

PERTRONIC INDUSTRIES LTD

DATASHEET

F100A Fire Fan Controls



Overview

Pertronic Fan Controllers are used in Pertronic F100A, F120A and F220 analogue addressable fire alarm systems to monitor and control the fans used for clean air and smoke exhaust systems within buildings.

The fan controller has been designed to comply with AS 1670.1-compliant. It is used to control a particular fan through a building services interface.



Left: Fan Control Module (FCM)

Centre: Fan Control Isolate / Reset Unit (F100PFCRST)

Right: Fan Control Reset Unit (FCRESETU)

The Pertronic Fan Controller consists of two principal modules and two optional modules:

Fan Control Module (FCM)

The fan control module is normally mounted at the fire alarm panel. It incorporates a mode switch (RUN, AUTO, and STOP), fan state indicator LEDs, and the timing and control functions required. The fan control unit may be operated in latching or non-latching modes (jumper selectable on the unit).

Fan Control Relay (FCRLY)

The fan control relay is usually located near the fan at the building services interface. It is commanded by the fan control unit to start and stop the fan. The fan control relay also reports whether the fan is running or has a fault condition back to the fan control unit.

The fan control relay has a built-in AA loop isolator

Isolate / Reset Unit (F100PFCRST)

The isolate/reset unit is an optional module used to isolate groups of fan controllers and reset latched states in fan controllers selected for latching operation. The isolate/reset unit may also be used to initiate a lamp test for the group of controllers connected to it. An off-normal fan control switch interlock input to the panel is also provided.

Fan Control Key-Switch (F100PFFSW)

The fan control key-switch is an optional key-switch module used to isolate/enable the switches on the fan control unit. The fan control key-switch does not influence the operation of the fans, but prevents tampering with the fan control unit and fan isolate / reset unit.

The control units and the Fan Control Relay are linked together by the analogue addressable loop. These modules must be on the same loop and use successive addresses.

Specifications

Dimensions (H x W x D mm)	Fan Control Unit	85 x 35 x 60 mm, usually mounted in the fire alarm cabinet
	Fan Control Relay	70 x 107 x 40 mm, PCB with mounting holes
	Fan Isolator/Reset Unit	85 x 35 x 60 mm, usually mounted in the fire alarm cabinet
	Fan Control Switch	85 x 35 x 60 mm
Power Requirements	Fan Control Unit	10 mA (one LED ON), loop powered
	Fan Control Relay	3 mA, loop powered
	Isolate/Reset Unit	9 mA, loop powered

Notes:

1. The Fan Control Unit, Fan Control Switch, and Fan Isolator/Reset Unit may be mounted into a 125 x 125 x 56 mm ABS Enclosure.

Controls and Indication

Fan Control Unit:

Mode Switch (three position)

AUTO	Operation initiated by the state of the fire panel controls
OFF	The fan is turned OFF
ON	The fan is turned ON

Indicator LEDs

FAN OFF	Indicates that the fan is OFF
FAN FAULT	Indicates that a fault has occurred to the fan
FAN ON	Indicates that the fan is ON

Jumpers

Exhaust	Insert for Exhaust/Pressurisation fan systems Remove for Clean Air fan systems
Latch	Insert to operate in latching mode
Door	Insert only in the unit remote from the Isolate/Reset unit when 'door interlock' is used

Fan Control Relay:

Control Relays

FAN ON	24 V ac, 2 A clean NO/NC contacts. Energized for fan ON
FAN OFF	24 V ac, 2 A clean NO/NC contacts. Energized for fan OFF FAN OFF overrides FAN ON

Monitored Input

10kΩ Across Input	'Fan Normal', normal OFF condition
Open Circuit Input	'Fan Fault' condition
Short Circuit Input	'Fan ON', normal running condition

Clean Air Turn On Delay: subsequent to a clean air fan shutdown in AUTO mode or reset, the fan will not turn on again until the associated clean air detectors have been smoke free for 65 seconds.

Addressing: each Fan Control and Fan Control Relay pair (controlling one fan) use two consecutive address in the module address space. The Fan Control Unit has the lower address (e.g.. 5), and the Fan Control Relay must be set at the next higher address (6).

System Capacity: up to 25 Fan Control / Interface pairs can be installed on each loop (13mA current drain per pair).

Multiple Control Option: a group of fans may be controlled by one mode switch on a Fan Control Unit.

Each fan will have a Fan Control Unit with it's indicator LEDs, but only one Fan Control Unit of the group will have the mode switch which controls all the units within the group.

Isolate/Reset Unit:

Isolate (down)	Commands connected Control Units to ignore mapped detector activations, and revert to the Normal state
Normal (up)	Normal operation

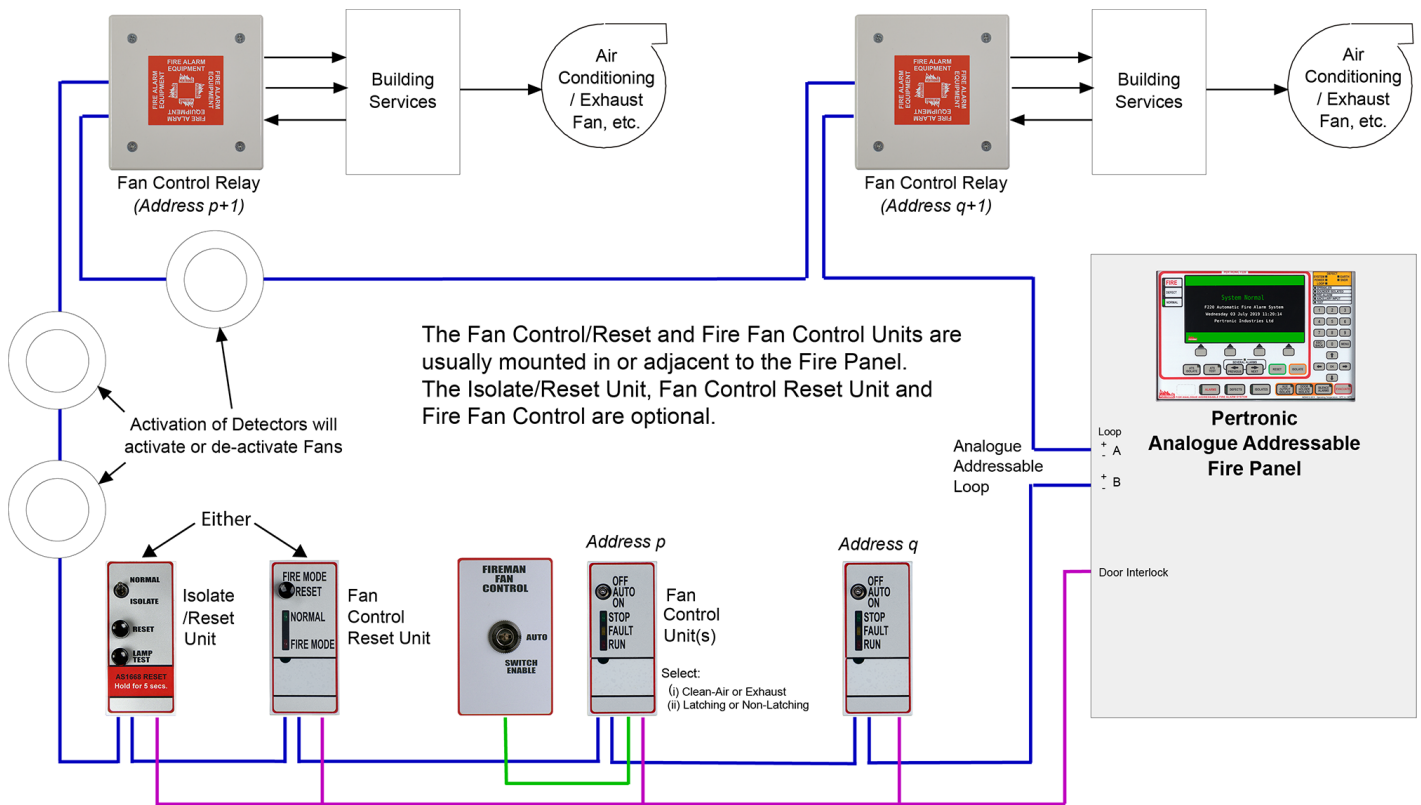
Push Buttons

Reset	Resets any latched states of connected Control Units
Lamp Test	Commands connected Control Units to enter the Lamp Test sequence. The Lamp Test stops after 20 seconds, or when Reset.
Door Interlock: K4	Closed relay contact when power is applied, and the switches of all connected control units are in the Normal or Auto position. Relay contact opens when any switch, including the Isolate switch, is Off-Normal

Fan-Control Key Switch:

Auto (horizontal)	Isolates the switches on the Fan Control and Isolate/Reset units
Enable (vertical)	Enables the switches on the Fan Control and Isolate/Reset units and allows the individual units to be controlled manually

Basic System Layout



Ordering Information

Product Code	Description
FCM	Fan Control Module (AS1670.1 2018)
FCRLY	Fan Control Relay in 125 x 125 x 56 mm Enclosure
FCRESETU	Fan Control Reset Unit (AS1670.1 2018)
F100PFCRST	AA Fan Control Reset Unit
F100PFFSW	AA Firemans Fan Switch Unit

The information in this document must not be treated as partial or complete instructions for the design, construction, installation, commissioning, or maintenance of fire detection, fire alarm, or building evacuation systems. Fire and evacuation systems must be designed and installed by properly qualified persons, in accordance with all regulatory requirements.

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