

VEXO X-POT XP+ Specification Sheet

Product Code

NA-XPOTXP+

Product Description

X-POT XP+ Side Stream Filtration and Dosing Unit C/w Franklin 10VR-02 Multi-stage Pump



Functional Overview

- **Integrated Filtration System:** Combines magnetic filtration, bag filtration, air and dirt separation and chemical dosing into one simple to install unit.
- **BMS Integration:** 1-Amp common relay for alarm notification of blocked filter status and maintenance requirement.
- **Smart Pump Control:** The Franklin 10VR-02 Multi-stage pump is controlled by the VEGAMET 842 controller which monitors pressure differential to indicate filter status and maintenance needs.
- **Construction:** 316 stainless steel vessel with a rigid powder coated welded steel frame for durability and ease of installation

Benefit Summary

Category	Benefit
Energy Efficiency	<ul style="list-style-type: none"> - Reduces energy consumption by up to 3.5% in real-world settings. - Field Study, J. Cripps et al MSc, 2020
Corrosion Control	<ul style="list-style-type: none"> - Removes corrosion by-products such as magnetite sludge and corrosion induced gases.
Gaseous Oxygen Removal	<ul style="list-style-type: none"> - Removes gaseous micro-bubbles of air and trapped air using automatic vent and micro-bubble coalescence.
System Longevity	<ul style="list-style-type: none"> - Mitigates erosion, air entrapment, and sludge build-up, reducing mechanical wear.
Diagnostics	<ul style="list-style-type: none"> - Enables early fault detection via filter change alerts - indicating system chemistry imbalances.
Water Quality Management	<ul style="list-style-type: none"> - Supports consistent water quality aligned with BSRIA BG29 and BG50 and best practice standards.
Integrated Functionality	<ul style="list-style-type: none"> - Combines magnetic and bag filtration, air separation, and chemical dosing in a single unit.
Operational Flexibility	<ul style="list-style-type: none"> - Performs effectively in pressurized, closed-loop systems at varying flow rates.

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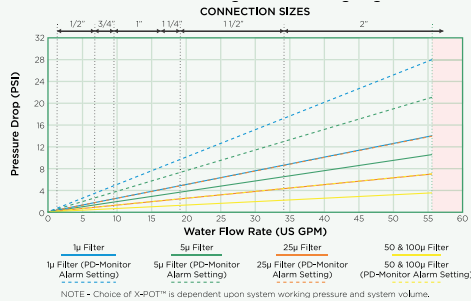
Product / Model	X-POT Series/XP+
Description	Side Stream Filtration and Dosing Unit

Art. Code
Date

Customer
Project
Reference

Design Criteria

Medium: Water/Glycol (Max 50%)
Max. System Volume (24/12hrs): 79,885/39,943 US gal
Max. System Btu/h (24/12hrs): 66.57/33.29 MMBtu/h
Max. System HP (24/12hrs): 1,987/994 HP
Max. Cooling TONS (24/12hrs): 5,326/2,663 TONS
Max. Pressure: 232 PSI
Min. Flow Rate: 1.31 GPM
Max. Flow Rate: 55.47 GPM
Max. Temp: 32°F - 203°F (0°C - 95°C)
Filtration Rate: Filtration down to 1 Micron (Bag Filter)
ΔP - Pressure Drop: See below graph



Mounting: Floor Standing (Frame/Skid)
Dosing Capacity: 6.6 US Gal

Testing and Quality Assurance

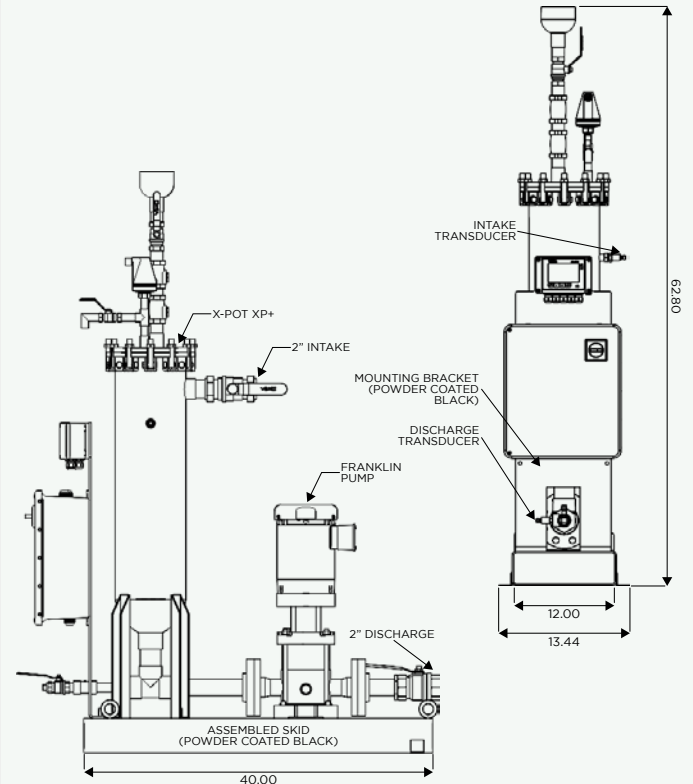
Design Standard/Codes: ASME BPVC VIII Div.1
 ASME 'U' Stamp
 BSRIA BG29 & BG50

Test Pressure: 360 PSI
Test Medium: Hydrostatic
Test Certificate: Yes
Drawing: Revit Drawing
Notified Body Inspection: Yes
Warranty (Unit Assembly): 2 Years
Warranty (Vessel Body): 10 Years
Industry Peer Reviewed Energy Savings: Yes

Construction Materials

Vessel Body/Lid: SS 316
Baffle Plate: SS 316
Magnet Grate: SS 316
Magnets (13no.): Neodymium Rare Earth (Encased in SS 304)
Bag Filter: Polypropylene Needlefelt
Isolation Valves: SS 316
AAV: SS 316
NRV: SS 316
Fittings: SS 316

Drawing



Electrical & Communication Specifications

Electrical Supply: 460V / 3 Phase / 60Hz
BMS Connectivity: 1-Amp Common Relay Alarm

Dimensions

Overall Height: 62.80"
Overall Depth: 13.44"
Overall Width: 40.00"

Connections

Isolation Valve: 2" NPTF
AAV: 1/2" NPTF

Volume & Weight

Volume: 6.38 US Gal
Dry Weight: 167.56 Pounds
Operational Weight: 266.69 Pounds

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General Description

A - The VEXO™ X-POT XP+™ assists in the restoration of water quality and flow rates within Hydronic Heating and Cooling Systems to remain reliable and run at their intended design capabilities, by keeping the thermal fluid within the system filtered, clean and free from suspended particulates and micro-bubbles. This also allows Chemical Inhibitor's and Biocides to remain effective, thus reducing the accumulation of Corrosion, Scale and Bio-film deposits which would otherwise cause flow loss, degradation of plant and pipeline material, as well as reduced system reliability, increased running and reactive maintenance costs, water losses and reduced lifespan of system components. Recent research presented at the CIBSE Technical Symposium in the UK in April 2023 and at the ASHRAE Summer Conference in the US in June 2023 has shed light on the significant energy savings that can be achieved by improving water quality and removing corrosion residuals with X-POT. The results were compelling, showing that poor water quality not only leads to plant failure but also significantly increases pump energy consumption. The X-POT reduced pump energy consumption by an average of 19% in multiple system pressure scenarios.

This is achieved by a combination of functions, as the X-POT™ acts as an all-in-one:

- Dirt & Air Separator
- Magnetic Filter
- Side Stream Filter (down to 1 micron)
- Shot Feeder (For adding Water Treatment Chemicals)

B - This section specifies cleaning and treatment of circulating HVAC water systems, including the following:

- Closed Loop Cooling Systems
- Closed Loop Heating Systems

Product Description - Side Stream Water Filtration and Treatment Device

A - The Contractor shall furnish and install a full side stream filtration device that incorporates an industry peer reviewed 'all-in-one', shot feeder, magnetic filter and air and dirt separation device as shown and detailed on the contract documents. The product provided shall be the VEXO™ X-POT XP+™ manufactured by VEXO International (www.vexoint.com) and exclusively supplied by Skidmore of Benton Harbor, MI or an approved substitution.

B - The product shall be all stainless steel construction including all valves and fittings and Franklin 10VR-02 Multi-Stage Circuiting Pump. Maximum working pressure shall be 232psi with flow rates up to 55.47 GPM with a temperature range of 32°F to 200°F. Dosing capacity shall be a minimum of 6.6 Gallons and Bag Filtration range to be no less than 50µ to 1µ (Cartridge Filters are not acceptable). Magnetic filtration shall consist of no less than thirteen (13) rare earth magnets - eight (8) with a minimum of 26.5 lbs pull force each, and five (5) with a minimum of 35 lbs pull force each - designed for easy removal and cleaning. Total system volume capacity shall be no less than 79,885 Gallons. The product must be provided with 2" isolation and drain valves and have an option for an insulation jacket with filter PD condition alarm installed to notify of timely filter changes and alert to water quality. Air separation function designed to promote the coalescence and removal of entrained gaseous air, including microbubbles, from circulating hydronic systems. Collected gaseous air shall be discharged through an automatic air vent.

The air separation principle is supported by independent laboratory testing undertaken on the VEXO X-POT product range, demonstrating microbubble coalescence, gaseous air removal and automatic venting.



WARNING!

Do not open whilst fluid is hot and/or under pressure!

Please use safety goggles, gloves and N95 face mask when working on this vessel/magnetic field.

