



# F220 LCD Mimics

*F220 Full Function Mimic*  
*F220 Enhanced Mini-Mimic*  
*F220 Alarm Mini-Mimic*

*Net2 Network Control Unit*  
*Net2 Network Enhanced Mini-Mimic*  
*Net2 Network Alarm Mini-Mimic*

## Overview

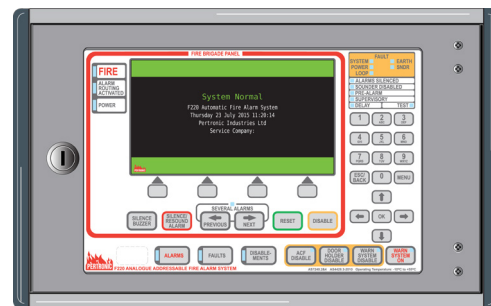
**Pertronic F220 LCD Mimics** provide remote access to information from an **F220 Fire Alarm Control Panel**, or from a **Pertronic Net2 Network System**.

The **F220 Full Function Mimic** gives full control and display of all F220 functions, for systems that need control and display at multiple locations. Any change to the panel status affects the information displayed on all connected full function mimics.

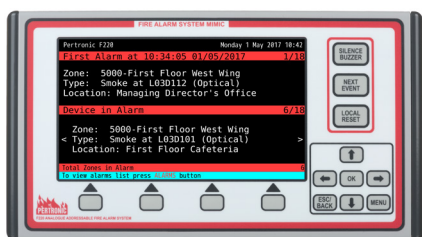
The **F220 Enhanced Mini-Mimic** is capable of accessing all system event information, including faults, pre-alarms, and disablements.

The **F220 Alarm Mini-Mimic** displays **Alarms** and **Warning System On**. It is designed for staff who are responsible for responding to alarms.

All **Pertronic F220 LCD Mimics** feature the 7 inch (180 mm) colour LCD display used on the F220 fire alarm control panel. The coloured display screens clearly identify the panel status. Red status bars and large easy to read text descriptors identify the **Alarm** mode. When used as panel mimics, these units display information from the connected control panel only.



**Pertronic F220 Full Function Mimic.**  
When fitted with Net2 network firmware, this unit becomes the **Pertronic Net2 Network Control Unit.**



**F220 Alarm View displayed on an F220 Enhanced Mini-Mimic**

When used as network control-display units, **F220 LCD Mimics** can be configured to display information from the entire network. Alternatively, each individual mimic can be configured to monitor specific F220 panels.

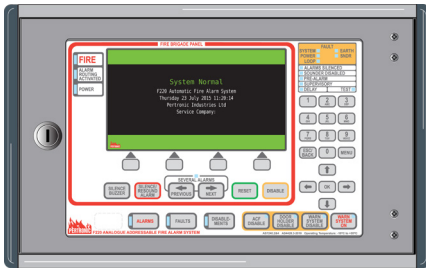
LCD Mimics communicate via the control panel's **External High-Speed RS-485 Bus**, or the network card's **Network Peripheral Bus**.

The bus provides a 24 Volt (nominal) DC power supply suitable for powering mimics. Standalone DC power supplies such as **Pertronic AS 7240.4 Auxiliary Power Supplies** may be used to power the mimics on installations where voltage drop or current consumption exceed the bus's capability. Alternatively, bus power may be fed from the fire panel's power supply unit.

Each Net2 control unit or mini-mimic is physically identical to its F220 panel counterpart. However, the Net2 network mimics have different firmware from that installed in F220 panel mimics.

## Features

- » Remote display for **F220 Fire Alarm Control Panel** or **Net2 Network System**
- » Seven-inch 800 x 480 pixel TFT LCD colour display
- » Coloured display screens clearly identify panel status
- » Easily readable 5 mm text height on **Alarm** screen
- » Local **Alarm** buzzer
- » Output for a remote **Alarm** buzzer
- » Cable length up to two kilometres, when fitted with a **Pertronic RS-485 Repeater/Splitter**
- » USB port for rapid firmware upgrade (located inside the cabinet to prevent unauthorised access)

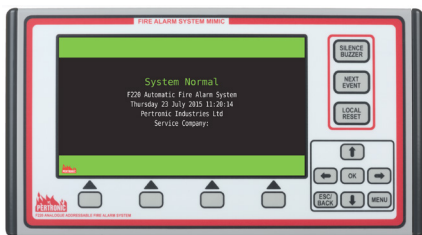


### F220 Full Function Mimic

Performs all the keyboard and display functions of the F220 fire alarm control panel from a remote location. Up to eight **F220 Full Function Mimics** can be connected to an F220 control panel. When fitted with network firmware, this unit becomes the **Net2 Network Control Unit**.

#### Features

- » **Keyboard-Display** identical to F220 fire alarm control panel keyboard-display including:
  - Full F220 menu controls with Door Holder Disable and ACF Disable with individual LED indication
  - Cursor control keypad for event navigation
  - Numeric keypad for menu navigation and data entry
  - Four context-sensitive **Soft Function Keys**
- » External control inputs for Door, Silence Buzzer, Silence Alarms, Auxiliary, Auxiliary Fault Input

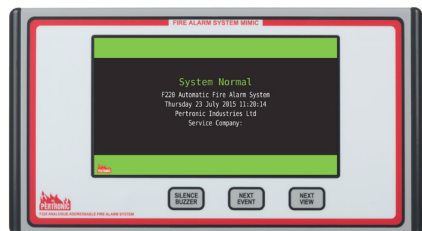


### F220 Enhanced Mini-Mimic

Provides access to all available information from the F220 fire alarm control panel, including all event screens and event logs. When fitted with network firmware, this unit becomes the **Net2 Network Enhanced Mini-Mimic**.

#### Features

- » LOCAL RESET button (if enabled) allows non brigade calling, latched detector alarms to be reset. This button may be disabled via DIP switch.
- » NEXT EVENT button selects the next item on the display list. For example: From the **Alarm View** it selects the next zone in alarm; from the **Alarm List** it selects the next alarm in the list
- » Cursor control keypad for event navigation
- » Four contact-sensitive **Soft Function Keys** operate similar to the soft function keys on the F220 control panel



### F220 Alarm Mini-Mimic

Displays only **Alarms** and **Warning System On**. The **F220 Alarm Mini-Mimic** is designed for use by staff who are responsible for responding to alarms. When fitted with network firmware, this unit becomes the **Net2 Network Alarm Mini-Mimic**.

#### Features

- » NEXT VIEW button: Switches between different **Event Type** screens
- » NEXT EVENT button selects either: The next zone in alarm, from the **Alarm View**; or the next alarm in the list, from the **Alarm List**.
- » SILENCE BUZZER button

## Specifications

### F220 & Net2 Mimics

	Full Function Mimic	Enhanced Mini-Mimic	Alarm Mini-Mimic
F220 Panel Mimic	F220-FFMA	F220-EMMA	F220-AMMA
Net2 Network Mimic	Net2-NCUA	Net2-EMMA	Net2-AMMA
Supply Voltage	15 – 30 Vdc	15 – 30 Vdc	15 – 30 Vdc
Standby Current @ 27 Vdc			
Backlight @ 0%	42 mA	42 mA	42 mA
Backlight @ 50%	60 mA	60 mA	60 mA
Backlight @ Maximum	82 mA	82 mA	70 mA
Alarm Current @ 27 Vdc			
Backlight @ 50%	80 mA	63 mA	60 mA
Backlight @ Maximum	100 mA	82 mA	72 mA
Max. Backlight Brightness	100 %	100 %	80 %
External Buzzer Output	5 Vdc - 20 Vdc max 40 mA	12 Vdc max 50 mA	12 Vdc max 50 mA
Dimensions (W x H x D mm)	375 x 235 x 52 Plus lock protruding 5 mm forward from front face	267 x 146 x 31	267 x 146 x 31
Weight	3 kg	1.35 kg	1.35 kg
Cabinet Material	Mild Steel	Mild Steel, with Moulded End Stops	
Cable Termination	0.5 to 2.5 mm <sup>2</sup> , Stranded Cable, Plug-in Terminal Blocks		
Chassis Colour	Apo Grey (Dulux 915 32786, Croda 6506, Ameron PE549/6506)		
End Stop Colour	Grey Friars (Dulux 915 58711, Croda 6499, Ameron AP746/6637)		
Operating Temperature	-10 °C to +50 °C		
Humidity	≤ 95 % RH, non-condensing		

### F220 External High-Speed RS-485 Bus & Net2 Network Peripheral Bus

Data Rate	115.2 kbit/s	
DC Current Capacity:		
External High-Speed RS-485 Bus	1.4 A	If more current is needed, DC power may be fed from the fire panel's power supply unit
Net2 Network Peripheral Bus	0.25 A	
Maximum Segment Length	1 km	
Maximum Overall Length	2 km	With <b>Pertronic RS-485 Repeater/Splitter</b>
Maximum Cascaded Segments	2	Using no more than one <b>RS-485 Repeater/Splitter</b>
End of line (EOL) Termination	90 Ω – 100 Ω, 0.5 W	Each end of each segment (refer to page 4)
Mimics per F220 Panel	Maximum 32 mimics in total, including up to 8 <b>F220 Full Function Mimics</b>	
NCU / Mimics per Network Card	Maximum 8 <b>Net2 Network Control Units and/or Net2 Mini-Mimics</b>	

### Ordering Information

Product Code	Description	Product Code	Description
F220-FFMA	F220 Full Function Mimic	Net2-NCUA	Net2 Network Control Unit
F220-AMMA	F220 Alarm Mini-Mimic	Net2-AMMA	Net2 Alarm Mini-Mimic
F220-EMMA	F220 Enhanced Mini-Mimic	Net2-EMMA	Net2 Enhanced Mini-Mimic
RS485REP	RS485 5 Way Repeater/ Splitter		

## External High-Speed RS-485 Bus:

The **F220 External High-Speed RS-485 Bus** supports a range of peripherals including LCD Mimics. The bus runs over a 4-wire cable. A twisted pair of wires carries the balanced data circuit. The other two wires carry the 24 V power circuit. **Pertronic Industries** recommend shielded cable for installations that are subject to severe electrical noise.

The **Net2 Network Peripheral Bus** has the same general architecture. However, in the network system, the **Net2 Network Card** takes the place of the F220 panel.

### Data Circuit

Mimics and other peripherals are connected across the data circuit in a multi-drop (“daisy-chain”) configuration.

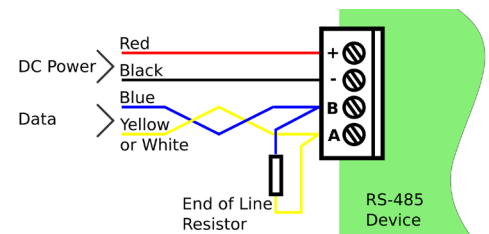
For satisfactory performance, each bus segment must be a point to point transmission line with no branches or spurs.

The **Pertronic RS-485 Repeater/Splitter** may be used to create up to five separate RS-485 bus segments. Each segment, including the segment from control panel to splitter, may be up to one kilometre from end to end. The **F220 External High-Speed RS-485 Bus** must not have more than two segments connected in cascade.

Every bus segment must be terminated **at each end** with an end of line resistor equal to the data circuit’s characteristic impedance. The characteristic impedance of typical fire-rated twisted pair cables measures between 90 and 100 ohms. With these cables, a 95 ohm resistor provides a suitable end of line termination.

The F220 and the Net2 Network Card have 95.3 Ohm resistors permanently connected to their external RS-485 ports. **End of Line** resistors are supplied with every mimic, to be fitted if required. Please consult the relevant installation instructions about end of line resistors for other peripherals.

**Note: DO NOT** fit end of line resistors to mimics or peripherals at intermediate locations on a bus segment.

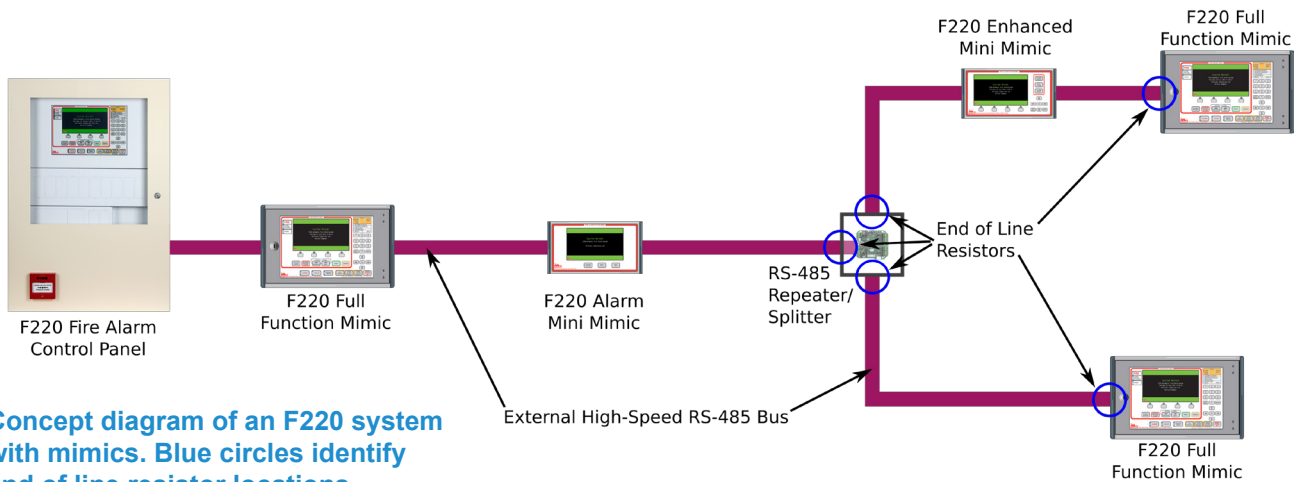


**Typical External High-Speed RS-485 Bus Connections at an F220 mimic, with end of line resistor**

### Power Circuit

The RS-485 bus provides a nominal 24 Volts DC power supply for mimics and other peripheral devices.

However, voltage drop on long cable runs can be significant. **Pertronic Industries** strongly recommends that voltage drop calculations should be used to check that adequate voltage will be available to mimics and peripherals. For F220 mimics the total volt drop must not exceed 4 Volts. This ensures the mimics will work properly on battery power, even if the battery voltage falls to 19 Volts.



**Concept diagram of an F220 system with mimics. Blue circles identify end of line resistor locations.**

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