VS-1300P Pharma Inline Fermentation Monitor

In-situ CO2, Ethanol, Sugars, Organic Acid and Temperature Measurements for Bioprocess

Be*N*Sense

The VS-1300P Pharma Inline Fermentation Monitor measures dissolved concentrations accurately and reliably. VS-1300P is easy to install, easy to integrate and has a low cost of ownership.

BevSense LLC is the leader in innovative infrared instruments for the food, beverage, biofuel and pharmaceutical industries. The VS-1300P Pharma Inline Fermentation Monitor is able to measure CO_2, Ethanol, Total Organic Acid or Sugars. One economical sensor can measure one, two, or three ingredients and temperature in real-time.

High Precision In-Situ Measurements of Bioreactor Process with Infrared — VS-1300P sensors help pharmaceutical companies with fermentation control and alarming. VS-1300P sensors measure process ingredients directly and help to optimize product yield, promote growth conditions and minimize variability.

Leadership Accuracy and Response — VS1300P sensors have been demonstrated to be more sensitive and repeatable than traditional instruments. Measurement data is taken 24 times per second and can be communicated to a control systems as fast as every 100ms.

Service and Maintenance Savings — VS-1300P sensors are designed to be maintenance free – solid state devices with no moving parts and no consumables.

Network Device Real-Time Data — VS1300P Series Sensors can be implemented as standalone systems or as part of a process control network under PLC control.

DASTEC S.R.L.

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Product Specifications

System includes inline sensor, cable, Sensor Management Station with local display and Windows™-based software

Part #'s Parameter Measured	VS-1300P (one to three concentration configurations available) Ethanol	Sugars (total)	CO2	Organic Acids (total)
Measuring Range	0 – 20 w/w% standard 0 – 100 w/w% customizable 0 – 20 v/v	0 - 20° Brix standard 0 - 100° Brix customizable	0 to 6 v/v 0 to 12,000 ppm 0 to 12 g/L	0-5 w/w% standard 0-100 w/w% customizable
Accuracy	± .016 w/w% ± .02 v/v%	± .01° Brix	± .02 v/v ± 39.2 ppm or .0392 g/L	.005 w/w%
Resolution	.01 w/w .01 v/v%	.01° Brix	.01 v/v 1 ppm/l or .001 g/L	.01 w/w%
Repeatability (8 hour test)	.01 w/w .01 v/v	.008° Brix	.008 v/v 16 ppm or .016 g/L	.008 w/w%

Measuring Method	Mid Infrared spectrometer with Attenuated Total Reflectance (ATR) sampling
Measuring Interval	100 ms
Data Output Interval	100 ms to 30s (user defined)
Operating Process Temperatures (in 40°C / 104°F spans)	-2°C to +85°C (+28.4°F to 185°F) – Standard Models -2°C to +120°C (28.4°F to 248°F) – Extended Temperature Model (with cooling jacket)
Temperature Display Range	-5°C to +85°C (+23°F to 185°F)
Maximum CIP Temperature	+85°C / +185°F (standard) +120°C / + 248°F (with cooling jacket)
Maximum Line Pressure	10 bar (150 psi)
Process Connection	25mm swagelock or 1.5 sanitary TriClamp (customizable)
Dimensions (Sensor)	Probe: = 25mm x 304.8mm TriClamp: 1.5 Probe: = 25mm x 152.4mm
Sensor Ingress Rating/Materials	IP67 (NEMA4) – 316L SS or HASTELLOY C2000 – Sapphire Crystal
Shock Resistance	100G 1/2 sine wave or 6 foot drop on concrete

Operator Interface – VS-300 Sensor Management Station or VS-200 SMS Sensor Management Station (DIN Rail mount)

Display	Concentration, Temperature and Time on three-line VFD display (VS-300 only)
Cable (Distance to Sensor)	4.6m / 15 ft (standard), 30.5m / 100 ft (max), 7.6m / 25 ft (max for ATEX)
Analog I/O	4-20mA standard
Fieldbus Interfaces	Ethernet, EtherNet/IP, Profibus DP (optional)
Power	120/240 VAC, 50-60 Hz (auto sensing) or 24VDC
Dimensions (WxHxD VS-300 SMS) (WxHxD VS-200 SMS 31mm DIN rail)	222.3mm (8.75 in) W x 290.8mm (11.5 in) H x 139.7mm (5.5 in) D 63.5mm (2.5 in) W x 127mm (5 in) H x 168mm (6.5 in) D
Enclosure VS-300 SMS	IP67 (NEMA4) VS-300 SMS only
Ambient Temperature	-5°C to +40°C (+23°F to 104°F)
Shipping Weight (Total System)	9.07 kg (20 lbs)
Approvals	CE, FCC, VCCI Class A, AS/NZS Class A and Class 1 Div1 ATEX (optional)