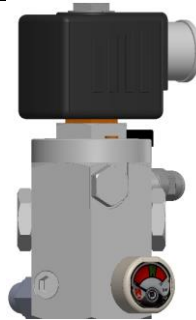


ILP LHD SYSTEMS – with a solenoid

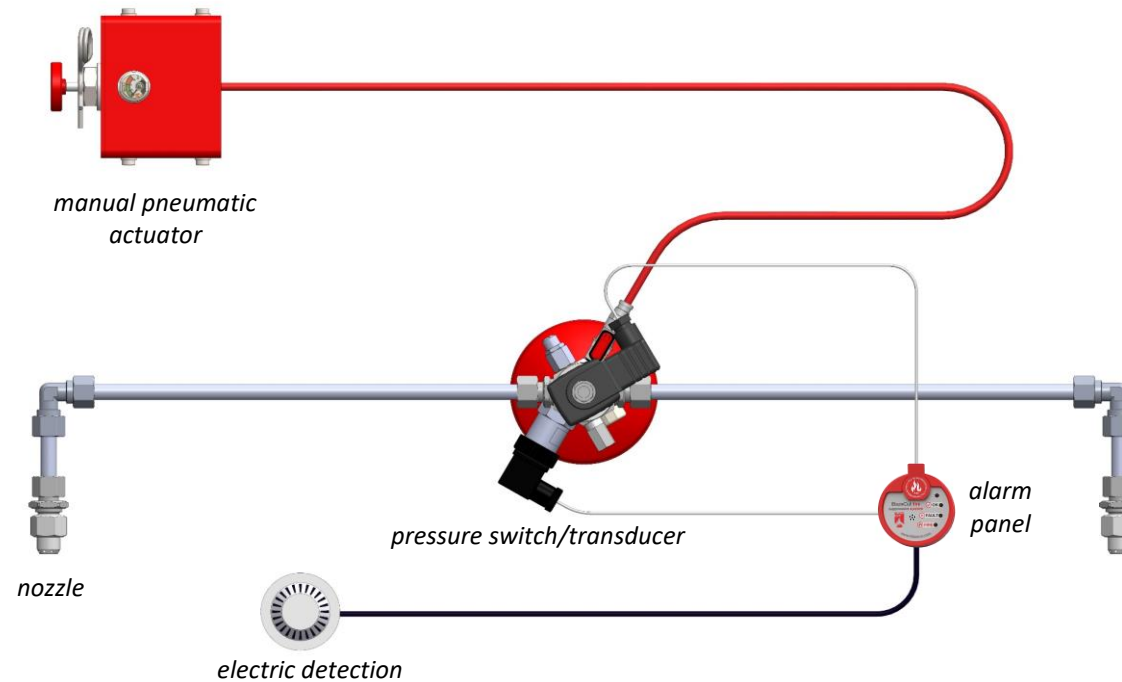


Valve 211-01, 212-01



Valve 211-30, 212-30

System with a detector, pneumatic manual actuator, alarm panel and pressure monitoring



Example of a ILP system

Specific components of the system

- 1) Actuator
 - a) Pneumatic ARA010 or ARA020
 - b) Electric ARA110 or ARA120
 - c) Electric ARA132
 - d) Fire button on Alarm Panel AAP211
- 2) Alarm Panel
 - a) AAP210
 - b) AAP211
- 3) Electric detection
 - a) BlazeWire
 - b) Detector – smoke, heat, combined
 - c) Heat probe
- 4) Pressure monitoring device
 - a) Pressure transducer
 - b) Pressure switch for low pressure indication
 - c) Pressure switch for external device ON/OFF switching
 - d) 2x pressure switches b) + c)



*Pneumatic actuator
ARA020*



*Electric actuator
ARA120*



*Electric actuator
ARA132*



*Fire button on an
Alarm Panel AAP211*



Alarm Panel AAP210



*Alarm Panel AAP211
with a tamper seal*



Pressure transducer



Pressure switch



BlazeWire



Detector



Heat probe

IN CASE OF FIRE

The system actuates automatically when fire, extreme heat or smoke is detected (depending on detection type) or can be activated manually.

Indications – several points can be true at the same time, depending on components used:

- 1) Actuation devices
 - a) Pneumatic Actuator ARA010 or ARA020
 - needle on the pressure gauge points to zero
 - pin is pulled out and the knob pressed
 - b) Electric Actuator ARA110 or ARA120
 - pin is pulled out and the knob pressed
 - c) Electric ARA132
 - protective glass plate is broken and button pressed
 - d) Alarm Panel AAP211
 - tamper seal is removed and FIRE button was pressed
- 2) Alarm Panel
 - a) AAP210
 - constantly lit RED light on the panel and constant beep for 120 seconds
 - b) AAP211
 - constantly lit RED light on the panel and constant beep for 120 seconds
 - tamper seal is removed and FIRE button was pressed
- 3) Electric detection
 - a) BlazeWire
 - is shorted
- 4) Pressure gauge
 - a) on the cylinder valve
 - needle on the pressure gauge points to zero
 - b) on the end-of-line adapter
 - needle on the pressure gauge points to zero



FAULT STATES

Low pressure

- 1) Actuation devices
 - a) Pneumatic Actuator ARA010 or ARA020
 - needle on the pressure gauge is in a red zone between zero and green zone
- 2) Alarm Panel connected to a pressure transducer or a pressure switch
 - a) AAP210 or AAP211
 - rapid ORANGE flash 1x per 4 sec. on the panel and beep 1x per 4 sec.
- 3) Pressure gauge
 - a) on the cylinder valve
 - needle on the pressure gauge is in a red zone between zero and green zone
 - b) on the end-of-line adapter
 - needle on the pressure gauge is in a red zone between zero and green zone



High pressure

- 1) Actuation devices
 - a) Pneumatic Actuator ARA010 or ARA020
 - needle on the pressure gauge is in a red zone between green zone and 28
- 2) Alarm Panel connected to a pressure transducer
 - a) AAP210 or AAP211
 - rapid ORANGE flash 1x per 1 sec. on the panel and beep 1x per 1 sec.
- 3) Pressure gauge
 - a) on the cylinder valve
 - needle on the pressure gauge is in a red zone between green zone and 28
 - b) on the end-of-line adapter
 - needle on the pressure gauge is in a red zone between green zone and 28



Component is disconnected or faulty

- a) Alarm Panel AAP210 or AAP211
 - constantly lit ORANGE light on the panel and beep 1x per 2 sec.



WORKING ORDER		LOW VOLTAGE	
<div>Indications:</div> <div><div><div>▪ needle on the pressure gauge is in the green zone</div><div>▪ constantly lit GREEN light on the AAP210 or AAP211</div></div><div><div></div></div></div> <div>Reasons:</div> <div><div>▪ all active components are working correctly and pressure in the system is optimal</div></div>		<div>Indications:</div> <div><div><div></div><div>▪ constantly lit GREEN, ORANGE and RED light</div></div></div> <div>Reasons:</div> <div><div>▪ the voltage has fallen below the minimum operational voltage of 9 V.</div></div>	
ALARM PANEL STATES			
<div>Indications:</div> <div><div><div>▪ no light indication and sound indication</div></div><div></div></div> <div>Reasons:</div> <div><div>▪ the alarm panel could be without power or with a malfunction; other unmentioned states.</div></div>			
DAILY SYSTEM CHECKS			
<div>During inspection of pressure, the ball valve on the cylinder valve must be open to inspect pressure in the system correctly (like during regular operation of the system).</div> <div><div>1. Check the system pressure on the pressure gauge situated on the cylinder valve, on the end-of-line adapter or manual actuator.</div><div>2. Visually inspect the system: check for loose and/or damage to cylinder assembly, hoses, brackets, detection, wiring, nozzles etc.</div><div>3. Connection between the pressure switch and a beacon or a siren. (if used)</div></div>			

CLEANING AFTER SYSTEM ACTIVATION



During the cleaning process always wear appropriate protective glasses, breathing mask, suitable protective gloves and clothes.

Enter the protected area only after the system operation is finished.

Unless absolutely necessary (e.g., fire is still present and it is necessary to use a portable fire extinguisher), enter the protected area only after it has been properly ventilated and cooled off and make sure that entry is safe.

HFC-227ea, FK-5-1-12

Extinguishing agent does not leave residue. Ventilate the protected enclosure properly, do not interfere with or work in the area before ventilation.

POWDER AGENT

After the system has activated clean the protected areas as soon as possible preferably by vacuuming the powder or by blowing the powder with air.
Try to remove as much powder as possible from affected area to prevent the powder from absorbing moisture and causing corrosion on metal components.

FOAM AGENTS

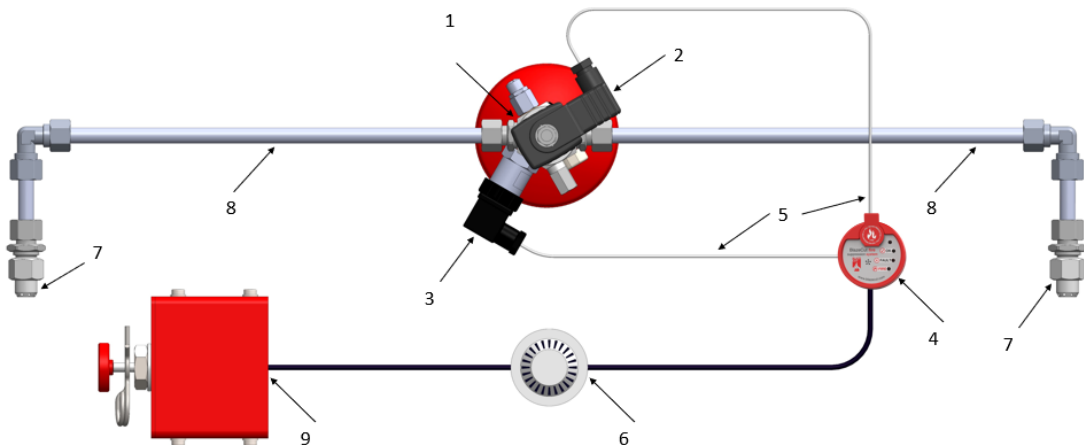
After the system has activated clean the protected areas preferably by washing away the foam with water and allow everything to dry completely before turning the power back on.

SYSTEM OVERVIEW

System components for valves 211/212 without BlazeTube:

1. Cylinder valve (view from above)
2. Solenoid with a cable connector
3. Pressure Switch/Transducer with a cable connector
4. External device (e.g., Alarm Panel AAP211)
5. Electrical cables
6. Fire detection device
 - a) heat/smoke detector
 - b) BlazeWire and end-of-line resistor
 - c) Heat probe
 - d) Other
7. Nozzles
8. Extinguisher distribution network
 - a) steel tubing and fittings
 - b) Fire hose and fittings
 - c) combination of steel tubing and Fire hose, fittings
9. Electric remote actuator

Extinguishing system components and their layout depend on the specific application.



1. Cylinder valve (view from above)
2. Solenoid with a cable connector
3. Pressure Switch/Transducer with a cable connector
4. External device (e.g., Alarm Panel AAP211)
5. Electrical cables
6. Fire detection device
 - a) heat/smoke detector and electrical cable
 - b) BlazeWire and end-of-line resistor
 - c) Heat probe
 - d) Other
7. Nozzles
8. Extinguisher distribution network
 - a) steel tubing and fittings
 - b) Fire hose and fittings
 - c) combination of steel tubing and Fire hoses, fittings
9. End-of-line device or another cylinder
 - a) pneumatic remote actuator
 - b) End-of-line connector with a pressure gauge
 - c) cylinder without a solenoid – valve type 20x
10. BlazeTube detection

A schematic diagram of a gas boiler system. The diagram shows a central boiler unit (1) with a gas control valve (2) and a pressure relief valve (3). A gas supply line (10) enters the boiler from the top left. A water supply line (8) enters the boiler from the bottom left. A water return line (7) exits the boiler to the bottom right. A water supply line (4) exits the boiler to the top right. A water return line (5) exits the boiler to the bottom right. A pressure relief valve (6) is connected to the boiler. A gas control valve (9 a) is connected to the gas supply line. A gas control valve (9 b) is connected to the gas supply line. A gas control valve (9 c) is connected to the gas supply line.