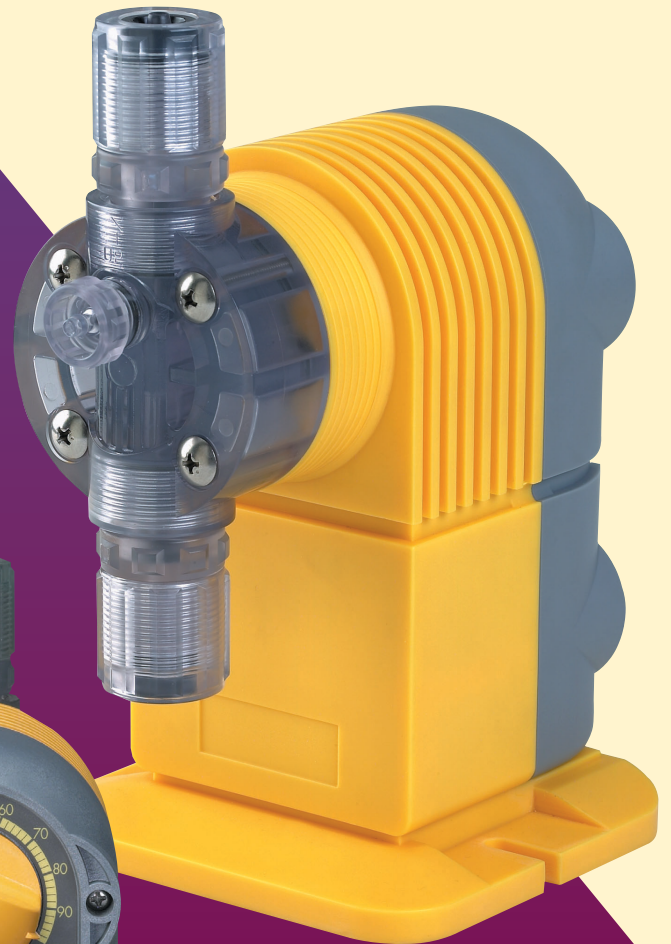


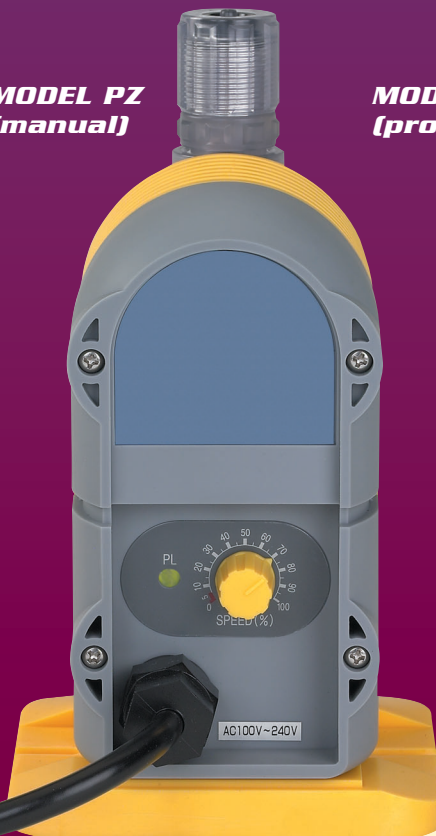
Series PZ - Pulse Metering Pumps

- Manual or programmable
- A single model accepts either pulse or milliamp signals
- Operates on any single-phase voltage from 94 vac through 264 vac
- Pump delivery is not affected by voltage fluctuations
- Excellent Priming Capability: Primes easily and stays primed. Perfect for sodium hypochlorite applications.
- Economy: Inexpensive but superior quality. One of the most rugged pumps on the market.
- US Patent #6,283,717

Neptune
CHEMICAL PUMP CO., INC.



MODEL PZ
(manual)



MODEL PZi8
(programmable)





PZ & PZi Features		PZ	PZi4	PZi8
Manual control	<ul style="list-style-type: none"> • PZ Models (Speed only is adjustable from 15 to 300 SPM) • PZi Models (Speed 1 to 300 SPM plus stroke length 50% to 100%) 	◆	—	—
Stop signal input	<ul style="list-style-type: none"> • External interlock (Examples: level switch, flow switch) 	—	◆	◆
Operation display	<ul style="list-style-type: none"> • Indicates speed and other operational data • Indicates speed, feed rate* and other operational data 	—	◆	◆
Signal input 4-pin connector	<ul style="list-style-type: none"> • Pulse signal (Frequency-division 1/1 to 1/9999, Multiplication 1 to 9999) • Analog signal (Shift function, Proportional band function) 	—	◆	◆
Signal output** 8-pin connector	<ul style="list-style-type: none"> • Alarm output (Level switch, injection monitor*) • Operation pulse signal (Synchronous pulse output for each stroke) • Operation progress signal (Time or number of strokes remaining in program) 	—	—	◆
Other functions	<ul style="list-style-type: none"> • Interval operation (Repeat cycle program, see below) • Counter (Countdown batch injection, see below) 	—	—	◆

*When used with flow checker shown on page 5.

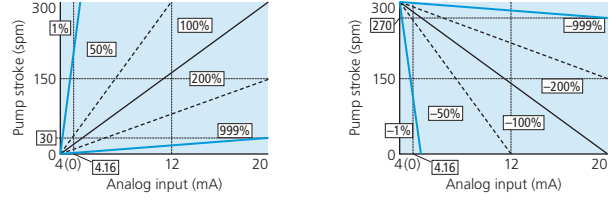
**Two separate outputs. Can be open collector or pulse.

ANALOG SIGNAL INPUT PZi4 and PZi8

DC4(0) to 20mA input

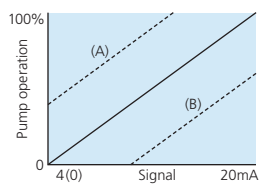
1. Proportional band function

The proportional band can be adjusted within a range of $\pm 1\%$ to $\pm 999\%$. Pump response to increasing input signal is easily reversed from min. 4mA and max. flow at 20mA to max. flow 20mA and min. flow at 4mA.



2. Shift function

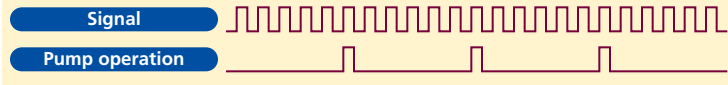
Shift can be set within the range $\pm 100\%$ allowing a min. preset flow at 0 (4mA) signal or allowing no flow until the input signal exceeds a preset value.



PULSE SIGNAL INPUT PZi4 and PZi8

1. Frequency-division (1/1 to 1/9999 adjustable)

Example: 1/6 frequency-division



2. Multiplication (1 to 9999 adjustable)

Example: 5 times multiplication

(A) Pulses 5 times—next 5 strokes at normal operating speed.



(B) Pulses 5 times evenly spaced over one minute.



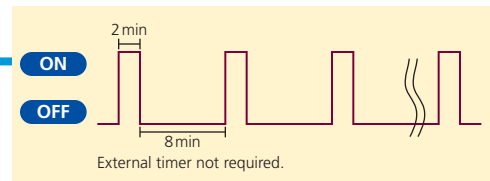
PULSE SIGNAL INPUT PZi8 ONLY

1. Counter (Metering batch injection)

Pump pulses up to max. 9999x1000 times by a start (switch) signal. Multiplication settings: x1, x10, x100 and x1000. Display counts down.

2. Interval function - repeat cycle

ON time and OFF interval can be easily set from 1 to 9999 minutes respectively.

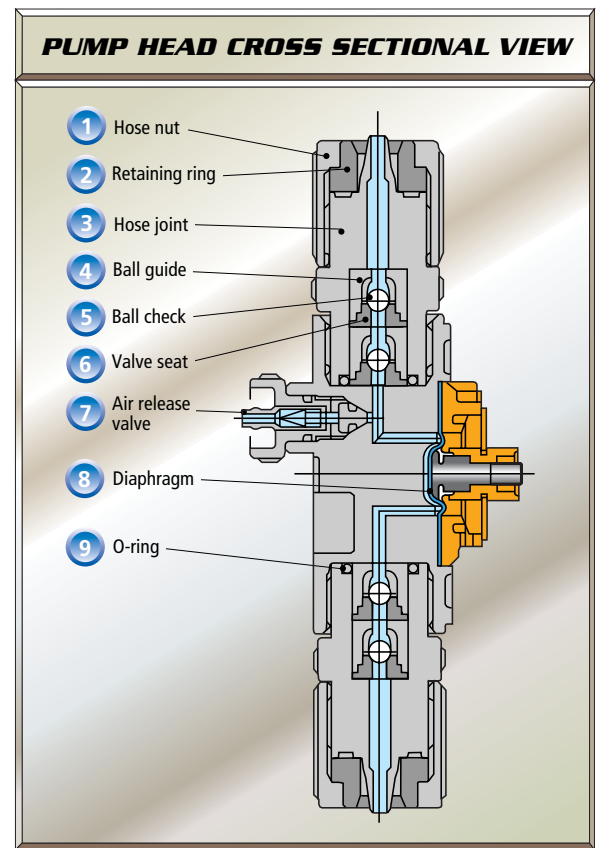


Advantages

- Digital settings from 15 to 300 pulses per minute on PZ models and from 1 to 300 pulses per minute on PZi models
- High stroking speed ensures more uniform distribution of chemical at low feed rates
- Pump delivery is constant at any voltage from 94 to 264 vac single phase and is not affected by voltage fluctuations
- Outdoor use—pump is water and UV resistant. Equivalent to IEC specification IP65. Dust proof, wash down duty (with proper electrical connection).

Applications

- Injection of chemicals to boilers and cooling towers
- Chlorine sterilization for food plants, small-scale water-supply systems, buildings and swimming pools
- Injection of nutrients and disinfectants in the livestock industry, such as poultry and hog producers, as well as for hydroponic cultivation
- Chemical injection for laboratories and pilot plants
- Very low flow rate injection of low viscosity liquids for any application (100 CPS max.)



Flow Indicator-Totalizer

- 1/16 DIN Case
- Pulse Input: NPN open collector or voltage pulse
Integral 12 VDC sensor power supply
- Analog Output: 4–20 mA DC
- User Scalable Indication Displays for Flow Rate and Totalized Flow:
 - Flow Rate: 4-digit, 8mm LED, decimal point selection
 - Totalized Flow: 5 digit, 8mm LED, decimal point selection
- Flow rate is averaged over 9 to 90 second user adjustable time period
- Two Alarm Outputs and Displays: Can be assigned to totalized flow for Batch Control
- Remote or Local Reset
- Remote Inhibit Terminals
- Power Requirements: 94 to 264 VAC, 50 to 60 Hertz, 5 VA
- Power Interruption: 30 day memory retention



INCLUDED WITH EACH PUMP:

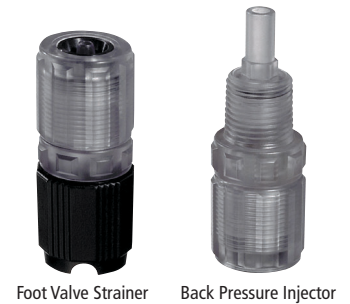
Foot Valve Strainer

Back Pressure/Check Valve Injector with Quill

Suction, Discharge and Air Release Tubing

Power Cord with 3-Prong Plug

Signal Cable with Multi-Pin Connectors (PZi4 and PZi8 models)



Degassing Head Option

AVAILABLE ON ANY MODEL

Available on any PZ or PZi model simply by adding "AR" to the front end of the model number. Example: PZ-31 with degassing head becomes Model ARPZ-31.



SPECIFICATIONS AND PERFORMANCE TABLE

For higher capacities, see Bulletins PX and DP-500E.

□: PZ, PZi4 or PZi8

SPECIFICATION ▼	MODEL ►	□-31	□-61	□-12
Maximum discharge volume GPH (ml/min)		0.47 (30)	0.94 (60)	1.58 (100)
Maximum discharge pressure (Kg/cm ²)		140 psi (10)	115 psi (8)	60 psi (4)
Stroke length (mm)		1.0	1.0	1.0
Connection		3/8 OD x 1/4 ID TUBE		
Weight (lb)		4	4	4
Maximum power consumption (VA)		220	220	220
Average power consumption (W)		16	16	16

NOTES: 1. PZi4 models include 2-meter cable with 4-pin connector on one end.

2. PZi8 models include separate 2-meter signal cables, one each with 4-pin and 8-pin connector end.

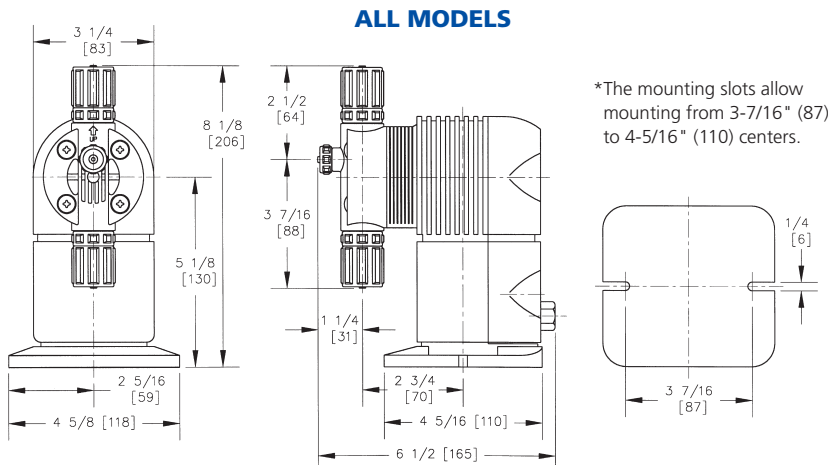
LIQUID-END MATERIALS

PART NAME	LIQUID-END MATERIAL
Pump Head, Hose Joint, Foot Valve, Injector Body	PVC
Diaphragm	PTFE
Valve Seats and O-Rings	Fluororubber (EPDM available)
Ball Check	Ceramic (Hast C available)
Injector Spring	Hast C

NOTE: 1. The special fluororubber is Diel 801, a vinylidene fluoride-hexafluoro-propylene base fluororubber rated for sanitary service.

EXTERNAL DIMENSIONS

Dimensions are shown in inches (mm).

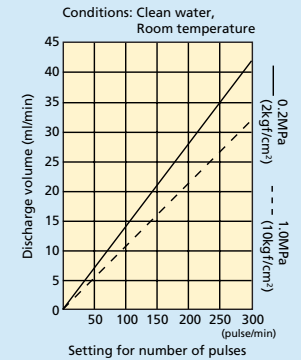


CAUTION

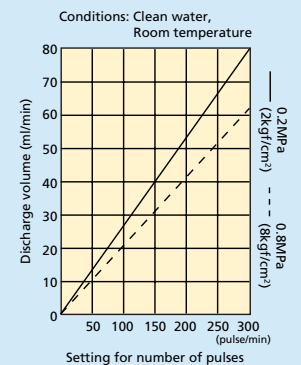
- Ambient temperature: 32 to 104°F (0 to 40°C)
Pumped liquids: Temperature: 32 to 104°F (0 to 40°C), Viscosity: 100 CPS or less
- This pump is designed for outdoor use. Avoid installing pump in a location where service life could be shortened (i.e., where it is exposed to direct sunlight or rain).
- This pump cannot pump liquids containing a slurry.
- If there is a shutoff valve in the discharge piping, a relief valve should be installed on the discharge side, close to the pump.

PERFORMANCE CURVES

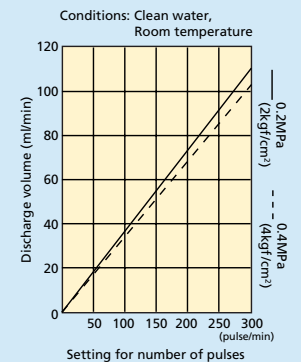
MODEL □-31



MODEL □-61



MODEL □-12



□: PZ, PZi4 or PZi8

TYPICAL CHEMICALS

Aqueous ammonia (NH₄OH)

Hydrochloric acid (HCl) to 20%

Hydrogen peroxide (H₂O₂) to 30%

Caustic soda (NaOH) to 40%

Acetic acid (CH₃COOH) to 20%

Sodium hypochlorite (NaOCl) to 12%

Poly-aluminum chloride (PAC)

Sulfuric acid (H₂SO₄) to 60%

Aluminum sulfate (Al₂(SO₄)₃)

Feed Verification

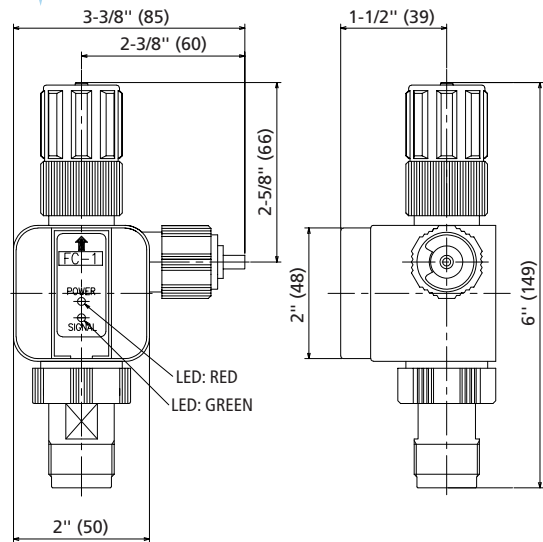


**MODEL FC-1
FLOW
CHECKER**

The Model FC-1 Flow Checker output provides vital information for water treatment programs requiring feed verification to manage chemistry and monitor drum inventory.

- The flow checker mounts directly to the discharge of PZ and PZi metering pumps.
- The flow checker is an oval gear flow meter which measures the pump output and transmits one pulse for each 1 ml of flow.
- Flow checker output can be directed to Model PZi8 Pumps for instantaneous indication of pump output displayed on the pump LCD. The flow checker output can also be directed to a Neptune Model FLC100-B Flow Indicator–Totalizer, to display both instantaneous flow and totalized flow.
- Connect the flow checker output to your controller or PLC.

DIMENSIONS inches (mm)



**MODEL FLC100-B FLOW
INDICATOR–TOTALIZER**
see page 3

MODEL SELECTION CHART

MODEL NUMBER	MATERIAL	USE w/ PUMP MODEL
FC-1P-P-N1	Ryton*	PZ or PZi-31
FC-1N-P-N1	Noryl**	PZ or PZi-31
FC-1P-P-N2	Ryton*	PZ or PZi-61 or -12
FC-1N-P-N2	Noryl**	PZ or PZi-61 or -12

LIQUID-END MATERIALS

PART NAME	MODEL FC-1P-□	MODEL FC-1N-□
Body	Ryton*	Noryl**
Ball Check	Ceramic	Ceramic
Ball Guide/Joint	PVC	PVC
Valve Seat/O-Ring	EPDM	Fluororubber

* Ryton: PPS — Polyphenylene-sulfide (for general chemicals)
** Noryl: PPO — Polyphenylene-oxide (for sodium hypochlorite)

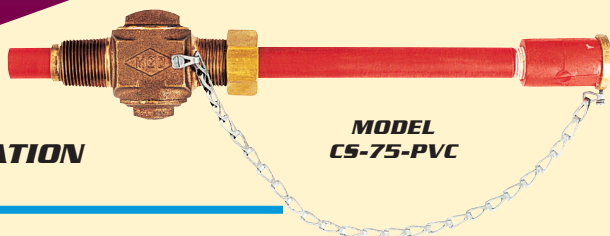
SPECIFICATIONS

Pulse constant	1mL/pulse
Accuracy	±4% (Depends on nature of chemical, flow rate, temperature and back pressure.)
Normal operating pressure	140 psi (10 Kg/cm ²)
Momentary maximum operating pressure	200 psi (14 Kg/cm ²)
Temperature	32–104°F (0–40°C) (Liquid should not freeze.)
Liquid viscosity	1 to 50 cps
Output	Open collector (Collector capacity: 30V, 30mA)
Power requirement	4.5 to 25VDC (20mA Max.)

Green LED lights for each pulse output. Red LED on when the power is ON.

NOTES: 1. Do not use the flow checker if tiny particles may be contained in the pumping liquid.
2. Pressure loss is 0.5 Kg/cm² (at maximum flow rate using water).

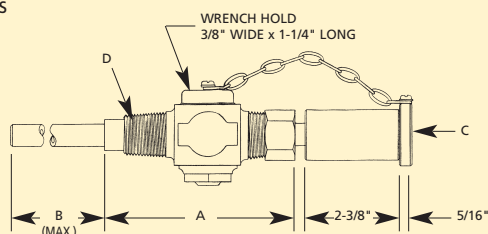
Quality Accessories by Neptune



CORPORATION STOPS

Use: Injection of chemicals pumped by proportioning pumps into tanks, mains, cooling towers and process systems.

Request Bulletin CS



MODEL	MATERIAL OF CONST.	SIZE (D)	DIMENSIONS		
			A	B	C
CS-75-PVC	CPVC	3/4" NPT	4 3/4"	8 1/2"	1/2" NPT
CS-100-PVC	CPVC	1" NPT	5 5/8"	7 7/8"	1/2" NPT

Kynar, 316 SS and C-20 also available.

PORTABLE MINI-TANK FEEDERS

Mini-tank system offers portability and economy. Compact 23 1/2" wide, 36" long, 29" high size fits through doorways, in elevators and allows installation in small areas. Tank removes from base for ease of transport and handling.

- Total weight: 40 lbs. plus pump
- Use with electronic or motor driven pumps
- 8" manway standard

Request Bulletin CFS

MODEL	DESCRIPTION
MT-30	30 Gallon System includes polypropylene suction piping with isolation valve and "Y" strainer (pump not included)
MT-30T	30 Gallon Molded Tank and Base Only
OPTIONS AND ACCESSORIES	
MT-CC	Calibration Column
MT-CT	Containment Basin
MTA	1/20 HP Mixer



MODEL MT-30

POLYETHYLENE SOLUTION TANKS & AGITATORS

For PZ/PX Series Pumps (Top Mounted)

- Self Supporting
- For Corrosive or Non-Corrosive Solutions
- Molded cover will accept "PZ/PX" Series Pumps and Neptune Economy Agitators
- 30 or 50 Gallon Sizes



MODEL ST-50

TANKS

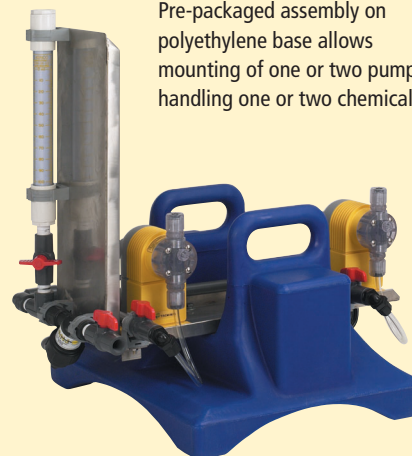
MODEL	SIZE	HEIGHT	DIA. MAX.	WEIGHT
ST-30	30 Gal.	23"	22"	19 lbs.
ST-50	50 Gal.	32 1/2"	22"	20 lbs.

AGITATORS – PVC suction protector pipe included

MODEL	DESCRIPTION	WEIGHT
AN-316-30	316SS shaft and propeller, fits 30-gallon polyethylene tank; 19" long shaft	14 lbs.
AN-316-50	316SS shaft and propeller, fits 50-gallon polyethylene tank; 29" long shaft	14 lbs.
AN-E-30	Epoxy-coated shaft and impeller, fits 30-gallon polyethylene tank; 19" long shaft	14 lbs.
AN-E-50	Epoxy-coated shaft and impeller, fits 50-gallon polyethylene tank; 29" long shaft	14 lbs.

EZE-GRAB DUAL PUMP PLATFORM

Pre-packaged assembly on polyethylene base allows mounting of one or two pumps handling one or two chemicals.



SOLD BY:

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 Toll-Free Fax: 1-800-255-4017
 Web Site: <http://www.neptune1.com>
 E-mail: pump@neptune1.com