

Electric Stroke Control

Purpose

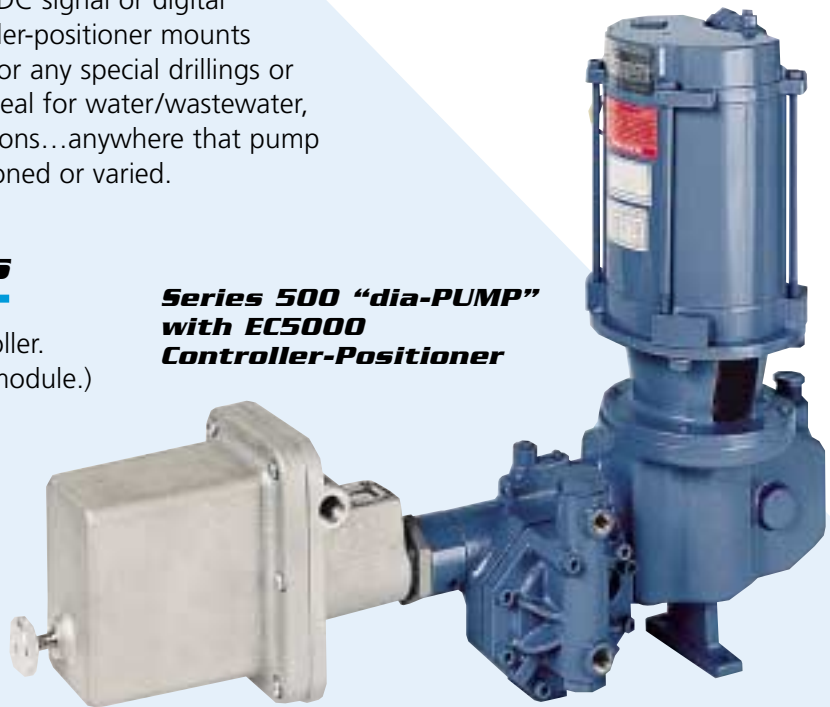
The Neptune Electric Stroke Control allows the capacity of any Neptune Series 500 or Series 600 "dia-PUMP" to be automatically controlled in response to a standard 4-20 mA process signal. Also accepts 0-5 VDC/0-10 VDC signal or digital pulse train inputs. One-piece controller-positioner mounts directly to the pump. No machining or any special drillings or tappings needed to retrofit pump. Ideal for water/wastewater, power and process industry applications...anywhere that pump flow must be automatically proportioned or varied.

Features/Benefits

- Stroke position indicator on controller. (Also on optional remote control module.) Permits fast, easy visual check of pump stroke length.
- Remote control unit (optional). Allows manual override and monitoring from remote location.
- Switch reversible. Allows direct or indirect response to signal.
- Separate signal and power entrance connections to terminal blocks.
- Adjustable ratio. Great control flexibility.
- Signal interruption "memory." If process signal is lost, unit can remain in its last position or move to a preset position.
- Adjustable travel time: 15 seconds minimum
- Input signal optically isolated from the line voltage. Eliminates inexact positioning which could be caused by extraneous electrical interference.
- Alarm function relay monitors: 1) movement to max/min preset limits; 2) movement to adjustable upper/lower limits. Gives early warning to malfunctions or process upsets, allows for quick corrective actions.

Neptune
CHEMICAL PUMP CO., INC.

**Series 500 "dia-PUMP"
with EC5000
Controller-Positioner**



Specifications

- NEMA 4 or Explosion-Proof (Class I, Division 1, Groups C & D; dust & ignition-proof rated Class II, Division 1, Groups E, F & G)
- Power supply: single phase 120/240 VAC 60 Hz or 110/220 VAC 50 Hz
- Operating temperature: 0°F to 150°F*
- Adjustable ratio: 2:1 or 1:2
- Input signal: 4-20 mA or 0-5 VDC or 0-10 VDC switch selectable; load 200 ohms. Also accepts digital pulse input direct from PLC (dry contacts).
- Output: isolated 4-20 mA; loop-powered, up to 600 ohms at 24V
- Precise pump stroke positioning accurate to $\pm 0.5\%$

*Limited by temperature at which chemical thickens or freezes.

Electric Stroke Control for Series 500/600 Pumps

Controller-Positioner fits all Series 500 pumps:

EC5004* (NEMA 4 Enclosure)

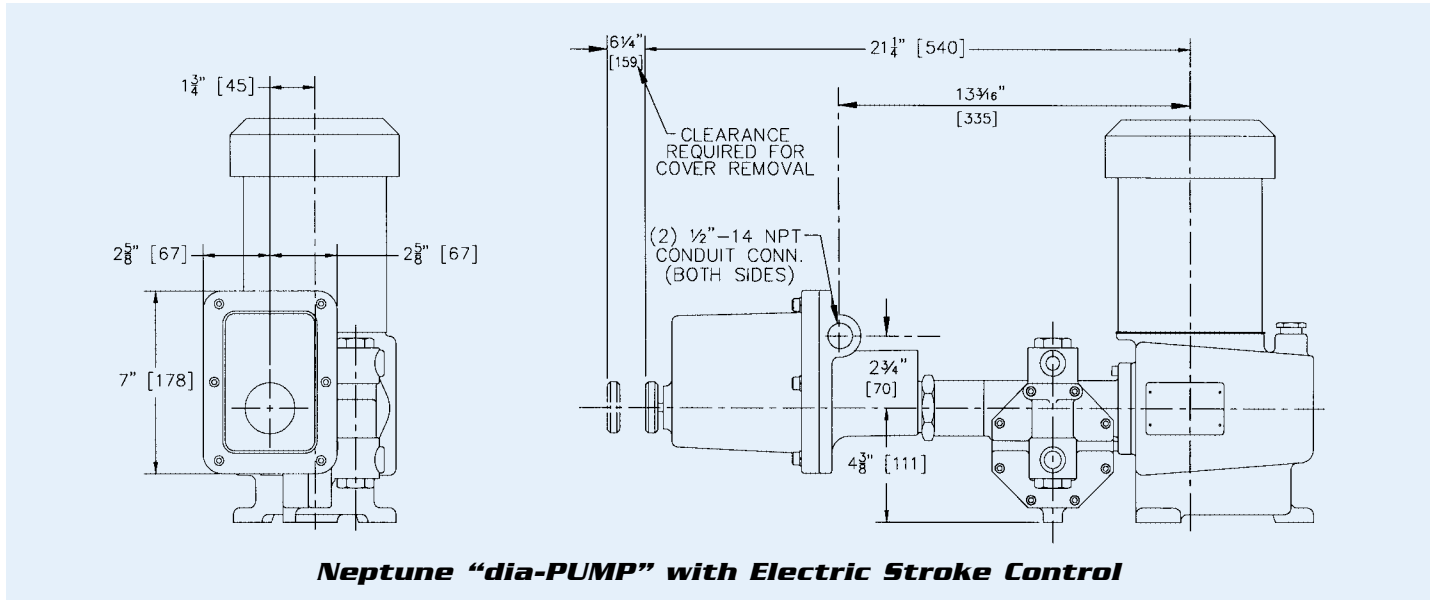
EC5000* (Explosion-Proof)

*NOTE: Can be mounted on only one head of a duplex pump.

Controller-Positioner fits all Series 600 pumps:

EC6004 (NEMA 4 enclosure)

EC6000 (Explosion-Proof)



ER1000 Remote Control Station

The optional ER1000 Remote Control Station allows manual override and monitoring of pump stroke from a remote location. The ER1000 includes an ON/OFF switch, auto/manual switch, digital stroke length indicator and stroke adjustment thumbwheel on the front panel. NEMA-1 enclosure, Power 115 VAC. For use with any controller-positioner above.



ER1000 Remote Control Station

Reversing Feature

Allows selection between direct or indirect response to increasing or decreasing signal.

EXAMPLE: Normal operation is "Forward" or "Direct" where increasing signal results in increased flow. A simple instrument may have a 4-20 mA linear signal output corresponding to a pH of 1 to 14. Using the reversing feature allows greater pump flow as pH (mA signal) decreases.

Ratio Control

Allows precise adjustment of pump response.

EXAMPLE: A pump flow of 0 to 15 gph is required in response to a 4-20 mA signal. The Neptune pump available is rated at 18 gph. Calculating that 15 gph is 83% of the maximum pump flow shows that the pump should be positioned at 83% of stroke length when a 20 mA signal is received. To calibrate, provide a 20 mA signal, thus causing the pump to move to 100% stroke length. Turn the ratio adjustment until the pump stroke moves to 83%. The pump will now provide 0 to 15 gph in response to a 4-20 mA signal.

Ratio control allows the full 4-20 mA signal range to be used over one half of the available pump stroke length, either 0 to 50% or 50 to 100%. Conversely, half of the 4-20 mA signal (4-12 or 12-20 mA) can drive the pump over the full stroke length.

Ratio and reversing features may be used in combination for nearly limitless control flexibility.