

J21K Series

DIFFERENTIAL PRESSURE SWITCHES

J21K Series



FEATURES

- Sealed, Isolated Metal Bellows Sensors
- Welded 316 Stainless Steel Models
- 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, senses excessive flow deviation, or verifies that a filter is clogged. It is designed with two separate, opposing sensors which are connected by a rod to actuate the snap switch.

The J21K is widely used in refrigeration (chiller) and compressor applications, where its sealed metal bellows sensors offer advantages over elastomer designs.

FEATURES

- Sealed, isolated metal bellows sensors
- Welded 316 stainless steel models
- Gasketed Die-Cast Aluminum Enclosure with Epoxy Coating
- Single switch output
- Adjustable ranges:
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SPECIFICATIONS

STORAGE TEMPERATURE	-65 to 160°F (-54 to 71°C)
AMBIENT TEMPERATURE LIMITS	-40 to 160°F (-40 to 71°C)
SET POINT REPEATABILITY	±1% of adjustable 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
ENCLOSURE CLASSIFICATION	Designed to meet enclosure type 4X requirements with M900 option (watertight conduit fitting)
SWITCH OUTPUT	One SPDT; switch may be wired "normally open" or "normally closed"
ELECTRICAL RATING	15 A 125/250/480 VAC resistive
WEIGHT	Approximately 2 lbs. (0.90 kg.)
ELECTRICAL CONNECTION	7/8" diameter conduit hole
PRESSURE CONNECTION	1/4" NPT female; models S127B, S140B & S150B: 1/2" NPT female

APPROVALS



UL listed
UL 508, file # E42272



CSA certified C22.2, no. 14, file # LR39690



CE Compliance with Low Voltage Directive (LVD)

MODEL CHART

Model	Stock #	Adjustable Set Point Range		Deadband		Proof Pressure Difference between High and low side		Working Pressure psi
		psid	bar	psi	bar	psid	bar	
316L welded stainless steel bellows and 1/2" NPT female pressure connections								
S127B	—	30 "Hg Vac to 0	-1 to 0	0.4 to 0.6 "Hg	0,01 to 0,02	15	1,03	30 "Hg Vac to 0
S140B	—	0 to 6	0 to 0,4	0.1 to 0.4	0,007 to 0,03	6	0,41	30 "Hg Vac to 30
S150B	9519	0 to 40	0 to 2,7	0.3 to 0.7	0,021 to 0,05	300	20,7	30 "Hg Vac to 300
316L welded stainless steel bellows and 1/4" NPT female pressure connections								
357	9504	0 to 70	0 to 4,8	2 to 4	0,14 to 0,28	70	4,83	30 "Hg Vac to 350
Brass bellows and 1/4" NPT female pressure connections								
127	—	30 "Hg Vac to 0	-1 to 0	0.4 to 0.6 "Hg	0,01 to 0,02	15	1,03	30 "Hg Vac to 0
140	9532	0 to 6	0 to 0,4	0.1 to 0.4	0,007 to 0,03	6	0,41	30 "Hg Vac to 30
150	9538	0 to 40	0 to 2,7	0.3 to 0.7	0,021 to 0,05	40	2,76	30 "Hg Vac to 180
Phosphor bronze bellows and 1/4" NPT female brass pressure connections								
232	9559	0 to 25	0 to 1,7	0.6 to 1	0,04 to 0,07	25	1,72	30 "Hg Vac to 110
254	9545	0 to 90	0 to 6,2	2 to 4	0,14 to 0,28	90	6,21	30 "Hg Vac to 200

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 or stock number based on adjustable range, deadband and proof pressure.

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

FOR FASTER DELIVERY:

If no options are required, use the stock number to order.

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 flashed 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; adjustable 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

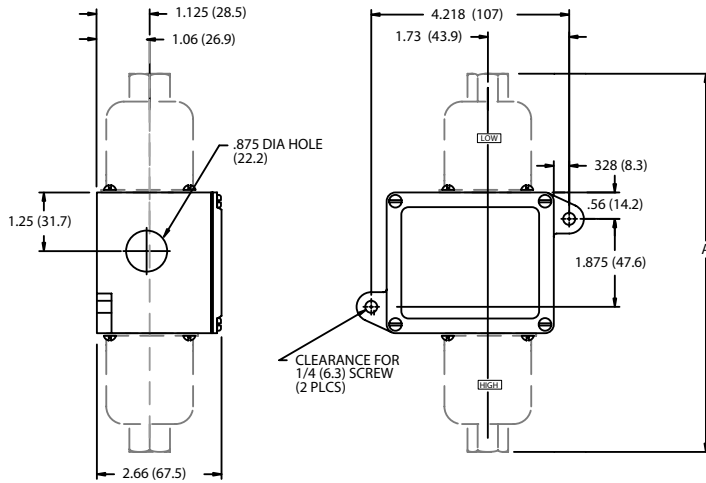
M201	Factory set one switch; specify increasing or decreasing pressure and set point
M276	Range indicated on nameplate in bars/mbars
M278	Range indicated on nameplate in Kg/cm ²
M444	Paper ID tag
M446	Stainless steel ID tag & wire attachment
M550	Oxygen service cleaning; internal construction may change (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



DIMENSIONAL DRAWINGS

Type J21K

INTERNAL SET POINT ADJUSTMENT



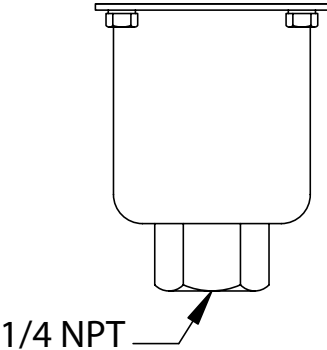
Dimension A

Models	Inches	mm	NPT
127-150	8.06	204,72	1/4
S127B-S150B	8.86	225,04	1/2
232	6.52	165,61	1/4
254	6.64	168,66	1/4
357	6.86	174,24	1/4

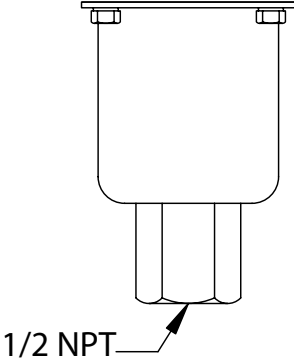
All dimensions stated in inches (millimeters)

PRESSURE SENSORS

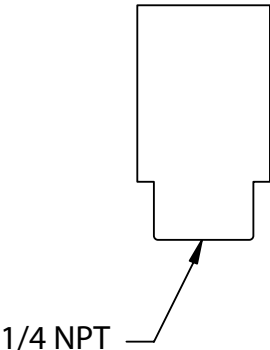
Model 127-150



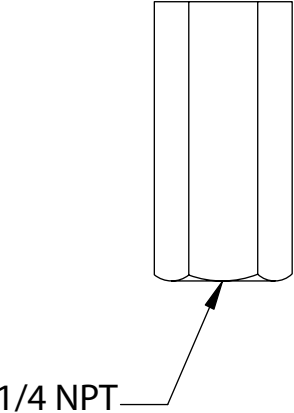
Model S127B-S150B



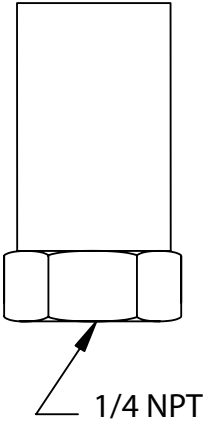
Model 232



Model 254



Model 357



RECOMMENDED PRACTICES AND WARNINGS

United Electric Controls Company recommends careful consideration of the following factors when specifying and installing UE pressure and temperature units. Before installing a unit, the Installation and Maintenance instructions provided with unit must be read and understood.

- To avoid damaging unit, proof pressure and maximum temperature limits stated in literature and on nameplates must never be exceeded, even by surges in the system. Operation of the unit up to maximum temperature is acceptable on a limited basis (i.e., start-up, testing) but continuous operation must be restricted to the designated adjustable range. Excessive cycling at maximum temperature limits could reduce sensor life.
- A back-up unit is necessary for applications where damage to a primary unit could endanger life, limb or property. A high or low limit switch is necessary for applications where a dangerous runaway condition could result.
- The adjustable range must be selected so that incorrect, inadvertent or malicious setting at any range point cannot result in an unsafe system condition.
- Install unit where shock, vibration and ambient temperature fluctuations will not damage unit or affect operation. Orient unit so that moisture does not enter the enclosure via the electrical connection. When appropriate, this entry point should be sealed to prevent moisture entry.
- Unit must not be altered or modified after shipment. Consult UE if modification is necessary.
- Monitor operation to observe warning signs of possible damage to unit, such as drift in set point or faulty display. Check unit immediately.
- Preventative maintenance and periodic testing is necessary for critical applications where damage could endanger property or personnel.
- For all applications, a factory set unit should be tested before use.
- Electrical ratings stated in literature and on nameplate must not be exceeded. Overload on a switch can cause damage, even on the first cycle. Wire unit according to local and national electrical codes, using wire size recommended in installation sheet.
- Use only factory authorized replacement parts and procedures.
- Do not mount unit in ambient temp. exceeding published limits.

LIMITED WARRANTY OF REPAIR AND REPLACEMENT

Seller warrants that the product hereby purchased is, upon delivery, free from defects in material and workmanship and that any such product which is found to be defective in such workmanship or material will be repaired or replaced by Seller (F.O.B. UE Watertown); provided, however, that this warranty applies only to equipment found to be so defective within a period of 18 months from the date of manufacture by the Seller (36 months for the Spectra 12 and One Series products). Seller shall not be obligated under this warranty for alleged defects which examination discloses are due to tampering, misuse, neglect, improper storage, and in any case where products are disassembled by anyone other than authorized Seller's representatives.

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LIABILITY LIMITATION

SELLER'S LIABILITY TO BUYER FOR ANY LOSS OR CLAIM, INCLUDING LIABILITY INCURRED IN CONNECTION WITH (I) BREACH OF ANY WARRANTY WHATSOEVER EXPRESSED OR IMPLIED, (II) A BREACH OF CONTRACT, (III) A NEGLIGENT ACT OR ACTS (OR NEGLIGENT FAILURE TO ACT) COMMITTED BY SELLER, OR (IV) AN ACT FOR WHICH STRICT LIABILITY WILL BE IMPUTED TO SELLER, IS LIMITED TO THE LIMITED WARRANTY OF REPAIR AND REPLACEMENT STATED HEREIN. IN NO EVENT SHALL THE SELLER BE LIABLE FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL OR OTHER DAMAGES OF A LIKE GENERAL NATURE, INCLUDING, WITHOUT LIMITATION, LOSS OF PROFITS OR PRODUCTION, OR LOSS OR EXPENSES OF ANY NATURE INCURRED BY THE BUYER OR ANY THIRD PARTY.

UE specifications subject to change without notice.

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