



**eVOQUA**  
WATER TECHNOLOGIES



## WALLACE & TIERNAN® GAS FEED SYSTEMS SERIES 55-410 REMOTE VACUUM SWITCHOVER

### PRODUCT OVERVIEW

The Series 55-410 remote vacuum switchover unit is designed to provide unattended automatic switchover to a fresh gas supply when the on-line supply is exhausted. This remote-mounted unit provides for vacuum manifolding of multiple gas containers for high capacity feedrates up to 20 kgs/hr (1000 ppd) of chlorine or its equivalent. The unit is installed in the vacuum gas feed line between separate banks of vacuum regulating valves and the gas control unit of a new existing gas feed disinfection system.

### STANDARD FEATURES

- Non-isolating switchover allows gas to continue to be withdrawn from the depleted supply after switchover to ensure that the supply containers are completely emptied. Manual by-pass valves are not required.
- Switchover is automatic, initiated by an increase in the vacuum level. Operator attention is required only for replacing the empty containers and resetting the switchover unit.
- Easy to read label graphics provide positive indication of operating status.
- Wall or panel mounted for operator convenience.
- Suitable for high Capacity use with chlorine or sulfur dioxide up to 20 kgs/hr (1000 ppd) and ammonia up to 8 kgs/hr (450 ppd).

### TECHNICAL DATA

#### Operational temperature

-12 to 55°C (10 to 130°F)

#### Operational vacuum

254 mm to 2900 mm H<sub>2</sub>O (10" to 115")

#### Switchover vacuum level

762 mm to 2285 mm H<sub>2</sub>O (30" to 90") normal

#### Maximum flow rate

20 kgs/hr (1000 ppd) chlorine and sulfur dioxide

8 kgs/hr (450 ppd) ammonia

#### Connections

1/2" NPT for both gas inlets and for gas outlet

#### Dimensions

125 mm L x 50 mm W x 88 mm H (5" x 2" x 3.5")

#### Weight

1.4 kgs (3 lbs)

## OPERATION

The remote switchover unit is designed to control and indicate the flow of gas under vacuum from two separate banks of gas storage cylinders. It provides a means of initially isolating one bank of cylinders, and then, at the achievement of a certain vacuum level in the gas vacuum feed line, opening this isolated bank of cylinders to allow gas feed from them. The unit is designed to be installed with, or into an existing, gas feed water disinfection system.

Most gas disinfection systems utilize some form of gas storage cylinders for the on-site storage of the disinfection chemical. These cylinders are usually in the form of 45 kg or 900 kg (150 or 2000 lb) containers. The gas storage systems are commonly arranged in two "banks" of cylinders. Each bank typically consists of from one to six or more cylinders manifolded together. Each cylinder may have its own standard vacuum, regulator (all vacuum piping) or several cylinders may be manifolded into a single and/or standard vacuum regulator (cylinder manifold under pressure).

Since these types of disinfection systems usually operate unattended for extended periods of time, there is a requirement for a means to draw from one bank of cylinders until they are empty and then automatically switch to the other bank. While the system is drawing from the second bank, the empty first bank can be replaced with cylinders allowing uninterrupted operation of the disinfection system.

The remote switchover device functions by sensing the gas feed vacuum level. In operation of the gas feed system, as the first bank of cylinders near the empty condition, the vacuum level in the gas supply line between the vacuum regulator(s) and the gas feed equipment rises from the nominal value of 505 mm to 1016 mm (20" to 40") H<sub>2</sub>O. When the gas feed vacuum level reached the set point of the switchover device, the device will trip.

On tripping, the unit opens the gas flow to both the first and second banks of cylinders. It is important to note that upon switchover, the device does not isolate the empty bank of cylinders from the system.

This allows the removal of any residual gas in the empty cylinders and prevents the return of partially empty cylinders. Because of this, the device is classified as a non-isolating switchover device.

Once the empty containers have been replaced and the individual vacuum regulators are set in the operating position, the remote vacuum switchover unit is then placed in the standby mode for the new bank of containers. This simply requires that the operating knob be moved to the standby position as indicated by the front decal. Gas does not feed from this new supply bank until after the on-line supply is depleted and switchover has occurred.



181 Thorn Hill Road, Warrendale, PA 15086

+1 (866) 926-8420 (toll-free) +1 (978) 614-7233 (toll) [www.evoqua.com](http://www.evoqua.com)

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