CNC Fire Suppression Control System

Operation and Maintenance Manual

EC Declaration of Conformity
In accordance with EN 45014:1998

Fire Detection activation system Model FireChase CNC detection and actuation system has manufactured in accordance with the following Directive:

73/23/EEC The Low Voltage Directive and its amending directives

has been designed and manufactured to the latest issues of the following specifications:

ISO 7240-2 Control and Indicating Equipment, Fire Detection and Alarm Systems
AS 3000 SAA Wiring Rules
AS 2546-3 Design and Use of Printed Boards
AS 1981 Stationary Batteries of the Lead-acid Pasted Plate Type

Model Listing: CSIRO Australia ActivFire
Listing Number: afp-1781
Part Number: 107 CNC FDDP

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1. Electrical Specifications

External power supply: 24VDC, 1.5A capable

Internal standby battery: 12V, 1.3AH

Panel normal current on external power supply: 100mA

Panel normal current on internal battery supply: 40mA

Suppressant module monitoring current: 1mA

Suppressant module discharge current: 1.0A

Battery float charge voltage: 13.75V

Battery charger current limit: 0.8A

Temperature probe end-of-line resistor:8K2 ohms, 1/4W

External breakglass end-of-line resistor:8k2 ohms, 1/4W

Time duration for battery support after external power is switch off: 5-6 minutes

Monitor contact outputs:

E-Stop, normally closed, 2 off
Fire System Ready, normally closed, fail-safe
Fire System Fault, normally closed
Panel Alarm, change-over

2. Mechanical Dimensions

Fascia dimensions: 180mm long, 130mm high
Equipment box dimensions:
153mm long, 103mm high, 83mm deep
Overall box dimensions:
107mm long, 103mm high, 87mm deep
Cut to Size: 108x155mm

3. Pluggable connectors terminal assignment

12-way

1, 2	External power input, 24VDC, 1 positive, 2 negative
3, 4	Temperature probe input, 8K2 end-of-line
5, 6	Manual breakglass input, 8K2 end-of-line
7, 8	E-Stop output contact, normally closed, first set. This output is composed of 3 normally closed contacts in series, being the alarm relay contact of each input as well as the discharge relay contact.
9, 10	Discharge output
11, 12	Safety door lock input, normally closed

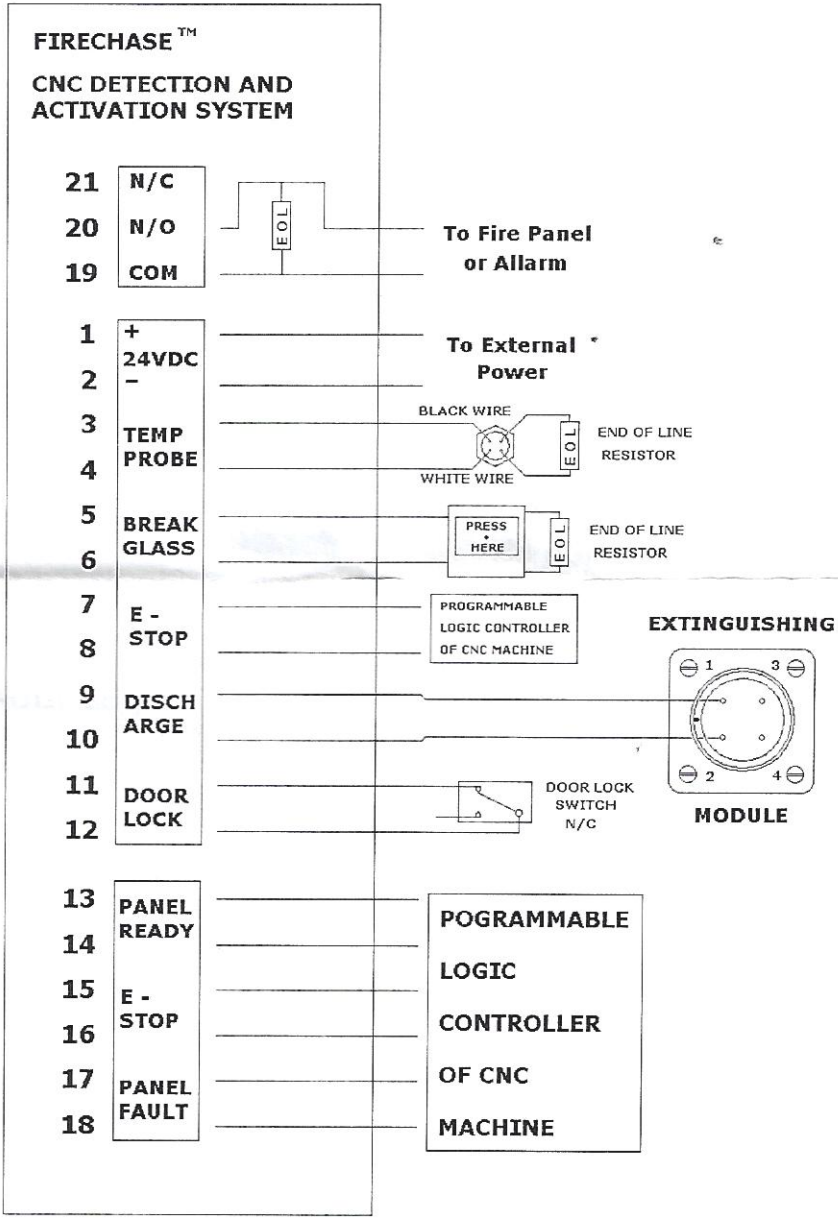
6-way

13, 14	Fire System Ready contact output, normally closed
15, 16	E-Stop output contact, normally closed, second set
17, 18	Fire System Fault contact output, normally closed

3-way

19,20,21	Alarm contact output for monitoring, common, normally open and normally closed

A schematic of a typical system layout is given below.



4 Front panel key switch and LEDs

When the key switch is turned to NORMAL, and provided the safety door is closed, and there is no fault in the system, the control panel is ready to function.

When the key switch is turned to ISOLATE, the discharge circuit is disabled. The alarm and fault sensing functions of the control panel are still active. The alarm sounder volume is reduced to 1/50th when the key switch is turned to this position. DO NOT turn the key switch back to normal if the OUTPUT ACTIVE LED is lit and the sounder is operated, indicating an alarm condition is present. Alarm conditions are not latched, and the panel will go back to normal when the alarm initiating situations are removed.

LED functions when lit:

MACHINE 24V SUPPLY ON:	green, external power supply is available to the panel
SAFETY INTERLOCK:	amber, safety door is NOT closed, or the key switch NOT on NORMAL
OUTPUT FAULT:	amber, open circuit on suppressant discharge
INPUT FAULT:	amber, open circuit on temperature probe or breakglass
OUTPUT ACTIVE:	red, an alarm condition exists
NORMAL:	green, key switch is on NORMAL, safety door is closed and there is no fault
ISOLATE:	amber, key switch is on ISOL, discharge circuit is disabled

An alarm condition exists when the temperature probe threshold is exceeded, or when the manual breakglass is operated, producing a short-circuit across their respective terminals, and indicated by the OUTPUT ACTIVE red LED, and the sounder. The alarm is not latched, so that if the alarm condition has passed, the panel will go back to normal. The suppressant discharge will occur instantaneously if the fire system is ready.

The sounder volume is reduced to a very low level, if the key switch is turned to ISOLATE, and an alarm condition exists with the panel. During periodic tests of the temperature or the breakglass, this low level sound is useful as a reminder NOT to turn the key switch to NORMAL until the alarm condition is removed.

6. Maintenance

The fire panel is designed to be as maintenance-free as possible. There are no fuses, and all external connections are current-limited, so that accidental short-circuits will not harm the system. The critical alarm sensing and discharge circuitry contains no electronics. Active components are only used for voltage regulation, fault sensing and battery backup timing. There is no earthing; the complete system is isolated from the metal enclosure.