Specification Sheet

PN: 9000-1920-23, 9000-1892-93, 9000-1896-97
SYSTEC® DST Pump with PCB
Vacuum Controlled

Description

The DST Pump with PCB is a vacuum control system for use with IDEX degassing chambers. The system includes a dual stage (DST) vacuum pump and a Smart board controller to maintain vacuum levels. There is a connector for optional external LED indicators or error outputs. The part numbers for various product configurations are located on the last page of this specification sheet. This specification sheet includes details for both the "analytical" and "prep" versions of the pump. The analytical version is designed for standard degassing chambers and fluids. The prep versions are designed to handle high vapor loads from high flow rate chambers or fluids with low vapor pressure that will cause increased solvent pervaporation through the membrane.

PUMP CONTROL SPECIFICATIONS

Power Requirements
24 VDC @ 0.75 Amp max.
(< 5 Watts consumption average)

Temperature
50 °C or lower when run in ambient conditions (20-25 °C)

Vacuum Sensor Calibration Accuracy
Prep 80 mmHg +/- 5 mmHg
Analytical 50 mmHg +/- 5 mmHg

Closed-Loop Control Setpoint
50 mm Hg absolute (analytical) or 80mm Hg (prep) pump runs at high RPM until near setpoint, then speed is varied to maintain a value of setpoint— load independent.

Errors Detected

1 – Pumpdown:	**Prep —** Unable to reach 82 mm Hg in 10 minutes. **Analytical —** Unable to reach 52mm Hg in 10 minutes.
2 – High Vacuum:	**Prep —** Vacuum > 110 mmHg for more than 6 min. in the running state (after pumpdown). **Analytical —** Vacuum > 82 mmHg for more than 6 min. in the running state (after pumpdown).
3 – Sensor Signal:	Sensor Failure Detected Sensor signal >800 mm Hg or sensor signal <10 mm Hg.

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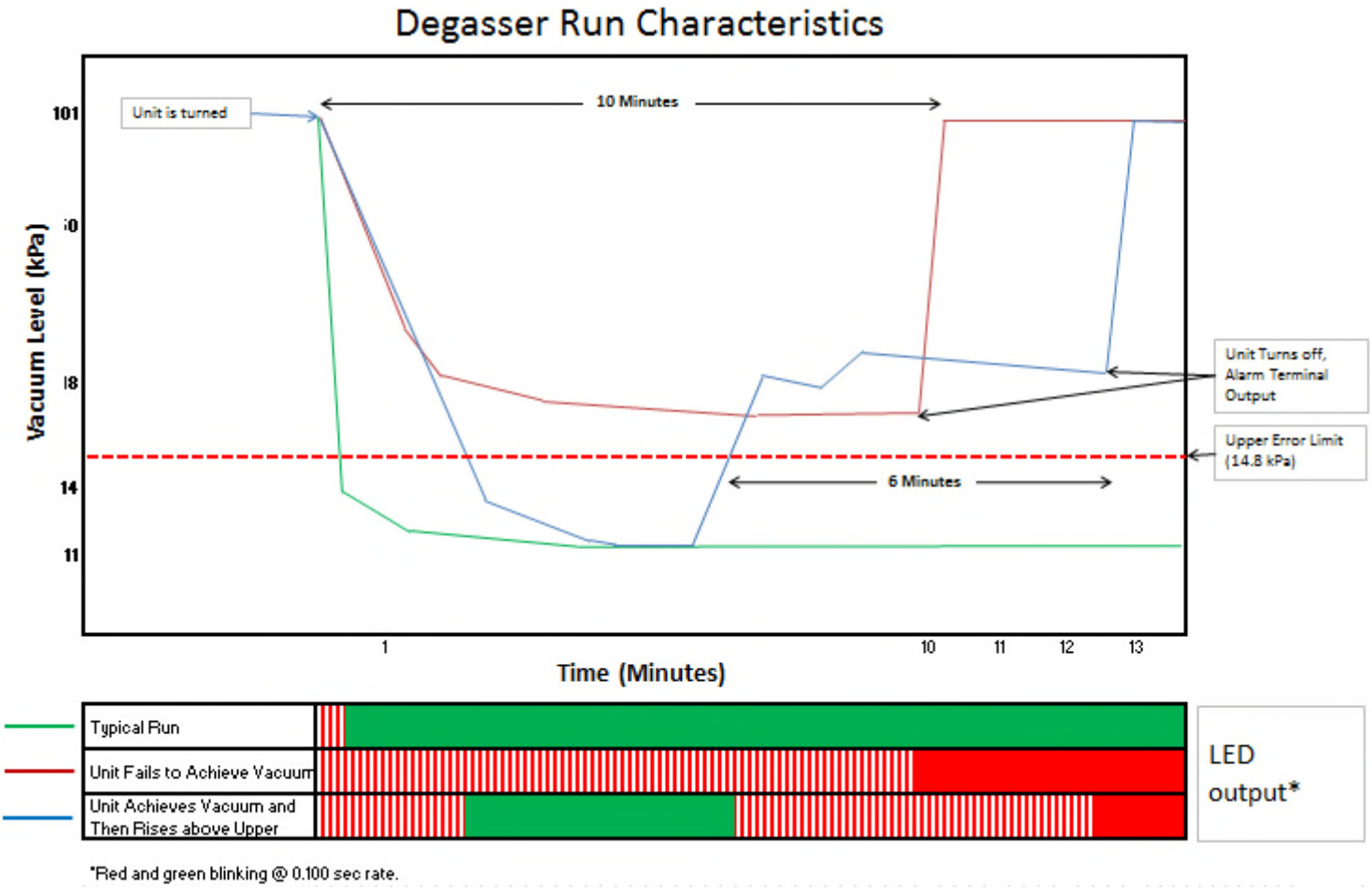
PREP VACUUM PUMP TECHNICAL DATA

Air Flow (no vacuum): 650 SCCM @ 400 RPM; 100 SCCM @ 60 RPM
Typical Vacuum Performance: 80 mmHg @ (80±20) RPM (3 SCCM air flow, closed loop)
Pump-down Time: <1 minute (with 4 MINI degassing channels, 50 cc total internal volume)
Pump Head Continuous Purge Air Flow Rate: ~30 SCCM
Vacuum Flow Path Materials: 303 Stainless Steel, Polypropylene, PTFE, EPDM Rubber
Expected Lifetime:>5 years (continuous run @ 60 RPM)



*Red and green blinking @ 0.100 sec rate.

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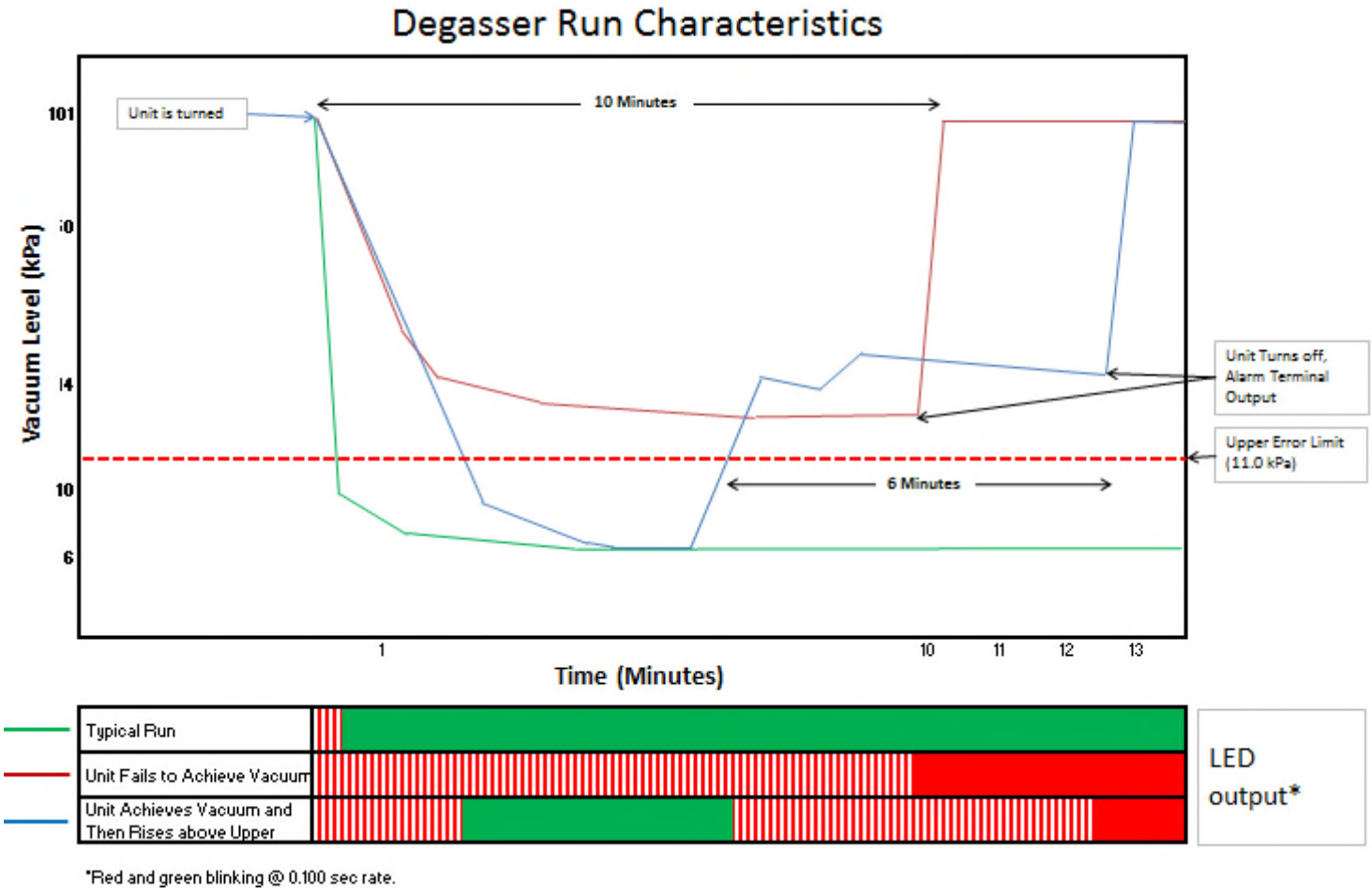
Analytical Vacuum Pump Technical Data

Air Flow (no vacuum): 650 SCCM @ 400 RPM; 100 SCCM @ 60 RPM
Typical Vacuum Performance: 50 mmHg @ (60±20) RPM (3 SCCM air flow, closed loop)
Pump-down Time: <1 minute (with 4 MINI degassing channels, 50 cc total internal volume)
Pump Head Continuous Purge Air Flow Rate: ~12 SCCM
Vacuum Flow Path Materials: 303 Stainless Steel, Polypropylene, PTFE, EPDM Rubber
Expected Lifetime:>5 years (continuous run @ 60 RPM)



*Red and green blinking @ 0.100 sec rate.

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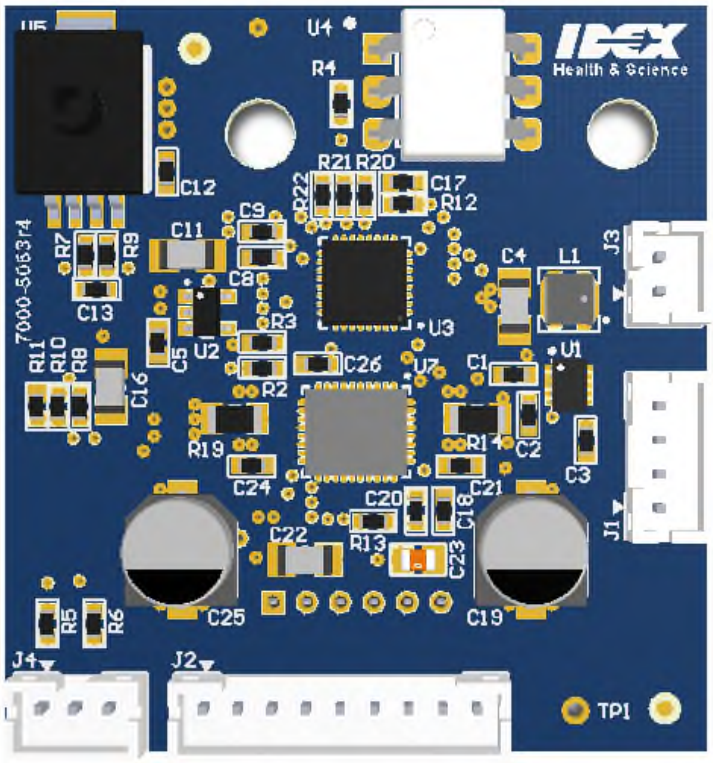
PCB Connector and Pin Map



Connector J1: Power Input

Header: *JST B4B-PH-K-S(LF)(SN)*
Mating Terminal: *SPH-002T-P0.5S*
Mating Housing: *JST PHR-4*

Connector J3: Bi-Color LED

Header: *JST B3B-PH-K-S(LF)(SN)*
Mating Terminal: *SPH-002T-P0.5S*
Mating Housing: *JST PHR-3*

Connector J5: Opto-isolated Error Output

Header: *JST B2B-PH-K-S(LF)(SN)*
Mating Terminal: *SPH-002T-P0.5S*
Mating Housing: *JST PHR-2*

Connector	Pin 1	Pin 2	Pin 3	Pin 4
J1	+24VDC	+24VDC	GND	GND
J3	Red LED Anode	GND	Green LED Anode	
J5	Emitter	Collector		

The recommended wiring for these connectors is stranded 24 AWG, UL 1007.

J5 exposes the opto-isolated, bi-polar transistor outputs of the onboard Fairchild Semiconductor H11G2SR2M integrated circuit. The collector and emitter of the opto-coupled transistor are exposed. The recommended circuit for interfacing to digital CMOS or TTL systems is shown in Figure 2.

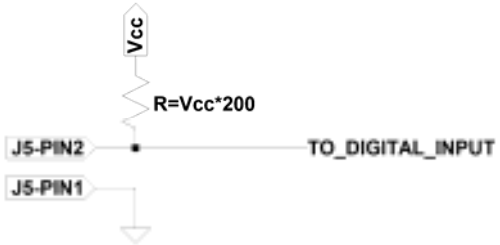


Figure 2: Recommended digital interface for alarm output circuit.

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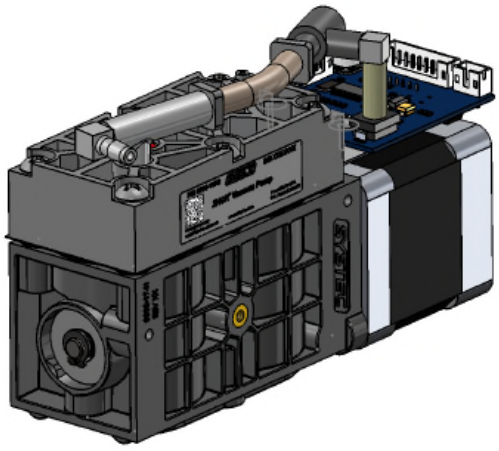
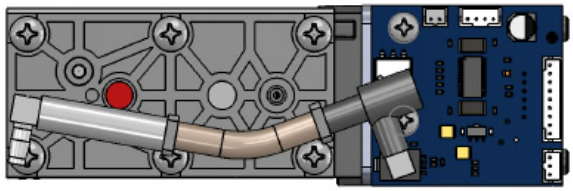
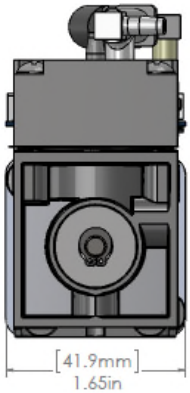
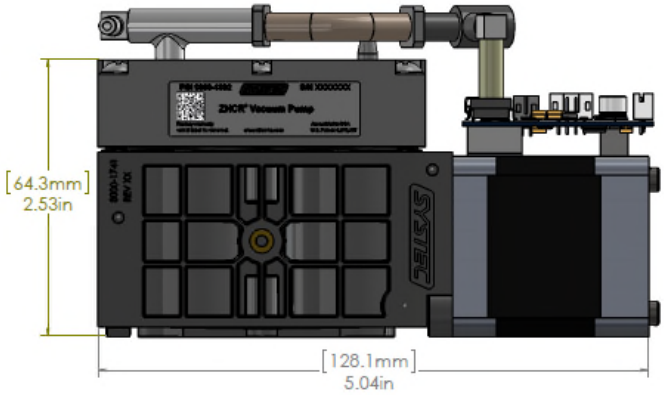
Dimensional Drawings

Dimensions are in inches and millimeters [mm]









Vacuum Degassing Control System

Part Number	Description	Mounting	Scale
9000-1920	Vacuum Control System (Pump, PCB and Air Bleed)	Bottom	Analytical
9000-1921	Vacuum Control System (Pump, PCB and Air Bleed)	Side	Analytical
9000-1922	Vacuum Control System (Pump, PCB and Air Bleed)	Bottom	Prep
9000-1923	Vacuum Control System (Pump, PCB and Air Bleed)	Side	Prep

Pump Only

Part Number	Description	Mounting	Scale
9000-1892	Vacuum Pump Only	Bottom	Analytical
9000-1893	Vacuum Pump Only	Side	Analytical
9000-1896	Vacuum Pump Only	Bottom	Prep
9000-1897	Vacuum Pump Only	Side	Prep

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