PERTRONIC INDUSTRIES LTD

DATASHEET
Extinguishing Agent Release System (Version 2)
ARC2, ARC2-CC
**ACS2-FM, ACS2-SM,**
LCS2-FM, LCS2-SM

Overview

The Pertronic extinguishing agent release system is designed for use with Pertronic and third-party fire panels. The system is designed to control gas flood equipment. It may also be used to control other fire suppression systems.

The system consists of an agent release controller, an agent control station, and one or more local control stations, together with audio visual signs as required for each specific installation.

Pertronic fire panels may be supplied with one or more factory fitted agent release systems.

The Agent Release Controller (ARC2) monitors the fire panel for alarm signals. In the default "Double-Knock Auto" mode, the ARC2 requires two separate alarm signals in order to activate the agent discharge process. In "Single-Knock Auto" mode, the agent discharge process is triggered by a single alarm signal.

The agent discharge process can also be activated by manually activating the yellow call point on any connected control station (ACS2 or LCS2).
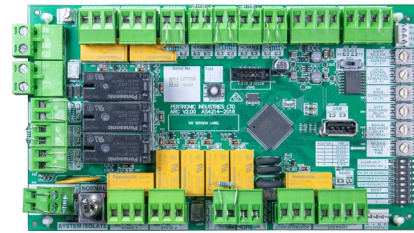
Agent Release Controller (ARC2)

Above Left: Agent Control Station (ACS2)
Above Right: Local Control Station (LCS2)

Operation

Double Knock Auto Mode

- » An alarm signal on the "Alarm 1" or "Alarm 2" input initiates Stage 1 of the agent discharge process.
- » Alarm signals on both the "Alarm 1" and "Alarm 2" input initiates Stage 2 of the agent discharge process.

Single Knock Auto Mode

An alarm signal initiates Stage 2 of the agent discharge process

Manual Mode

Activation of a call point on any connected ACS2 or LCS2 initiates Stage 2 of the agent discharge process.

Stage 1 Operation

- » ACS2 & LCS2 Alarm Input 1 LEDs light up, flashing
- » Controller Dual Sign output activates with "stage 1" polarity
- » Controller Activation Stage 1 output turns on

Stage 2 Operation

- » Countdown timer lights up, indicating the time in seconds till discharge
- » ACS2 & LCS2 Alarm Input 1 and Alarm Input 2 LEDs light up
- » ACS2 & LCS2 Stage 2 / Timer Running LED lights up
- » Controller Dual Sign output activates with "stage 2" polarity
- » Controller Activation Stage 2 output turns on
- » At the end of the delay period, the controller activates the Detonation output

Abort

Press the Manual Mode button on any control station to abort the agent release process.

Pause

Activation of a lock-off valve, or an interlock (such as a connected door or vent switch), will pause the agent release delay timer.

Features

- » Compatible with Pertronic F220©, F100A, F16e, and F120A fire panels
- » Auto and Manual operating modes
- » A Pertronic Extinguishing Agent Release System includes
  - » One Agent Release Controller
  - » One Agent Control Station (ACS2)
  - » One or more Pertronic Audio Visual (A-V) Signs. (This may include System Inoperative signs)
  - » Optionally, up to nine Local Control Stations (LCS2)
- » Automatic release can be aborted from any control station
- » Programmable Features (details on page 4):
  - » Alarm Input ("Single Knock" or "Double Knock")
  - » Auto Discharge Delay
  - » Manual Discharge Delay
  - » Release Output Hold Time
  - » Pressure Switch Feedback
  - » Low Pressure Fault Input
  - » Local Control Station (LCS2) buzzer inhibit
- » Programmable via PCB-mounted rotary and DIP switches
- » Supervised detonation output
- » Supervised two-wire dual polarity output for A-V signs
- » Supervised two-wire output for System Inoperative sign
- » Audible fault warning
- » Lamp test
- » Complies with AS 4214:2018
- » ARC2-CC has a conformal coating for extra protection against moisture and harsh conditions

Control Stations

Agent Control Station

- » Mount on fire panel or remote location
- » Auto Mode button with indicator
- » Manual Mode button with indicator
- » Buzzer Mute button
- » Indicator LEDs
  - » Time to Discharge display
  - » Normal
  - » Alarm Input 1
  - » Alarm Input 2
  - » Manual Activation
  - » Stage 2/Timer Running
  - » Agent Discharge Initiated
  - » Agent Discharged
  - » Lock Off Valve Operated
  - » Agent Low Pressure
  - » Interlock Fault
  - » Controller Fault
  - » Detection Fault
  - » Agent Discharge Fault
  - » Sign Fault
  - » LCS Fault
- » Integral yellow Extinguishant Release manual call-point with replaceable activating element
- » Available in flush-mount or surface-mount configuration
- » Available with a conformal coating
- » A Pertronic agent release system must include one Agent Control Station

Pertronic Agent Control Station in optional surface-mount configuration (ACS2-SM). A flush-mount version of this control station is also available

Local Control Station

- » Mount in any remote location
- » Auto Mode button with indicator
- » Manual Mode button with indicator
- » Buzzer Mute button
- » Indicator LEDs
  - » Time to Discharge display
  - » Normal
  - » Alarm Input 1
  - » Alarm Input 2
  - » Manual Activation
  - » Agent Discharged
  - » System Fault
- » Integral yellow Extinguishant Release manual call-point with replaceable activating element
- » Available in flush-mount or surface-mount configuration
- » Available with a conformal coating
- » A Pertronic agent release system may include up to nine Local Control Stations

Pertronic Local Control Station in optional surface-mount configuration (LCS2-SM). A flush-mount version of this control station is also available

Extinguishing Agent Release System Connections
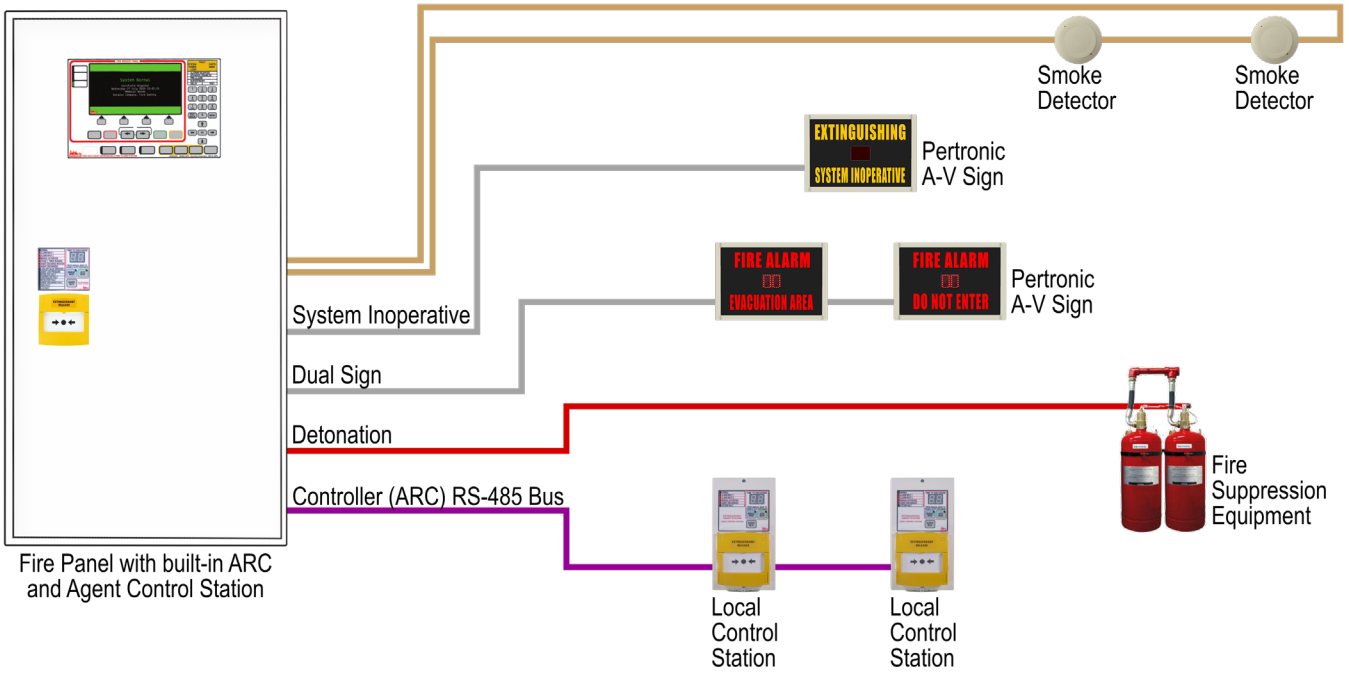
*Typical arrangement of a Pertronic Extinguishing Agent Release System with
a Pertronic fire panel and Pertronic Audio Visual Signs*

Agent Release Controller

The Pertronic Extinguishing Agent Release Controller is designed
for installation in a fire panel. The fire panel may be a Pertronic
F220©, F100A, F16e, or a third-party fire panel.

A single fire panel may be fitted with multiple Extinguishing Agent
Release Controllers. Each controller requires one Pertronic Agent
Control Station, which is mounted on or near the fire panel.

Agent Release Controller (ARC2) Features

» Provides an RS-485 bus for connection with an Agent
Control Station and up to nine Local Control Stations

» Programmable Features (details on page 4):
  » Alarm Input ("Single Knock" or "Double Knock")
  » Auto Discharge Delay
  » Manual Discharge Delay
  » Release Output Hold Time
  » Pressure Switch Feedback
  » Low Pressure Fault Input

» On-board System Isolate switch

» Supervised Outputs:
  » Detonation
  » Dual stage two-wire dual polarity sign output
  » Two-wire "System Inoperative" sign output

» Non-Supervised Outputs:
  » Activation Stage 1
  » Activation Stage 2
  » Agent Released
  » Agent Release System Fault

» A Pertronic agent release system must include one Agent
Release Controller
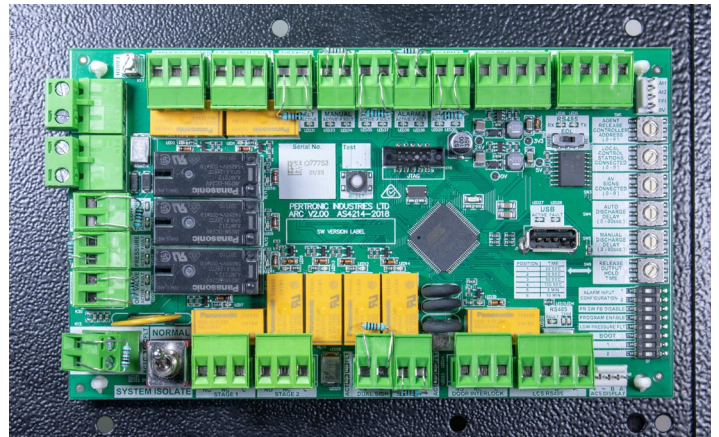
*Extinguishing Agent Release Controller (ARC2)
mounted on a Pertronic fire panel gear plate.
(Wiring omitted for clarity)*

Agent Release Controller (ARC2) Specification

Operating Voltage		20 to 30 V dc
Current	Quiescent	30 mA
	Alarm Stage 1	95 mA
	Alarm Stage 2	120 mA
Supervised Inputs (Notes 1 & 2)	Alarm 1 Alarm 2 Manual Activation Fire Panel Fault Lock Off Valve Pressure Switch	Active Low (Normally Open switch contacts)
	Low Pressure Fault	Configurable for Normally Open or Normally Closed switch contact
Supervised Outputs (Note 1)	Detonation	24 V dc, 1.5 A
	Dual Sign System Inoperative Sign	24 V dc, 1.1 A
Non-Supervised Relay Outputs	Activation Stage 1 Activation Stage 2 Agent Released Agent Release System Fault Door Interlock (note 3)	2 A @ 30 Vdc resistive load Form C (changeover)
Programming Options	Alarm Input	Double Knock or Single Knock
	Auto Discharge Delay	5, 10, 20, 30, 40, 50, 60, 70, 80, or 90 seconds
	Manual Discharge Delay	5, 10, 20, 30, 40, 50, 60, 70, 80, or 90 seconds
	Release Output Hold Time	20 seconds, 30 seconds, 60 seconds, 120 seconds, 5 minutes, 10 minutes
	Pressure Switch Feedback	Active or Disabled
	Low Pressure Fault Input	Normally Open or Normally Closed
RS-485 Bus	Power	24 V dc, 1.85 A
	Data	RS-485 data A + B
Dimensions		170 W x 98 H x 30 D mm
Mounting Holes		Four x 4 mm diameter Centred at 152 x 89 mm
Operating Temperature		-10 ºC to +50 ºC
Operating Humidity		10 to 95 % RH, non-condensing

Control Station Specification

Operating Voltage		20 to 30 V dc
Current	Quiescent	7 mA @ 24 V
	Alarm Stage 1	7 mA
	Alarm Stage 2	18 mA
Indicators: ACS2 and LCS2		Normal Alarm Input 1 Alarm Input 2 Manual Activation Agent Discharged
Indicators: ACS2 only		Stage 2/Timer Running Agent Discharge Initiated Lock Off Valve Operated Agent Low Pressure Interlock Fault Controller Fault Detection Fault Agent Discharge Fault Sign Fault LCS Fault
Indicator: LCS2 only		System Fault
Programming Option (LCS2 only)		Buzzer Inhibit
RS485 In & Out (Note 4)	Power	24 V dc
	Data	RS-485 data A + B
Dimensions (Including MCP)	Surface Mount	112 W x 202 H x 67 D mm
	Flush Mount	112 W x 202 H x 37 D mm
Operating Temperature		-10 ºC to +50 ºC
Operating Humidity		10 to 95 % RH, non-condensing

Notes

1. Supervised inputs and outputs require 10 kΩ end of line (EOL) resistors, mounted at the extreme end of each input or output cable. In addition, each unused input must be terminated with a 10 kΩ EOL resistor. Suitable 10 kΩ resistors are supplied with each Agent Release Controller.
2. The controller board is supplied with 2k2 resistors for triggering the various supervised inputs (see Technical Manual for details).
3. The Door Interlock output is activated whenever the "System Isolate" switch is on. When correctly connected, the fire panel will display a "door open" fault when the Agent Release Controller is isolated.
4. Each LCS2 and ACS2 control station has two interchangeable RS-485 Bus connectors. Multiple control stations may be "daisy-chain" connected to the bus.
5. Pertronic Audio Visual signs feature easily changed fascia panels. The fascia panel controls the sign's colour and wording. Please refer to the Pertronic website (https://pertronic.com.au, and https://pertronic.co.nz) for details of Pertronic A-V signs

Ordering Information

Product Code	Description	Product Code	Description
ARC2	Agent Release Controller AS4214:2018	LCS2-SM	Local Control Station, Surface Mount AS4214:2018
ARC2-CC	Agent Release Controller, Conformal Coating AS4214:2018	AVS-B	Audio Visual Sign (excl. fascia) (note 5)
ACS2-FM	Agent Control Station, Flush Mount AS4214:2018	AVS-C	A-V Sign, c/w Timer (excl. fascia) (note 5)
ACS2-SM	Agent Control Station, Surface Mount AS4214:2018	AVS-WP	Audio Visual Sign, IP66, no sounder (note 5)
LCS2-FM	Local Control Station, Flush Mount AS4214:2018	ARCSI	Agent Release Solenoid Interface