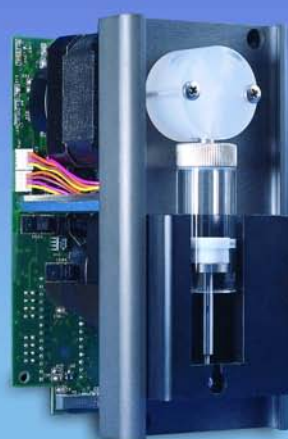


## Cavro® XE 1000

### Compact OEM Syringe Pumps



- 1000 increment resolution per stroke
- RS-232, RS-485 and CAN Communications interfaces
- RoHS compliant
- UL recognized component

The Cavro® XE 1000 is Tecan Systems' entry level syringe pump. With a rugged, low maintenance design, this pump offers the lowest cost of ownership over the life of the product.

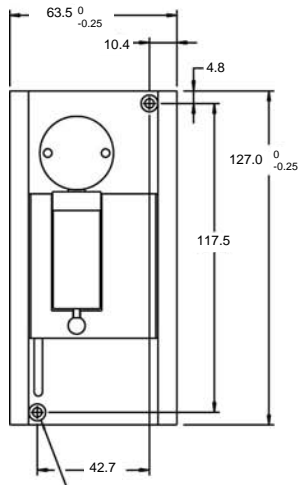
**Resolution.** The XE 1000 is designed for liquid handling applications in the 5  $\mu$ L to 5 mL range. The syringe drive has a 30 mm travel and a resolution of 1,000 increments.

**Communications.** The XE 1000 can communicate singly or in a multi-pump configuration through an RS-232, RS-485 or Controlled Area Network (CAN) interface. Up to 15 XE Pumps or other Cavro devices can be connected in the multi-pump configuration. XE 1000 pumps support 9,600 baud for

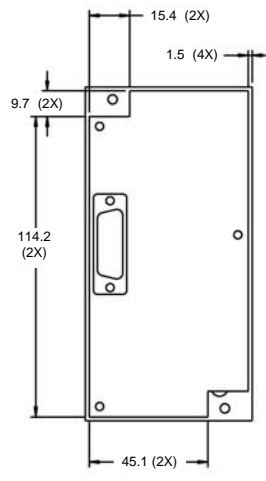
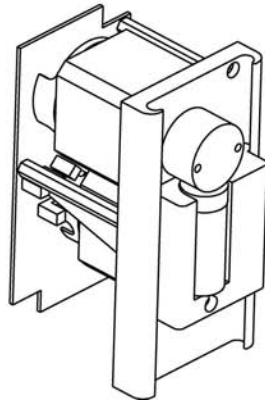
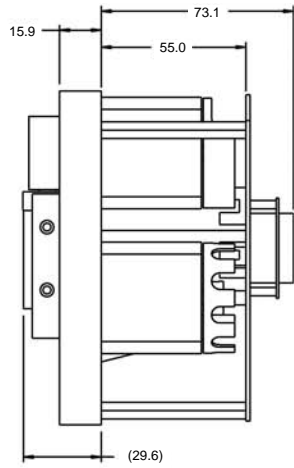
RS-232/RS-485 and 100K for CAN. Pumps also include an auxiliary input and output for TTL level signals.

**Syringe Drive.** The XE 1000 is driven by a stepper motor with a rack and pinion drive that incorporates a home flag and a quadrature encoder for step loss detection. Plunger speeds are programmable from 2 to 60 seconds per full stroke. Syringe sizes are available from 50  $\mu$ L to 5 mL.

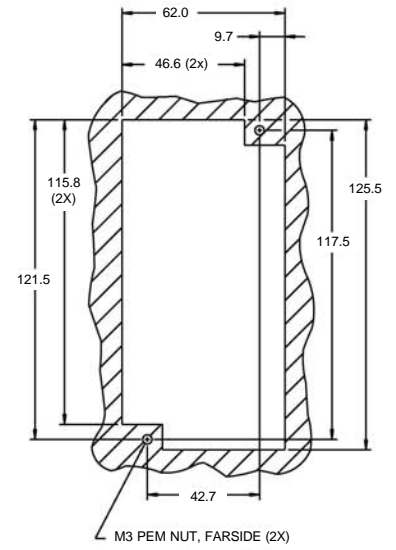
**Design and Maintenance.** The XE 1000 is a compact and lightweight pump. It uses an anodized cast aluminum frame and is designed to mount to a panel. The pump face has two mounting holes for easy access. The syringe drive can be manually moved (without power) in order to facilitate syringe replacement. Valves and tubing are available in 1/4-28 or M6 formats.



FRONT VIEW

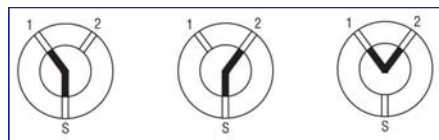


BACK VIEW



PANEL MOUNTING LAYOUT  
(VIEWED FROM FRONT DIRECTION)

NOTE:  
ABOVE DIMENSIONS IN METRIC UNITS (MILLIMETERS).



3-Port Valve

# Cavro XE 1000 OEM Syringe Pump Specifications

## Plunger Drive

<b>Principle</b>	Direct rack and pinion drive with encoder and home flag; step loss detection
<b>Travel</b>	30 mm

**Syringes** 50 µL, 100 µL, 250 µL, 500 µL, 1.0 mL, 2.5 mL and 5.0 mL

## Valve/Valve Drive

<b>Valve Options</b>	120° 3-port valve
<b>Turn time</b>	≈250 ms between adjacent ports
<b>Drive</b>	Stepper motor with optical encoder for positioning feedback; step loss detection
<b>Material</b>	Plug: Teflon® Body: PCTFE
<b>Standard Fittings</b>	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

<b>Height</b>	127 mm (5.0 in.)
<b>Width</b>	64 mm (2.5 in.)
<b>Depth</b>	102 mm (4.0 in.)

## Power Requirements

<b>Supply Voltage</b>	24 VDC ± 2%
<b>Current</b>	Peak: 1 Amp

**Resolution** 1,000 increments

**Speed** 2 seconds - 60 seconds / full stroke depending upon syringe size and tubing

**Precision** ≤0.05% CV within run at full stroke (at 25°C, 1mL syringe using deionized water)

**Accuracy** <1.0% deviation from expected at full stroke (at 25°C, 1mL syringe using deionized water)

## Interface

<b>Type</b>	RS-232, RS-485, or CAN
<b>Baud rate</b>	9,600
<b>Format</b>	Data Bits: 8 Parity: None Stop Bit: 1 Half Duplex
<b>Addressing</b>	Up to 15 pumps can be addressed individually
<b>Communications</b>	Data Terminal or OEM protocol

## Environmental (Mechanism)

<b>Operating Temperature</b>	15° - 40°C (59° - 104°F)
<b>Storage Temperature</b>	-20° - 65°C (-4° - 149°F)
<b>Humidity (Non-Condensing)</b>	20-80% RH at 40°C (104°F)

## Safety and Regulatory Compliance

The XE 1000 is a UL recognized component. Tecan Systems UL customer file is E164638. Tecan Systems' Quality System is ISO 13485 Certified. The XE 1000 meets the requirements set by European Union's Directive 2002/95/EC on the Restriction of Hazardous Substances.



Specifications are subject to change without notice.

# Ordering Information

<b>Cavro XE 1000</b>	<b>RS-232/RS-485</b>	<b>CAN/RS-485</b>
<b>3-Port (120°), 1/4-28</b>	20738585	20738587
<b>3-Port (120°), M6</b>	20738589	20738591

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