

Features

- Simplex® 4100U stand-alone and Network connected fire alarm control panels; device details download directly from the Network for rapid site programming.
- Also compatible with conventional fire alarm control panels using contact I/O interfaces
- Supports both Simplex IDNet™ and MX Digital™ Loop protocols
- Full Client Server with TCP/IP Network Clients
- Redundant support for critical applications
- Integrated IP Video/CCTV
- Non Alarm Audio, Background Music and Paging Control.
- Powerful macros provide optional custom control programming features.
- XL Graphics workstation and fire alarm panels connect to the CCUNET (Communication Control Unit Network) using specific interface modules

Extensive image importing and editing include:

- Simple importing procedure that supports over 20 image file types; image editing tools allows resizing of imported images for optimal display
- Screens support graphical objects (lines, rectangles, and arrows) and textual objects (text boxes, notes, and push pins) for operator assistance

Icon support includes:

- A library of common and specialty device icons
- provided as standard
- Custom icons including animated GIFS
- Open XML standard allows import of custom device types and icons
- Snap to grid and alignment of device icons, graphical and textual objects
- Up to 200 icons can be available per screen

Screen operation features include:

- Custom emergency event procedures can be triggered to display and print based on event criteria
- IP Video cameras / CCTV images can be manually selected or automatically displayed based on event criteria. E.g. A fire alarm event generated from a smoke detector can automatically display video images from specific or selected cameras within the area/zone.
- Operator comments can be attached to events to enable tracking of troubles and rectification actions
- Permanently visible status bar shows overall system event status regardless of functions being performed



Features (continued)

- Permanently visible status bar shows overall system event status regardless of functions being performed
- Multiple password controlled operator levels provide selectable access
- Pre-recorded audio messages can be triggered to play at the computer to alert the workstation operator when selected events or specific information is being viewed
- Test Event Generator Tool provides site configuration testing
- Mouse operation and/or touchscreen operation provides convenient user interface
- History Logs provides easy access to site event history for post-emergency auditing
- Event data can be quickly filtered by parameters such as specific category, date or by day reference
- Compatible with HTML, spreadsheet, and database programs for off-line viewing and report customization
- Logs of system and user events provide detailed traceability when auditing and debriefing emergency events

Description

XL Graphics Systems provide annunciation, status display, and control for Simplex Fire Alarm Panels and Networks using graphical interface with a high resolution, color display. Response buttons with realistic icons provide control switches specific to the operation being performed.

XLGraphics is true client server application with multiple topologies and connectivity options to Simplex panels and networks such as hardwire, fibre and TCP/IP.

Graphic Screens (Graphics Mode)

Graphic screens can provide easily recognizable site plan and floor plan information. The level of detail can be customized for each specific site to easily and accurately direct the operator to the immediate area of interest.

Icons can be added to identify the exact location of the active device and optional hyperlinks can be used to directly "zoom" to other predetermined screens for more detail.

In addition to screen text or graphic information, the operator will be presented with specific custom messages that provide emergency response information and directions. These custom messages are easily edited for local requirements.



Non Alarm Audio (NNA)

The 4100ES is agency listed for Non Alarm Audio (NNA) such as background music paging and Mass Notification.

Facility owners and managers are often looking for ways to reduce hardware space and costs without compromise. Combining evacuation and Non Alarm Audio such as paging in one system can meet their needs. As Voice Alarm systems are typically designed to meet the audibility and speech intelligibility requirements of project specifications, fire detection standards and local building codes they are often suited to public address and paging therefore alleviating the need for two separate systems.

A One speaker system instead of two can provide a lower system cost and installation/commission time. In addition utilising the Fire Alarm System for paging increases familiarity with the controls therefore satisfying needs for operator training.

Audio Control

XLGraphics provides a simple graphical interface to controlling both Emergency Alarm Audio and Non Alarm Audio (NNA) such as background music and paging.

Screens can be customised to provide selective evacuation, paging or music section per area or floor.





Report information can be formatted to be compatible with standard spreadsheet and database programs. The day of week and the date are separated into separate fields to facilitate information sorting. With this feature, detailed records of the system history can be kept by adding information such as problem investigation details.



ADDRESS	DEV-TYPE	DESCRIPTION
00000000	00000000	00000000
00000001	00000001	00000001
00000002	00000002	00000002
00000003	00000003	00000003
00000004	00000004	00000004
00000005	00000005	00000005
00000006	00000006	00000006
00000007	00000007	00000007
00000008	00000008	00000008
00000009	00000009	00000009
0000000A	0000000A	0000000A
0000000B	0000000B	0000000B
0000000C	0000000C	0000000C
0000000D	0000000D	0000000D
0000000E	0000000E	0000000E
0000000F	0000000F	0000000F
00000010	00000010	00000010
00000011	00000011	00000011
00000012	00000012	00000012
00000013	00000013	00000013
00000014	00000014	00000014
00000015	00000015	00000015
00000016	00000016	00000016
00000017	00000017	00000017
00000018	00000018	00000018
00000019	00000019	00000019
0000001A	0000001A	0000001A
0000001B	0000001B	0000001B
0000001C	0000001C	0000001C
0000001D	0000001D	0000001D
0000001E	0000001E	0000001E
0000001F	0000001F	0000001F
00000020	00000020	00000020
00000021	00000021	00000021
00000022	00000022	00000022
00000023	00000023	00000023
00000024	00000024	00000024
00000025	00000025	00000025
00000026	00000026	00000026
00000027	00000027	00000027
00000028	00000028	00000028
00000029	00000029	00000029
0000002A	0000002A	0000002A
0000002B	0000002B	0000002B
0000002C	0000002C	0000002C
0000002D	0000002D	0000002D
0000002E	0000002E	0000002E
0000002F	0000002F	0000002F
00000030	00000030	00000030
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00000032	00000032	00000032
00000033	00000033	00000033
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00000037	00000037	00000037
00000038	00000038	00000038
00000039	00000039	00000039
0000003A	0000003A	0000003A
0000003B	0000003B	0000003B
0000003C	0000003C	0000003C
0000003D	0000003D	0000003D
0000003E	0000003E	0000003E
0000003F	0000003F	0000003F
00000040	00000040	00000040
00000041	00000041	00000041
00000042	00000042	00000042
00000043	00000043	00000043
00000044	00000044	00000044
00000045	00000045	00000045
00000046	00000046	00000046
00000047	00000047	00000047
00000048	00000048	00000048
00000049	00000049	00000049
0000004A	0000004A	0000004A
0000004B	0000004B	0000004B
0000004C	0000004C	0000004C
0000004D	0000004D	0000004D
0000004E	0000004E	0000004E
0000004F	0000004F	0000004F
00000050	00000050	00000050
00000051	00000051	00000051
00000052	00000052	

CCUNET

CCUNET products, combined with XL Graphics colour graphics software, provide fire network integration for Simplex Fire Detection Control panels and third party systems.

Multi-point, Point-to-Point Operation:

CCUNET is a multi-point, point-to-point network, which allows different data to be simultaneously transmitted between points on the network. All network segments transmit and receive simultaneously which greatly increases network capacity.

Routing and Packet Processing:

Each CCUNET node has routing and packet processing capability which allows Network segment failure isolation and fast data transfer via routing tables.

Features

Dual redundant communication loops deliver transparent information routing around breakages and failures in the network. A flexible network design with support for multiple loop topologies, expansion modules and connectivity options such as:

- RS232
- RS485
- RS422
- Ethernet,
- Fibre (single and multi mode)
- Ethernet TCP/IP.

Hardware

CCU3 Interfaces:

CCU3/4100:

The CCU3/4100 provides a gateway to interface a Simplex 4100ES or Simplex network of fire detection control panels to a CCUNET network.

CCU3/HUB:

The CCU3/HUB provides a gateway to interface XLGraphic and/or OPC Alarm and Event Servers to a CCUNET Network. The CCU3/4100 and CCU3/HUB has on board support for RS232, RS485 and RS422 connectivity.

Expansion Media Cards:

CCU3/IO:

The CCU3/IO is a multi purpose input / output board for integrating conventional type fire detection panels, security systems and/or other third party equipment. The CCU3/IO has 10 supervised inputs, and 4 relay outputs, selectable as NO or NC.

CCU3/F:

The CCU3/F is a fibre media board allowing transport of data through CCUNET over fibre optic cables. The CCU3/F is available in two versions supporting single mode or multi mode fibre.

CCU3/E:

The CCU3/E adds the ability to offer transport of data through CCUNET over an existing local area network (LAN). The CCU3/E supports a variety of network protocols including TCP, UDP, SNMP and SNMP.

CCU3/HUB



CCU3/4100
with CCU3/E



CCU3/4100
with CCU3/F



OPC Server

Object Linking and Embedding for Process Control:

OPC defines a method of publishing events for use by other applications.

XLGraphics Client/Server with OPC interface, gives access to the OPC controllers for the monitoring and control of the Fire and Security Network managed behind XLGraphics.

For example, on a large industrial site, the fire system might publish its status and events via an OPC server. A PLC system might include these events in its logic and take action with the plant based on detected fire alarms.

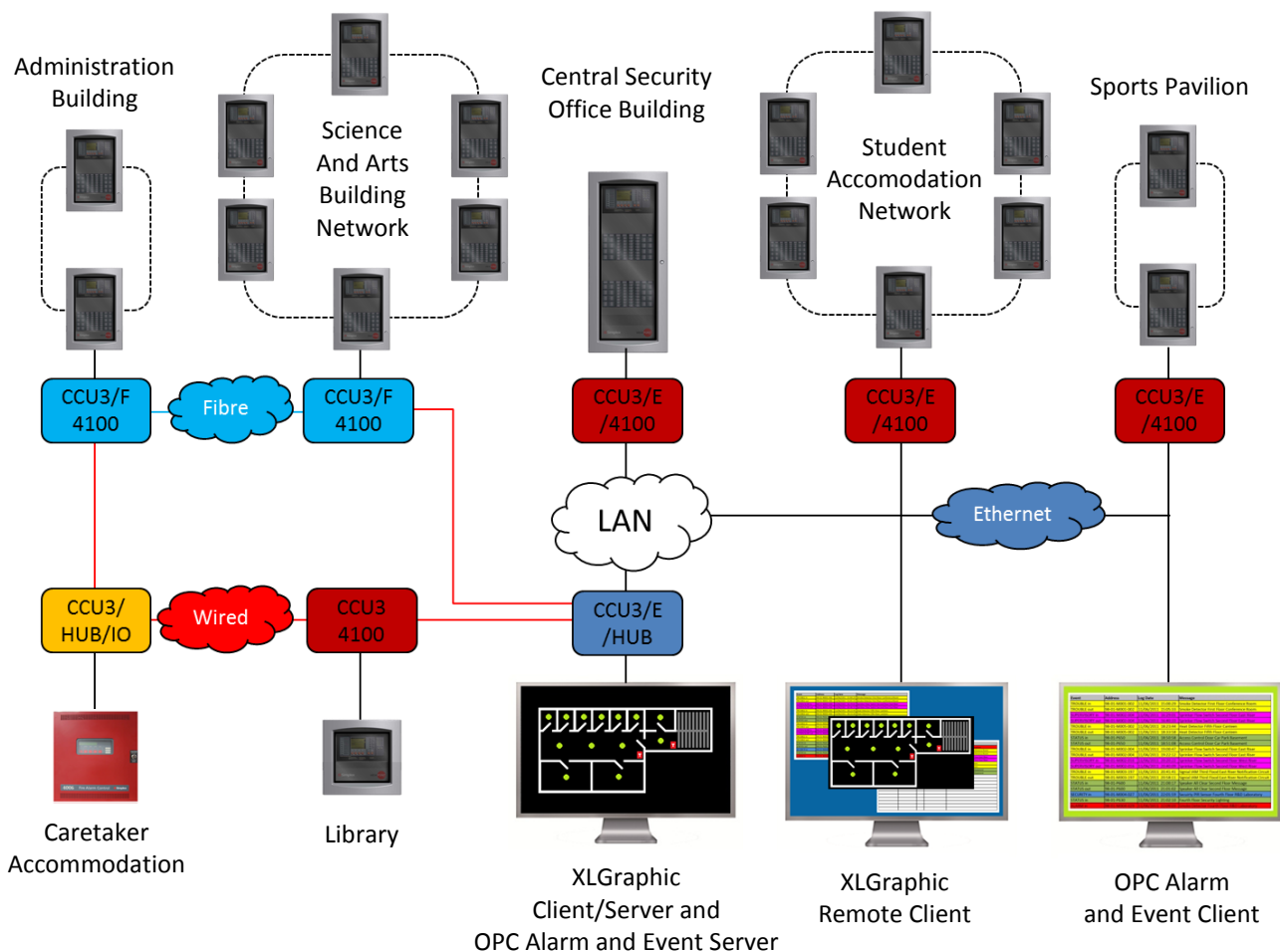
Alternatively, a university site may want to use a specific or even proprietary Graphical Information System. The central system could receive events and status from the Fire, Electrical, Air conditioning and other systems via the OPC interface.

OPC Alarm and Event Server provides an industry standard interface to a variety of Fire and Security monitoring and annunciation systems.

The OPC server implements both an Alarm and Event (AE) server and a Data Access (DA) server. The AE server can be used for event annunciation with the option for acknowledging system events. The DA server can be used if full control (such as Reset, Isolate) is required. However, both servers are operational and can be used simultaneously.

The OPC server implements uses the same XLGraphics database therefore systems with both XLGraphic command centres and OPC integration will share one common database configuration. This concept facilitates initial programming, modifications, changes and additions throughout the life of a system reducing cost of ownership.

CCUNET Example with multiple connectivity options



Modbus

The CCU3/C-4100MB provides a MODBUS interface to standalone 4100ES panels or a number of panels on a 4100ES network. The CCU3/C-4100MB can connect to 2 MODBUS masters either via RS232, RS485, or RS422 connections. An optional CCU3/E board is also supported to provide Ethernet connection to MODBUS master.

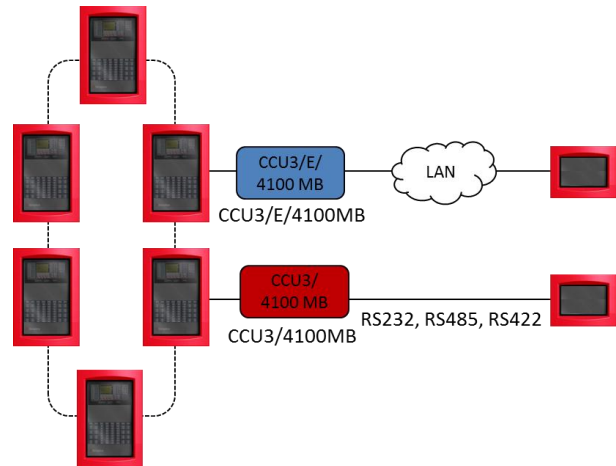
CCU3/IO boards media cards may also be used to provide general I/O devices accessed through the MODBUS interface. Each CCU3/IO has 4 relay outputs that can be used as inputs to the 4100. These contacts are controlled via WRITE commands to the MODBUS map. Each CCU3/IO also has 10 supervised inputs whose status can be read from the MODBUS map.

The MODBUS map of the CCU3/C-4100MB is configured using the CCU3/C-4100MB Programmer. The map may contain up to 12288 bits.

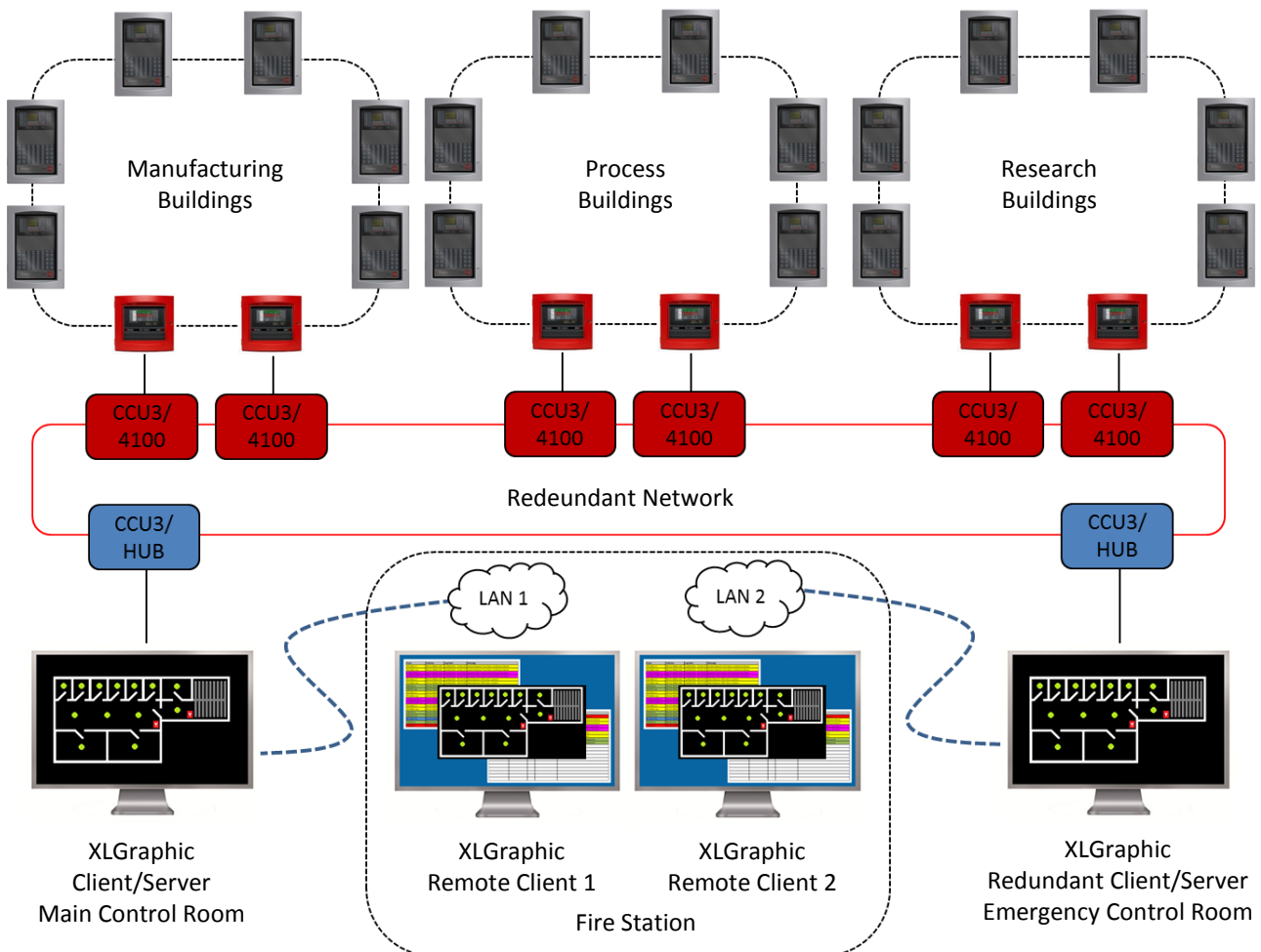
MODBUS Commands

The CCU3/C-4100MB connects to a 4100 MODBUS as a slave. The MODBUS master may use any of the following 5 MODBUS commands:

Code	Description
1	Read Coil Status
2	Read Input Status
4	Read Input Registers
15	Force Multiple Coils
16	Preset Multiple Registers



CCUNET Example with Redundant Server, Client and CCU's



XLGraphics Software Selection

Part Number	Model	Description
508.044.100	XLG-GSXE-C232	XL Graphics Software Package including: Installation and Configuration Manual, Operator's Guide, software CD, RS232 Interface Adapter Dongle, PC USB Cable, Interface Adapter Connector (6 pin) and License for 1 x panel and 1 x Client. For connection to CCU3/HUB or 4010ES / 4100ES direct panel connection.
508.044.101	XLG-GSXE-C422	XL Graphics Software Package including: Installation and Configuration Manual, Operator's Guide, software CD, RS422 Interface Adapter Dongle, PC USB Cable, Interface Adapter Connector (6 pin) and License for 1 x panel and 1 x Client. For connection to CCU3/C422-4100
508.043.002	XLG-004	2 – 4 Panel License for XLG-GSXE-C232 or XLG-GSXE-C422 software package. If ordering additional panel licenses for exiting system, site Interface Adapter Dongle serial number must be supplied with order.
508.043.003	XLG-010	Unlimited Panel Licence for XLG-GSXE-C232 or XLG-GSXE-C422 software package. If ordering additional panel licenses for exiting system, site Interface Adapter Dongle serial number must be supplied with order.
508.043.011	XLG-CLIENT	Additional XLGraphics Client for XLG-GSXE-C232 or XLG-GSXE-C422 software package. If ordering additional Client licenses for exiting system, site Interface Adapter Dongle serial number must be supplied with order.
508.043.004	XLG-OPC	1 x OPC Single client license for unlimited panels - add on to existing XLGraphics Application.

CCUNET Product Interface Selection

Part Number	Model	Description
557.202.502	CCU3/C422-HUB	Interface to XLGraphics PC or Conventional Fire Alarm Control Panels/Third Party Equipment using CCU3/I - IO Expansion Card.
557.202.515	CCU3/C422E-HUB	Interface to XLGraphics PC or Conventional Fire Alarm Control Panels/Third Party Equipment using CCU3/I - IO Expansion Card. This model is supplied complete with 1 x CCU3/E - Ethernet Media Card.
557.202.516	CCU3/C422I-HUB	Interface to XLGraphics PC or Conventional Fire Alarm Control Panels/Third Party Equipment using CCU3/I - IO Expansion Card. This model is supplied complete with 1 x CCU3/I – IO Expansion Card.
557.202.507	CCU3/C422-4100	Interface for Simplex 4010ES, 4100ES and NDU Fire Alarm Control Panels and Fire Alarm Network.
557.202.520	CCU3/C422E-4100	Interface for Simplex 4010ES, 4100ES and NDU Fire Alarm Control Panels and Fire Alarm Network. This model is supplied complete with 1 x CCU3/E Ethernet Media Card.

CCUNET Expansion Media Cards

Part Number	Model	Description
557.202.503	CCU3/I - IO	IO Expansion Media Card. 2 x IO Expansion Cards can be fitted to CCU3/C422-HUB, CCU3/C422E-HUB, CCU3/C422-4100 and CCU3/C422E-4100 Interfaces.
557.202.506	CCU3/E - Ethernet	Interface to XLGraphics PC or Conventional Fire Alarm Control Panels/Third Party Equipment using CCU3/I - IO Expansion Card. This model is supplied complete with 1 x CCU3/E Ethernet Media Card.
557.202.557	CCU3/FM820ST	Multimode Fibre 820nm ST Interface - 2 x Dual Fibre Ports (TX & RX)
557.202.558	CCU3/FS1300ST	Multimode Fibre 1300nm ST Interface - 2 x Dual Fibre Ports (TX & RX)
557.202.559	CCU3/FS1300ST	Single Mode Fibre 1300nm ST Interface - 2 x Dual Fibre Ports (TX & RX)

CCUNET Server Software Selection

Part Number	Model	Description
508.043.005	OPC-GE -C232	OPC Server Software Package including: Installation and Configuration Manual, Operator's Guide, software CD, RS232 Interface Adapter Dongle, PC USB Cable, Interface Adapter Connector (6 pin) and License for 1 x panel and 1 x Client. For connection to CCU3/HUB or 4010ES / 4100ES direct panel connection.
508.043.006	OPC-GE -C422	OPC Server Software Package including: Installation and Configuration Manual, Operator's Guide, software CD, RS422 Interface Adapter Dongle, PC USB Cable, Interface Adapter Connector (6 pin) and License for 1 x panel and 1 x Client. For connection to CCU3/C422-4100
508.043.004	XLG-OPC	1 x OPC Single client license for unlimited panels - add on to existing XLGraphics Application.

Modbus Selection

Part Number	Model	Description
557.202.508	CCU3/C485-4100MB	Modbus Interface for Simplex 4010ES, 4100ES and NDU Fire Alarm Control Panels and Fire Alarm Network. Package includes: Installation and Configuration Manual, Operator's Guide, Software CD and RS232 Interface Cable. Supports Modbus RS232, RS422 and RS485
557.202.509	CCU3/C485E-4100MB	Modbus Interface complete with CCU3/E – Ethernet Media Card for Simplex 4010ES, 4100ES and NDU Fire Alarm Control Panels and Fire Alarm Network. Package includes: Installation and Configuration Manual, Operator's Guide, Software CD and RS232 Interface Cable. Supports Modbus RS232, RS422, RS485 and Modbus over Ethernet.

CCU Module Specifications

CCU3/C422-HUB, CCU3/C422-4100 and CCU3/C485-4100MB	
Environmental	Operating Temperature Range = 32° F to 120° F (0° C to 49° C)
Module Package	Each interface module is packaged in a protective aluminum enclosure sized at 4-1/4" x 5-11/16" (108 mm x 144 mm)
Input Voltage	18 to 30 VDC (nominal 24 VDC) supplied from fire alarm control panel
Power	5 W maximum; 278 mA maximum @ 18 VDC; 208 mA maximum @ 24 VDC nominal
Communications	Four Isolated Communication Ports
Local Relay	Form C contacts with LED indicators; green LED operates when relay is active and can be used to indicate processor or communication failure, alarm annunciation, or via CCUNET programmable logic; Maximum ratings = 1 A resistive at 24 VDC
Status Indications	Transmission status green LED, one per Communication Port Supervision Fault status yellow LED, one per Communication Port Relay Output status per above

CCUNET Cabling Recommendations; RS-422 Communications Protocol

Wiring Distance	Up to 3280 ft (1 km) between CCUNET Modules (wire and environmental condition dependent)
Electrically Noisy Environments	Cables run through noisy environments (such as power stations, near heavy machinery, or close to high power cables) may require shielding to ensure low error rate communication. If shielded cable is used, connect the shield to the Earth pin at one end of the cable run
Suggested Cables	CAT 5e LAN cable, STP (Shielded Twisted Pair) or UTP (Unshielded Twisted Pair) Belden- 3107A Paired RS-485 Belden- 9562 Paired Telephone cable (unshielded) Belden- 7838A Paired - T1/DS1 Central Office Interconnect/Cross Connect Cable Belden- 88723 Paired - Audio, Control and Instrumentation Cable Belden- 9729 Paired - Low Capacitance Computer Cable for EIA RS-422 Applications Alpha Wire Company- 6072C Alpha-Byte Low Capacitance Data Cables

CCU3/C422/4100, Interface for Simplex Fire Alarm Control Panels and Fire Alarm Network

Connections	COM 1 provides the RS-232 connection to 4010ES, 4100ES and NDU COM 2 and COM 3 are CCUNET RS-422 Ports Expansion socket for connection to up to 2 x CCU3/I IO Expansion Modules and 1 x Media Card (CCU3/F Fibre Media Card or CCU3/E Ethernet Media Card)
Maximum Points	Up to 1000 Annunciation points for 4010ES fire alarm control panel Up to 2000 Annunciation points for 4100ES fire alarm control panel Up to 12,000 Annunciation points for NDU

CCU3/C422/HUB; Interface to XLGraphics PC or Conventional Fire Alarm Control Panels using IO Card

Connections	COM 1 provides the RS-232 connection to XLG-GSXE-C232 Interface Adaptor Dongle. COM 2 and COM 3 are CCUNET RS-422 ports Expansion socket for connection to up to 2 x CCU3/I IO Expansion Modules and 1 x Media Card (CCU3/F Fibre Media Card or CCU3/E Ethernet Media Card)
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CCU3/I; I/O Expansion Module

Interfaces	Four (4) Form C Relay Outputs; connections for Common, Normally Open (NO), and Normally Closed (NC); active state is programmable Ten (10) Supervised un-powered inputs, 4-20 mA loop Activation current is individually selectable for each input		
LED Status Indicators	Input Active: One red Active Status LED per input; LED is on when input current is above the active state selectable trip point I_{Trip} (initial factory set point is 10 mA)		
	Input Fault: One yellow Supervision Fault LED per input; LED is on when the input current is below the LED Status supervision point of 4 mA		
	Relay Status: Two (2) green LEDs per Relay Output; LEDs turn on to indicate the terminal is connected to common: steady = connected to common, inactive state flashing = connected to common, active state		
Input Specifications	Current	< 4 mA	Supervision Failure
		4 mA to I_{Trip} mA	Supervised Normal; I_{Trip} = selectable activation current, initial factory set point is 10mA
		> I_{Trip} mA	Active Alarm
		> 35 mA	Current Limited to prevent damage (Loop shutdown)
	Voltage	30 VDC	Maximum voltage on any input pin with respect to Earth
Relay Output Specifications	Configurable for NC or NO operation; LED indications are per above Operation can be used to indicate processor or communication failure, alarm annunciation, or via CCUNET programmable logic		
Relay Ratings	1 A Resistive maximum @ 24 VDC		
Mounting	Up to 2, CCU3/I IO Expansion Modules may be plugged on top of a single CCU3/422/HUB module		
Module Dimensions	4-1/4" x 6" x 3/4" (108 mm x 152 mm x 19 mm), with pluggable terminal connections attached		

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