

Packaged Pumping System With Integrated Cooling Tower Control

Model PPS-CTC

The Model PPS-CTC, Packaged Pumping System with Integrated Cooling Tower Control is a UL-Listed factory assembled and tested system used in Cooling Tower applications. The PPS-CTC is configured for automatic control of Cooling Tower Fans and may be arranged with an optional *Variable Frequency Drive* in any industrial or commercial application. Cooling Tower water enters a common system header and by use of centrifugal pumps is pumped at a controlled flow rate to a common discharge header. The flow rate is controlled by use of a manually-adjusted flow control valve. A UL-Listed control panel with single-point power connection and Integrated PLC-based Temperature Controller is pre-wired to all electrical sources. The controller may be configured with multiple temperature, pressure, or flow output signals for use with Cooling Towers or Fluid Coolers. Each Unit is custom engineered and designed to meet specific system requirements. All systems are fabricated and welded per ASME Section IX Code and Standards, and are Hydrostatically tested prior to shipment. The PPS-CTC provides for quick installations and efficient operations through use of the fully integrated system configuration.

STANDARD CONSTRUCTION

- Structural Channel Base
- Carbon Steel Piping
- Operational Testing
- Pump Isolation Valves
- Hydrostatically Tested
- Industrial Enamel Coating

CONDITIONS OF OPERATION

Max. Allowable Pressure:	125 psig / 8.6 bar
Max. Allowable Temperature:	240 °F / 115.5 °C



Legend:

- A. Base-mounted, End-suction Centrifugal Pumps
- B. Triple Duty Valve
- C. System Inlet / Outlet Thermometers
- D. Pump Differential Pressure Gauge
- E. UL-Listed Electrical Control Panel with Integrated Cooling Tower Controller

SYSTEM OPTIONS

- Stand-by pumps
- Suction Diffuser
- Panel-mounted Gauges
- Flexible Connectors
- Vibration Isolation
- Variable Frequency Drives

Model PPS-CTC
Packaged Pumping System Order Form

Form 01-PPS-CTC

Specify the following parameters:

I. Cooling Tower Flow Rate = _____ GPM

II. System Differential
Pressure Required = _____ psid

III. System Inlet
Pressure = _____ psig

IV. System Temperature (Min / Max) = _____ °F

VI. System Electrical = _____ V _____ Hz

VII. System Volume = _____ Gal.
(for Closed System applications)

Note: System medium assumed to be water, unless otherwise specified.

SYSTEM OPTIONS

Stand-by Pump

Pressure Gauges

Pump Suction Diffuser

Vertical In-line Pump

Split-coupled Vertical In-line Pump

Horizontal Split-case Pumps

Closed-coupled end-suction Centrifugal
Pump

Auto standby pump start on lead pump
failure

Auto Pump Alternation

Pump Variable Frequency Drives

Cooling Tower Fan Variable Frequency
Drives

Remote start connection

Make-up water assembly

Panel-mounted Differential Pressure Gauges

Pump Run Time Hour Meter

Outdoor use Rating

Outdoor Cabinet

System Inlet/Outlet Isolation Valves

System Flow Switch

Differential Pressure Switch across Pump
suction/discharge

System drain valves

Flexible Connectors

Vibration Isolation

Expansion Tank

Air Separator

Regardless of system size, temperature,
pressure, fluid medium, or space requirements,
EnviroSep can provide solutions to all specialized
needs.

EnviroSep • Fluid & Heat Recovery Systems
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Typical Specifications for PPS-CTC

Furnish and install one **EnviroSep**
Model PPS-CTC- [A] - [B] - [C] - [D] Packaged
Pumping System with the system capacity to pump
_____ GPM of _____ (fluid) from
_____ psig to _____ psig.

KEY:

[A] = Model # (GPM)

[B] = # of pumps (1,2,3,etc.)

[C] = Parallel (P) or Stand-by (S) pump designation

[D] = Manual (M) or Automatic (A) alternation for
multiple pumps

GENERAL - This package shall be factory assembled
with pump(s), fabricated steel frame, interconnection
piping(welded per ASME Section IX certified
welders), UL-listed Industrial Control Panel factory
wired for single-point field connection per NEC.

PUMPS-Pump(s) shall be single, end-suction type
with radically split, top center-line discharge, self-
venting casing. Pump construction shall be cast iron,
bronze fitted and shall be fitted with a long-life,
product lubricated, drip tight mechanical seal, with O-
ring seat retainer. Impeller shaft to be 416SS fitted
with a SS shaft sleeve and be supported by two heavy
duty ball bearings. The design shall allow back pull
out servicing, enabling the complete rotating assembly
to be removed without disturbing casing piping
connections. The pump shall be mounted on a rigid,
single base plate and by flexible with guard to the
motor. Seal shall be rated for continuous duty at
270°F, motor shall be open drip proof, NEMA MG-1
with 1.15 service factor

TRIPLE DUTY VALVE- System shall include, on
the discharge of each pump, a combination valve
incorporating three functions in one body: tight shut-
off, spring closure type silent non-slam check, and
flow measured/throttling. Valve body shall be ductile
iron with two ¼" NPT connections on each side of the
valve seat. The valve disc shall be bronze plug disc
type with high impact engineered resin seat to ensure
tight shut-off and silent check valve operation. Valve
stem shall be SS with flat surfaces provided for
adjustment with open end wrench.

SUCTION DIFFUSER- System shall include, on the
suction of each pump a suction diffuser with cast iron
body, outlet guide vanes and removable SS strainer.

VARIABLE FREQUENCY DRIVE – Variable
Frequency Drive shall be variable torque AC inverter
enclosed in NEMA 1 or 12 enclosure. Standard
features shall include circuit breaker disconnect,
Hand-Off-Auto selector switch, manual potentiometer
(speed pot), door-mounted keypad, run relay contacts,
fault relay contacts, and top/bottom conduit entry.
Drive bypass shall be provided as standard with

Drive-Off-Bypass selector switch. Class 20 overloads
are included.

SYSTEM CONTROLLER – Controller shall include
all controls necessary to operate the system as a stand-
alone system. The PLC-based controller shall be of
the same manufacturer as the Packaged Pumping
System. Controller shall include Remote/Local
system start capability. Acceptance of up to 16 remote
4-20 ma signals shall be provided for modulation of
pump speed, and other optional control functions.
Enclosure shall be NEMA 12 with thru-the-door
disconnect. Operator Interface shall be a color touch
screen type. Controller shall include independent PID
control loop for each remote signal.

CONTROL PANEL - System shall include one (1)
UL - Listed, NEMA 12, Industrial Control Panel with
single-point power connection, pre-wired to all
electrical components. Panel shall have thru-the-door
fused disconnect; magnetic circuit breaker
supplementary motor protector with fast-closing
contacts, non-reversing 3-pole contactor, and variable
setting, bi-metallic overload relay for each motor; 30
mm Foundry-duty switches; 30 mm Corrosion
Resistant pilot lights; control transformer; Automatic
Alternator (if required). Operation of each pump shall
be Hand-Off-Auto with external connection to
terminal blocks. When standby pump(s) are used, the
standby pump(s) shall
manually/automatically(customer specified) start on
primary pump failure. All internal wiring shall be
placed in conduit.

MANUFACTURER - Shall assume system liability,
and performance guarantee and warranty all
equipment on system for 12 months after initial start-
up.

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