

Differential Pressure Monitor



Figure 1. Differential Pressure Monitor with Remote Pressure Transmitter.

The Differential Pressure Monitor (DPM) is an integral part of the APOGEE® Automation System. The monitor measures and displays the differential pressure between a room and its adjoining space. It is used for monitoring in hospital pharmacies and isolation rooms, and also in labs, areas surrounding labs, holding rooms, and other areas where knowledge of the differential pressure is important.

The Differential Pressure Monitor can operate stand-alone or networked to the APOGEE Automation System. When used with the APOGEE Automation System, alarm, differential pressure values, and status point information can be communicated via a Local Area Network (LAN) to a central terminal for display and recording.

Features

- Through-the-wall differential pressure measurement
- Digital display of pressure (inches of water / Pascals)
- LED indicators for normal and alarm status
- Audible horn indicates alarm condition
- Return from power failure without operator intervention
- Optional 2-position keyed switch disables alarms, available in separate models enabling alarms for:
 - > negative pressure (infectious isolation)
 - > positive pressure (protective isolation)
- Control parameters assigned and changed using the Portable Operator's Terminal
- Proven system architecture

Description

The DPM consists of the following:

- A Liquid Crystal Display (LCD) which displays:
 - State of pressure mode key switch (optional)
 - Pressure monitoring mode
 - High pressure alarm
 - Low pressure alarm
 - General failure
 - Status of door switch
 - Anteroom status
 - Differential Pressure (In.w.c. or Pa)
- 2 LED status lights: green indicating normal operation; red indicating alarm condition
- Audible horn with Horn silence button
- Interfaces to:
 - One or two Remote Pressure Transmitters
 - APOGEE LAN communication
 - Portable Operator's Terminal port
 - Auxiliary alarm relay output
 - 4-20 mA output of pressure
 - Door switch contact
- Optional 2-position keyed switch disables alarms for space cleaning and maintenance.

- Separate keyed switch models for:
 - > negative pressure (infectious isolation)
 - > positive pressure (protective isolation)

Monitor Specifications

Power Requirements	
Operating Range	18-28 Vac 50/60 Hz
Power Consumption	2.2 VA @ 24 Vac
Remote Communication	LAN trunk
Local Communication	Portable Operator's Terminal
Inputs	
Digital	2 Remote Pressure Transmitters 1 dry contact
Outputs	
Analog	1 4-20 mA (pressure) 1 resistive (mode switch)
Digital	2 dry contacts
LEDs	1 green, 1 red
Alarm	1 horn, 85 dbs @ 4" (10 cm)
Ambient Conditions	
Storage Temp	-40°F to 167°F (-40°C to 75°C)
Operating Temp	32°F to 120°F (0°C to 49°C)
Humidity Range	10% to 90% (non-condensing)
Dimensions	8.5" W x 4.5" H x 1.5" D (216 mm x 114 mm x 38 mm)
Weight	15 oz (410 g)
Agency Listings	UL 916 PAZX, UL 864 UDTZ CSA Certified FCC Compliance Part 15, Cl. A

NOTE: Authorities having jurisdiction over healthcare facilities may not allow monitors with keyed switches. Please check with local codes before ordering.

Product Ordering Information

Description	Product Part Number
Differential Pressure Monitor (DPM) without Keyed Switch	547-002
DPM with 2-position Keyed Switch, NEGATIVE / NEUTRAL	547-005
DPM with 2-position Keyed Switch, POSITIVE / NEUTRAL	547-006
Remote Pressure Transmitter	547-003
Differential Pressure Monitor Calibration Tool	547-004
Healthcare Isolation Rooms Architectural and Mechanical Design Considerations Technology Report	149-903

Remote Pressure Transmitter

The Remote Pressure Transmitter (RPT) measures the differential pressure between a room and its adjoining space. The RPT uses thermal anemometer technology to measure the air pressure differential between two spaces. These values are then transmitted through a proprietary output signal to an input of the DPM, which converts the signal to a differential pressure measurement. The RPT is designed to be mounted in a through-the-wall installation. It is calibrated after installation. This calibration is made easy through the use of a proprietary NIST traceable calibration tool.

RPT Specifications

Power Requirements	
Operating Range	18-28 Vac 50/60 Hz
Power Consumption	1.4 VA @ 24 Vac
Maximum Distance from Differential Pressure Monitor	500 ft. (150 m)
Measurement Range	-0.2" to +0.2" of water (-49.8 to + 49.8 Pascals)
Accuracy	±0.001" of water (±0.3 Pascals)
Airflow Across Sensor	
Minimum	0.0035 CFM (100 CCM)
Maximum	0.35 CFM (10,000 CCM)
Ambient Conditions	
Temperature Range	65°F to 85°F (18°C to 30°C)
Humidity Range	10% to 90% (non-condensing)

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NOTE: DPM with 3-position Keyed Switch, 547-001, is only offered as a service replacement part. Contact your local Siemens Building Technologies office for assistance.