

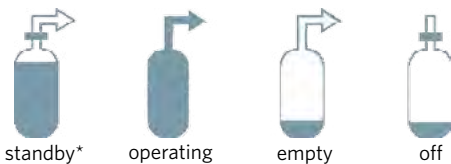


eVOQUA
WATER TECHNOLOGIES



WALLACE & TIERNAN® GAS FEED SYSTEMS E10K™ CHLORINATOR

The E10k™ chlorinator is a vacuum operated, sonically regulated unit dedicated to chlorine feed applications. Direct cylinder mounting puts the vacuum-regulating valve right at the source, reducing gas pressure to a vacuum immediately. It provides for economic low capacity chlorine gas feed applications for municipal and industrial water and wastewater treatment and disinfection as well as industrial process water. Its flexible mounting configurations for cylinders, manifolds or tonne containers provides versatility for all installations. Two basic arrangements are available in capacities of 4 and 10 kg/hr (200 and 500 pounds per day (PPD)) of chlorine gas. With fewer internal parts, you can be confident that the E10k chlorinator will provide reliable, dependable service.



FEATURES

* Automatic switchover only

Positive Indication of Operating Status

Easy to read icons provide positive indication of cylinder status. The operator can tell at a glance whether the container is in the standby status (for automatic switchover), operating, empty or off.

Positive Shutoff

An OFF position on the face of the regulator allows for positive shutoff. Containers can be changed without admitting air, dirt or moisture into the control unit and without shutting off the injector.

Built-in Automatic Switchover

Built-in switchover eliminates the need for external switching devices.

MOUNTING OPTIONS

Chlorine Institute Yoke

A unique self aligning captive yoke clamp makes it easy to line up and connect the chlorinator to the gasketed outlet of a container valve. A tonne container kit includes a drip leg, to trap initial spurts of liquid, a heater to evaporate this liquid and a replaceable filter.

KEY BENEFITS

- Easy to read icons provide positive indication of container status
- Positive shutoff allows containers to be changed without admitting air, dirt or moisture into control unit
- Easy alignment of the control unit on the container by means of a captive yoke assembly
- Complete gas consumption (dependent upon local regulations) by means of a non-isolating switchover system
- Flexible installation with detachable flowmeter assemblies



CI Yoke



Universal Yoke



Union Connection

Universal Yoke for International Cylinder Variants

A universal yoke is available to accommodate certain cylinder valve configurations that can not accommodate the standard captive yoke design.

Union Type Connection with Optional Pressure Gauge

(Available in Europe only)



Detachable Flowmeters

Two sizes of flowmeters, 75 and 125 mm (3" and 5"), are available in 15 capacities up to 10kg/hr (500 PPD) chlorine. These flowmeters can be integral to the unit, or mounted remote, for installation flexibility. Flowmeters can be ganged together for multiple points of application. When used with optional vacuum solenoid valves multiple rate control can be achieved.

TECHNICAL DATA

Easy to Install, Operate and Maintain

The E10k™ chlorinator is simple in design, compact and easy to handle. Injector installation only requires an inlet connection to a water supply and outlet connection to a main or open channel. A knob adjustment on the flowmeter changes gas feed rate, which is indicated on a high resolution 75 or 125 mm (3" or 5") scale.

Accuracy

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

Operating Range

Manual 20:1 for any flowmeter

Automatic 10:1 for any V-Notch plug

Distance, Supply to the Control Unit

For flexibility, it is not necessary to install the vacuum regulator close to the control unit. Distance is dependent on maximum feed rate, the diameter of the connecting pipe or tubing and system performance requirements.

Injector Operating Water

Injector operating water must be reasonably clean. Injectors are fixed-throat differential type. Maximum inlet pressure for a 3/4" injector is 15.5 bar (225 psi) to a maximum of 38°C/100°F; 7.7 bar (112.5 psi) to a maximum of 54°C/130°F. An optional

3/4" injector is available for 20 bar (300 PSI). Maximum inlet pressure for the 1" injector is 20 bar (300 PSI)

Pressure at Application Point

Maximum pressure with hose or polyethylene tubing is 5 bar/75 psi. High pressure hose or rigid pipe will allow application against back pressure to 11 bar/160 psi.

A solution pump after the injector will allow application against higher pressure.

CONTROL METHODS

Feed rate of any E10k chlorinator is controlled by either one or both of these methods: interrupting the injector-water supply to shut off the gas feeder's operating vacuum or changing the gas feed control orifice by adjusting the V-Notch rate valve.

Manual Control

Manual control by changing orifice area (V-Notch plug position) via an adjustment knob on the flowmeter.

Start-Stop or Program Control

This type of control is achieved with simple implementation. Operating vacuum is started and stopped by interrupting the injector water supply.

Automatic Control

The E10k chlorinator can be provided with automatic feed rate control ranging from simple to complex control schemes. The control system can consist of a simple direct mA control V-Notch actuator or a more sophisticated control including an actuator and a controller.

One of these controllers is capable of flow proportional or manual control and accepts a 4-20 mA DC input signal. Control capabilities include dosage and flow scaling. A 4-20mA output signal is provided for retransmission of gas rate (actuator position)

A second automatic controller is available for direct residual feed back, compound loop, feed forward, flow proportional and manual control.

Up to 3 analogue and two digital inputs can be handled by this unit. Outputs include control out to actuator and user configurable 4-20mA, RS-485 serial communications. Four user configurable alarms are available for 16 different configurations.

Direct 4-20mA input control

(See WT.040.050.000.IE.PS)

- Direct 4-20mA input signal from an external control device
- Compact integral design
- Internal dosage capability

CONNECTIONS

Pipe and plastic tubing sizes.

Vacuum Regulating Valves

Tubing to	4 kg/hr. (200 PPD)	10 kg/hr. (500 PPD)
control unit	3/8" x 1/2"	1/2" x 5/8"
container valve	gas inlet is yoke connection to a cylinder or header valve or union, with optional adapter, to a tonne container valve (yoke connections only)	

Injectors

Connection	4 kg/hr. (200 PPD)	10 kg/hr. (500 PPD)
water inlet		1" female NPT
	3/4" male NPT or	
water outlet	3/4" flexible pipe	3/4" NPT with adaptors for 3/4" (optional), 1", or 1-1/2" pipe or hose

Gases and Capacities

	Chlorine		
	Scale Max Cap. Lb/24HR	Scale Max Cap. Kg/HR	Scale Max Cap. Gm/HR
3" / 75mm Rotameter	4		80
	10		200
	20		400
	50	1	
	100	2	
	200	4	
5" / 125mm Rotameter	3		60
	10		200
	20		400
	25		500
	50	1	
	100	2	
	200	4	
	250	5	
	500	10	

Overall Dimensions

Chlorinator:	
75 mm / 3" Flowmeter	200 x 178 x 278 mm / 7 7/8" W x 7" H x 10" D
127 kgs / 5" Flowmeter	210 x 305 x 330 mm / 8 1/4" W x 12" H x 10" D
Automatic panel	640 x 187 x 181 mm / 25 1/4" H x 7 3/8" W x 7 1/8" D



E10k™ Automatic Control Panel with 5" Flowmeter

Shipping Weight

Gas metering unit	2.3 kgs / 5 lb.
Automatic panel	7.3 kgs / 16 lb.

For additional dimensional information see:
WT.025.300.100.UA.PS and
WT.025.300.102.UA.PS



E10k™ Automatic Control Panel with 3" Flowmeter

OPTIONS

Related options include: cylinder valves and connections; header valves with manifolding and connections; vent; injector water and injector outlet lines and clamps; main connections; solenoid valves; water line pressure gauge; high vacuum pressure switch and alarm; chlorine detectors; on-line analyzers; cylinder scales; residual test kits; injector vacuum gauges; spare parts and PM Kits.

Chlorine Gas Warning

All unattended chlorine gas containers and chlorination equipment should be monitored for leaks. Sensitive chlorine detectors, which respond quickly to chlorine in the atmosphere, should be installed at each site.

Compliance

Controller and actuators are designed to conform to all applicable NEC, NEMA and CE marking. The gas feeder is designed to conform to Chlorine Institute and Compressed Gas Association recommendations.

MATERIALS OF CONSTRUCTION

All materials used are compatible with chlorine gas.

WARRANTY

The E10k™ Chlorinator is warranted for 3 years against defects in material and workmanship. The vacuum regulating spring, injector spring, pressure relief spring, and inlet cartridge are warranted for life against chemical attack. The PM Kit® replacement parts are warranted for 1 year.



E10k™ Chlorinator (Rear View)



4800 North Point Parkway, Suite 250, Alpharetta, GA 30022

+1 (866) 926-8420 (toll-free) +1 (978) 614-7233 (toll) www.evoqua.com

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