

Wallace & Tiernan Chem-Ad® Series A Diaphragm Metering Pump

Technical Information
TI 440.600-1 UA

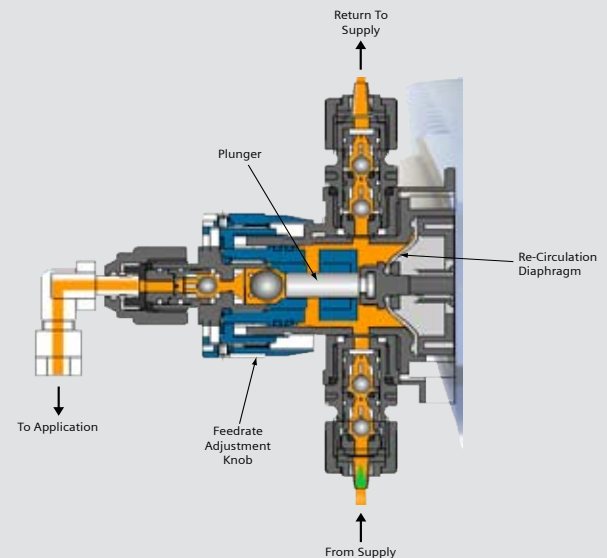
The Wallace & Tiernan Chem-Ad Series A is an electronically controlled, motor driven diaphragm metering pump. It is designed specifically for very low feedrate applications, particularly sodium hypochlorite. The pump features a unique, constant circulation liquid end with a calibrated, adjustable plunger for precise feedrate control. This design ensures consistent performance, even with chemicals that tend to outgas, such as hypochlorite.

The Chem-Ad series of diaphragm metering pumps provided by Siemens Water Technologies are designed to handle the most demanding applications in the treatment of potable water, swimming pools, wastewater and industrial processes. A well-balanced range of capacities combines with excellent reproducibility and optimal chemical resistance. Chem-Ad metering pumps are of the positive displacement-type driven by proven overload-proof motors. Since they are available with a wide choice of configurations ranging from manual to flow proportional to setpoint, these pumps can cover any metering requirement.

The XL Series, shown below, features an integrated LED display panel, touch-pad controls and multiple control functions, including feedrate setpoint with closed-loop control, flow/no-flow monitoring, batch operation and feedrate display.



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Key Benefits:

- Dependable low capacity metering from 0.06 USGPH (0.2 LPH) to 0.44 USGPH (0.5 LPH) and back pressures to 120 PSI (10 BAR @ 50 Hz)
- Reliable metering of most multi-phase fluids, particularly Sodium Hypochlorite, with integral auto de-gasing
- Flexible automatic signal input - analog or pulse
- Simple user-friendly pump calibration
- Continuous accurate chemical dosing
- Suitable for unmanned installations with auto controls and optional flow monitoring
- Easy to read back-lit digital display of pump capacity, strokes operating mode and alarm
- Low maintenance PVDF head standard
- Corrosion resistant IP65 enclosure
- CE marked electronics

Description

The Chem-Ad Series A model features manual control, or optional external control, and is designed to handle multi-phase solutions that tend to out-gas.

Due to its unique design incorporating pre-feeding and a gasket-free ceramic piston/cylinder unit the pump can maintain a high reproducibility even when handling very low feed rates at maximum stroke frequency.

Its smooth pulsation characteristics ensure high metering accuracy and long life of diaphragms and valves. Due to its unparalleled low noise level and its enclosure, IP65, the Chem-Ad Series A is perfectly suitable for laboratories and humid ambient conditions.

The basic model has an ON/OFF switch, a level switch input, and alarm output connection. The standard liquid end made of PVDF ensures a wide range of chemical resistance.

Controls

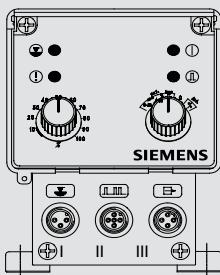
Manual - E11

Manual control on-line by means of a mechanical stroke length adjustment via a two-turn knob graduated 0 to 100%. An on/off switch is also provided. There are connections to accept level input and alarm output.

Automatic - E30

The E30 Automatic option provides:

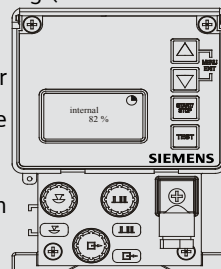
- Manual on-line stroke frequency regulation - from 0-100%.
- External control by 0/4-20mA or pulse input with stop function.
- Alarm output/stroke pulse output.



Automatic - E60 (XL Model)

The automatic E60 (XL Model) includes:

- An integrated LED display panel for easy to read, clear indication of operating status and user friendly programming.
- A four key membrane touch pad simplifies function selection.
- Local or remote control via analog (0/4-20mA or 20-4/0mA) or pulse input signals.
- Signal scaling allows for multiplying or division of the pulse input signal.
- Flow/no flow verification via an optional flow monitor.



Automatic - E60 Plus (XL Model)

With the addition of an intelligent control package (ICP) and Oval Gear Meter (OGM), the E60 becomes the full featured E60 Plus and includes:

- Set point controls with automatic frequency compensation for constant chemical feed
- Chemical consumption data logging
- Real time feed rate display
- Plug and play with calibration data storage on OGM
- Adjustable flow alarm points

Spares and Accessories

Liquid End PM Kits® Parts

For every model of the Chem-Ad Series A, a corresponding maintenance kit is available. This economically priced package contains all spare and wear parts for a prompt and quick maintenance of the liquid end. The Chem-Ad series is available with additional useful accessories.

Suction Lance

This option includes pre-wired, built-in low and empty level switches, foot valve and strainer. This option is recommended with the Series A pump.



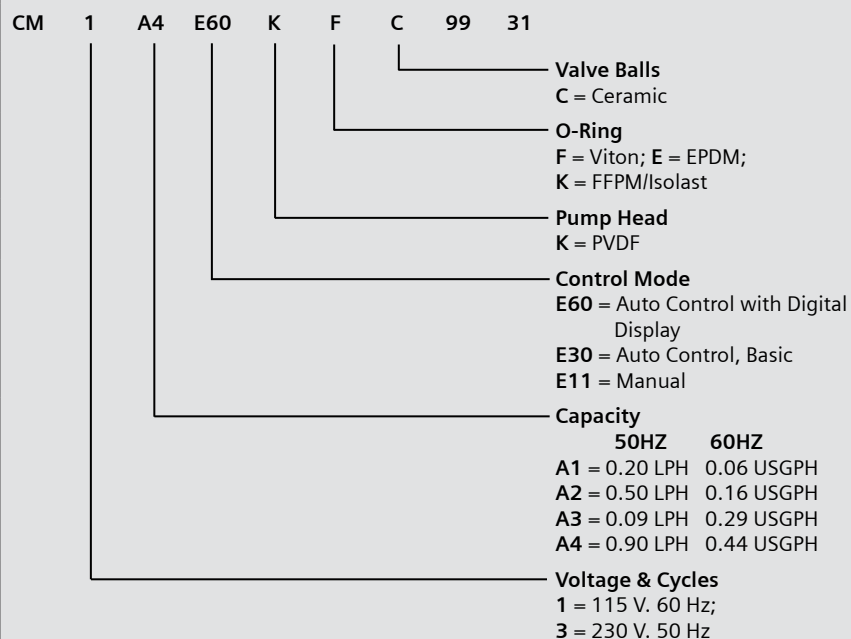
Intelligent Control Pack

Oval Gear Meter

Selection Guide

To allow easy selection, the Chem-Ad series is engineered to the modular design principle. The selection criteria shown below provides a perfect guide to define the right pump for the respective duty.

SELECTION CODE (EXAMPLE)



Options / Series A	E11	E30	E60	E60 Plus
ON-OFF Button	X	X	X	X
Manual Stroke Length Control	X	X	X	X
Stroke Frequency Control		X	X	X
Level Switch Input (low level and empty)	X	X	X	X
Power Cord and Plug	X	X	X	X
External Analog Input (0-20 or 4-20 mA)		X	X	X
External Analog Input (0/4-20 mA) or (20-4/0 mA)			X	X
Input Signal Scaling			X	X
External Pulse Input		X	X	X
Remote On / Off		X	X	X
Batch Mode & Pulse Storage			X	X
Alarm Output & Stroke Pulse Output		X	X	X
Membrane Touch Pad			X	X
Flow Monitoring (OGM Required)			X	X
Integral Back-Lit Digital Display			X	X
Password Protection			X	X
Capacity Display			X	X
Multiple Language Display (English, German, French)			X	X
Flow Totalizing				X
Set Point Control				X

Note - E60 Plus models require ICP & OGM combination.

Technical Data

Maximum Capacity USGPH (LPH) 60 Hz LPH @ 50 Hz	0.06 (0.24)	0.16 (0.6)	0.29 (1.08)	0.44 (1.68)
	0.2	0.5	0.9	1.4
Max. Back Pressure	120 PSI, 60 Hz / 10 Bar, 50 Hz			
Piston Diameter (mm)	3	4.76	6.34	8
Stroke Frequency Max. (SPM) @ 60/50 Hz	144 / 122			
Capacity / Stroke Max. (cm³)	0.027	0.068	0.12	0.19
Accuracy	± 2 % over 10:1 range (minimum of 20 % stroke length)			
Max. Suction Lift at 100%*	6 Ft (2 Meters)			
Max. Back Pressure of Return	4.5 PSI / 0.3 Bar			
Suction and Return	2m Duo Hose 6mm ID Supplied			
Metering Discharge	1/4" OD x 0.040" Wall Thickness			
	2mm x 4mm	4mm x 6mm		
Power Supply	115 V, 60 Hz (230 V, 50 Hz) (Power Cord and Plug Supplied)			
Current (mA) 115/230 VAC	172 @ 60 Hz / 81 @ 50 Hz			
Max. Power Input (W) 115/230 VAC	18.7			
Enclosure	IP 65			
Max. Ambient Temp.	104°F (40°C)			
Insulation Class	B			
Alarm Output Low Level and Tank Empty Contact	Dry contact 24 V, 3 Amps AC/DC or 240 V, 3 Amps AC/DC			
mA Input	0/4-20 mA (E30) / 0/4-20 mA or 20-4/0 mA (E60 & E60 Plus) Max. Impedance 50 Ohms			
Pulse Input	Dry contact, Min. 15 msec pulse width E30 Max. Frequency - 144 Pulse/min., E60 & E60 Plus - 50 Hz			
Stroke Signal Output	1 Pulse Per Stroke, Dry Contact Rated 24 V DC, 300 mA			
Weight	6 lbs / 2.4 Kgs			

Materials of Construction

Pump Head: PVDF

Metering Piston/Cylinder: Ceramic

Diaphragm: PTFE-EPDM Composite Diaphragm

Valves: PVDF

Valve Balls: Ceramic

O-Ring: FPM, or EPDM, FFPM/ Isolast

Valve Springs: Hastelloy

Housing/Finish: Thermoplastic Polyester

* Suction lifts with clean, wetted valves

Suction Lance with tank level switches is recommended for all capacities.
All data refers to water at 68°F as per the instruction manual.

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Dimensions (See Literature)

CN 441.600 - Unit Dimensions

CN 441.601 - E11/E30 Control Panel

CN 441.630 - E60-E60 Plus Control Panel

CN 441.650 - OGM Dimensions

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