

Wallace & Tiernan® Gas Feed Systems Series 50-204 Automatic Changeover System for Liquid Cl₂, NH₃ or SO₂

Applications

For use on ton containers, tank cars, and other large gas or liquid-chlorine supplies, this system gives automatic changeover to a fresh supply when the on-line supply runs out. The system's two motorized ball valves are monitored and controlled from a single panel. They are ideal ahead of gas feeder-evaporator combinations; one system can supply up to 10 manifolded evaporators. Can be used for liquid ammonia or sulfur dioxide.

Features

Simple, Convenient, Fully Automatic: This system is constructed of standard, stock components and is self-contained. It requires no auxiliary equipment or external pressure for operation. Switchover is automatic; requires little attention, no manual resetting required for switchover.

Flexible: Series 50-204 Systems can be used on ton containers, most tank cars (not consumer air-padded tank cars), and other large supplies. In addition, the operator can choose which portion of his supply to exhaust first. The control panel can be wall mounted or supplied in a free-standing module that matches modular gas feeders, analyzers, instrumentation, and other system components.

Continuous Supply: The system is designed to give an uninterrupted supply, to minimize the possibility of untreated water or wastewater. It's long in-service periods can be a value in remote locations or periods of personnel shortage.

Comprehensive Control Panel: The control panel gives the operator clear information on important system functions. It contains: a power on-off switch and light; a three-position manual-automatic changeover switch; evaporator pressure lights (up and down); supply open and closed lights; and reserve supply available and exhausted lights. Unpowered contacts for remote reserve supply lights are included.

Key Benefits

- Automatic changeover operation for uninterrupted chemical supply
- Complete package, including controls, motorized valves and liquid line pressure relief systems
- Convenient operator controls for supply management
- Suitable for use with ton containers, tank cars and other large liquefied gas supplies

As an option, an audible reserve-exhausted alarm, alarm acknowledgement button, and unpowered contacts for an external alarm may be ordered.

Meets Code Requirements: The ball-valve actuators and pressure-switch are in NEMA 4 enclosures. The control panel enclosure is rated NEMA 12; it conforms to Articles 250 and 300, National Electric Code and to NEMA ICS Standards (1 -110, 111, 112). The ball valves conform to Chlorine Institute recommendations (Pamphlet 6, Section 3.5).



Product Sheet

Reliable Operation: Limit switches on each valve actuator are designed to prevent the valves from opening or closing simultaneously. This helps prevent liquid flow from a full to an empty container and abnormal increases in evaporator pressure. The system handles gas in the same way.

Operation

With the selector switch on automatic, a green panel light indicates the open supply; an amber light, the closed supply. When the open supply is exhausted, the pressure switch at the evaporator inlet senses low pressure and activates at 1.4 bar (20 psi). This closes the open valve then opens the closed valve so that the reserve supply comes on line. A red light on the panel (and the optional audible alarm) indicates that the reserve needs replacement. When the exhausted supply is replaced, the system is ready for the next changeover. The operator then pushes a button to light the reserve-supply-available light. Changeover can be manual if the selector switch is changed to the manual position.

Technical Data

Use: To switch over automatically to a new liquid chlorine (or ammonia or sulfur dioxide) supply when the on-line supply runs out.

Capacity: 45,400 kgs (100,000 lbs) liquid chlorine per 24 hrs maximum (to 10 Wallace & Tiernan® evaporators).

Switchover Pressure: 1.4 bar (20 psi).

Electrical Requirements: 115 volt, 60 Hz, single phase, 2 amp maximum.

Control Panel: Painted steel box rated NEMA 12. Includes those switches, lights, and terminals described under features.

Mounting: Control panel can be supplied for wall mounting or mounted in a free-standing structural foam ABS module.

Valves: Two ball valves, which meet Chlorine Institute requirements with on-off electric operators in NEMA 4 enclosures. The valves have 25.4 mm (1") NPT pipe connections.

Materials: stem and ball, Monel® alloy; seats and seals, TFE; body, carbon steel.

Pressure Switch: To be installed in the chlorine line at inlet of evaporator. Diaphragm protected; activates changeover circuitry when evaporator pressure falls below 1.4 bar (20 psi). Activation point adjustable between 0.8 and 2.1 bar (11 and 30 psi).

Temperature and Pressure Limits: Valves and pressure switch are suitable for the maximum rated working temperatures and pressures of the evaporator 100°C (212° F) and 560 psig.

Optional Accessories: Ammonia flanges; pressure gauges; alarm units; flexible connections; valves and fittings. Optional accessories are included with the switchover system only as specifically listed in a quotation.

Overall Dimensions: Modular system, 1733.5mm H, 406 mm D, 70 mm H (68-1/4" H, 16" D, 27-1/2" W); wall-mounted, 508 mm H, 260 mm D, 441 mm W (20" H, 10-1/4" D, 17-3/8" W).

Shipping Weight: 80 kgs (175 lbs).

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