

# GRUNDFOS ENVIRONMENTAL VARIABLE PERFORMANCE PUMPING SYSTEMS



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The Environmental Variable Frequency Drive (VFD) has been uniquely designed to operate and protect the **MP1** Variable Performance Groundwater Sampling Pump and the **SPE 4"** Variable Performance Sampling / Remediation Pumps. Due to the sophisticated electronics within the VFD, the operator can easily change between the **MP1** and **SPE 4"** Variable Performance Pumps by pressing a button. With the pressing of another button, the operator can precisely control the discharge flow rate from the pump from a maximum of 50 gallons per minute to a minimum of 100 milliliters per minute, to depths to 524 feet of head.

Unlike most variable frequency drives, this VFD is compatible with either 120V or 230V single-phase, AC input power. The operator can simply change the power cord to accommodate the different voltages.

The VFD can also be purchased without the carrying case for use in dedicated applications.



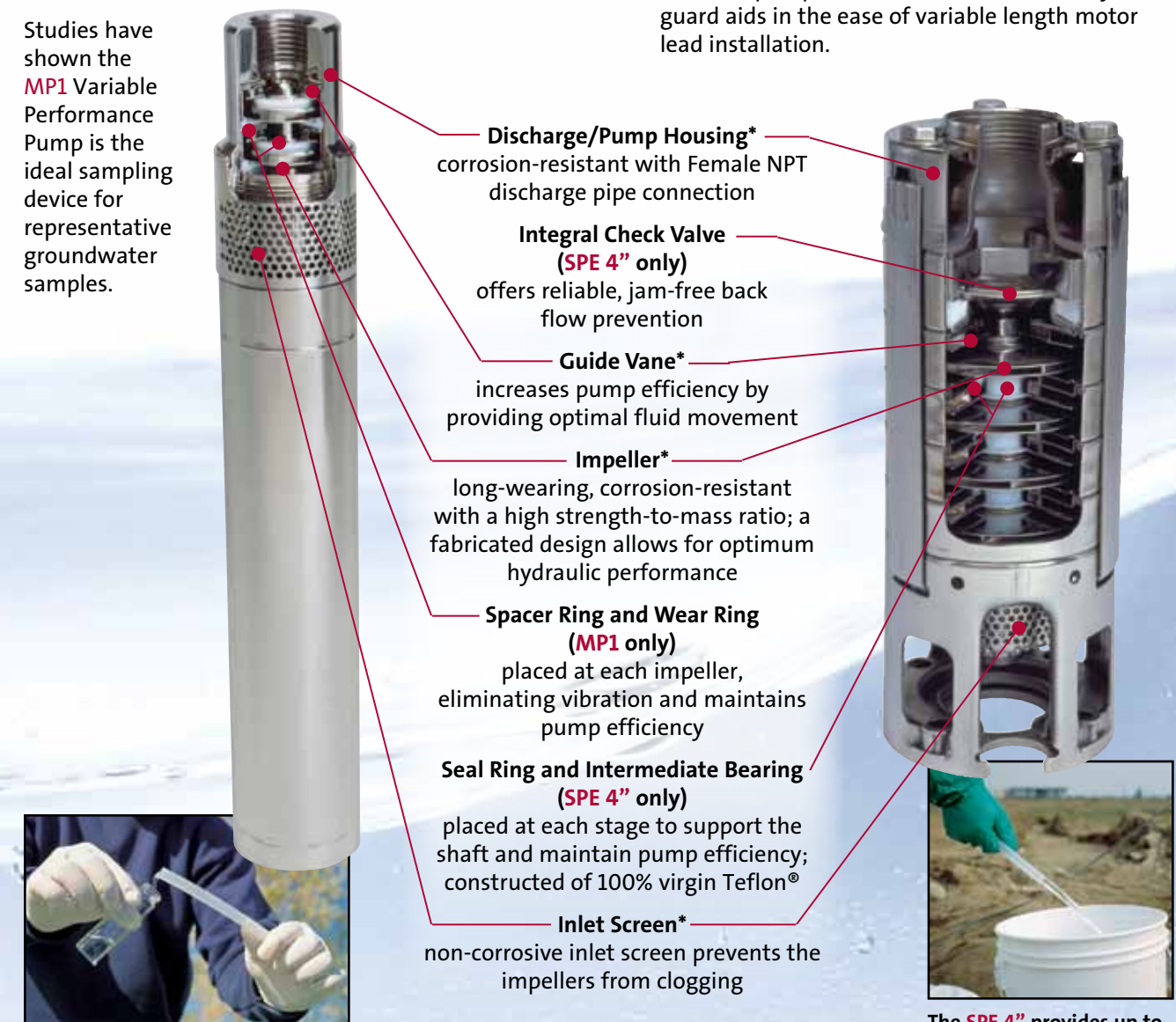
**THE UNIQUE FEATURES OF THE ENVIRONMENTAL VFD:**

- **Precise Flow Control** — The push button control pad provides greater control over the pump's discharge flow rate for better accuracy and precision during sampling.
- **Wide Performance Range** — Instead of operating according to one performance curve, the VFD allows for coverage of a range of performances and can function at any point of operation within that range.
- **Motor Protection** — The VFD will protect the Environmental Performance Pumps from adverse motor conditions such as, over-and-under-voltage, over-current, and groundfault.
- **Dual Input Power Capability** — Either 120V or 230V, single-phase AC input power is accommodated simply by changing the power cord.
- **Dual Functionality** — The VFD can be easily switched to operate either the **MP1** pump or the **SPE 4"** Variable Performance Pumps.
- **Enclosure** — The VFD NEMA 4 enclosure is designed for outdoor duty and is resistant to damage as a result of incidental exposure to rain or splashing water.

The **MP1** Variable Performance Pump combines state-of-the-art technology into a light, compact and yet powerful submersible pump for precise, accurate and reproducible groundwater sampling. Designed for long-term reliability in dedicated monitoring wells, the **MP1** provides optimal sample quality with either traditional purging prior to sampling, or low draw-down passive sampling when operated with the VFD.

Studies have shown the **MP1** Variable Performance Pump is the ideal sampling device for representative groundwater samples.

The **SPE 4"** Variable Performance Pumps are submersibles constructed of virgin Teflon® and stainless steel to handle the rigors of contaminated groundwater monitoring and continuous operation in remediation applications. The **SPE 4"** Variable Performance Pumps are designed to operate in 4 inch and larger wells to depths of 524 feet. The **SPE 4"** pumps have a built-in check valve to prevent back-flow in the well after the pump is shut down. A user-friendly cable guard aids in the ease of variable length motor lead installation.



**Discharge/Pump Housing\***  
corrosion-resistant with Female NPT discharge pipe connection

**Integral Check Valve (SPE 4" only)**  
offers reliable, jam-free back flow prevention

**Guide Vane\***  
increases pump efficiency by providing optimal fluid movement

**Impeller\***  
long-wearing, corrosion-resistant with a high strength-to-mass ratio; a fabricated design allows for optimum hydraulic performance

**Spacer Ring and Wear Ring (MP1 only)**  
placed at each impeller, eliminating vibration and maintains pump efficiency

**Seal Ring and Intermediate Bearing (SPE 4" only)**  
placed at each stage to support the shaft and maintain pump efficiency; constructed of 100% virgin Teflon®

**Inlet Screen\***  
non-corrosive inlet screen prevents the impellers from clogging



Smooth, continuous, uninterrupted discharge flow rate is possible with the **MP1**.



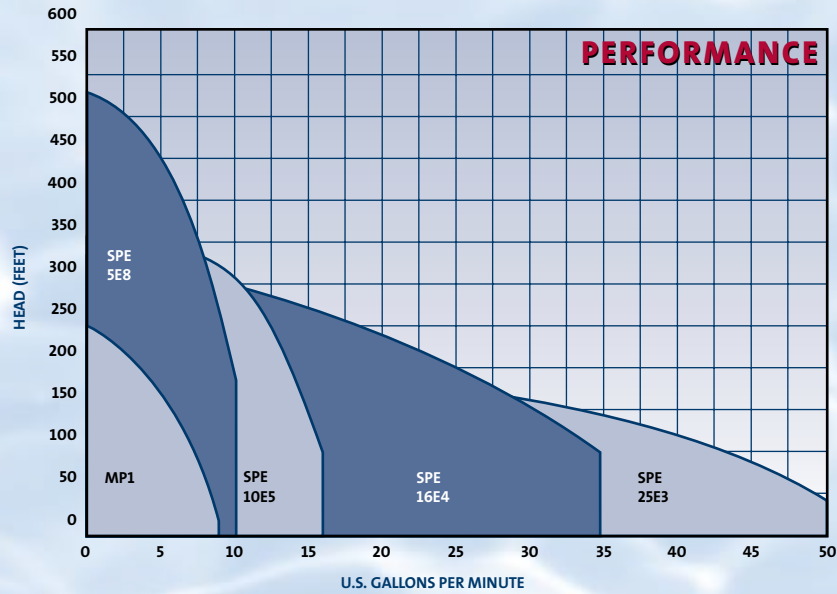
The **SPE 4"** provides up to 45 gallons per minute for purging and remediation.

\*On these features, the material of construction for the **MP1** is 316 stainless steel, and the **SPE 4"** is 304 stainless steel.

## GRUNDFOS ENVIRONMENTAL PRODUCTS

MODELS	WELL SIZE	DISCHARGE SIZE*	FLOW RANGE GPM	HEADS TO: (FT.)
<b>MP1 VARIABLE PERFORMANCE PUMP</b>				
MP1	2"	1/2"	100 ml/min - 9	250
<b>SPE 4" VARIABLE PERFORMANCE PUMPS</b>				
5E8	4"	1"	100 ml/min - 10	524
10E5	4"	1-1/4"	100 ml/min - 15	356
16E4	4"	1-1/4"	100 ml/min - 35	302
25E3	4"	1-1/2"	100 ml/min - 50	234

\*Female NPT



Contact:

VFD unit:



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