Hydra-Sentinel automatic chlorine shut-off device

The Hydra-Sentinel is an automatic shut-off device for chlorine cylinders and drums. It meets the performance requirements and recommendations of AS 2927:2019

Hydra-Sentinel automatically shuts the primary isolation valves on the containers if a gaseous chlorine leak is detected via a chlorine leak detector.

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Protect personnel, plant and equipment

The Hydra-Sentinel is an automatic shut-off device for chlorine cylinders and drums. It automatically shuts the primary isolation valves on the containers if a gaseous chlorine leak is detected via a chlorine leak detector (sold separately).

Systems for other toxic gas containers such as ammonia and sulphur dioxide are also available.

The principal benefit is the protection of plant and equipment from accelerated corrosion caused by chlorine gas escape while the installation is unmanned. It is also intended to supplement and enhance the protection against exposure to chlorine gas (and/or other toxic gases) afforded to operating personnel and the public after a leak has occurred.

The Hydra-Sentinel is not intended to prevent leaks from occurring in the first place.

Key components

- Electrical control panel - includes PLC for sequence control of shutdown actuators, indicators for system status and alarm conditions,battery and charge control circuit
- Pneumatic control panel - includes 5 port solenoid valve, air pressure switch, gauge and emergency stop button
- Quantity of actuator arms (up to 8) as required by the installation, arranged for direct clamping to a container valve
- Pneumatic operation - air is supplied by any of the options listed opposite
- System operates from an 240V single phase power supply which continually charges an integral back-up battery capable of maintaining power and operating integrity for up to 8 hours on loss of mains power supply
- Unique purpose-built yoke mounted actuator arm, designed to connect directly to the yoke of a Wallace and Tiernan vacuum regulator without the need for additional adaptors
- Arms for other manufacturer's vacuum regulators available on request
- Inhibit button to prevent shutdown during container change procedures

Display

The system is designed to shutdown gas cylinders under the following input conditions:

- Gas leak
- Remote initiation

Additionally the system can facilitate a shutdown under the following conditions if required:

- Low air pressure (less than 400kPa)
- Low battery voltage (11Vdc)

Associated equipment

The Hydramet online chlorine gas leak monitoring system is recommended for the detection of gaseous chlorine in ambient air. Features include:

- Selectable range
- Battery backup
- Sensor auto-test
- Remote sensor monitoring
- Multiple alarms
- Analogue outputs
- Auto-test verification

Control panel

The control panel includes indication for the following:

- Power on
- Power loss
- Low battery voltage
- Leak detected
- Remote shutdown activated
- Test
- Low air pressure

The control panel includes alarm outputs for the following:

- Shutdown
- Power fail
- Low air pressure
- Low voltage

Specifications

Enclosure rating	Electrical control panel: IP65 Pneumatic control panel: IP56
Power	240VAC, 50Hz, 15 Watts
Contact rating	5 Amp at 250 VAC, resistive
Battery backup	12VDC, 4 Amp hour (4 hours minimum)
Compressed air supply	Flowrate (L/min): 12L/min (ANR) per actuator Flowrate per cycle: 20L/cycle (ANR) per actuator (1 cycle = 50 strokes) Pressure: 600kPa to 700kPa Low pressure: 400kPa
Compressed air supply options	1. G size compresssed air cylinders - allocated specifically for this function, includes a pressure regulator suitable for compressed air (supplied by customer) 2. Full air service package - a reciprocating air compressor with a 58l air receiver tank and pressure regulator with auto drain filters (reducing plant air pressure to 600kPa) 3. Air receiver package - for sites with existing plant air and includes 58l air receiver tank, pressure regulator with auto drain filter (reducing plant air pressure to 600kPa), check and pressure relief valves
Conditioning	0.3 micron filter with auto drain and oil mist separator (required by options 2 and 3 above)
Operating temperature	-15^0 C to $+40^0$ C continuous
Humidity	0 - 99% non-condensing
Distance of operating arm to controller	20 meters maximum
Cable	Cable to connect electrical control and pneumatic control panels not included

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