

## DP Systems

### Product Description/Equipment Specifications

**F**LEXIBILITY  
**L**ATITUDE  
**E**NGINEERING  
**E**XECUTION  
**E**XCELLENCE

*Process Water Systems designed with ultimate **FLEXIBILITY** in mind.*



Photo is for illustrative purposes only

#### Features at a glance:

- Quick Delivery
- Minimal field installation required
- Multiple configurations
- PLC Controlled
- Controls are UL listed
- Seismic Zone 4 compliant (support for exchange tanks provided separately)
- Flow rates ranging from 5 to 50 GPM
- Small foot print
- Skid Mounted
- On-board water quality monitor
- Variety of Piping Material Options
- Custom Configurations available.
- System wide O&M Manual

#### General Description:

FLEXX™ DP Systems are distribution polish systems complete with re-pressurization pump, pre-filter, final filter; *optional* bacteria destruct ultraviolet light, integral PLC, and on-board water quality monitor. Standard product flow rates range from 5 to 50 gallons per minute and are offered with either Schedule 80 PVC or Socket-Fusion Polypropylene product piping (other materials available on request). All systems are designed to minimize installation efforts and operate in one of four alternate arrangements (see Generic P&ID below).

The variety of pre-treatment configurations allows for a flexible solution for most feed water sources and local service support structures. Each of the four standard options integrates with the same final pump and polish design. With the exception of the Reverse Osmosis (RO) design, all treatment aspects are on a single skid (Softeners and RO are free standing).

#### Mechanical Description:

Skid frames have been constructed to provide maximum support for all system components yet allow ample access for maintenance and operation. Frames are offered as powder-coated carbon steel; alternately stainless steel frame is available.

**Installation Arrangement:**

- **Pretreatment Arrangement “A”:** This configuration is designed to produce high purity water utilizing a direct city water feed and employ local service exchange Carbon and Deionization technologies. The major system components are: Dry Safety System, Pressure Regulator, Pre-Filter, exchange carbon, make-up exchange deionization, quality light, loop pump, cleaning ports, flow meter, final polish exchange deionization, *optional* bacteria destruct UV, final filter, and final quality monitor.
- **Pretreatment Arrangement “B”:** This configuration is designed to produce high purity water utilizing a direct city water feed with a small pretreatment storage tank that aids in servicing and cleaning operations. and as A above it employs local service exchange Carbon and Deionization technologies. The major system components are: Dry Safety System (applies only to the distribution aspect in this arrangement), Pressure Regulator, Pre-Filter, exchange carbon, make-up exchange deionization, quality light, pre-treatment break tank, loop pump, cleaning ports, flow meter, final polish exchange deionization, *optional* bacteria destruct UV, final filter, and final quality monitor.
- **Pretreatment Arrangement “C”:** This configuration is designed to produce high purity water with low total organic carbon content utilizing a direct city water feed and employ local service exchange Carbon and Deionization technologies. This design is similar to A with the addition of a TOC Reduction UV for organics reduction and requires less space than a Reverse Osmosis solution. The major system components are: Dry Safety System, Pressure Regulator, Pre-Filter (#1), exchange carbon, make-up exchange deionization, quality light, Pre-Filter (#2), TOC UV, loop pump, cleaning ports, flow meter, final polish exchange deionization, *optional* bacteria destruct UV, final filter, and final quality monitor.
- **Pretreatment Arrangement “D”:** This configuration is designed to produce high purity water with Reverse Osmosis (RO), and final loop polishing. Due to the critical nature of feed water to the RO membranes more stringent pretreatment is required. The major system components are: Dry Safety System, Pressure Regulator, Pre-Filter, water softener, make-up exchange carbon, RO Machine, pre-treatment break tank, loop pump, cleaning ports, flow meter, final polish exchange deionization, *optional* bacteria destruct UV, final filter, and final quality monitor. Note: The softener, reverse osmosis unit, and storage tank may be purchased with equipment for additional cost or provided locally).

**Electrical & Operational Description:**

All electrical components: Programmable Logic Controller (PLC), motor starter, switches, indicators, and control transformer (where applicable) are included and housed in a gray, NEMA 4/12, steel construction enclosure. The control system is pre-wired and functionally tested prior to shipping. The Client provides a source of power to the Main Control panel (NOTE: a “Pretreatment Arrangement “D” installation also requires a power supply to the RO and a duplex receptacle for the softener).

**Design Parameters:**

Feed water temperature: 33 degrees F to 90 degrees F (NOTE: if the system is to be installed in Pretreatment Arrangement “D” utilizing a reverse osmosis unit, inlet water temperature may need to be tempered based on feed water requirements of the RO). Feed water pressure: 50 - 100 psig.

**General Specifications:**

Piping	Pretreatment: Schedule 80 PVC, Post Treatment: Schedule 80 PVC or Polypro
Process Valves	Pretreatment PVC Ball Valves: +GF+ Type 355, or equal Post-treatment Diaphragm Valves: Schedule 80 PVC piping: +GF+ Type 314; Polypro piping: +GF+ Type 315, or equal.
Sample Valves	All valves Delrin ¼" MPT x FPT or equal
Pump	Grundfos CRN multistage centrifugal , 316SS, TEFC, or equal

**Instrumentation Specifications:**

Feed Pressure	Winters, Brass, 0-100 PSI, or equal
Product Pressure	Winters, SS, 0-100 PSI, or equal
Flow	Blue-White Flow Meter, or equal
Quality	Thornton M300 with Thornton analytical probe and patch cord

**Electrical Specifications:**

Controller	Modular PLC (Programmable Logic Controller)
Enclosure	NEMA, 4/12, steel, gray
System Voltage	115VAC/1 ph: 5 and 10 gpm only; 208/240/480VAC/3 ph: 20gpm through 50 gpm

**Pipe Size Connection Specification:**

System Flow Rate	05 GPM	10 GPM	20 GPM	30 GPM	40 GPM	50 GPM
Feedwater Inlet	½"	¾"	1"	1 ¼"	1 ½"	2"
Loop Water Supply/Return	¾"	1"	1 ¼"	1 ½"	2"	2"

**Physical Dimensions:**

System Flow Rate	05 GPM	10 GPM	20 GPM	30 GPM	40 GPM	50 GPM
Length	41"	41"	41"	60"	60"	72"
Width	32"	32"	32"	32"	32"	32"
Height	74"	74"	74"	74"	74"	74"
UV Bulb Clearance	24" Vert	36" Vert	36" Left	48" Left	48" Left	48" Left

## DP Systems Part Number Selection

Select   Select   Select   Select

Select   Select   Select   Select

### EXAMPLE PART NUMBER

**DP     10     BPS     A**

### EXAMPLE OPTIONS

**DPX     X     X     X**

<b>FIELD 1</b>	<b>DP System</b>	
	<b>Code</b>	<b>Code Description</b>
	<b>DP</b>	DP Series Recirculating Deionization System

<b>FIELD 2</b>	<b>System Flow Rate:</b> Enter the code for the desired treated water flow.	
	<b>Code</b>	<b>Code Description</b>
	<b>05</b>	5 GPM
	<b>10</b>	10 GPM
	<b>20</b>	20 GPM
	<b>30</b>	30 GPM
	<b>40</b>	40 GPM
	<b>50</b>	50 GPM

<b>FIELD 3</b>	<b>Pipe Material:</b> Enter the code for the desired piping material.	
	<b>Code</b>	<b>Code Description</b>
	<b>PVC</b>	Schedule 80 PVC
	<b>BPS</b>	Beta Polypropylene, Socket Fusion

<b>FIELD 4</b>	<b>Pretreatment Arrangement:</b> Enter the code for the desired Pretreatment Arrangement.	
	<b>Code</b>	<b>Code Description</b>
	<b>A</b>	Arrangement "A"
	<b>B</b>	Arrangement "B"
	<b>C</b>	Arrangement "C"
	<b>D</b>	Arrangement "D"

<b>FIELD 5</b>	<b>Additional Options:</b> Enter the code for all desired additional options.	
	<b>Code</b>	<b>Code Description</b>
	<b>HTD</b>	Include High Temp Dump Valve
	<b>DPX</b>	Include Duplex Pump Arrangement
	<b>UVB</b>	Include Bacterial Destruct Ultraviolet Unit
	<b>RIP</b>	Includes all interconnecting piping, hoses, components and any additional equipment necessary to install the system in any one of the four pretreatment arrangements offered (these are shown in bold line type on the P&ID).

