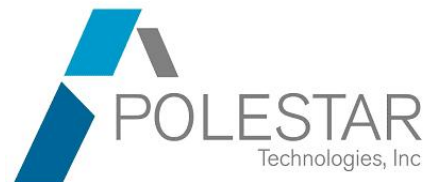


Product Data Sheet

PDS-002



DSP 4000 MC Multi-Channel Optical Process Monitor

Polestar's DSP Series Optical Process Monitors are designed specifically to operate with our oxygen, pH, and CO₂ sensors, and are the core of all Polestar process monitoring systems. The multi-channel DSP 4000 MC monitor can be configured to measure any combination of up to four of these parameters simultaneously. DSP 4000 MC includes automatic temperature and pressure compensation as well as automatic gain control (AGC, patent pending) to optimize readings and maximize sensor lifespan. Pre-set calibration factors can be uploaded using a conventional USB flash drive, which can also be used for local storage of process run data. In compliance with 21CFR part 11, run data are time-stamped via an on-board clock, and all changes to run settings are logged, and may be password protected.

The NEMA 12/4X, IP 65 enclosure has water-tight cord-grips for bringing in process temperature and pressure data via 4-20 mA signals and a high-visibility VFD display. The system also offers 4-20 mA isolated loop analog outputs, as well as a range of digital communication protocols. If desired, process temperature can be monitored using on-board circuitry for PT100 RTDs.

The DSP 4000 MC system is suitable for use in a range of environments, including laboratories, pilot and production plants, as well as outdoors. Applications enabled by the robust, non-electrode design include bioprocessing, food & beverage, high purity water, fuels and biofuels, and environmental monitoring.

Easy to Use

The DSP 4000 MC is designed for easy installation and operation. It may be pipe-, surface-, or panel-mounted, or used on the benchtop. It features a large, easy-to-read four-line VFD display and intuitive menu-driven software. The keypad is ESD and EMI shielded with no double assignment of keys; it is also sealed and washable, and offers positive tactile feedback.

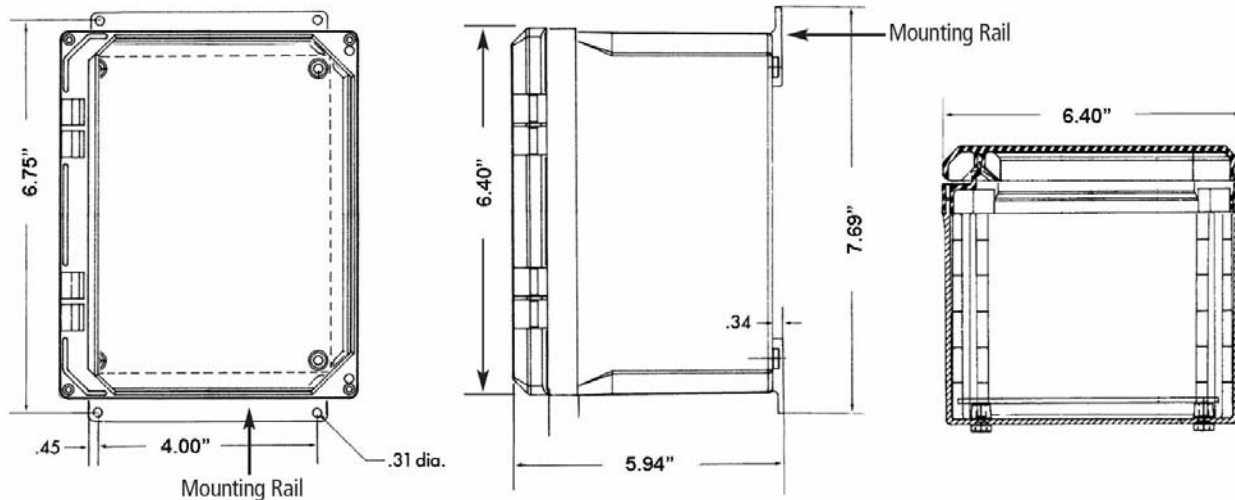
Optical Sensing Technology

Depending upon the sensor chemistry, Polestar's DSP 4000 MC utilizes either fluorescence lifetime (O₂) or ratiometric fluorescence analysis (pH, CO₂) to measure the parameter of interest. Because they are inherently self-referencing, both of these detection approaches eliminate the potential for measurement error arising from changes in sample turbidity, refractive index, viscosity, or color. This ensures stable, drift-free calibration and hence reliable measurements throughout the lifespan of a sensing element.

Calibration Made Easy

All sensing elements are shipped pre-calibrated. Users simply upload the calibration constants from a USB flash drive. If they prefer, users may perform a simple one- or two-point calibration. Either way, the calibration is stable throughout the life of the sensing element.





DSP 4000 MC Product Specifications

Enclosure/Power	
Operator Interface	4-line VFD Display, 8 tactile keys
¼ DIN Dimensions (H x W x D)	6.40 x 6.40 x 5.94 in.
Max Depth – panel mounted	5.94 in.
Mounting	Panel, Pipe, or Wall
Material	Polycarbonate, NEMA 12/4X, IP 65
Weight	5 lbs.
Ratings/Approvals	CE compliant; NEMA 12/4X, IP 65
Power	24 VDC
Environmental	
Storage Temperature	-40 to 70 ° C (-40 to 158 ° F)
Ambient Operating Range	-10 to 50 ° C (-14 to 122 ° F)
Relative Humidity	0 to 95%
Outputs – Independent outputs for each active channel	
Analog output	16-bit isolated 4-20 mA. 10-300 V
Analog output scaling	Used defined
Digital output protocols	RS232/RS485, Modbus® TCP, Profibus, @, DeviceNet
Inputs – Independent inputs for each active channel	
Sensors	4 channels (customer choice)
Temperature	PT100 RTD; 4-20 mA signal; manual
Pressure	4-20 mA signal; manual

For more information
 visit Polestar's website at
www.polestartech.com;
 or contact Customer Service
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