature</th>
<th>-5 … +40°C / -20 … +60°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humidity relative at 40 °C / 20°C</td>
<td>93% max., without condensation</td>
</tr>
</tbody>
</table>

## Mechanical Data

<table>
<thead>
<tr>
<th>XC1001-A</th>
<th>Cabinet / Protection index</th>
<th>Metal frame with plastic cover / IP30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Dimensions (l x h x p) / Weight</td>
<td>RAL9003 (cover), RAL9006 (user interface)</td>
</tr>
<tr>
<td></td>
<td>370 x 286 x 90 mm / 4.1 kg</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>XC1005-A</th>
<th>Cabinet / Protection index</th>
<th>Metal case with plastic cover / IP40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Dimensions (l x h x p) / Weight</td>
<td>RAL9003 (cover), RAL9006 (user interface)</td>
</tr>
<tr>
<td></td>
<td>505 / 375 / 125 mm / 6.5 kg</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>XC1003-A</th>
<th>Cabinet / Protection index</th>
<th>Rack 19” / 4U / IP30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Dimensions (l x h x p) / Weight</td>
<td>RAL9006</td>
</tr>
<tr>
<td></td>
<td>482.6 (19”) x 177.8 (4U) x 187 mm / 6.6 kg</td>
<td></td>
</tr>
</tbody>
</table>

## Conformity

| EN 12094-1, EN 54-2/A1, EN 54-4/A2 | — |

---

Siemens Switzerland Ltd
Building Technologies Division
International Headquarters
Fire Safety & Security Products
Gubelstrasse 22
CH-6301 Zug
Tel. +41 41 724 24 24
Fax +41 41 724 35 22
www.siemens.com/buildingtechnologies

© 2009 Copyright by Siemens Switzerland Ltd
Data and design subject to change without notice.
Supply subject to availability.

Document no. A6V10257471_a_en--

Datasheet XC10 – MP2.1