

DIFFERENTIAL PRESSURE SWITCH



FEATURES

- Sealed Metal Bellows Sensors
- Welded 316 Stainless Steel Sensors
- Gasketed Die-Cast Aluminum Enclosure with Epoxy Coating
- Single Switch Output
- Adjustable Ranges:
30 "Hg Vac to 90 psid (-1 to 6 bar)



OVERVIEW

The J21K differential pressure switch monitors the difference between two system pressures or vacuums and senses excessive flow deviation, or verifies that a filter is clogged.

The J21K's rugged design - with epoxy coated enclosure and sealed metal bellows - lends itself to exacting applications. Widely used in refrigeration (chiller) and compressor applications, the J21K can be used for filter status monitoring and proof of flow.

FEATURES

- Designed to meet Enclosure Type 4X (with watertight conduit fitting)
- UL listed and cUL certified
- Optional ATEX and Rostechnadzor (GOST-R) intrinsic safety compliance
- Optional adjustable deadband
- Single switch output
- Opposing bellows design



J21K-150 differential pressure switch with nickel-plated brass pressure connections and brass bellows



J21K-254 differential pressure switch with brass pressure connections and phosphor bronze bellows

SPECIFICATIONS

STORAGE TEMPERATURE	-65 to 160°F (-54 to 71 °C)
AMBIENT TEMPERATURE LIMITS	-40 to 160°F (-40 to 71 °C); Set point typically shifts less than 1% of range for a 50°F (28°C) ambient temperature change
SET POINT REPEATABILITY	±1% of full scale range
SHOCK	Set point repeats after 15 G, 10 millisecond duration
VIBRATION	Set point repeats after 2.5 G, 5-500 Hz
ENCLOSURE	Die cast aluminum, epoxy powder coated, gasketed
ENCLOSURE CLASSIFICATION	Designed to meet enclosure type 4X requirements with M900 option (watertight conduit fitting)
SWITCH OUTPUT	One SPDT snap action switch; switch may be wired "normally open" or "normally closed"
ELECTRICAL RATING	15 A 125/250/480 VAC resistive. Electrical switches have limited DC capabilities. Consult factory for additional information.
WEIGHT	Approximately 2 lbs. (0.90 kg.)
ELECTRICAL CONNECTION	7/8" diameter conduit hole
PRESSURE CONNECTION	Models 127-150, 232-254, 357, 16020: 1/4" NPT (female); models S127B-S150B, 16021: 1/2" NPT (female)



APPROVALS



UNITED STATES AND CANADA

UL listed, cUL certified
UL 508; CSA C22.2, no. 14 File # E42272



EUROPE

Low Voltage Directive (LVD) 73/23/EC & 93/68/EEC

Compliant to LVD
Products rated lower than 50 VAC and 75 VDC are outside the scope of the LVD

Pressure Equipment Directive (PED) 97/23/EC

Compliant to PED
Products rated lower than 7.5 psi are outside the scope of the PED



ATEX Directive (94/9/EC)

II 1G Ex ia IIC T6 Ga **(Optional - code M405)**
-50°C ≤ Tamb ≤ +60°C
UL International DEMKO A/S (N.B.#0539)
Certificate # DEMKO II ATEX 1105261X
EN 60079-0, 60079-11, 60079-26



RUSSIA

Rostekhnadzor Permit and GOST-R CoC **(Optional - code M406)**
0ExiaICT6
Tamb = -50C to +60C
NANIO CCVE Certification Center
Certificate # ROSS US.GB05.Bo2933
GOST R 51330.0, 51330.1, 51330.10 & 51330.14

MODEL CHART

Model	Adjustable Set Point Range		Deadband		Differential Proof Pressure**		Working Pressure*	
	Low end of range on fall; psid (unless noted)	High end of range on rise bar (unless noted)	psi (unless noted)	bar (unless noted)	psid	bar	psi (unless noted)	bar
Welded 316L stainless steel bellows with 1/2" NPT (female) pressure connections								
S127B	30 "Hg Vac to 0	-1 to 0	0.4 to 0.6 "Hg	13,5 to 20,3 mbar	15	1.0	30 "Hg Vac to 0	-1 to 0
S140B	0 to 6	0 to 0,4	0.1 to 0.4	6,9 to 27,6 mbar	6	0,4	30 "Hg Vac to 30	-1 to 2,1
S150B	0 to 40	0 to 2,8	0.3 to 0.7	20,7 to 48,3 mbar	300	20,7	30 "Hg Vac to 300	-1 to 20,7
16021	1 to 15	0,07 to 1,0	0.1 to 0.6	6,9 to 41,4 mbar	125	8,6	30 "Hg Vac to 125	-1 to 8,6
316L welded stainless steel bellows with 1/4" NPT (female) pressure connections								
357	0 to 70	0 to 4,8	2 to 4	0,1 to 0,3	70	4,8	30 "Hg Vac to 350	-1 to 24,1
Brass bellows with 1/4" NPT (female) pressure connections								
127	30 "Hg Vac to 0	-1 to 0	0.4 to 0.6 "Hg	13,5 to 20,3 mbar	15	1.0	30 "Hg Vac to 0	-1 to 0
140	0 to 6	0 to 0,4	0.1 to 0.4	6,9 to 27,6 mbar	6	0,4	30 "Hg Vac to 30	-1 to 2,1
150	0 to 40	0 to 2,8	0.3 to 0.7	20,7 to 48,3 mbar	40	2,8	30 "Hg Vac to 180	-1 to 12,4
16020	1 to 15	0,07 to 1,0	0.1 to 0.6	6,9 to 41,4 mbar	125	8,6	30 "Hg Vac to 125	-1 to 8,6
Phosphor bronze bellows with 1/4" NPT (female) pressure connections								
232	0 to 25	0 to 1,7	0.6 to 1	41,4 to 68,9 mbar	25	1,7	30 "Hg Vac to 110	-1 to 7,6
254	0 to 90	0 to 6,2	2 to 4	0,1 to 0,3	90	6,2	30 "Hg Vac to 200	-1 to 13,8

***Working Pressure Range:** The pressure range within which two opposing sensors can be safely operated and still maintain set point adjustability.

**** Differential Proof Range:** The maximum differential pressure to which a pressure sensor may be occasionally subjected, which causes no permanent damage.

The unit may require calibration (e.g. start up, testing)



HOW TO ORDER

BUILDING A PART NUMBER

Select a **Type**

Refer to the "Type" section below

Determine type number based on switch output, enclosure, adjustment and reference.

Fill in the type portion of your part number with the corresponding number.

Select a **Model**

Refer to the "Model Charts"

Determine model based on adjustable range, deadband and proof pressure.

Fill in the model portion of your part number with the corresponding number.

Select an **Option**

Refer to the "Options" section

Determine option number based on switch output, optional materials or other product enhancements.

Fill in the option portion of your part number with the corresponding number. Leave "option" portion blank if no options are needed.

FOR MULTIPLE OPTIONS: Call United Electric Controls.

TYPE	DESCRIPTION
Differential Pressure	Type J21K - one SPDT output, internal adjustment with no reference dial.

SWITCH OPTIONS*

0140	Gold contacts, 1 A 125 VAC resistive
0500	Close deadband, 5 A 125/250 VAC resistive
1520	Adjustable deadband, 15 A 125/250/277 VAC resistive; adjustment wheel changes rise setting only. If adjustment on fall setting is required use primary adjustment
1535	High ambient, 15 A 125/250 VAC resistive; temperatures up to 250°F (121°C)
1537	Vapor sealed switch, 15A 125/250 VAC resistive

OTHER OPTIONS

M201	Factory set one switch; specify increasing or decreasing pressure and set point
M277	Range indicated on nameplate in kPa or MPa, factory selected
M278	Range indicated on nameplate in Kg/cm ²
M405	European ATEX Intrinsic Safety compliance
M406	Intrinsic safety compliance per Russian Rostekhnadzor (GOST-R)
M444	Paper ID tag
M446	Stainless steel ID tag & wire attachment
M550	Oxygen service cleaning; alcohol cleaning to remove residue from the process connection. NOT AVAILABLE MODEL 254
M900	Watertight conduit fitting; converts 7/8" hole to 1/2" NPT fitting. Required for product to meet Enclosure Type 4X

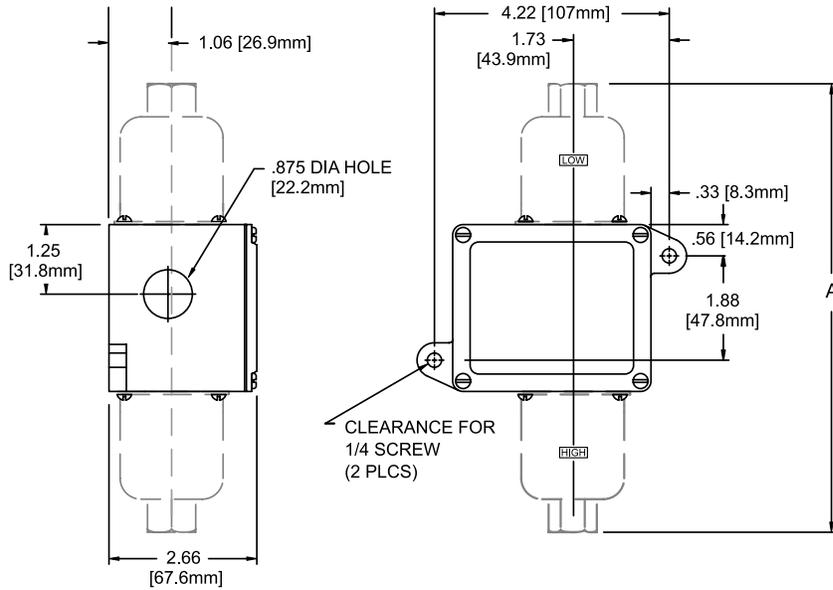
*All switches have limited DC capabilities. Consult factory for details.

DIMENSIONAL DRAWINGS

Dimensional drawings for all models may be found at www.ueonline.com

Type J21K

INTERNAL SET POINT ADJUSTMENT

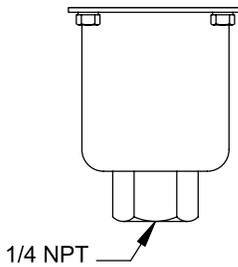


Models	Dimension A		
	Inches	mm	NPT
127-16020	8.06	204.7	1/4
S127B-16021	8.86	225.0	1/2
232	6.53	165.9	1/4
254	6.50	165.1	1/4
357	6.88	174.8	1/4

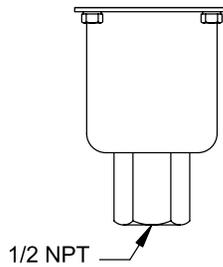
All dimensions stated in inches (millimeters)

PRESSURE SENSORS

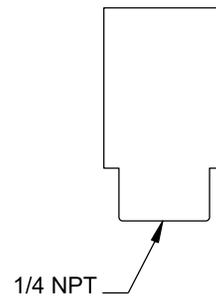
Model 127-16020



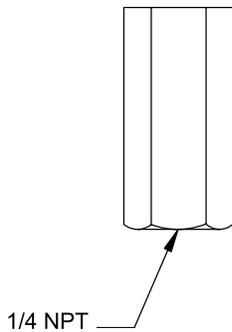
Model S127B-16021



Model 232



Model 254



Model 357

