

Simplify Pump Replacement & Scale Cycle Rate to Tool Algorithm

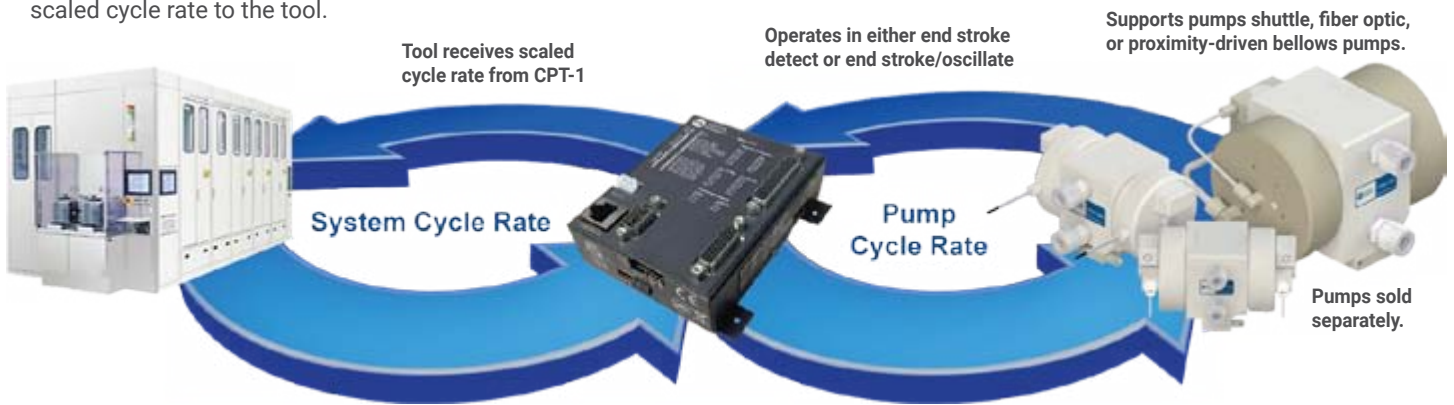
Manage cycle rates to prevent errors and eliminate steady-state cycle rate alarms.

The Cycle Rate Translator (CPT-1) enables swapouts of competitive pumps in existing tools. It operates the replacement White Knight pump at its optimal cycle rate and scales its operational cycle rate to match the rate expected by the tool. It manages cycle rate errors and eliminates steady-state cycle rate alarms. It can be configured to work with any system setup.



Operation

The CPT-1 maintains two separate communication loops. It operates the pump and calculates its cycle rate; it scales the cycle rate, and communicates the scaled cycle rate to the tool.



Features & Benefits

Cycle Rate Translator

- Customize cycle rate scale
- Simple Plug-&-Play integration using industry standard protocols
- Software interface simplifies system setup
- Switch between operation modes quickly and easily
- Compatible with full line of White Knight bellows pumps



Features & Benefits of White Knight Pumps

- No metals; no elastomer O-rings
- Ultra-high purity pump designs compatible with the industry's most demanding chemicals
- Flexible design integration allows White Knight pumps to be positioned above or below the fluid reservoir
- Dead-head capable operation
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- Capable of up to 30, 60, or 140 lpm flow rates; 100 psi pressures; 210°C temperatures (depending on model)
- Compact footprint
- No electric motors; no heat rise



<https://wkfluidhandling.com/cpt/>

Wiring Configurations

The CPT-1 works in various configurations. In systems with tool-to-controller communications, the CPT-1 receives signals from tools to turn on/off and sends cycle rate signals to the tool. CPT-1 also sends signals to open valves to operate pumps, and it receives end detect signals from pumps. There is no need to connect leak detection to the CPT-1 if a tool handles leak errors; if the tool does not handle leak detection, it can be wired into the CPT-1.

Wiring Connections

Digital I/O Connections: 44 Pin HD D-Sub Connector

Each digital input can be wired into either a high or low voltage reference. The controller sends voltage source or voltage sink digital outputs to control or to be read by other devices. The controller will turn on both corresponding voltage source and sink when turning on an output.

Digital Inputs Include:

- Left/Right signal from system
- Left/Right signal from end stroke sensors
- Left/Right leak detect sensors
- Leak Reset Input

Digital Outputs Include:

- Left/Right Solenoid Valve outputs
- Left/Right Scaled Cycle rate signal
- System Enabled signal
- Leak detected signal

* Digital inputs are configurable to voltage reference high or low.
* Digital outputs are configurable to be voltage source or sink.
* Digital ports must be powered with an external source.

Power Requirements

CPT-1 power consumption 2.5 watts typical with max of 4 watts.

High-power outputs

- (12 –24 VDC, 500 mA)

Low-power outputs

- (5 –24 VDC, 25 mA)

Controller Options

Breakout board to screw terminals



Digital I/O cable to wire leads



24 VDC 60 with external power

Communications

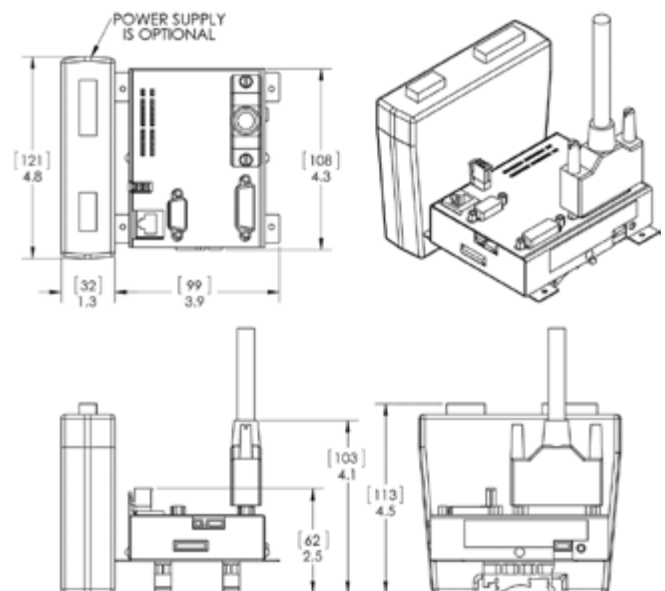
Controller can be setup easily using a Windows computer via either a standard RS-232 communication protocol or a 10/100 Base-T Ethernet port. It supports automatic IP Address assignment over DHCP Network.



Dimensions

CPT-1 with Wire Connectors

Dimensions [mm] in.



CPT-1 with Screw Terminals

Dimensions [mm] in.

