



Cavro[®] XE Pump

Compact, economical and easy to integrate

The Cavro® XE Pump is Tecan's entry level OEM syringe pump, combining exceptional value with a reliable, low maintenance design for precision liquid handling applications.

Flexible design

The Cavro XE Pump is designed to offer a broad dynamic range of 5 µl to 5 ml, with plunger speeds programmable from 2 to 60 seconds per full stroke, allowing a single pump to perform multiple operations for more economical use of space. Its compact, lightweight design and anodized aluminum frame ensure straightforward panel mounting and easy integration, with a choice of 1/4-28 or M6 valve and tubing formats to provide maximum flexibility.

It can be used individually or in a multi-pump configuration of up to 15 modules through a single RS-232, RS-485 or CAN interface (supporting 9,600 baud for RS-232/485 and 100K for CAN), minimizing hardware requirements. The pump also provides an auxiliary input and output for TTL level signals that can be used for synchronization with external devices, further increasing integration flexibility.

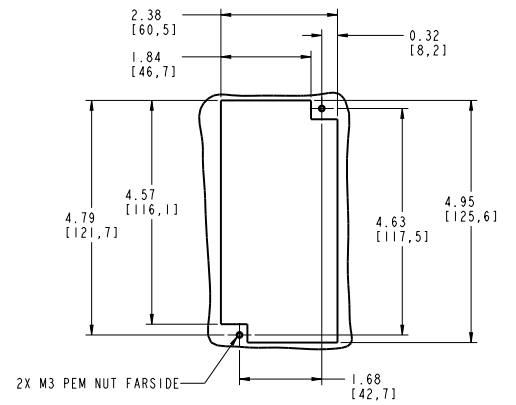
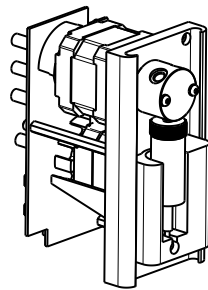
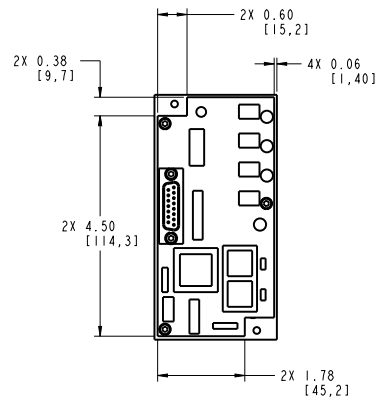
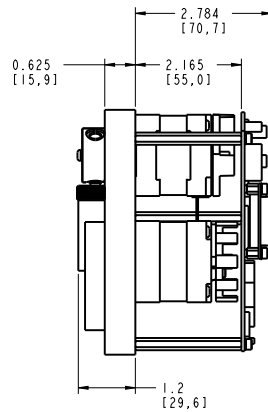
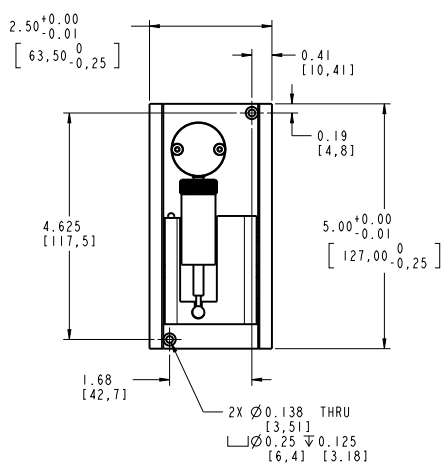
Exceptional value

Designed to offer the lowest cost of ownership over the life of the product, the Cavro XE Pump features a rugged, low maintenance rack and pinion syringe drive with a 30

mm travel. It offers a resolution of 1,000 increments, and incorporates a home flag and a quadrature encoder for step loss detection, providing an unmatched balance of value and reliable performance. The syringe drive can also be moved manually (without power), allowing fast, easy syringe replacement to minimize downtime and lower ongoing costs.

Faster product development

In today's fast-paced environment, time-to-market is a major consideration for any instrument designer. Selecting proven off-the-shelf components is a sure way to accelerate your instrument development. You can also speed up and simplify validation of your instruments by choosing OEM components that have already been extensively tested and approved. The Cavro XE Pump is constructed to meet ISO 13485 and ISO 9001 requirements, and to comply with national and regional standards, including Europe's 2006 RoHS Directive and the US FDA's QS regulations. It is UL recognized (standard UL 61010A-1) and bears the UL designation label, streamlining instrument validation and approval for a shorter time to market.

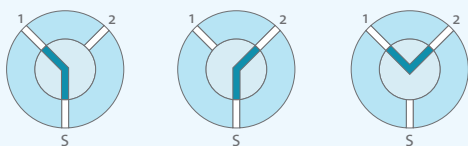


**PANEL MOUNTING LAYOUT
VIEWED FROM FRONT DIRECTION**

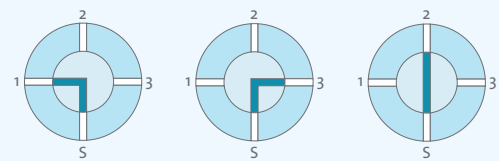
Valve options

Ceramic valve options	Non-distribution: 3-port Distribution: 3-port
Plastic valve options	Non-distribution: 3-port Distribution: 3-port

3-port non-distribution valve



3-port distribution valve



Cavro XE Pump specifications

Plunger drive	Principle	Direct rack and pinion drive with encoder and home flag; step loss detection
	Travel	30 mm
Syringes	Sizes	50 µl, 100 µl, 250 µl, 500 µl, 1.0 ml, 2.5 ml and 5.0 ml
Valve/valve drive	Switch time	≤ 250 ms between adjacent ports
Valves	Valve options	3-port valve, 3-port distribution valve
	Turn time	~ 250 ms between adjacent ports
	Drive	Stepper motor with optical encoder for positioning feedback; step loss detection
Material	Plastic	Plug: PTFE Body: PCTFE
	Ceramic	99.5 % Alumina
	Standard fittings	1/4-28 or M6 tubing fitting, 1/4-28 syringe fitting
	Firmware	Selectable plunger speeds Backlash compensation Terminate moves, delays Diagnostics Absolute or relative positions
Dimensions	Height	127 mm (5.0 in)
	Width	64 mm (2.5 in)
	Depth	102 mm (4.0 in)
Power requirements	Supply voltage	24 VDC ± 10 %
	Current	Peak: 1 Amp
	Resolution	1,000 increments
	Speed	2 seconds-60 seconds/full stroke depending upon syringe size and tubing
	Precision	≤ 0.05 % CV at full stroke (at room temperature, 1 ml syringe using deionized water)
	Accuracy	≤ 1.0 % deviation from expected at full stroke (at room temperature, 1 ml syringe using deionized water)
	Interface	Type
	Baud rate	9,600 (serial), 100K (CAN)
	Format	Data bits: 8 Parity: none stop bit: 1 half duplex
	Addressing	Up to 15 pumps can be addressed individually
	Communications	Data terminal or OEM protocol (serial), Cavro CAN (CAN)
Environmental	Operating temperature (mechanism)	15°-40°C (59°-104°F)
	Humidity (non-condensing, mechanism)	20-80 % RH at 40°C (104°F)
	Storage temperature	-20°-65°C (-4°-149°F)

Please contact your local Tecan representative to determine the best configuration for your needs.

Tecan – Who we are

Tecan (www.tecan.com) is a leading global provider of laboratory instruments and solutions in biopharmaceuticals, forensics and clinical diagnostics. The company specializes in the development, production and distribution of automated workflow solutions for laboratories in the life sciences sector. Its clients include pharmaceutical and biotechnology companies, university research departments, forensic and diagnostic laboratories. As an original equipment manufacturer (OEM), Tecan is also a leader in developing and manufacturing OEM instruments and components that are then distributed by partner companies. Founded in Switzerland in 1980, the company has manufacturing, research and development sites in both Europe and North America and maintains a sales and service network in 52 countries.

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Safety and regulatory compliance

Tecan Cavro OEM components are designed and manufactured to the highest quality, meeting EU RoHS directives. Many Tecan Cavro components are UL-recognized components. Tecan Systems' Quality Management System (QMS) is compliant with ISO 9001, ISO 13485, and the Quality System Regulations (QSR).

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