



hydrovar® X-ENABLED PRODUCT LINE

SIMPLICITY, SERVICEABILITY
AND SUSTAINABILITY

JENNIFER FRERES

GLOBAL PRODUCT MANAGER

Bell & Gossett and Goulds Water
Technology, centrifugal pumps

JIM WILKINSON

AMERICAS PRODUCT MANAGER

Packaged systems, Bell & Gossett, a Xylem company

WHAT ARE SMART PUMPS?

Next generation motor and drive platform delivering market-leading efficiency, intelligence and sustainability.



Permanent magnet assisted synchronous reluctance motor with integrated variable speed drive and built-in intelligence with a range up to 30 hp.



Expertly paired with our flagship pump products to create efficient, effective and reliable pumping solutions for municipal, industrial and commercial applications.



EFFICIENCY

Lower lifecycle costs
Improved asset efficiency
Energy rebates

INTELLIGENCE

Easy button setup
Condition monitoring
System optimization

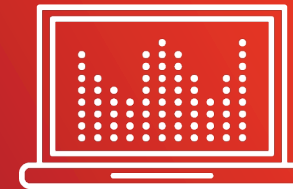
CONNECTIVITY

Onboard connectivity as standard
Smart device interface for setup and operation
Simple BMS integration

INTEGRATION

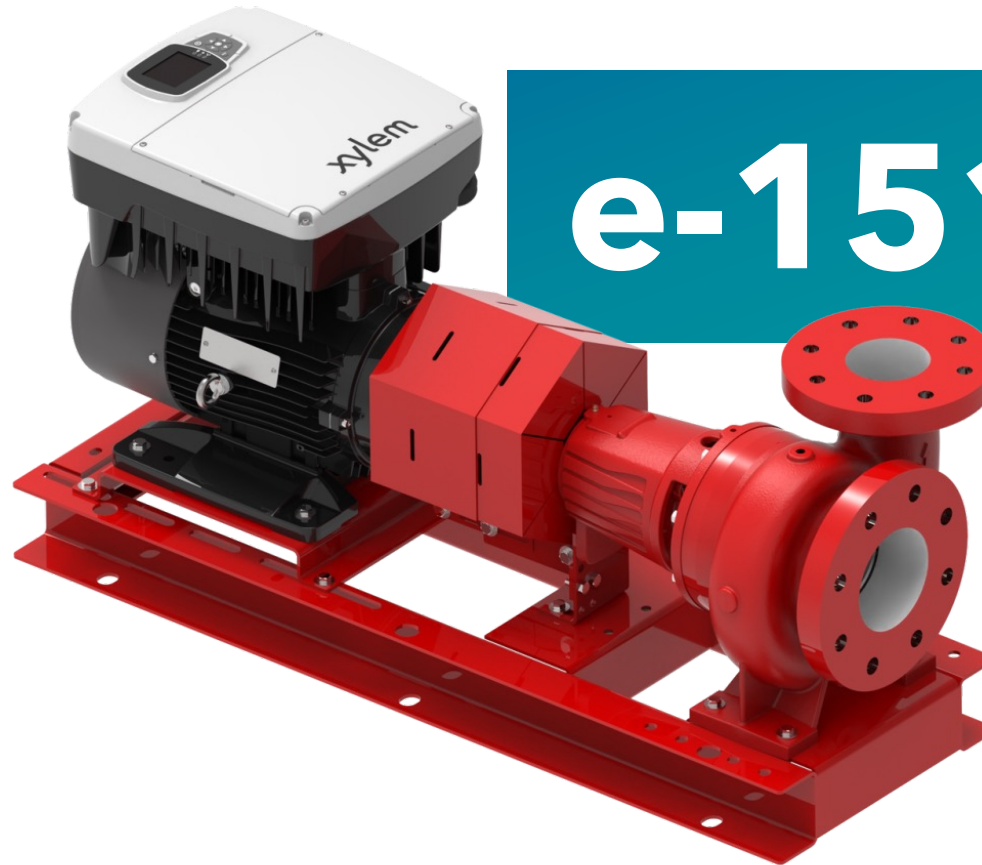
Lower installation and commissioning costs
Smaller footprint
Simplified supply chain

MACRO TRENDS



SERIES e-1510 WITH SMART MOTOR!

- End Suction Pump
- Stainless Steel Impeller
- Internally Flushed Seals
- True Back Pull Out
- Spacer Coupling
- ANSI / OSHA Guard
- Foot Mounted Volute
- Fabricated Base Plate
- Standard NEMA T frames
- Two Seal Options - Buna & EPR



e-1510X



SERIES e-80 INLINE WITH SMART MOTOR!

- Close Coupled Inline Pump
- Back Pull-Out Design
- 175# Maximum Working Pressure
- 225°F Maximum Temperature
- Three Seal Options
- 1.5x1.5x7C through 6x6x9.5B
- Capacities to 1400 GPM 428ft head
- Standard NEMA JM & JP frame
- Stainless Steel Impellers
- External Flush Line
- ANSI flange bolt pattern on bottom of volute for ease of installation



e-80X



TECHNOFORCE e-HV WITH SMART MOTOR!



e-HV^X

- AISI 304 stainless steel
- Single point power connection
- Grooved system connections
- optimize and Avensor come standard
- 304 SS suction and discharge manifolds, check valves, shutoff valves, pressure gauges
- Increase to 2,100 GPM



INTEGRATED MOTOR AND DRIVE



INTERFACE

Color Graphical LCD
Xylem X Mobile App
Enhanced UX

CONTROL MODES

Constant Speed
Constant Pressure
Prop Pressure (Linear)
Prop Pressure (Quad)
Constant Flow
Constant Temp
Constant Δ temp

FEATURES

4 set points
Expanded I/O
Heat Energy Meter
Single Sensor Mode
Forced Priority

MULTIPUMP

Up to 8 pumps
BEP staging

COMMUNICATION

Modbus RTU
BACnet MS/TP
Bluetooth 5.0

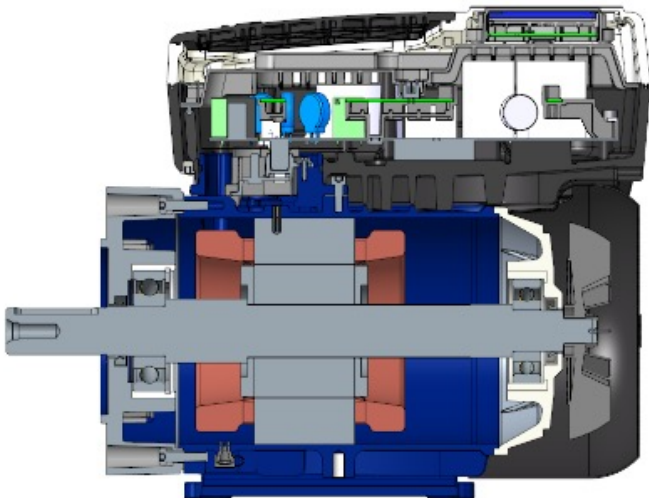
TECHNOLOGY OVERVIEW

INTEGRATED MECHANICAL DESIGN

Internally designed to achieve the maximum integration, modularity and compactness.

CONTROL & HMI BOARDS

Synergy with other new platforms on design architecture and development.



OPTIMIZED COOLING SYSTEM

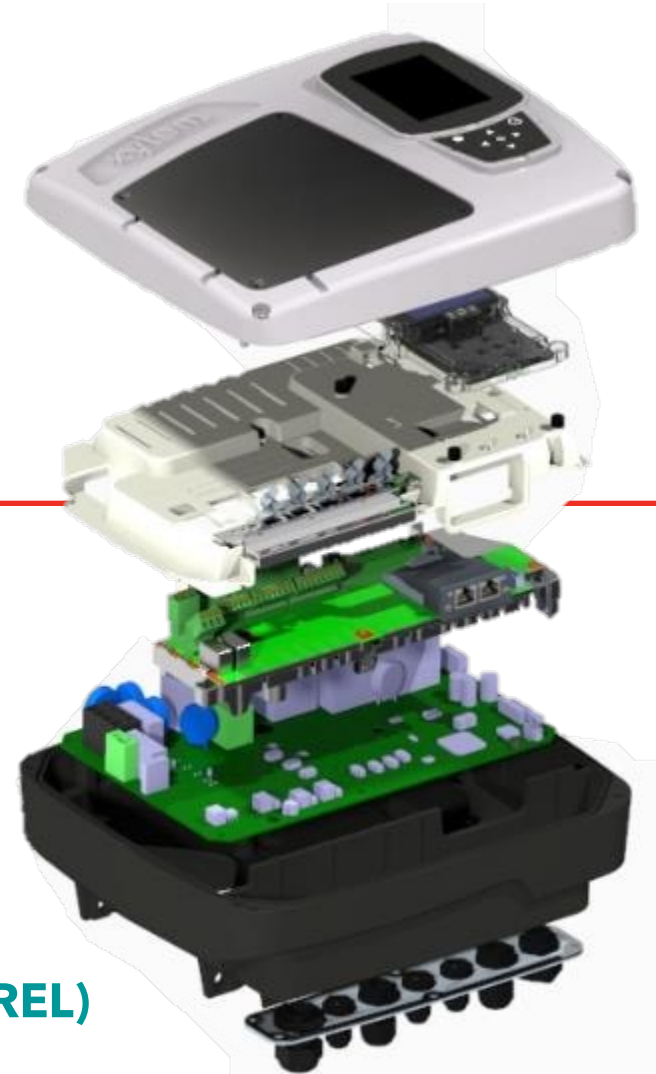
CFD optimized design of fan, fan cover, inverter heatsink and motor housing fins.

SEPARABLE CABLE GLAND PLATE

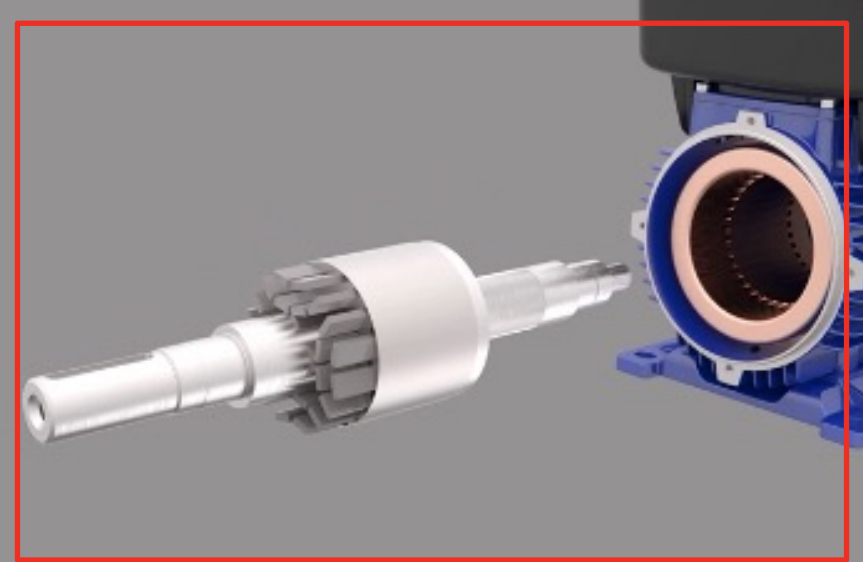
Provides the possibility to easily replace the unit without complete rewiring.

PM ASSISTED RELUCTANCE MOTOR (PMAREL)

Xylem design and technology development.



TECHNOLOGY OVERVIEW

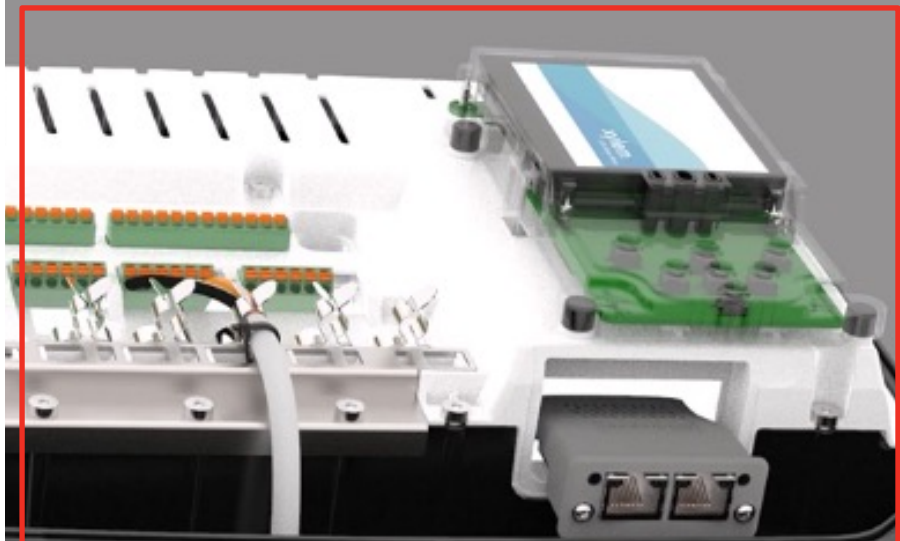
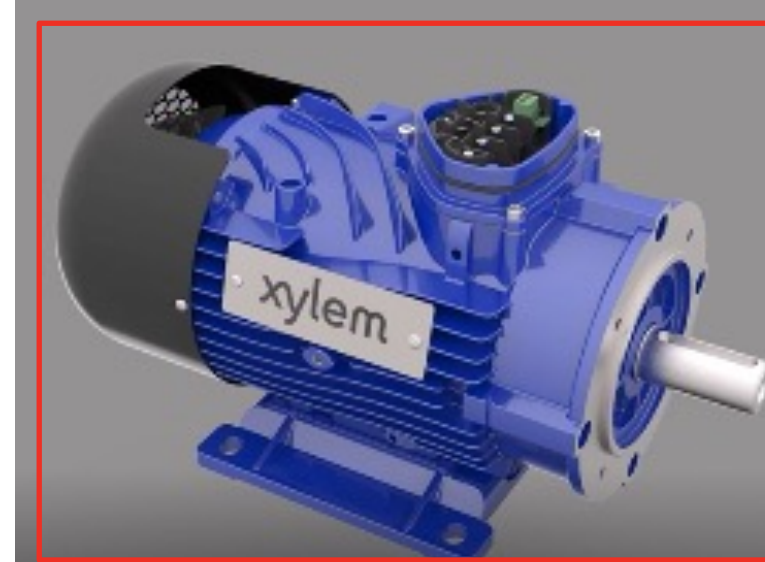


PM ASSISTED RELUCTANCE MOTOR

Optimized for efficiency, compactness and sustainability with no rare earth materials.

COMMUNICATION EXPANSION MODULES

Leveraging a commercially available range of modules, extending the communication capability to any of the existing protocols as well as any future protocols.



MOTOR / DRIVE QUICK CONNECT

Easily removable drive using a dedicated connector for enhanced serviceability.

EASE OF USE

The Genie is a configuration wizard that starts automatically when the unit is powered on for the first time. It guides the customer to set the most important parameters on the unit, in a single or multipump application:



- Language
- System configuration (single pump, cascade serial or synchronous)
- System type (pressurization)
- Control mode (actuator, constant or proportional pressure, etc.)
- Set of unit of measurement (SI or Imperial)
- Setpoint
- Start value
- Minimum threshold
- Pipe filling
- Date & time

KEY DIFFERENTIATORS

SUSTAINABILITY

Most competitors use rare earth magnets in their motor technology.

Mining of these materials is costly and inefficient, generating large volumes of toxic and radioactive material that can cause problems for the environment and human health.

Our unique motor design does not use these materials so has less environmental and social impact.



EFFICIENCY

Electric motor driven systems account for around 45% of the global electricity consumption, with pumps accounting for a large portion of this.

Our technology meets or exceeds the highest efficiency level of IE5 without the use of expensive and unsustainable rare earth materials.

Advanced control algorithms and smart curve technology enables the pumps to always operate at their most efficient point.



SIMPLICITY

With the acceleration of advanced technology and features within smart pumps, it has become increasingly important that users are able to easily interact with the solution during setup and operation.

We have invested heavily in UX/UI development ensuring that the embedded HMI and mobile application are intuitive and easy to use, enabling operators to utilize complex control features without needing extensive training or experience.

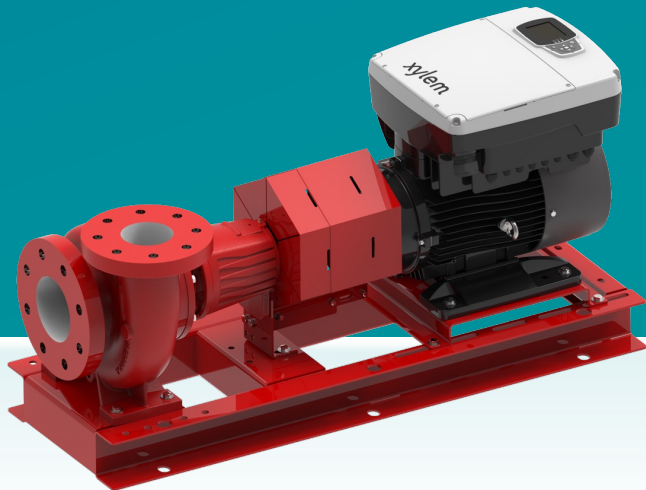


KEY DIFFERENTIATORS

COMPACT DESIGN

The new hydrovar X-enabled pumps reduce floor and wall space through integration of the drive into a compact, accessible and easily serviceable pump package.

What's more, it can be easily mounted directly on the motor of the pump, creating a compact, complete packaged system.



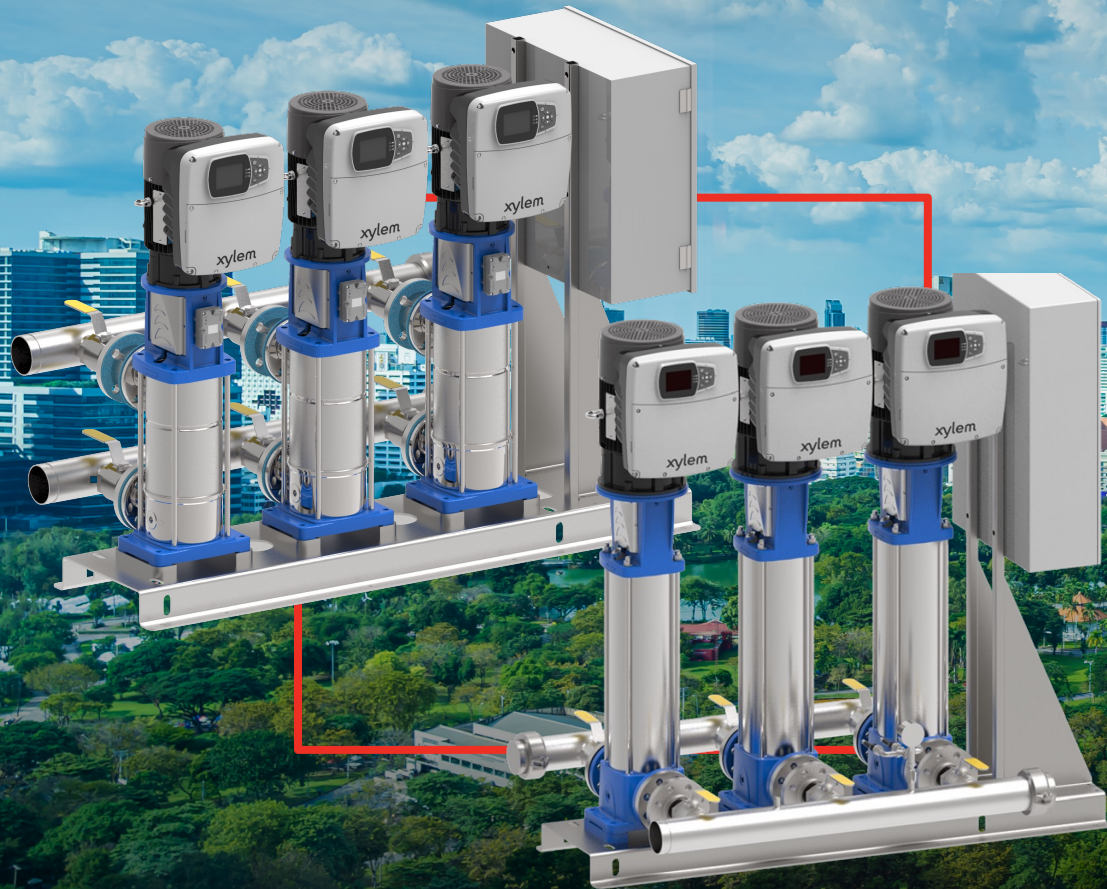
SERVICEABILITY

The modular design of the hydrovar X motor and drive gives you the most serviceable pump package.

Separate quick connect components let you replace the drive or the motor independently and no wiring is required, giving you a true plug, plumb and play solution versus buying a new motor and drive combination.



e-HVX AND e-HVXR PACKAGED SYSTEMS WITH hydrovar[®] X



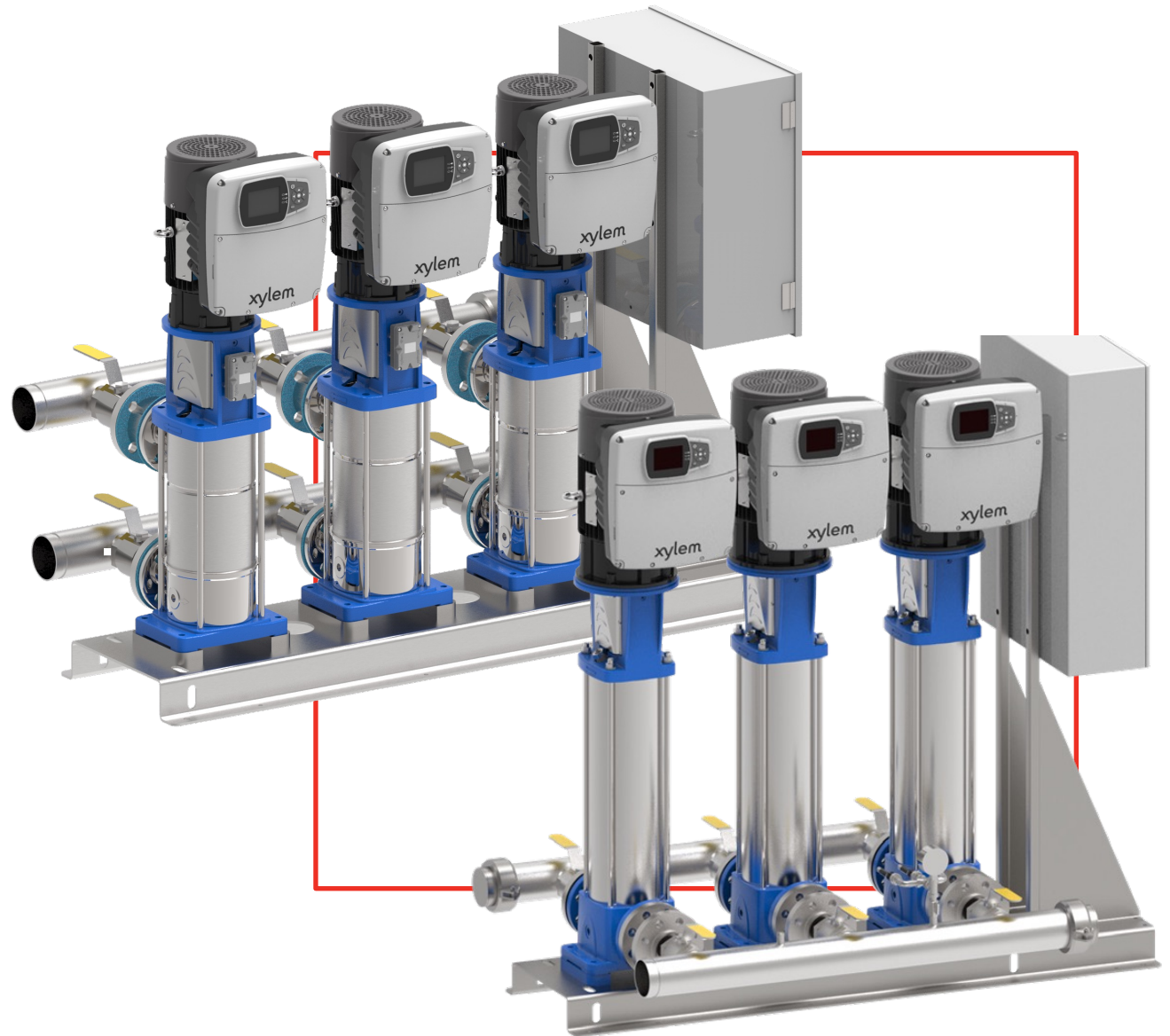
JIM WILKINSON

OVERVIEW

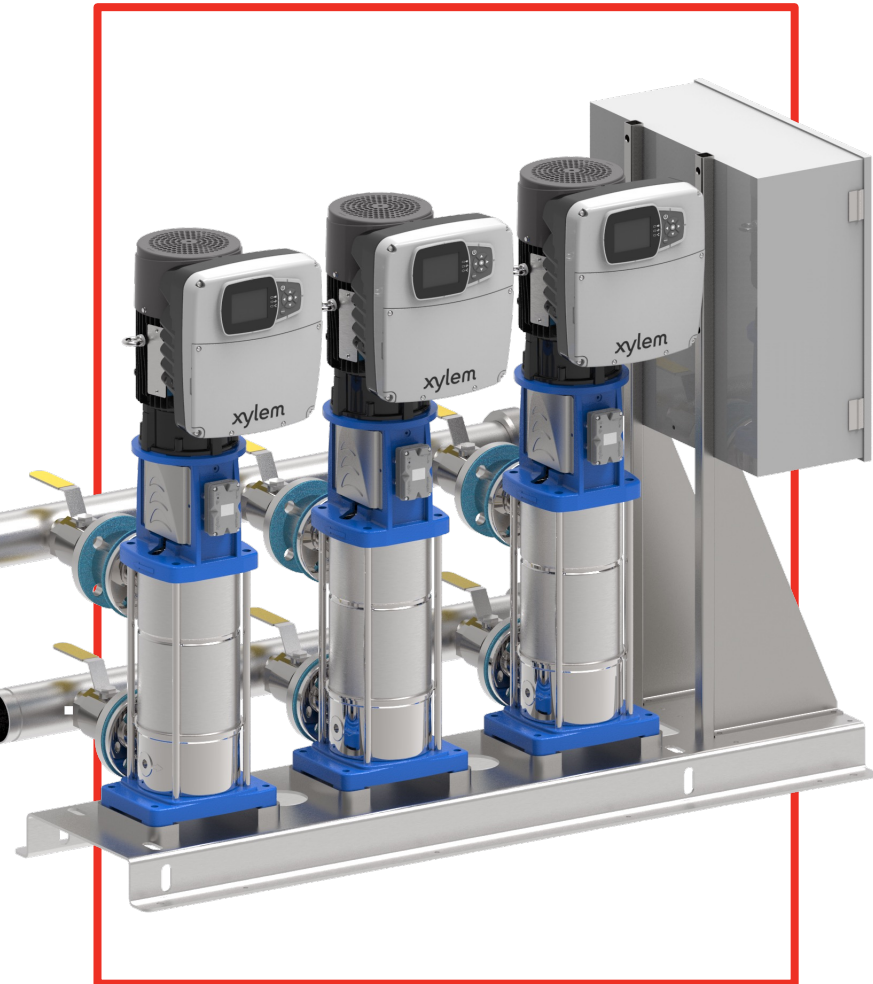
e-HVX and e-HVXR booster sets are variable speed pumping units equipped with hydrovar X+ for clean water pressurization and transfer in private and public buildings in water supply networks.

Performance Ranges

- Flow: up to 2,100 GPM
- Head: up to 800' TDH
- Power: up to 30 HP



FEATURES AND BENEFITS



SUSTAINABILITY

No use of rare earth materials.

ENERGY EFFICIENCY

IE5 “ultra premium efficient” motors up to 22 kW (30HP).

USABILITY

New color HMI and app for ease of setup and operation.

RELIABILITY AND REDUNDANCY

Multi-master configuration to avoid single point of failure.

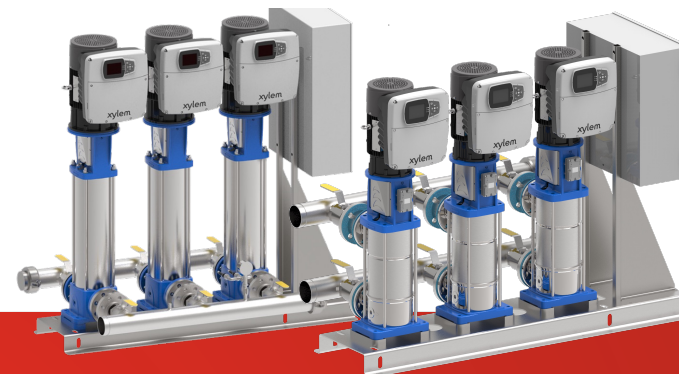
COMPACT DIMENSIONS

Compact layouts allow installation where space is at premium (e-HVXR).

QUICK AND EASY COMMISSIONING

Genie makes this step fast and easy. Can be up and running in minutes, even without prior VFD/package systems experience.

QUICK REFERENCE: e-HV to e-HVX/e-HVXR



	e-HV	e-HVX/e-HVXR
Available Pump Qty.	2, 3 or 4	2 or 3
Max Flow	800 GPM	2,100 GPM
Available Phase/Voltage	3/208-230, 3/460	3/208-230, 3/460
Pump Sizes Available	3SV, 5SV, 10SV, 15SV, 33SV	5SV, 10SV, 15SV, 33SV, 46SV, 66SV, 92SV, 125SV
Avensor	Field Installable	Standard
optimize™	Field Installable	Standard
Configurations	"Classic" - e-SV w/ G pump body	"Classic" and Compact - e-SV w/ R pump body
Common Features	304 SS suction and discharge manifolds, check valves, shutoff valves, pressure gauges	

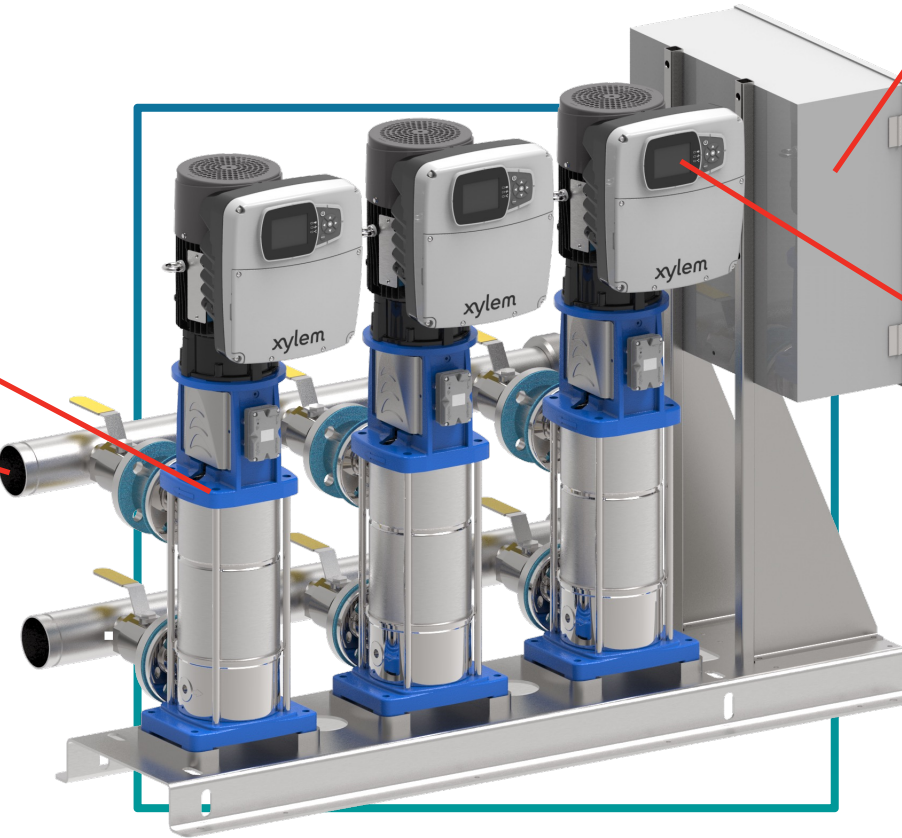
GENERAL FEATURES

VALVES

- Check valves: on discharge side
- 2 shutoff per pump, suction and discharge side

MANIFOLDS

- AISI 304 Stainless Steel
- Grooved system connections
- Endcaps can be swapped to accept flow or discharge flow from either direction

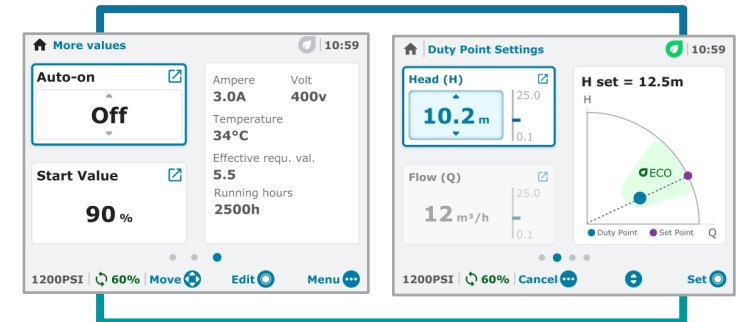


PANEL

- Available on either side of the package
- Single point power connection
- Station disconnect
- Internal breakers for individual pump/motor isolation

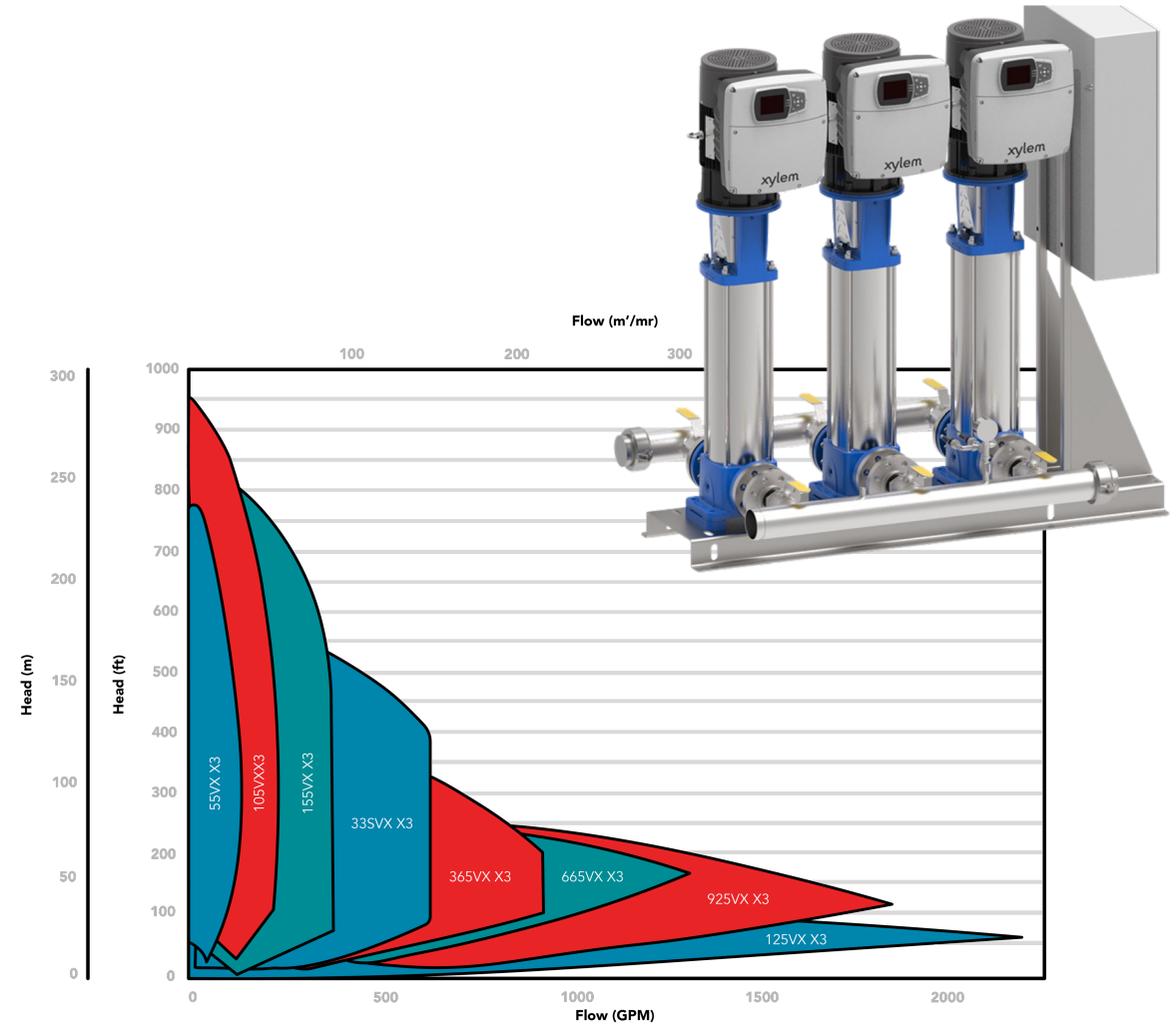
HMI

- Brand new HMI
 - Simplified navigation and readout
- Full color
- Positioned in front of booster set for easy access



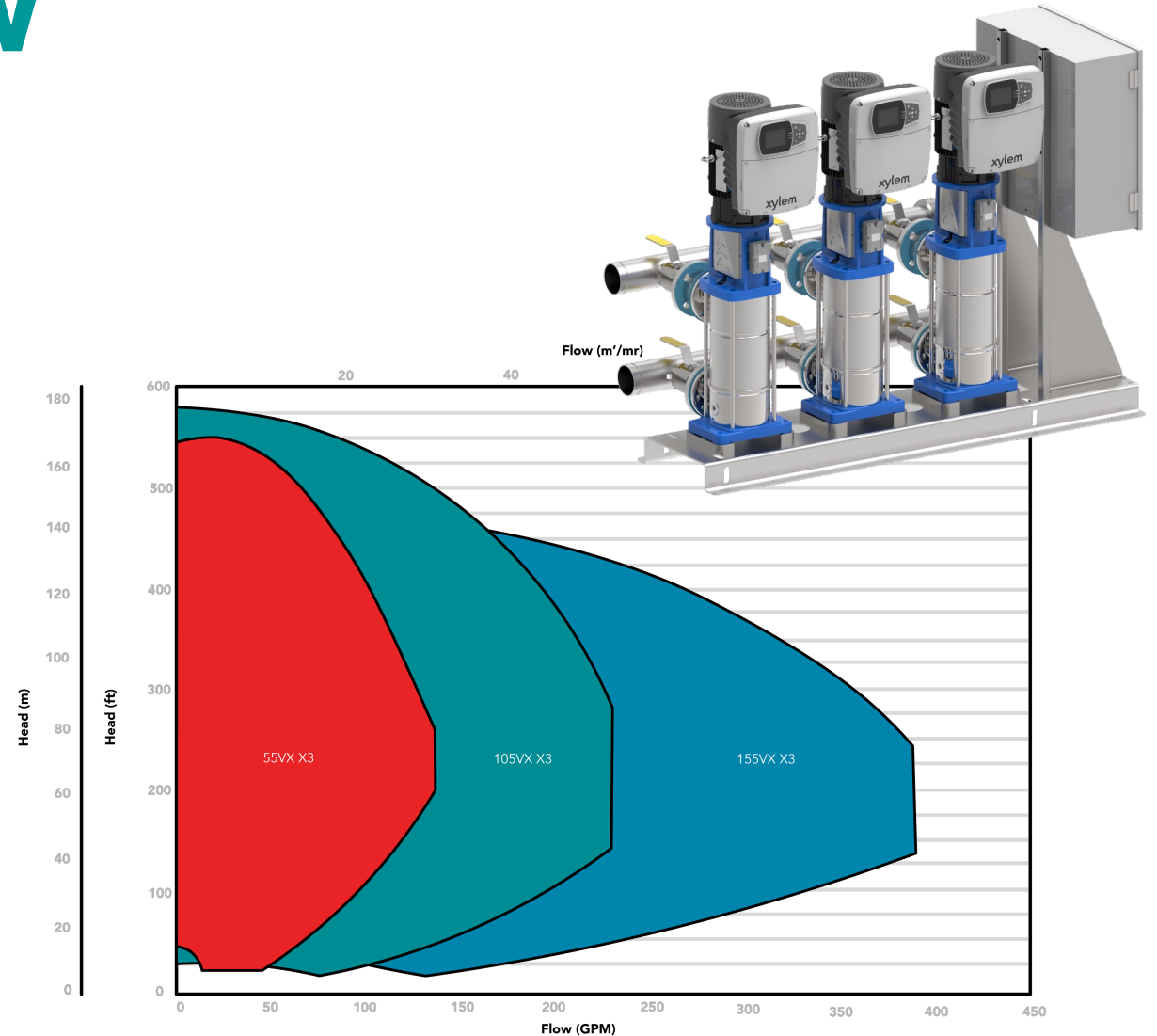
e-HVX OVERVIEW

- Direct replacement to our existing e-HV
- “Classic” design. Manifolds are on either side of the package.
 - Allows for simplified retrofits as this is common in the field.
- All SKUs utilize the e-SV with the G cast iron pump body.
- Control panel is configurable on either side of the package
 - Indicated by character in product nomenclature.
- Expanded product offering
 - Current e-HV is offered up to the 33SV. Up to 15HP.
 - e-HVX is offered up to our 125SV. Up to 30HP.
 - 800 GPM max to 2,100 GPM max
- Avensor and optimize™ are standard on all packages.



e-HVXR OVERVIEW

- Part of our expanded product offering
- “Compact” design. Manifolds are on the same side of the package. Opposite the HMI.
 - Roughly a 30% footprint reduction.
- All SKUs utilize the e-SV with the R stainless steel pump body.
- Control panel is configurable on either side of the package.
 - Indicated by character in product nomenclature.
- Limited offering. e-SV products beyond 22SV are not offered with the R configuration
 - 5SV, 10SV and 15SV models. Up to 15HP.
- Avenor and optimize[™] are standard on all packages.



SIZING AND SELECTION/ MARKETING COLLATERAL

- The e-HVX and e-HVXR will be selectable in our Solver platform
- Standard product documentation will be available as well
 - Sales Brochure (2 page)
 - Sales Brochure (4 page)
 - Technical Brochure
 - Installation and Operation Manual
 - Pricebook
 - Product Specification

Product Specifications

hydrovar X Smart Motor Specifications

Display:	Graphic color
Controls:	Actuator, Constant Pressure, Proportional Pressure, Proportional Quadratic Pressure, Constant Flow, Constant Temperature, Constant Level
Enclosure:	IP65/NEMA4
Working temperature:	-4°F to 122°F (-20°C to 50°C)
Communication protocols:	MODBUS® RTU, BACnet MS/TP
Features:	IES synchronous motor
Mobile app:	Bluebird®

e-HVX Packaged Booster System Specifications

Flow rate:	up to 2100 GPM (477 m ³ /h)
Head:	up to 800 ft (180 m)
Temperature of pumped liquid:	32°F to 180°F (0°C to 82°C)
Maximum operating pressure:	270 psi (18.5 bar)
Environment temperature:	-4°F to 122°F (-20°C to 50°C)
Multi-pump:	up to 3 pumps (booster package)

e-HVXR Packaged Booster System Specifications

Flow rate:	up to 380 GPM
Head:	up to 550 TDH
Temperature of pumped liquid:	32°F to 180°F (0°C to 82°C)
Maximum operating pressure:	270 psi (18.5 bar)
Environment temperature:	-4°F to 122°F (-20°C to 50°C)
Multi-pump:	up to 3 pumps (booster package)

e-HVX Packaged Booster System Family Curves

e-HVXR Packaged Booster System Family Curves

hydrovar X Smart Motor Dimensions

Motor Power (HP/kW)	H (in/mm)	W (in/mm)	D (in/mm)
1/2 (0.37)	11.25 (286)	10.00 (254)	11.19 (284)
3/4 (0.55)	13 (329)	11.89 (302)	13.82 (351)
1 (0.75)	15.75 (400)	14.25 (362)	17.4 (442)

Unleash the power of hydrovar X!

Don't hold back your imagination! With the graphical color display, you can quickly set up and navigate the menu of your unit; check all the parameters and choose the perfect unit configuration to fit your installation. No time to do it? Give us a call and we'll start up and run the unit for you!

Check your systems from wherever you want. Download the mobile app. hydrovar X and Avenor, better together. hydrovar X can communicate with Avenor IoT platform for a complete overview of assets, anytime, anywhere. Avenor collects data to analyze trends and generate alerts for failures and equipment downtime.

Simple: Built-in application software makes the drive one of the easiest to commission, program and operate, in any configuration of pumps.

Sustainable: No rare earth materials are used to minimize product availability challenges and address environmental concerns while offering smart technology and superior performance.

Intelligent performance: Advanced system controls are customizable for a wide range of applications. The IES "ultra-premium" hydrovar X smart motor provides one of the broadest efficiency ranges in the industry.

Reliable: Multi-master control functionality ensures that in the event of a fault or failure within one or more pump packages, that the system will continue to operate until corrective action can be taken.

Built-in protections: Integral system intelligence provides electrical and mechanical protection.

Easy service: VFD and/or motor can be easily replaced individually, minimizing downtime and expensive repair.

Compact design: The new e-HVXR features a reduced package footprint relative to legacy e-HV systems and components, allowing for space savings up to 30% due to the orientation of the suction and discharge manifolds.

TECHNOFORCE™ e-HVX & e-HVXR Packaged Booster Systems

Integrated pump, motor & variable speed drive solutions, **powered by hydrovar® X**

30% SMALLER

Separate quick connect component allows users to replace the drive or the motor independently. The integrated electrical control requires no additional wiring, allowing a fast plug and play solution versus both a new motor and drive combination.

and the availability of your critical services. For more information or to contact the cyber security team please visit www.xylem.com/

Learn more about e-HVX and e-HVXR packaged booster systems

10/17/2024 January 2024

THANK YOU

