

Wallace & Tiernan® V10k Gas Feed System

SIEMENS

Introduction

The V10k is a remote vacuum solution feed gas control unit for use with four of the most commonly used gases for the disinfection and treatment of Potable water, Industrial water and Wastewater. This unit has been built to enhance the proven design and features of previous models. The convenience of wall mounting and front access have been incorporated into this new design. An optional floor standing version is available where space is at premium.

See SB.25.100.GE for detailed features and benefits.

Easy installation service

The gas flow components, injector and V-notch actuator can be on a panel for wall mounting. This arrangement saves space and enables the control unit to be located separately from the pressure gas supply. Front panel mounting and hand tightened components are easily removed for servicing.

Flexible mounting configuration

The unit is a simple, compact wall mounted unit with versatile configurations allowing user selectable options.

Where circumstances dictate, a floor standing cabinet-mounted configuration is also available.

Handles all water and wastewater gases

The unit can handle chlorine, sulphur dioxide, carbon dioxide and ammonia gas.

The V-notch orifice consists of a precisely grooved 75m long plug sliding in a fitted ring. Any position of the plug in the ring results in a specific orifice size and corresponding feed rate.

This provides very accurate gas-flow control and excellent repeatability.



Benefits

- Direct feed, cylinder pressure operated
- Automatic switchover
- Reliable operation
- Easy installation
- Consistent feed rates
- Can be scale mounted
- Chemical resistant

Technical data

Accuracy

Gas feed is $\pm 4\%$ of the indicated flow.

Operating range

20:1 for any flowmeter. 10:1 on 0.06kg/h flowmeter.

Control modes

Manual, start-stop or program, flow proportional, direct residual and combined flow residual.

Vacuum regulators

2 types are available:

- Single inlet valve
- Double inlet valve for added safety (manual)

2 types of container of gas header fittings are available:

- Universal clamp to fit all containers and Siemens Water Technologies Valves
- Union nut suitable for UK chlorine/ SO₂/ ammonia and DIN container valves

Injectors

The injector operating water must be reasonably clean. Injectors are of the fixed throat design. Maximum inlet pressure is 11 bar. Injectors are fitted with double back flood prevention to ensure water does not back up to the control unit. High pressure injectors are available.

19mm Injector

Union assembled (no bolts) double back flood protection. Suitable for gas flows up to 3.8kg/h (1g/s). Maximum pressure 20 bar at 38°C.

25mm Injector

With double back flood protection. Suitable for gas flows up to 15kg/h (4.2g/s).

Vacuum connections

Suitable for 6mm compression fitting or 1/2"BS female thread depending on capacity.

Materials of construction:

Body - PVC.

Diaphragm - PTFE

Valve - brass and monel.

Options

Thermostatically controlled heater fitted to gas inlet block, 110/230 VAC, 40 watts.

Auto Change Over (from duty to standby)

Same specification as single version but fitted with a detent that enables a new container to come into operation when the duty container is empty.

Each empty container is maintained at 0.5 to 1 bar at changeover. Electrical contact rated at 5 amps at 230 volts is available to notify of change-over (optional).

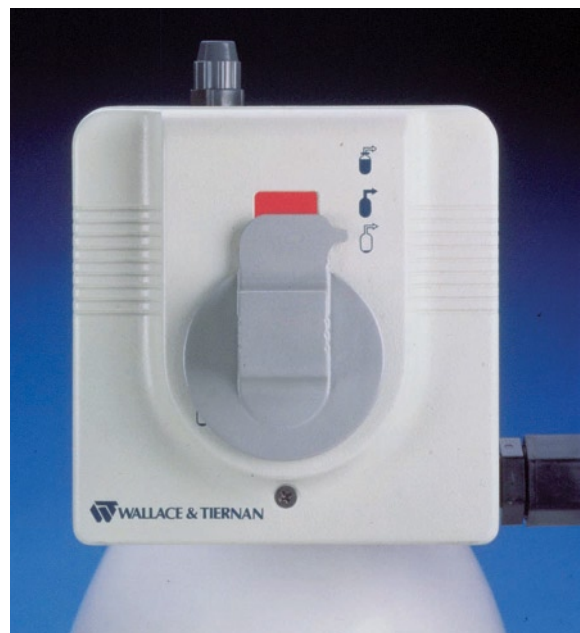
Visual indication

The operational state is provided by an indicator knob showing off*/duty/standby/ empty.

*Off is a manual operation of the indicator knob used to isolate any trapped gas whilst changing containers. It is not necessary to install the vacuum regulating valve close to the gas control unit. It can be separated by up to 500 meters depending on maximum feed rate and the diameter of the connecting pipe.

Electrical requirements

The V-notch positioner requires 120 volts $\pm 10\%$ (200mA) or 230 volts $\pm 10\%$ (100mA), 50/60 Hz, single phase.



Dosage control using SCU (Signal Conditioning Unit)

Flow input signal is scales from 10 to 400%.

Inputs

Flow proportional inputs are 4-20, 0-20, 0-10, 0-5 mA or 1-5 volts DC.

Output

Standard outputs are 4-20, 0-20, 0-10, 0-5mS for remote indication of chlorinator feed rate (V notch position). Maximum loop impedance 600ohms

Mounting

The SCU can be remote mounted or on the panel with the V10k. If the unit is remote the maximum distance from the gas control unit is 150 meters. See Publication TI.40.100.GE

Options and accessories

Related options include: cylinder and tonne auxiliary

valves; flexible connection; header valves with manifolds; mains injector fittings; solenoid valves; high/low vacuum alarm.

Carbon dioxide and Ammonia note

Because of the high pressure in carbon dioxide containers, the vacuum regulating valve cannot be mounted directly on the container. A pressure reducing valve must be installed between the supply and the vacuum regulating valve.

Compliance

Chlorinator and actuator are designed to conform to all applicable EC safety requirements and carry the required CE mark.

Connections

Pipe and plastic tubing sizes:

Solid 1/2" nominal bore PVC

Solid 20mm nominal bore PVC

Flexible 1/2" OD x 1/16" wall Polyethylene.

Gases and scale and capacities						
	Chlorine and Sulphur Dioxide		Ammonia		Carbon Dioxide	
	gph†	kg/h	gph†	kg/h	gph†	kg/h
V10k-LC 125mm Scale length*	60		28		46	
	200		90		150	
	380		180		300	
	600		280		450	
	950		450		700	
	1000	1.50	700		1500	2.20
		3.00	900	1.40		3.00
V10k-LC 125mm Scale length*		4.00		1.80		4.00
		5.00		2.40		4.50
		6.00		2.80		4.50
		7.80		3.60		7.50
		10.00		4.80		7.40
		12.00				
		15.00				

*250mm scale also available, †mg/s scale available as a non standard option.

Wall mounted and floor standing arrangements

Floor mounted cabinet options.

1. Manual V10k
2. Automatic V10k with or without Vacuum Switch
3. Automatic V10k with SCU
4. Automatic V10k with PCU

Including provision for mounting of injectors within the cabinet or remotely.

Cabinet construction

One piece GRP construction, colour matched to the gas metering components, with provision for rigid floor fixing and/ or ballast addition.



Wall mounted cabinet



Floor mounted cabinet

Overall Dimensions				
V10k	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)
Manual				
no pack panel	385	350		3
with back panel	465	580		20
cabinet mounted	1730	600	400	32
Auto				
narrow width panel	930	380		20
mid width panel	930	432		20
wide panel	930	580		20
cabinet mounted	1730	600	400	32
Vacuum regulator with universal yoke or union nut	150	150		5
Injectors				
19mm (up to 3.8kg/h)	130	103		1
25mm (over 3.8kg/h)	160	120		2

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