10 Series

PRESSURE SWITCH

FEATURES

- Tamper-Resistant Field Adjustment
- Adjustable Ranges from 4 to 7500 PSI (0,3 to 517,1 Bar)
- Choice of 7 Electrical Terminations
- 1-1/4" Diameter
- Height as Small as 3"

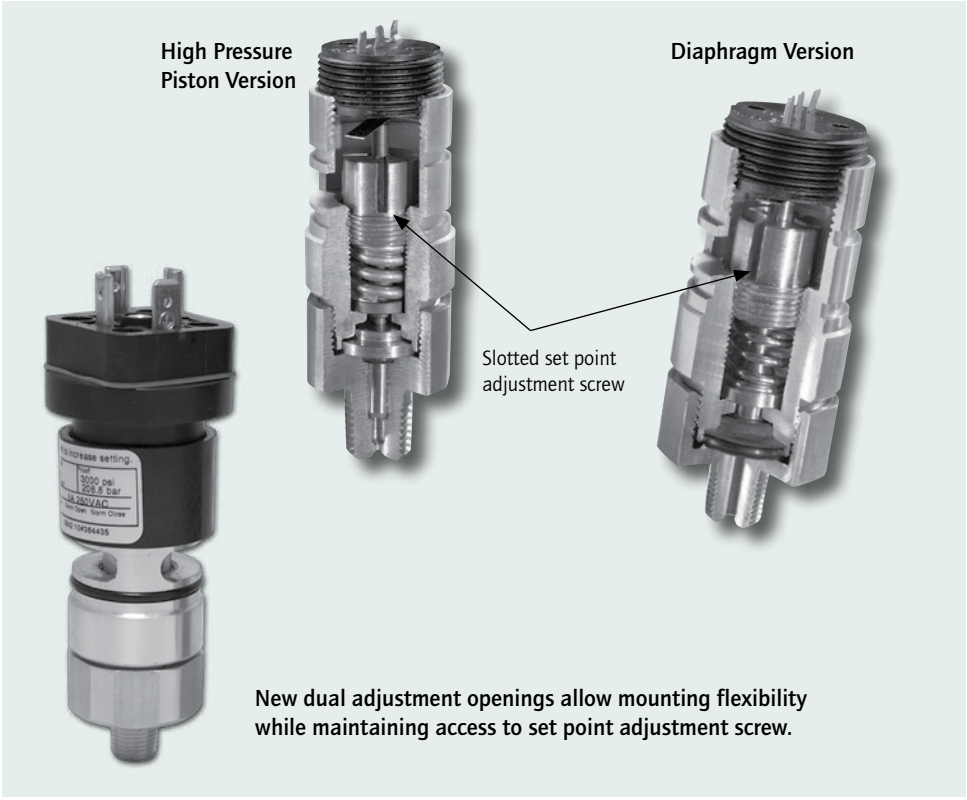
OVERVIEW

Available with seven electrical termination varieties, a choice of sensors, and several pressure connections, the 10 Series is designed to meet most requirements for a variety of OEM and industrial applications. Just 1-1/4 inches in diameter and as small as 3 inches high, this compact, cylindrical switch mounts wherever space is at a premium. A reliable and cost-effective switch, the 10 Series is ideal for applications with high settings and surges. Among the tough applications in which the product has proven itself are: mobile hydraulic units, compactors, balers and lube oil systems.

In addition to standard capabilities, modified designs or options are available to help you meet specific application requirements. Design flexibility allows for customized pressure connections, electrical terminations and pressure ranges. Consult UE for all product capabilities, order restrictions and special conditions.

FEATURES

- cULus recognized, CE compliant to low voltage directive and pressure equipment directive
- Optional ATEX intrinsic safety compliance
- NPT or SAE threaded pressure connections
- Choice of 7 electrical terminations
- Optional leadwire/cable lengths
- Rugged and vibration resistant
- Proof pressures up to 12,000 psi (827 bar)



New dual adjustment openings allow mounting flexibility while maintaining access to set point adjustment screw.

SPECIFICATIONS

STORAGE TEMPERATURE	-40 to 180°F (-40 to 82°C)
AMBIENT TEMPERATURE LIMITS	0 to 160°F (-18 to 71°C) with Buna-N construction; 0 to 180°F (-18 to 82°C) with Viton® construction; set point shifts less than 1% of range for a 50°F (28°C) ambient temperature change. Unit will operate down to -40°F (-40°C) but with reduced repeatability
MAX. MEDIA TEMPERATURE	200°F (93°C) with Buna-N sensor; 250°F (121°C) with Viton® sensor
SHOCK	Set point repeats after 50 G, 10 millisecond duration
VIBRATION	Set point repeats after 10 G, 5-500 CPS
ENCLOSURE CLASSIFICATION	Types C, D, E, F & G: Designed to meet enclosure type 4 requirements Types A & B: Not applicable
SET POINT REPEATABILITY	Models 10-12: ± 1% of full scale range; Models 13-16: ± 1.5% of full scale range
SWITCH OUTPUT	One SPDT
ELECTRICAL RATING	Rated to 5 A resistive and 5 A inductive (75% power factor), at 125 VAC & 250 VAC, 1/4 HP; 5 A resistive and 3 A inductive at 30 VDC; 0.5 A resistive and 0.25 A inductive at 125 VDC; gold flashing over silver contact for loads down to 5 mA at 6 VDC, 2 mA at 12 VDC and 1 mA at 24 VDC
ENCLOSURE	Aluminum
WEIGHT	Type A: 5 oz.; Type B: 6 oz.; Type C: 6.5 oz.; Type D: 6 oz.; Type E: 12 oz.; Type F: 6.5 oz.; Type G: 12 oz.
ELECTRICAL CONNECTION	7 electrical terminations; Refer to "How to Order"
PRESSURE CONNECTION	Models 10-12: 1/8" NPT (male); Models 13-16: 1/4" NPT (male); optional SAE threads and other connections (see options list)
MOUNTING	Via pressure connection. Surface mounting bracket kit available for field installation. (see Options list)

10 Series

APPROVALS

UNITED STATES AND CANADA
UL Recognized, cUL Recognized
Pressure: UL 508; CSA C22.2 No. 14, file # E42272

EUROPE
ATEX Directive (94/9/EC)
II 1 G EEx ia IIC T6 **(OPTIONAL – code M405)**
Tamb = -50°C to +60°C
UL International DEMKO A/S (N.B.# 0539)
Certificate # DEMKO 03 ATEX 0335063
EN 50014, 50020 & 50284

Low Voltage Directive (LVD) (73/23/EC & 93/68/EEC)
Compliant to LVD
Products rated lower than 50 VAC and 75 VDC are outside of the scope of the LVD
The Low Voltage Directive does not apply to products for use in hazardous locations

Pressure Equipment Directive (PED) (97/23/EC)
Compliant to PED
Products rated lower than 7.5 psi are outside the scope of the PED

RUSSIA
Gosgortechnadzor Permit **(OPTIONAL – code M406)**
0ExiaIICT6
Tamb = -50°C to +60°C
NANIO CCVE Certification Center
Certificate # ROSS US.GB05.Bo2933
GOST 51330.0, 51330.1, 51330.10 & 51330.14

MODEL CHART

Range Code	Adjustable Set Point Range Low end of range on fall High end of range on rise		Deadband Narrower deadbands may be expected at bottom of range		Over Range Pressure*		Proof Pressure**	
	psi	bar	psi	bar (unless noted)	psi	bar	psi	bar
Buna-N diaphragm and O-ring with 1/8" NPT (male) brass pressure connection								
10	4 to 50	0,3 to 3,4	1 to 6	68,9 mbar to 0,4 bar	1000	68,9	3000	206,8
11	10 to 150	0,7 to 10,3	2 to 10	0,1 to 0,7	1500	103,4	3000	206,8
12	30 to 600	2,1 to 41,4	8 to 60	0,6 to 4,1	2500	172,4	3000	206,8
Stainless steel piston and Buna-N O-ring with 1/4" NPT (male) brass pressure connection								
13	100 to 1500	6,9 to 103,4	20 to 220	1,4 to 15,2	8000	551,6	10,000	689,5
14	180 to 3000	12,4 to 206,8	50 to 400	3,4 to 27,6	8000	551,6	10,000	689,5
15	400 to 4700	27,6 to 324,1	100 to 600	6,9 to 41,4	8000	551,6	10,000	689,5
16	4000 to 7500	275,8 to 517,1	400 to 950	27,6 to 65,5	10,000	689,5	12,000	827,4

* **Over Range Pressure**: The maximum pressure that may be applied continuously without causing damage and maintaining set point repeatability.
** **Proof Pressure**: The maximum 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

Build a part number by selecting appropriate code for each feature category. Example: 10-B11*M201

10	B	11	M201
Series Designation	Electrical Termination Type	Range	Misc. Options

ORDERING CODE **DESCRIPTION** **10 B 11 M201**

SERIES DESIGNATION

10	Designation for 10 Series product line

ELECTRICAL TERMINATION TYPE

A	0.11" push-on terminals. Mating terminals supplied
B	0.25" push-on terminals
C	NEMA 4; 1/2" NPT (male) conduit connection; 20" leads
D	NEMA 4; 20" leads
E	NEMA 4; 1/2" NPT (female) conduit connection; 5' cable
F	NEMA 4; 4 terminal DIN connector. Mating part not supplied
G	NEMA 4; 5' cable

RANGE

10, 11, 12, 13 14, 15, 16	See model chart on page 4

MISCELLANEOUS 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	Intrinsic safety compliance for European Union per ATEX standards
M406	Intrinsic safety compliance for Russia per Gosgortechnadzor standards
M430	Cover lock
M444	Paper ID Tag
M446	Stainless steel ID tag & wire attachment
M449	Surface mounting bracket kit
M511	1/4" NPT (male) 316 stainless steel pressure connection
M512	1/4" NPT (male) brass pressure connection. NOT AVAILABLE ON MODELS 13, 14, 15, OR 16
M540	Viton® construction. Deadbands and low end of range may increase (consult factory). Wetted parts include Viton® diaphragm and/or O-ring plus standard pressure connection material
M541	Ethylene propylene (EPDM) construction. Deadbands may increase (consult factory). Wetted parts include EPDM diaphragm and/or O-ring plus standard pressure connection material
M550	Oxygen service cleaning (alcohol cleaning to remove residue from the process connection); Buna-N diaphragm and/or O-ring changes to Viton®
M925	7/16-20 UNF-2A, SAE male brass pressure connection
M929	G1/2 straight pipe thread pressure connection
62169-26	Surface mounting bracket kit
L040	4' leadwire/cable. NOT AVAILABLE ON TYPES A, B, E, F, G
L060	6' leadwire/cable. NOT AVAILABLE ON TYPES A, B, F
L080	8' leadwire/cable. NOT AVAILABLE ON TYPES A, B, F
L100	10' leadwire/cable. NOT AVAILABLE ON TYPES A, B, F
L120	12' leadwire/cable. NOT AVAILABLE ON TYPES A,B, F

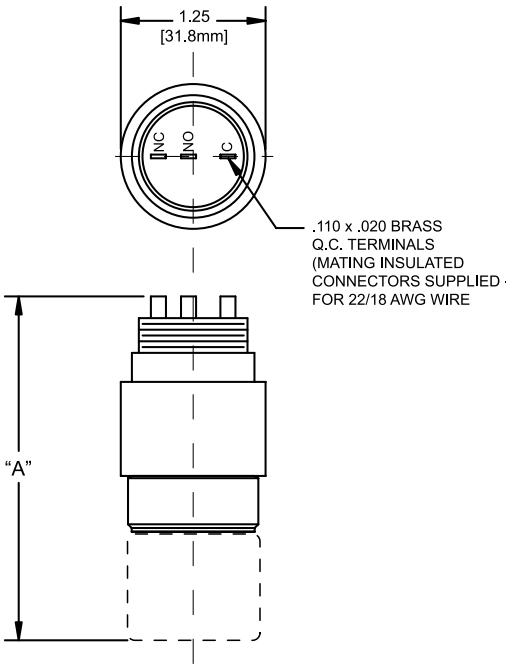
Viton® is a registered trademark of E.I. Dupont Company

10 Series

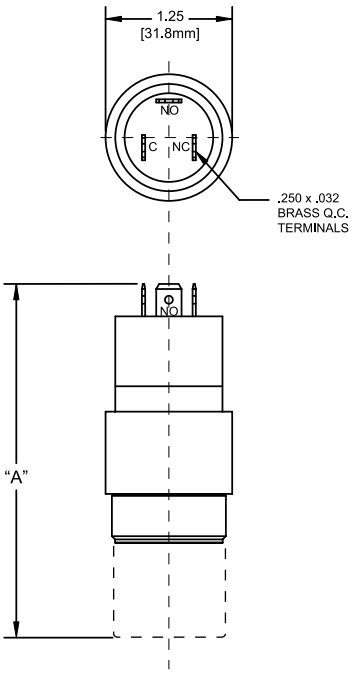
DIMENSIONAL DRAWINGS

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

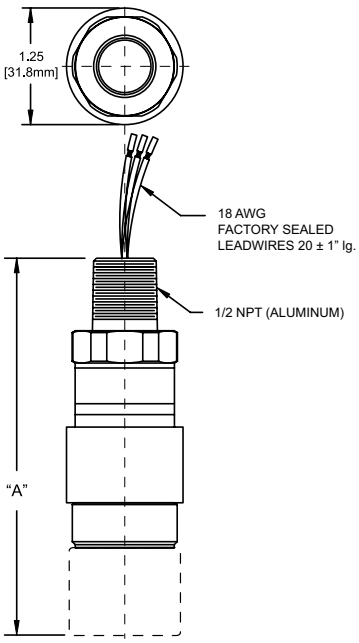
Type 10-A



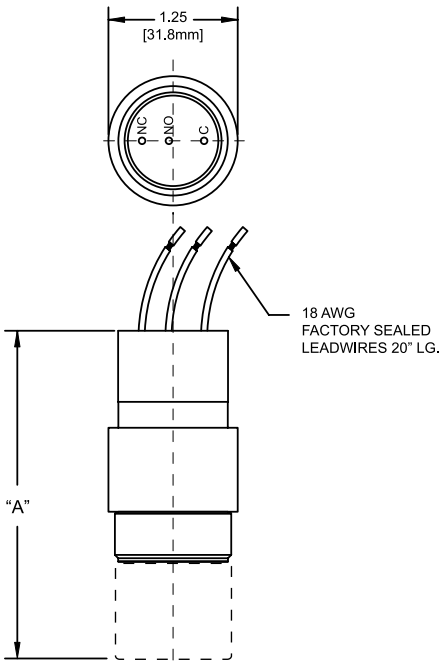
Type 10-B



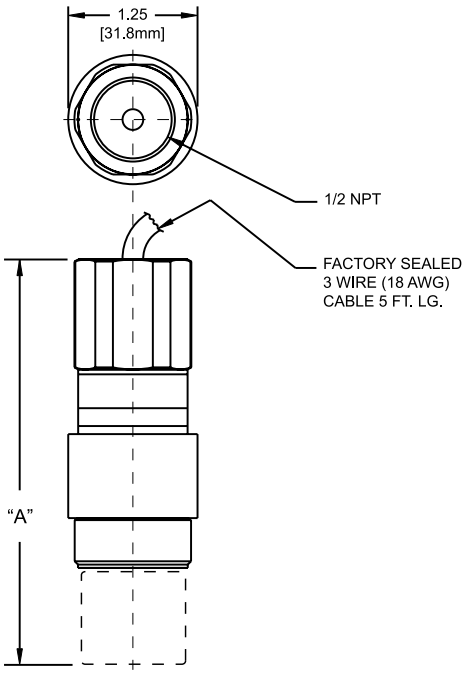
Type 10-C



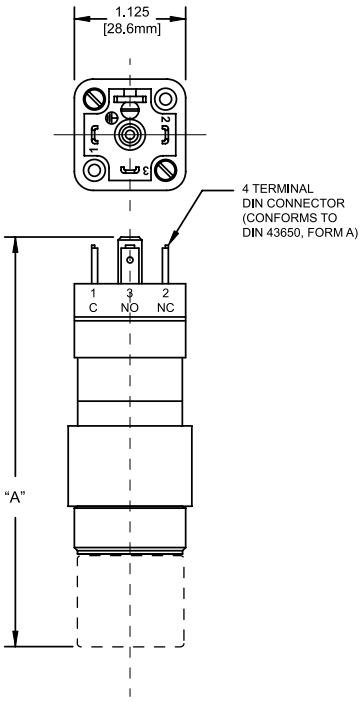
Type 10-D



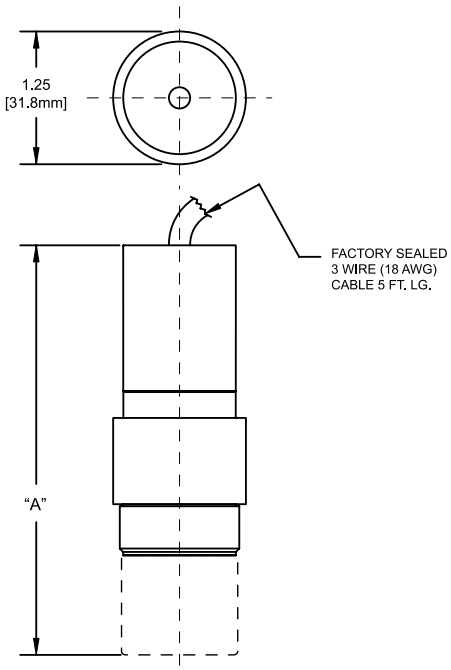
Type 10 -E



Type 10-F



Type 10-G

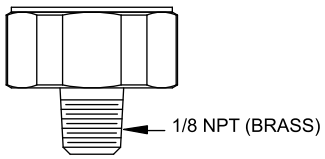


"A" Dimension Chart			
Models	**Inches**	**mm**	**NPT**
A10-12	3.00	76.2	1/8"
A13-16	3.31	84.1	1/4"
B10-12	3.50	88.9	1/8"
B13-16	3.81	96.8	1/4"
C10-12	4.06	103.2	1/8"
C13-16	4.38	111.1	1/4"
D10-12	3.19	81.0	1/8"
D13-16	3.50	88.9	1/4"
E10-12	3.94	100.0	1/8"
E13-16	4.25	108.0	1/4"
F10-12	4.13	104.8	1/8"
F13-16	4.44	112.7	1/4"
G10-12	3.88	98.4	1/8"
G13-16	4.19	106.4	1/4"

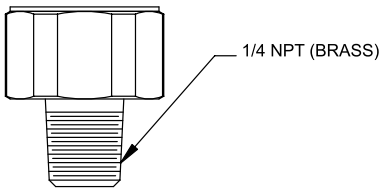
NOTE: For full size drawings, please visit our web site @www.ueonline.com

PRESSURE CONNECTION DETAILS

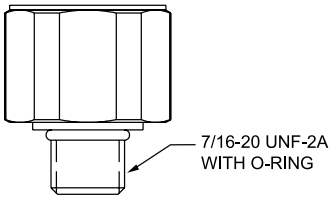
Model 10-12



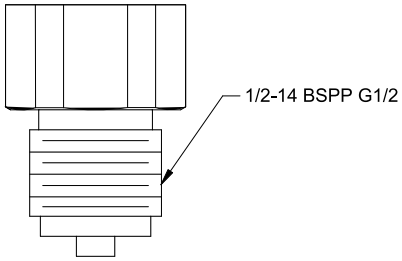
Model 13-16



Option M925



Option M929



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 pressure or temperature is acceptable on a limited basis (e.g., start-up, testing) but continuous operation must be restricted to the designated adjustable range. Excessive cycling at maximum pressure or 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. When applicable, 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.
- 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.
- Do not mount unit in ambient temp. exceeding published limits.

LIMITED WARRANTY

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 (Ex-works, Factory, Watertown, Massachusetts. INCOTERMS); provided, however, that this warranty applies only to equipment found to be so defective within a period of 24 months from the date of manufacture by the Seller. 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. EXCEPT FOR THE LIMITED WARRANTY OF REPAIR AND REPLACEMENT STATED ABOVE, SELLER DISCLAIMS ALL WARRANTIES WHATSOEVER WITH RESPECT TO THE PRODUCT, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

LIMITATION OF SELLER'S LIABILITY

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 inputted to seller, is limited to the "limited warranty" of repair and/or replacement as so stated in our warranty of product. 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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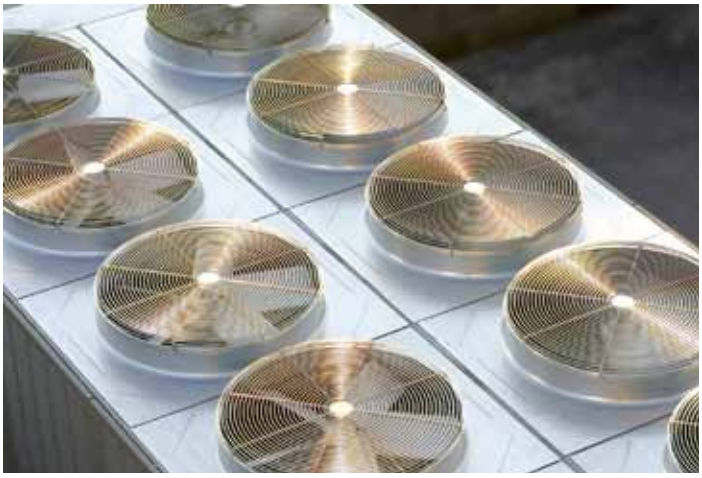
http://www.ueonline.com

Be sure to visit www.ueonline.com for the latest information.

CP01103500

24 Series

PRESSURE, VACUUM & DIFFERENTIAL PRESSURE



FEATURES

- **Brass & Polysulfone (FDA compliant) Pressure Connections**
- **Compact Size**
- **Complies with Enclosure Type 4 with watertight conduit fitting**
- **Terminal block wiring**
- **Optional red status light**
- **Adjustable Ranges:**

  Pressure: 30" Hg Vac to 90 psi
  (-1 to 6,2 bar)

  Differential Pressure: 1 to 45 psid
  (68,9 mbar to 3,1 bar)

OVERVIEW

The cost-effective 24 Series Delta-Pro™ pressure, vacuum, and differential pressure switches offer a unique blend of compact size, excellent performance, and environmental protection. Available with brass or polysulfone pressure connections the Delta-Pro is ideal for applications involving hot or cool air, water, gas or oil. The precision snap-acting switch and sensitive diaphragms combine to provide a narrow deadband and repeatability of approximately ±1% of full scale range. A convenient, externally accessible adjustment screw is multi-turn to provide easy set point adjustability. The force-balanced design gives the Delta-Pro excellent vibration resistance.

Delta-Pro with Brass
Pressure Connections

Delta-Pro with Polysulfone
Pressure Connections

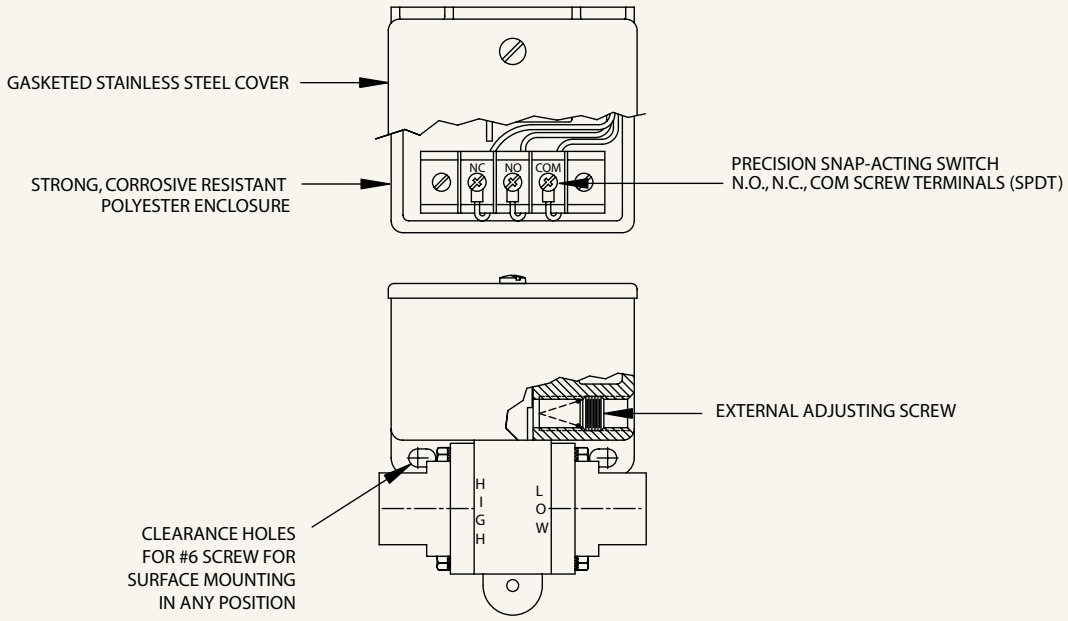
FEATURES

- UL listed and cUL certified. CE compliant to low voltage directive and pressure equipment directive
- Vacuum, Pressure or Differential pressure measurement
- 5 A @ 125/250 VAC SPDT snap-acting switch
- External stainless steel multi-turn adjusting screw
- OEM capabilities include external adjustment knob with or without reference scale

APPLICATIONS

Typical applications include filter monitoring and proof-of-flow. The 24 Series is used within the water & wastewater, bioprocessing, food & beverage, HVAC and gas processing industries.

TECHNOLOGY



The 24 Series (Delta Pro™) was designed to be a compact, cost-effective differential pressure switch for applications such as proof-of-flow, filter monitoring, etc. It depends upon two opposing diaphragms to sense pressure on the "High" and "Low" pressure outputs of a system. The resulting pressure differential is transmitted through a linkage to a snap-action electrical switch, providing an output when a pre-set difference is exceeded. This set point can be easily modified while under pressure via an external adjusting screw. This adjustment "pre-loads" the actuation mechanism, which results in excellent vibration-resistance. Straight pressure and vacuum versions, with a single diaphragm, are also available.

24 Series

SPECIFICATIONS

STORAGE TEMPERATURE	-20° to 180°F (-29° to 82°C)
AMBIENT TEMPERATURE	30° to 160°F (-1° to 71°C). Set point typically shifts less than ±0.6% of range for a 50°F (28°C) ambient temperature change; consult factory for special ratings
MAX MEDIA TEMPERATURE	200°F (93°C) at 100 psi working pressure
SHOCK	Set point repeats after 15G, 10 millisecond duration
VIBRATION	Set point repeats after 2.5G, 5-500 Hz
ENCLOSURE CLASSIFICATION	Complies with enclosure type 4 requirements with optional water tight conduit connector. Reinforced polyester body, stainless steel cover with gasket.
SET POINT REPEATABILITY	Typically ± 1% of full scale range.
SWITCH OUTPUT	One SPDT precision snap-acting micro-switch with mechanical contact life of 10 million cycles. Actual life depends on electrical load and cycle frequency
ELECTRICAL RATING	Rated to 5 A resistive and 5 A inductive (75% PF) at 125 VAC and 250 VAC, 1/4 HP; 5 A resistive and 3 A inductive at 30 VDC and 0.5 A resistive and 0.25 inductive at 125 VDC. Gold flash over silver contacts for minimum loads of 5 mA at 6 VDC, 2 mA at 12 VDC and 1 mA at 24 VDC
WEIGHT	6.5 oz.
ELECTRICAL CONNECTION	7/8" hole for optional 1/2" NPT conduit connector. Terminal block with screw terminals. Max wire size 16 AWG
PRESSURE CONNECTION	Models 013-014, 019-022: 1/4" NPT (female) brass; models 011-012, 015-018: 1/4" NPS (female) FDA compliant* Udel® polysulfone, non-tapered to minimize connection stress with 1/4" NPT (male) fittings - max torque is 2-ft.lbs.
MOUNTING & INSTALLATION	Surface mount with two screws through clearance holes, or mount by pressure connections

Udel® is a registered trademark of Solvay Advanced Polymers
* The U.S. Food & Drug Administration (FDA) has approved polysulfone resins as compliant with the specifications of the FDA 21CFR177.1655 for repeated use and selected single use in contact with food under conditions of use as specified in the citation.

APPROVALS

UNITED STATES AND CANADA
UL Listed, **cUL** Certified
Pressure: UL 508; CSA C22.2 No. 14, File #E42272

EUROPEAN UNION
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
The Low Voltage Directive does not apply to products for use in hazardous locations

Pressure Equipment Directive (PED) 97/23/EC
Pressure models only
Compliant to PED
Products rated below 7.5 psi are outside of the scope of the PED

DIFFERENTIAL PRESSURE MODEL CHART

Model	Adjustable Range Low end of range of fall High end of range on rise		Typical Deadband		***Max. Working Pressure		**Proof Pressure	
	psid	bar (unless noted)	psid	mbar	psi	bar	psi	bar
Polyurethane (polyether) diaphragm and polysulfone® 1/4" NPS (female) (mechanical) pressure connection								
011	1 to 10	68,9 mbar to 0,7	0.75	51,7	0 to 150	0 to 10,3	150	10,3
012	4 to 45	0,3 to 3,1	1	68,9	0 to 150	0 to 10,3	150	10,3
Polyurethane (polyether) diaphragm and brass 1/4" NPT (female) pressure connection								
013	1 to 10	68,9 mbar to 0,7	0.75	51,7	0 to 150	0 to 10	150	10,3
014	4 to 45	0,3 to 3,1	1	68,9	0 to 150	0 to 10	150	10,3

VACUUM AND PRESSURE MODEL CHART

Model	Adjustable Range		Typical Deadband		*Over Range Pressure		**Proof Pressure	
	psi (unless noted)	bar (unless noted)	psi (unless noted)	mbar (unless noted)	psi	bar	psi	bar
Polyurethane (polyether) diaphragm and polysulfone®, 1/4" NPS (female) (mechanical) pressure connection								
015	30" to 2" Hg VAC	-1 bar to -68,9 mbar	2.5" Hg	84,7	150	10,3	150	10,3
016	1 to 10	68,9 mbar to 0,7	0.75	51,7	150	10,3	150	10,3
017	4 to 45	0,3 to 3,1	1	68,9	150	10,3	150	10,3
018	10 to 90	0,7 to 6,2	3	0,2 bar	150	10,3	150	10,3
Polyurethane (polyether) diaphragm and brass 1/4" NPT (female) pressure connection								
019	30" to 2" Hg VAC	-1 bar to -68,9 mbar	2.5" Hg	84,7	150	10,3	150	10,3
020	1 to 10	68,9 mbar to 0,7	0.75	51,7	150	10,3	150	10,3
021	4 to 45	0,3 to 3,1	1	68,9	150	10,3	150	10,3
022	10 to 90	0,7 to 6,2	3	0,2 bar	150	10,3	150	10,3

*Over Range Pressure: The maximum pressure that may be applied continuously without causing damage and maintaining set point repeatability.
**Proof Pressure: The maximum 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).
***Working Pressure: The pressure range within which two opposing sensors can be safely operated and still maintain set point adjustability.

24 Series

HOW TO ORDER

Build a part number by selecting a model and options. Choose the Sensor Type and the Range from the Model Chart. If options are required, add the code from the option list below. Example: 24-013 * M900.

24 Select a Type	**013** Select a Model	**M900** Select an Option
24	013	M900

COMPONENTS

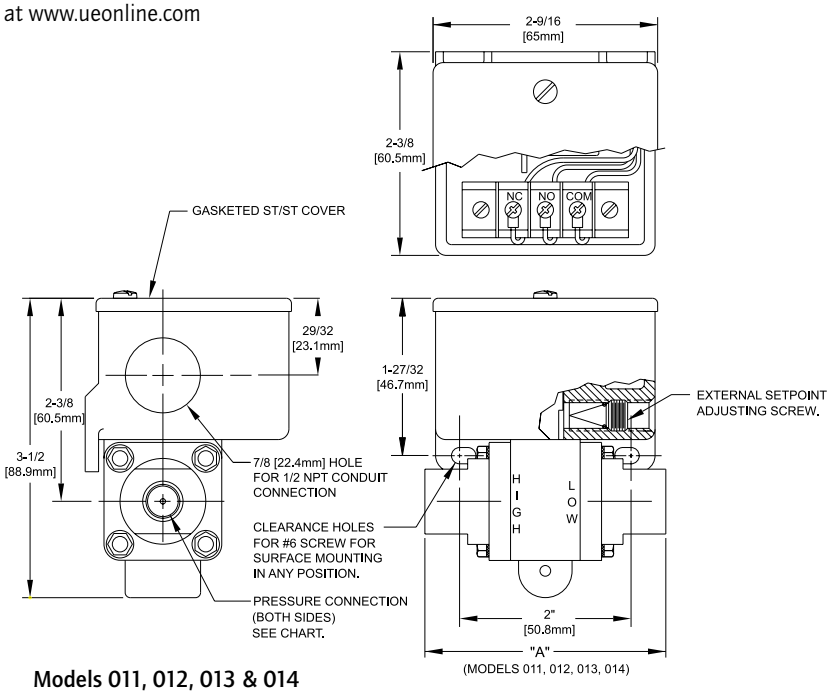
CODE	DESCRIPTION
SERIES DESIGNATION	
24	Designation for 24 Series product line
DIFFERENTIAL PRESSURE MODELS *	
011, 012	Polyurethane (polyether) diaphragm and 1/4" NPS (female) (mechanical) polysulfone pressure connection
013, 014	Polyurethane (polyether) diaphragm and 1/4" NPT (female) brass pressure connection
	*(See Model Chart for Differential Pressure Ranges)
VACUUM AND PRESSURE MODELS *	
015, 016, 017, 018	Polyurethane (polyether) diaphragm and 1/4" NPS (female) (mechanical) polysulfone pressure connection
019, 020, 021, 022	Polyurethane (polyether) diaphragm and 1/4" NPT (female) brass pressure connection
	*(See Model Chart for Pressure Ranges)
OPTIONS	
M020	Red status light, 115 VAC only. Specify whether light turns on or off with increasing or decreasing pressure
M201	Factory set one switch; specify set point on increasing or decreasing pressure
M260	Self-contained battery-operated audible alarm
M262	Buna-N diaphragm
M277	Range indicated on nameplate in kPa or MPa, factory selected
M278	Range indicated on nameplate in Kg/cm^2
M540	Viton® construction (deadband and low end of range may increase slightly. Consult factory.) Wetted parts include Viton® diaphragm plus standard connection material.
M900	Water tight conduit fitting; converts 7/8" hole to 1/2" NPT fitting; must specify for Enclosure Type 4 compliance

Viton® is a registered trademark of E.I. duPont de Nemours and Company.

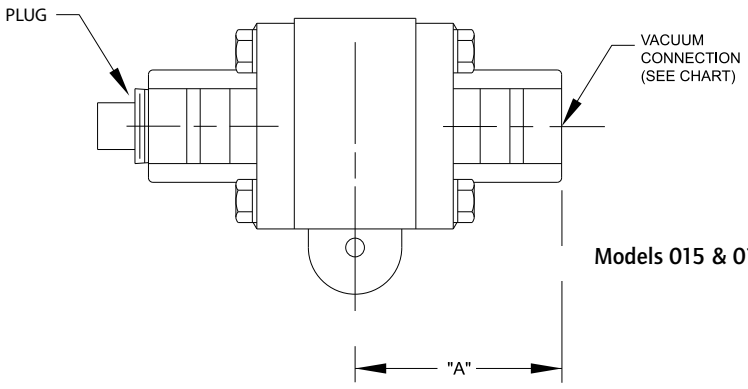
DIMENSIONAL DRAWINGS

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

All dimensions stated in inches (millimeters)

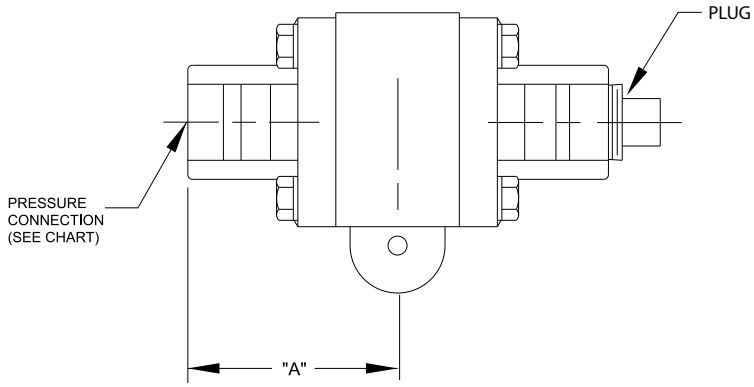


Models 011, 012, 013 & 014



Models 015 & 019

Models 016, 017, 018, 020, 021 & 022



Model	DIMENSION A	Pressure Connection
011, 012	2.75" (69.9 mm)	1/4 " NPS (F) Polysulfone
013, 014	3.13" (79.5 mm)	1/4" NPT (F) Brass
015, 016, 017, 018	1.44" (36.6 mm)	1/4" NPS (F) Polysulfone
019, 020, 021, 022	1.56" (39.6 mm)	1/4 " NPT (F) Brass

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 pressure or temperature is acceptable on a limited basis (e.g., start-up, testing) but continuous operation must be restricted to the designated adjustable range. Excessive cycling at maximum pressure or 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. When applicable, 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.
- 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.
- Do not mount unit in ambient temp. exceeding published limits.

LIMITED WARRANTY

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 (Ex-works, Factory, Watertown, Massachusetts. INCOTERMS); provided, however, that this warranty applies only to equipment found to be so defective within a period of 24 months from the date of manufacture by the Seller. 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. EXCEPT FOR THE LIMITED WARRANTY OF REPAIR AND REPLACEMENT STATED ABOVE, SELLER DISCLAIMS ALL WARRANTIES WHATSOEVER WITH RESPECT TO THE PRODUCT, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

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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 INPUTTED TO SELLER, IS LIMITED TO THE "LIMITED WARRANTY" OF REPAIR AND/OR REPLACEMENT AS SO STATED IN OUR WARRANTY OF PRODUCT. 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.

Be sure to visit www.ueonline.com for the latest information.

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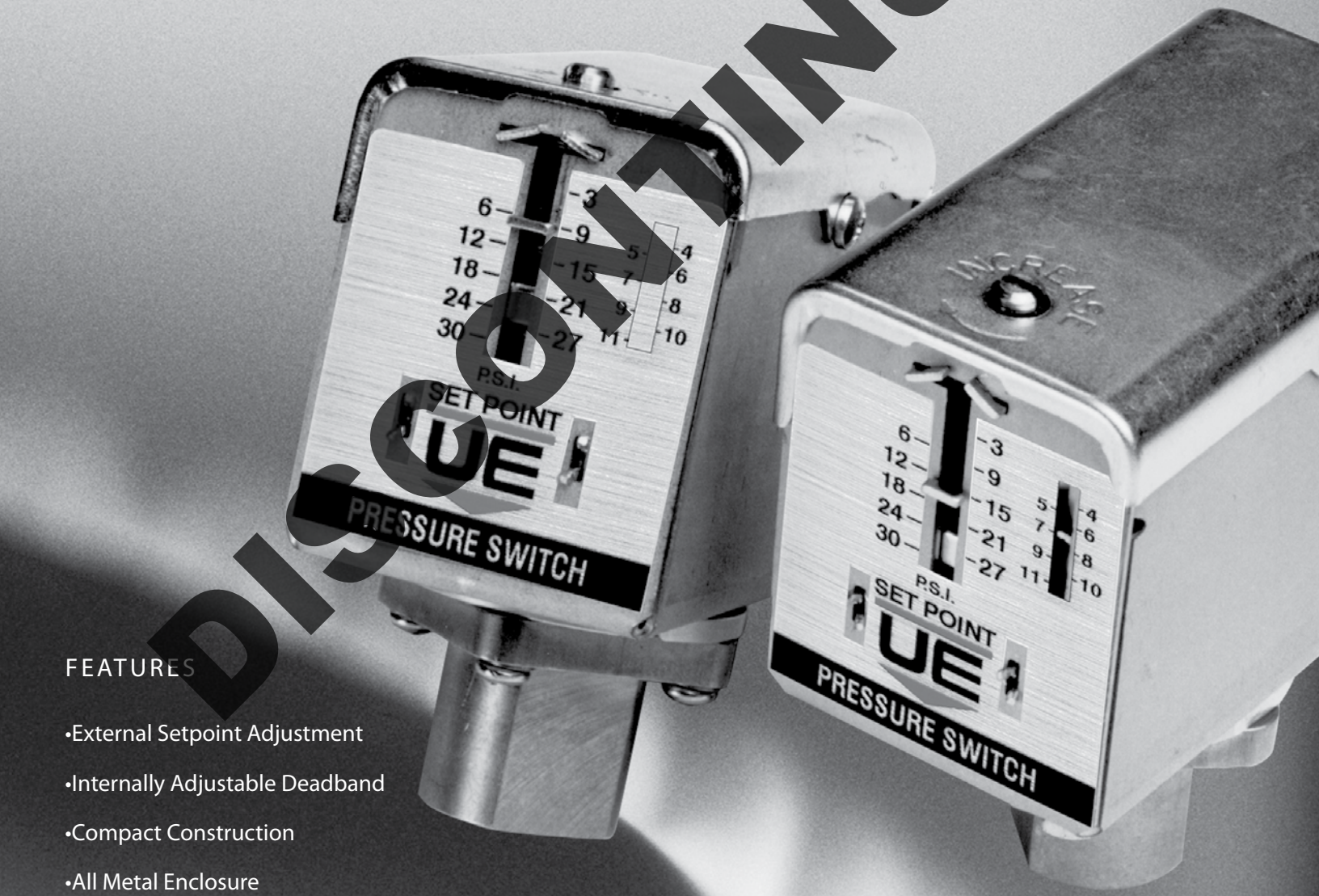
CP01111500

25 Series

25 Series

PRESSURE SWITCH

DISCONTINUED



FEATURES

- External Setpoint Adjustment
- Internally Adjustable Deadband
- Compact Construction
- All Metal Enclosure

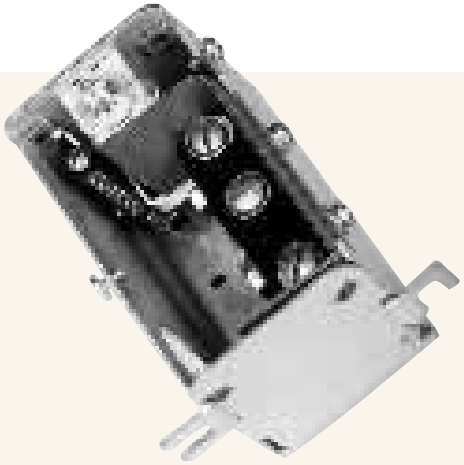
UNITED ELECTRIC CONTROLS

25 Series

overview

The 25 Series is a low cost pressure switch featuring an externally adjustable set point and an internally adjustable deadband. It offers a self contained solution for direct control of AC loads up to 20 amps with adjustable pressure ranges up to 475 psi.

The adjustable set point and deadband feature is a real benefit for applications where a full function logic controller would not be necessary. Technicians can make on-the-fly corrections during development testing, start-up or maintenance. The compact design and low cost also makes the 25 Series well suited for installation on OEM equipment or in panels.



Internal Deadband Adjustment

SPDT, 20 amp Snap-acting switch

External Set Point Adjustment

High Pressure Protection

Mounting Ears

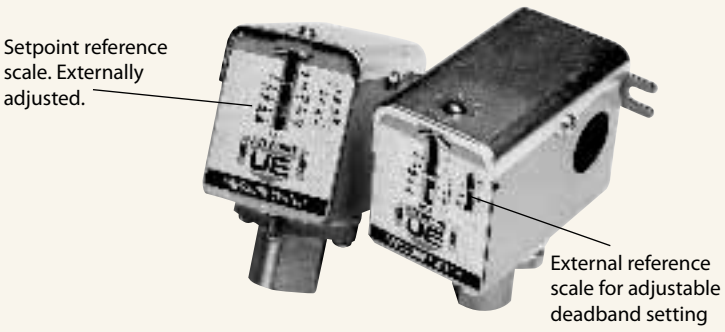
features

- External Adjustment
- Adjustable Deadband
- Compact Construction
- All Metal Enclosure

The 25 Series features proven diaphragm sensing technology, a 20 amp snap-acting switch, and adjustable ranges up to 475 psi, highlighting its versatility. The 25 Series is cULus listed and is available with a Buna-N, Viton® or EPDM diaphragm pressure sensor. The switch comes with a standard brass pressure connection; however, other materials are available for volume applications. All models achieve a rated proof pressure of 600 psi and are contained in a NEMA housing. The robust design provides repeatability of ±1%, even when subjected to shock and vibration.

Applications

The 25 Series Adjustable Pressure Switch offers an easy to install solution for direct control of HVAC fans and blowers, as well as control of pumps, compressors and valves. The switch is ideal for alarm and shutdown applications where the user must protect people, equipment or the environment.



technology

The 25 Series relies on simple, but dependable technology to achieve its purpose: a cost-effective, ideal product for direct pump monitoring/control and similar applications. The 25 uses a diaphragm to sense changes in pressure, which are transmitted through a lever to the 20A snap-action switch. Changes to set point are accomplished easily while the unit is under pressure through the external adjusting screw. This adjustment "pre-loads" the lever, which results in excellent vibration-resistance. On many models, the deadband (the difference between actuation and de-actuation) is also field adjustable, giving the user flexibility in configuring the product to the application.

25 Series

specifications

STORAGE TEMPERATURE	-65 to 160°F (-54 to 71°C)
OPERATING AMBIENT TEMPERATURE	0 to 160°F (17 to 71°C) Set point shifts less than 1% of range for a 50°F (28°C) ambient temperature change
MAXIMUM MEDIA TEMPERATURE	Buna-N sensor: 200°F (93°C) Viton® sensor: 250°F (121°C) EPDM sensor: 250°F (121°C)
ENCLOSURE	Zinc plated steel with bright chromate finish
ENCLOSURE CLASSIFICATION	Complies with enclosure type 1
SHOCK	Set point repeats after 15 G, 10 millisecond duration
VIBRATION	Set point repeats after 2.5 G, 5 to 500 Hz
SET POINT REPEATABILITY	Typically ±1% of span
SWITCH OUTPUT	One SPDT, snap-acting switch
ELECTRICAL RATINGS	20 A @ 480 VAC resistive 1 HP @125 VAC Resistive, adjustable deadband versions (choice F) 2 HP @250 VAC Resistive, adjustable deadband versions (choice F)
ELECTRICAL CONNECTION	7/8" hole for optional NPT conduit connector
WEIGHT	16 oz.
PRESSURE CONNECTION	1/4" NPT female Brass, or 1/8" NPT female Brass
MOUNTING	Surface mount with two screws through clearance holes, or mount by pressure connection

Viton is a registered trademark of E.I. DuPont Company.

approvals

UL 873 listed, files # E10667, # E57086
CSA C22.2 No. 24-1993, Files # E10667, # 57086

CE Compliance with LVD (Low Voltage Directive)

model chart

Adjustable Deadband Version - Deadband Choice A

Model	Adjustable Range*				Adjustable Deadband Range				Max. Working Pressure		Proof Pressure	
	Low end of range on fall		High end of range on rise									
	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
A	3	0,2	30	2,1	5	0,3	11	0,8	30	2,1	600	41,4
B	20	1,4	200	13,8	20	1,4	70	4,83	200	13,8	600	41,4
C	25	1,7	475	32,8	35	2,4	140	9,7	475	32,8	600	41,4

Fixed Deadband Version - Deadband Choice F

Model	Adjustable Range*				Fixed Deadband Tolerance				Max. Working Pressure		Proof Pressure	
	Low end of range on fall		High end of range on rise									
	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
A	3	0,2	30	2,1	2	0,1	5	0,3	30	2,1	600	41,4
B	20	1,4	200	13,8	4	0,3	10	0,7	200	13,8	600	41,4
C	25	1,7	475	32,8	10	0,7	25	1,7	475	32,8	600	41,4

* Value indicated on dial is the set point on falling pressure.
Deadband represents the reset point above this setting. Dial setting plus deadband must not exceed adjustable range.

25 Series

how to order

Select a single letter or number "Code" to make up a part number.

25	A	1	F	2	A	M201
Series Designation	Model/ Range	Number of Switches	Pressure Connection	Sensor Material	Deadband	Miscellaneous Options

(Example of "Code") 25 A 1 F 2 A M201

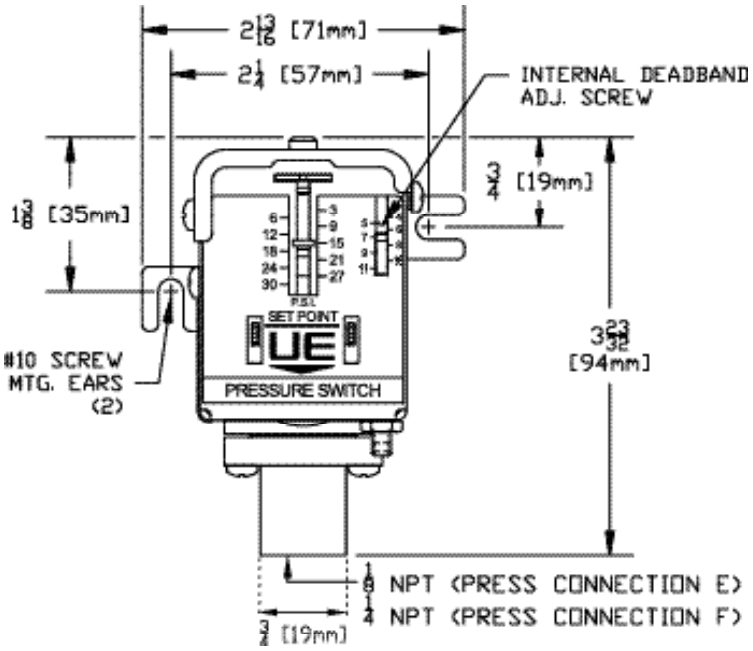
COMPONENTS

CODE	DESCRIPTION
SERIES DESIGNATION	
25	Designation for 25 Series product line
MODEL/RANGE	
A	3 to 30 psi
B	20 to 200 psi
C	25 to 475 psi
NUMBER OF SWITCHES	
1	(1) SPDT snap-switch, 20 A @ 480 VAC resistive
PRESSURE CONNECTION	
E	1/8" NPT(female), Brass Pressure Connection
F	1/4" NPT(female), Brass Pressure Connection
SENSOR MATERIAL	
2	Buna-N
3	Viton®
4	EPDM
DEADBAND	
F	Fixed
A	Adjustable
MISCELLANEOUS OPTIONS	
M201	Factory set point
M230*	Set adjustable deadband
M444	Paper tag
M446	Stainless steel tag

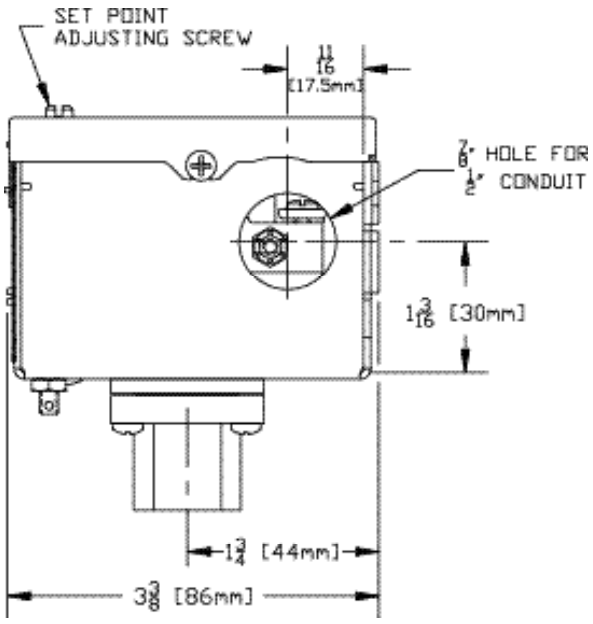
* Do not specify M201 when specifying M230

dimensional drawings

Front View



Side View



RECOMMENDED PRACTICES AND WARNINGS

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- 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.

EXCEPT FOR THE LIMITED WARRANTY OF REPAIR AND REPLACEMENT STATED ABOVE, SELLER DISCLAIMS ALL WARRANTIES WHATSOEVER WITH RESPECT TO THE PRODUCT, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

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.

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EMCO50001201

54 Series

PRESSURE, VACUUM AND TEMPERATURE

FEATURES

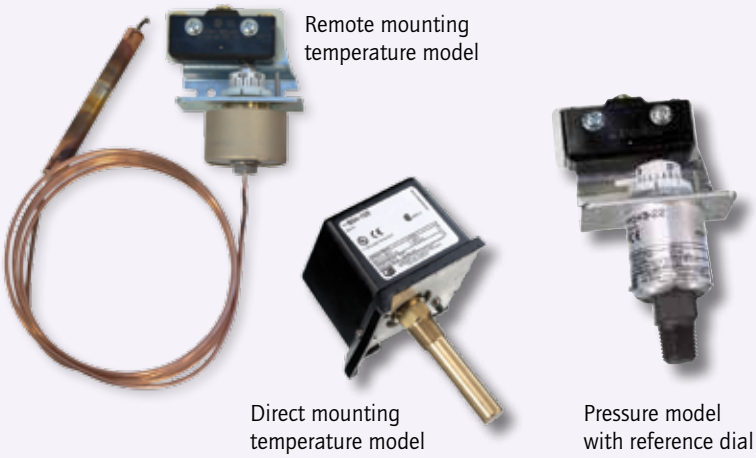
- **Compact Size**
- **Wide Selection of Adjustable Ranges:**
  Pressure: 30" Hg Vac to 6000 psi (-1 to 413,7 bar)
  Temperature: -130 to 650°F (-90 to 343.3°C)
- **Choice of One or Two Switch Outputs**
- **Adjustable or Narrow Deadband Options**
- **Reference Dial or Hex Screw Set Point Adjustment**

54 Series

OVERVIEW

The 54 Series offers the OEM a combination of reliable performance and low cost. Available in pressure and temperature versions, with single or dual SPDT outputs and enclosed or open frame (skeleton) construction, the 54 Series family provides design versatility.

The 54 has been field-proven in a wide variety of OEM applications, including medical, laboratory, fire protection and heating equipment.



Remote mounting temperature model

Direct mounting temperature model

Pressure model with reference dial

FEATURES

- Compact size
- Choice of one or two switch outputs
- Reference dial or hex screw-type setting
- Optional 1/2" NPT (male) by 1/8" NPT (female) polysulfone® pressure connection
- Optional external manual reset
- NEMA 1 or open frame (skeleton) versions for OEM applications
- Brass bellows models

Polysulfone® is a registered trademark of Amoco

SPECIFICATIONS

STORAGE TEMPERATURE	-65 to 160°F (-54 to 71°C)
AMBIENT TEMPERATURE LIMITS	
Pressure Models	Models 126-164, 610-614: -40 to 160°F (-40 to 71°C); Models 22-28: 0 to 160°F (-18 to 71°C)
Temperature Models	-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.
SHOCK	Set point repeats after 15 G, 10 millisecond duration
VIBRATION	Set point repeats after 2.5 G, 5-500 CPS
ENCLOSURE CLASSIFICATION	Types C54, C54A, B54, F54, E54, J54, J54A, H54: complies with NEMA 1 requirements. Types C54S, B54S, F54S, E54S, J54S, J54AS, H54S: not applicable
SET POINT REPEATABILITY	
Pressure Models	Models 22-28, 126-164: ± 1% of full scale range; Models 610-614: ± 1.5% of full scale range
Temperature Models	± 1% of full scale range
SWITCH OUTPUT	One or two SPDT snap action switch(es); dual switch may be separated up to 100% of range; switches may be wired "normally open" or "normally closed"
ELECTRICAL RATING	15A 125/250/480 VAC resistive. Electrical switches have limited DC capabilities. Consult UE for additional information.
ENCLOSURE MATERIAL	Lexan® black finish for Types J54, J54A, H54, B54, C54, C54A, E54, F54 only
WEIGHT	Approximately 12 oz.
ELECTRICAL CONNECTION	Types J54 & H54, C54, C54A, B54, E54, F54: 7/8" diameter hole; Type J54A: 1-1/16" diameter hole
PRESSURE CONNECTION	Models 22-28: 1/4" NPT (male); 126-164, 610-614: 1/4" NPT (female)
TEMPERATURE ASSEMBLY	Bulb and Capillary: 6 feet copper or 304 stainless steel capillary Immersion Stem: Brass
TEMPERATURE FILL	Non-toxic oil
TEMPERATURE DEADBAND	Typically 1% of range under laboratory conditions (70°F circulating bath at rate of 1/2°F per minute change)

APPROVALS

UNITED STATES AND CANADA

Type J54, J54A, H54
UL Listed, cUL Certified
Pressure: UL 508, CSA C22.2 No. 14, file # E42272
Type J54S, J54AS, H54S
UL Recognized, cUL Recognized
Pressure: UL 508, CSA C22.2 No. 14, file #E42272

Type B54, C54, E54, F54
UL listed, CSA Certified
Temperature: UL 873, file # E10667;
CSA C22.2 No. 0 & 24, file # LR7814
Type B54S, C54S, E54S, F54S
UL Recognized, CSA Certified
Temperature: UL 873, file # E10667;
CSA C22.2 No. 0 & 24, file # LR7814

EUROPE

Low Voltage Directive (LVD) (73/23/ED & 93/68/EEC)
UEC compliant to LVD
Products rated lower than 50 VAC and 75 VDC are outside of 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

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PRESSURE MODEL CHART

Model	Adjustable Set Point Range Low end of range on fall; High end of range on rise		Deadband		Over Range Pressure*		Proof Pressure**	
	psi (unless noted)	bar (unless noted)	psi (unless noted)	bar (unless noted)	psi	bar	psi	bar
J54, J54A, J54S, J54AS, H54, H54S								
Buna N diaphragm and O-Ring with 1/4" NPT (male) aluminum pressure connection; limited to process temperature below 200°F								
22	30" Hg Vac to 0	-1 to 0	1 to 3.5" Hg Vac	33,9 to 118, 5 mbar	0	0	50	3,4
24	3 to 30	0,2 to 2,1	0.4 to 1.3	27,6 to 89,6 mbar	50	3,4	200	13,8
25	10 to 100	0,7 to 6,9	1 to 2.5	68,9 to 172,4 mbar	100	6,9	above	above
27	30 to 300	2,1 to 20,7	1.3 to 4	89,6 to 275,8 mbar	above	above	set point	set point
28	50 to 500	3,4 to 34,5	1.5 to 5	103,4 to 344,7 mbar	set point	set point	Max 600	Max 41,4
Brass bellows with nickel-plated brass 1/4" NPT (female) pressure connection; Model 126 has a zinc-plated steel spring exposed to media								
126	30" Hg Vac to 0	-1 to 0	0.2 to 0.9" Hg	6,8 to 30,5 mbar	3	0,2	5	0,3
137	0 to 80 "wc	0 to 199,1 mbar	1 to 8 "wc	2,5 to 19,9 mbar	3	0,2	5	0,3
144	0 to 20	0 to 1,4	0.1 to 0.5	6,9 to 34,5 mbar	20	1,4	25	1,7
146	0 to 30	0 to 2,1	0.1 to 0.6	6,9 to 41,4 mbar	30	2,1	40	2,8
152†	0 to 50	0 to 3,4	0.1 to 0.7	6,9 to 48,3 mbar	50	3,4	75	5,2
156	0 to 100	0 to 6,9	0.2 to 0.8	13,8 to 55,2 mbar	100	6,9	125	8,6
164	0 to 200	0 to 13,8	0.3 to 2	20,7 to 137,9 mbar	200	13,8	200	13,8
J54, J54S								
303 stainless steel piston and Buna N O-Ring with 1/4" NPT (female) pressure connection (not recommended for gas service since drying of the O-Ring can allow bleeding of the medium into the atmosphere)								
610	75 to 1000	5,2 to 68,9	30 to 150	2,1 to 10,3	6000	413,7	10,000	689,5
612	125 to 3000	8,6 to 206,8	40 to 250	2,8 to 17,2	6000	413,7	10,000	689,5
614	700 to 6000	48,3 to 413,7	50 to 400	3,4 to 27,6	6000	413,7	10,000	689,5

*Over Range Pressure: The Maximum pressure that may be applied continuously without causing damage and maintaining set point repeatability.

**Proof Pressure: The maximum 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).

† Model not available for types H54, H54S

TEMPERATURE MODEL CHART

Model	Adjustable Set Point Range		Max. Temperature		Scale*** Division		Stem Size
	°F	°C	°F	°C	°F	°C	NPT x BT (inches)
B54, B54S, C54, C54S, C54A, C54AS, Brass immersion stem							
103	0 to 225	-17.8 to 107.2	250	121.1	10	5	3/8 x 2-1/8
109	200 to 425	93.3 to 218.3	425	218.3	10	5	3/8 x 2-1/8
							OD x Length
E54, F54, Copper bulb and capillary							
D20BC	-130 to 120	-90 to 48.9	170	76.7	10	5	3/8 x 4-1/2
D21BC	0 to 150	-17.8 to 65.6	200	93.3	5	5	3/8 x 6-7/8
D22BC	50 to 300	10 to 148.9	350	176.7	10	5	3/8 x 4-1/2
D23BC	150 to 650	65.6 to 343.3	700	371.1	25	10	3/8 x 3-5/8
E54, F54, Stainless steel bulb and capillary							
D20BS‡	-130 to 120	-90 to 48.9	170	76.7	10	5	3/8 x 4-1/2
D21BS	0 to 150	-17.8 to 65.6	200	93.3	5	5	3/8 x 6-7/8
D22BS	50 to 300	10 to 148.9	350	176.7	10	5	3/8 x 4-1/2
D23BS	150 to 650	65.6 to 343.3	700	371.1	25	10	3/8 x 3-5/8
E54S, F54S, Copper bulb and capillary							
D21BC	0 to 150	-17.8 to 65.6	200	93.3	5	5	3/8 x 6-7/8
D22BC	50 to 300	10 to 148.9	350	176.7	10	5	3/8 x 4-1/2
D23BC	150 to 650	65.6 to 343.3	700	371.1	25	10	3/8 x 3-5/8
E54S, F54S, Stainless steel bulb and capillary							
D21BS	0 to 150	-17.8 to 65.6	200	93.3	5	5	3/8 x 6-7/8
D22BS	50 to 300	10 to 148.9	350	176.7	10	5	3/8 x 4-1/2
D23BS	150 to 650	65.6 to 343.3	700	371.1	25	10	3/8 x 3-5/8

‡ Not available Type F54

*** Applies to Types B54, B54S, E54, E54S only

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 - PRESSURE MODELS
J54:	NEMA 1 enclosure; One SPDT output; internal hex adjustment with no reference dial
J54A:	NEMA 1 enclosure; Two SPDT outputs; internal hex adjustment with no reference dial
J54S:	Skeleton construction; One SPDT output; hex adjustment with no reference dial
J54AS:	Skeleton construction; Two SPDT outputs; hex adjustment with no reference dial
H54:	NEMA 1 enclosure; One SPDT output; internal adjustment with reference dial
H54S:	Skeleton construction; One SPDT output; adjustment with reference dial
	TEMPERATURE MODELS
C54:	NEMA 1 enclosure; Immersion stem; one SPDT output; internal hex adjustment with no reference dial
C54A:	NEMA 1 enclosure; Immersion stem; two SPDT outputs; internal hex adjustment with no reference dial
C54S:	Skeleton construction; Immersion stem; one SPDT output; hex adjustment with no reference dial
C54AS:	Skeleton construction; Immersion stem; Two SPDT outputs; hex adjustment with no reference dial
B54:	NEMA 1 enclosure; Immersion stem; one SPDT output; internal adjustment with reference dial
B54S:	Skeleton construction; Immersion stem; one SPDT output; adjustment with reference dial
F54:	NEMA 1 enclosure; Bulb and capillary; one SPDT output; internal hex adjustment with no reference dial
F54S:	Skeleton construction; Bulb and capillary; one SPDT output; hex adjustment with no reference dial
E54:	NEMA 1 enclosure; Bulb and capillary; one SPDT output; internal adjustment with reference dial
E54S:	Skeleton construction; Bulb and capillary; one SPDT output; adjustment with reference dial

SWITCH OPTIONS*

CODE	DESCRIPTION
0500	Close deadband, 5A 125/250 VAC resistive NOT AVAILABLE ON B54, B54S, C54, C54S, C54A, C54AS, E54S, F54, F54S
1520	Adjustable deadband, 15A 125/250/277 VAC resistive. Adjustable wheel changes rise setting only. If adjustment of fall setting is required, use primary adjustment. NOT AVAILABLE ON TYPES J54A, J54AS, H54, H54S, PRESSURE MODELS 610-614 & TEMPERATURE VERSIONS
1530	External manual reset, 15A 125/250/480 VAC resistive; reset on increasing pressure or temperature only. NOT AVAILABLE ON TYPES J54A, J54S, J54AS, H54S,B54S, C54A, C54AS, C54S, E54S, F54S OR MODELS 610-614
2000	20A 125/250 VAC resistive

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

GENERAL OPTIONS

CODE	DESCRIPTION
M201	Factory set one switch; specify increasing or decreasing pressure or temperature and set point. NOT AVAILABLE ON TYPES J54A, J54AS, C54A, C54AS
M202	Factory set two switches; specify increasing or decreasing pressure or temperature and set point. NOT AVAILABLE ON TYPES J54, J54S, H54, H54S, B54, B54S, C54, C54S, E54, E54S, F54, F54S
M270	Calibrated dial in Celsius. NOT AVAILABLE ON PRESSURE VERSIONS AND TYPES B54, B54S, C54, C54S, C54A, C54AS, F54, F54S
M277	Range indicated on nameplate in kPa or MPa. NOT AVAILABLE ON TEMPERATURE VERSIONS
M278	Range indicated on nameplate in kg/cm2. NOT AVAILABLE ON TEMPERATURE VERSIONS.
M444	Paper ID tag
M446	Stainless steel ID tag & wire attachment
M540	Viton® construction (deadband and low end range may increase slightly. Consult factory); Wetted parts include Viton® diaphragm and O-Ring plus standard connection material. NOT AVAILABLE MODELS 126-164 OR TEMPERATURE VERSIONS

PRESSURE CONNECTION OPTIONS

M501	Polysulfone® pressure connection 1/2" NPT (male) x 1/8" NPT (female). NOT AVAILABLE MODELS 126-164, 610-614 OR TEMPERATURE VERSIONS

OPTIONS FOR TEMPERATURE MODELS

UNION CONNECTORS

For all bulb & capillary switches

Option	Replacement Number	Description
	Brass	
W027	SD6213-27	1/2 " NPT w/ 3/4" bushing
W045	SD6213-45	3/4" NPT
W051	SD6213-51	1/2" NPT
	304 Stainless Steel	
W028	SD6213-28	1/2" NPT w/ 3/4" bushing
W046	SD6213-46	3/4" NPT
W050	SD6213-50	1/2" NPT

THERMOWELLS

For all bulb & capillary switches

	Brass	
W075	SD6225-75	3/4" bushing adapter, 4" BT
W191	SD6225-191	1/2" NPT, 4" BT
W118	SD6225-118	3/4" bushing adapter, 7" BT
W192	SD6225-192	1/2" NPT, 7" BT
	316 Stainless Steel	
W076	SD6225-76	3/4" NPT, 4.5" BT
W193	SD6225-193	1/2" NPT, 4.5" BT
W119	SD6225-119	3/4" NPT, 7.5" BT
W177	SD6225-177	1/2" NPT, 7.5" BT
For all Immersion stem switches		
W141	SD6225-141	1/2" NPT x 1 9/16" BT, brass
W146	SD6225-146	1/2" NPT x 1 9/16" BT, 316 stainless steel

OPTIONAL LENGTHS:

Optional immersion stem lengths to 15" available in brass, with or without 316 st/st thermowell. Consult UE for additional information. Optional capillary length to *50' available in copper or 304 st/st. Armor or Teflon® capillary protection available to lengths less than or equal to capillary length. Consult UE for additional information.

**Consult UE regarding repeatability and ambient effects on capillary lengths over 30'.*

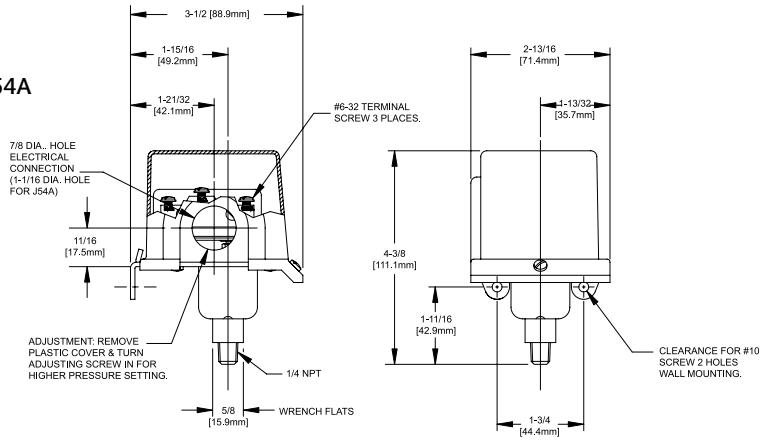
Viton® is a registered trademark of Dupont Dow Elastomers

54 Series

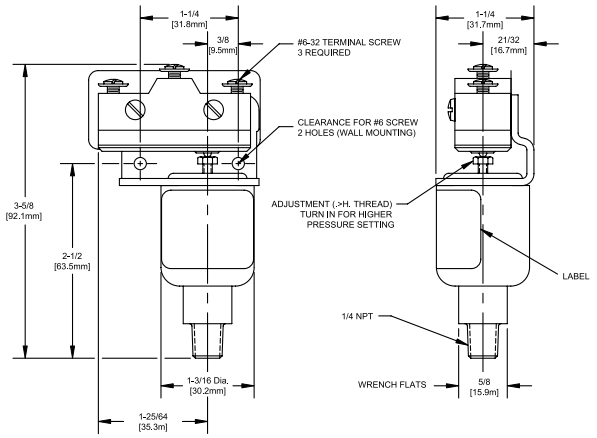
DIMENSIONAL DRAWINGS

Pressure Models

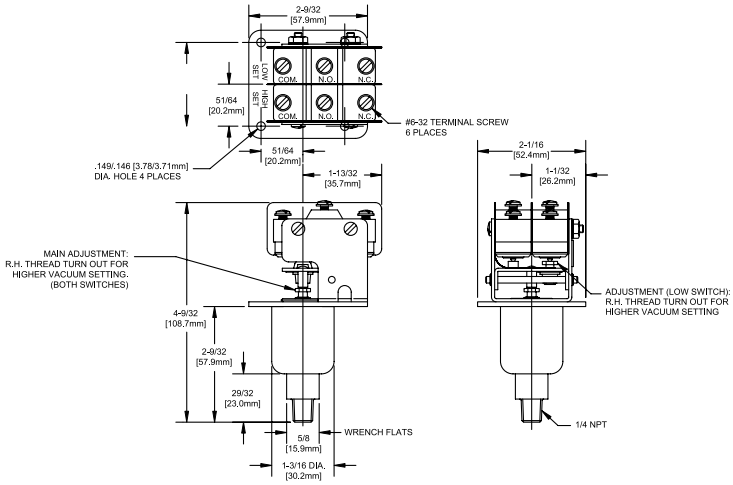
Type H54, J54 and J54A Models 22 - 28



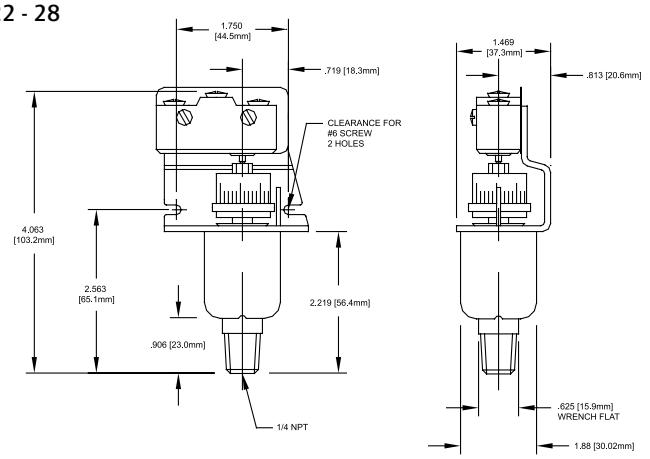
Type J54S, Models 22 - 28



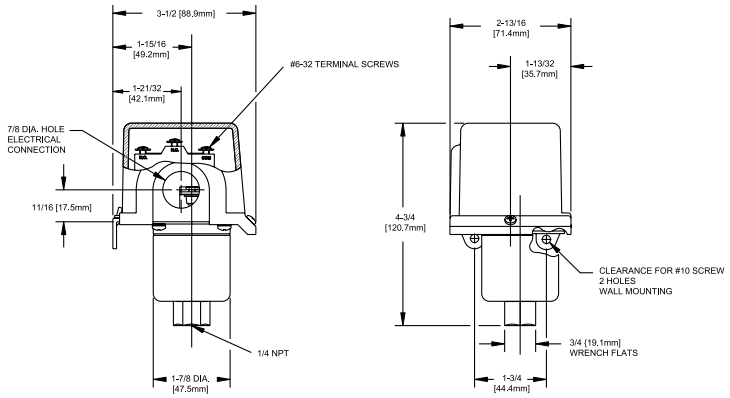
Type J54AS, Models 22 - 28



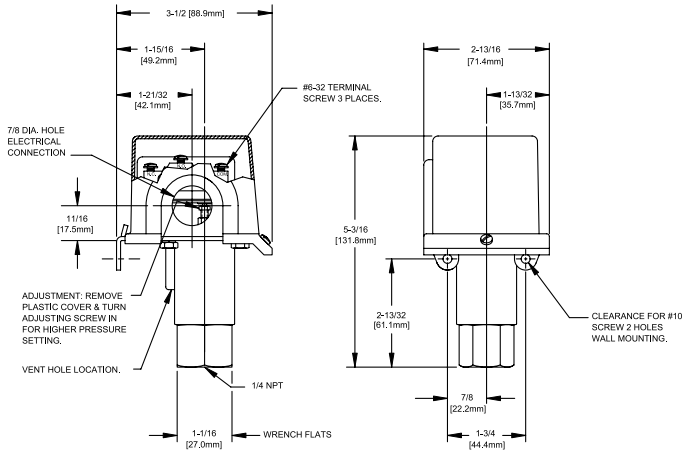
Type H54S, Models 22 - 28



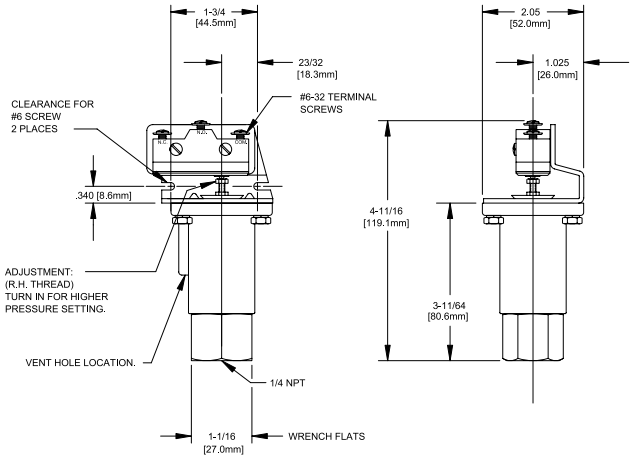
Type H54, J54, and J54A
Models 126-164



Type J54
Models 610 - 614



Type J54S
Models 610 - 614

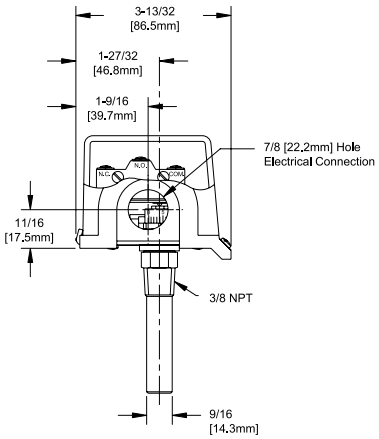


54 Series

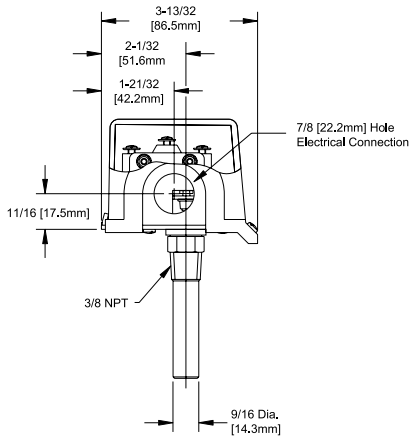
DIMENSIONAL DRAWINGS

Temperature Models

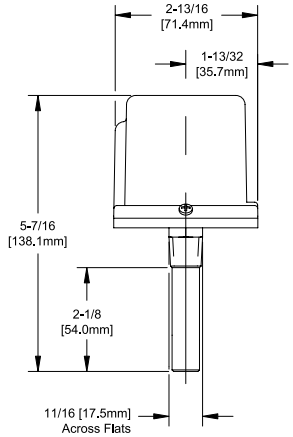
Types B54, C54



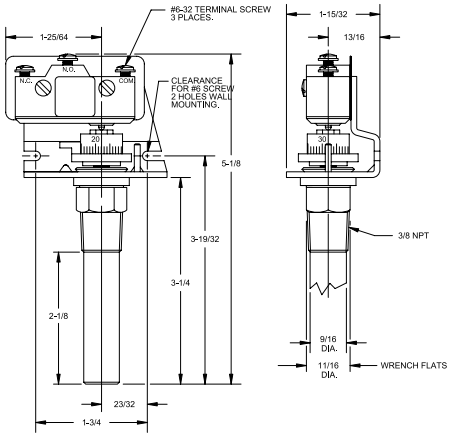
Type C54A



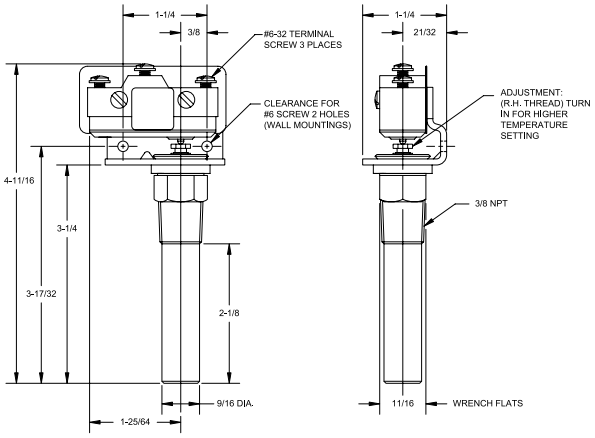
Types B54, C54, C54A



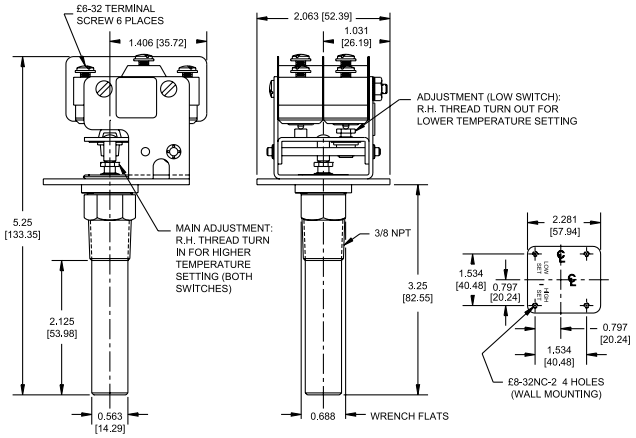
Type B54S



Type C54S

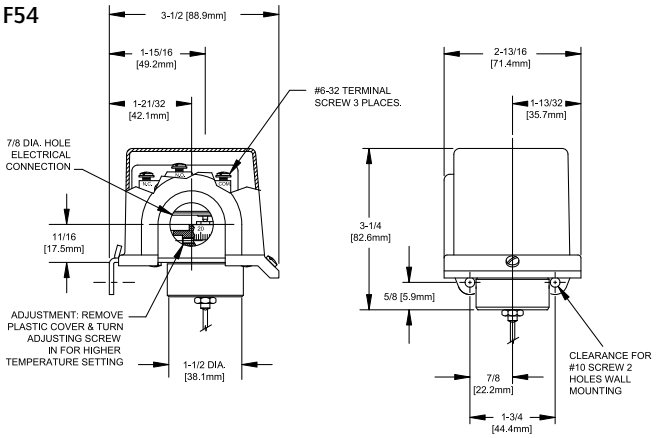


Type C54AS

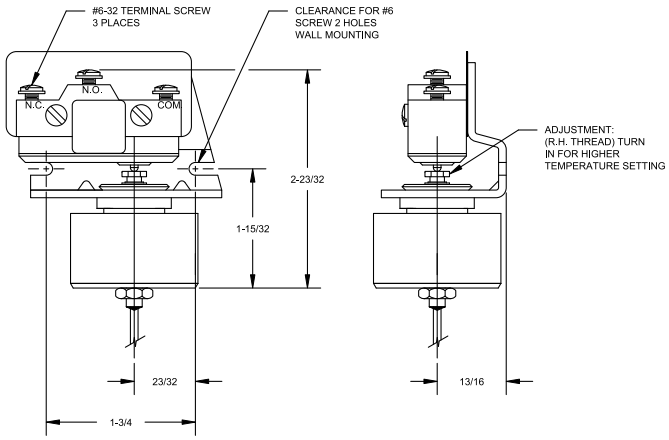


All dimensions stated in inches (millimeters)

Types E54 and F54

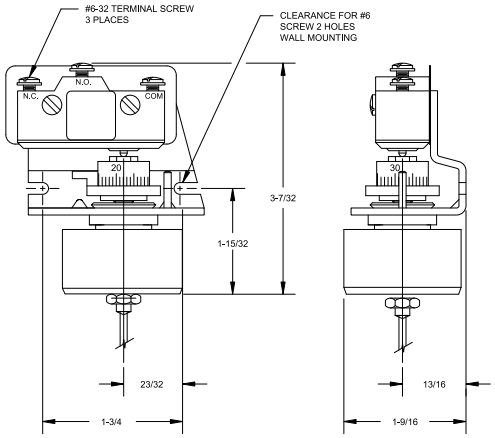


Type F54S



Bulb Size		
Models	**Inches**	**mm**
E54 & F54		
D20BC, D20BS, D22BC, D22BS	4.50	114.3
D21BC, D21BS	6.86	174.6
D23BC, D23BS	3.63	92.1
E54S & F54S		
D21BC, D21BS	6.86	174.6
D22BC, D22BS	4.50	114.3
D23BC, D23BS	3.63	92.1

Type E54S



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 pressure or temperature is acceptable on a limited basis (e.g., start-up, testing) but continuous operation must be restricted to the designated adjustable range. Excessive cycling at maximum pressure or 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. When applicable, 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.
- 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.
- Do not mount unit in ambient temp. exceeding published limits.

LIMITED WARRANTY

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 (Ex-works, Factory, Watertown, Massachusetts. INCOTERMS); provided, however, that this warranty applies only to equipment found to be so defective within a period of 24 months from the date of manufacture by the Seller. 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. EXCEPT FOR THE LIMITED WARRANTY OF REPAIR AND REPLACEMENT STATED ABOVE, SELLER DISCLAIMS ALL WARRANTIES WHATSOEVER WITH RESPECT TO THE PRODUCT, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

LIMITATION OF SELLER'S LIABILITY

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 inputted to seller, is limited to the "limited warranty" of repair and/or replacement as so stated in our warranty of product. 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.

Be sure to visit www.ueonline.com for the latest information.

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FAX: 905-455-5131

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CP01101500

55 Series

REMOTE MOUNTING TEMPERATURE SWITCH AND CONTROL

FEATURES

- Single or Dual 15 A Switch Output
- Panel or Surface Mount
- External adjustment via reference dial
- Heat Tracing Models
- Adjustable Ranges Within -130 to
- 650°F (-90 to 343.3°C)

ISO 9001 CERTIFIED COMPANY

UNITED ELECTRIC CONTROLS

OVERVIEW

The E55 Series provides rugged, dependable temperature control for many applications. Available in single or dual output versions, with either an epoxy coated enclosure (designed to meet NEMA Type 4X) or skeleton construction, the E55 combines flexibility with compact size. It has been used in diverse applications such as food service appliances, oven control, and heat tracing.

FEATURES

- Single or dual 15 A switch output
- Skeleton or Enclosure construction - designed to meet NEMA Type 4X
- Optional external manual reset
- Compact size
- Copper or stainless steel bulb & capillary

Remote mount heat tracing model (E55-R25HT)

Dual switch, skeleton model

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 adjustable range
SHOCK	Set point repeats after 15 G, 10 millisecond duration
VIBRATION	Set point repeats after 2.5 G, 5-500 Hz
ENCLOSURE CLASSIFICATION	Type E55 & E55A: Designed to meet enclosure type 4X requirements Types E55S & E55AS: Skeleton, open frame construction, not applicable
ENCLOSURE	Die cast aluminum, epoxy powder coated with stainless steel, gasketed adjustment cover (E55 and E55A)
SWITCH OUTPUT	One or two SPDT; dual switch may be separated up to 100% of range; switches may be wired "normally open" or "normally closed"
ELECTRICAL RATING	15 A 125/250/480 VAC resistive; 22 A 480 VAC for E55-R25HT and E55-L24HT heat trace models. Electrical switches have limited DC capabilities. Consult factory for additional information
ELECTRICAL CONNECTION	1/2" NPT (female) (E55 and E55A)
WEIGHT	Types E55S, E55AS (skeleton): approximately 12 oz.; Types E55, E55A: approximately 1 lb.
BULB AND CAPILLARY	Models E20BC - E23BC: 6 feet copper; Models E20BS - E23BS: 6 feet stainless steel Model R25HT-101: 10 feet stainless steel Model L24HT: stainless steel, Local sensor, no capillary, for ambient sensing
TEMPERATURE FILL	Non-toxic oil
TEMPERATURE DEADBAND	Typically 1% of range under laboratory conditions (70°F circulating bath at rate of 1/2°F per minute change)

APPROVALS

UNITED STATES AND CANADA

E55(A) Models
UL Listed, CSA Certified
UL 873, file # E10667; C22.2 no. 24, file # LR7814

E55(A)S Models
UL Recognized, CSA Certified
UL 873, file # E10667; C22.2 no. 24, file # LR7814

EUROPE

Low Voltage Directive (LVD) (73/23/EC & 93/68/EEC)
UEC compliant to LVD
Products rated lower than 50 VAC and 75 VDC are outside of the scope of the LVD

55 Series

MODEL CHART

Model	Adjustable Set Point Range		Max. Temp.		Dial Div.		Bulb Size
Copper bulb & capillary	°F	°C	°F	°C	°F	°C	OD x Length (inches)
E20BC	-130 to 120	-90 to 48.9	170	76.7	10	5	3/8 x 4-3/8
E21BC	0 to 150	-17.8 to 65.6	200	93.3	5	5	3/8 x 6-7/8
E22BC	50 to 300	10 to 148.9	350	176.7	10	5	3/8 x 4-3/8
E23BC	150 to 650	65.6 to 343.3	700	371.1	25	10	3/8 x 3-5/8
Stainless steel bulb and capillary							
E20BS‡	-130 to 120	-90 to 48.9	170	76.7	10	5	3/8 x 4-3/8
E21BS	0 to 150	-17.8 to 65.6	200	93.3	5	5	3/8 x 6-7/8
E22BS	50 to 300	10 to 148.9	350	176.7	10	5	3/8 x 4-3/8
E23BS	150 to 650	65.6 to 343.3	700	371.1	25	10	3/8 x 3-5/8
R25HT‡‡	25 to 325	-3.9 to 162.8	600	315.6	10	–	1/4 x 7-3/16
L24HT‡‡	15 to 140	-9.4 to 60	190	87.8	5	–	3/8 x 7

‡ Not available with Type E55AS
‡‡ Not available with Types E55A, E55S, E55AS

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, and capillary material.

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

E55	Bulb & capillary; one SPDT output; Epoxy coated enclosure; external adjustment with reference dial, tamper-resistant cover
E55A	Bulb & capillary; two SPDT outputs; Epoxy coated enclosure; external adjustment with reference dial, tamper-resistant cover
E55S	Bulb & capillary; one SPDT output; skeleton construction; external adjustment with reference dial
E55AS	Bulb & capillary; two SPDT outputs; skeleton construction; external adjustment with reference dial

SWITCH OPTIONS*

0500	Close deadband, 5 A 125/250 VAC resistive. NOT AVAILABLE ON MODELS R25HT, L24HT
1530	External manual reset, 15 A 125/250/480 VAC resistive; reset on increasing temperature. NOT AVAILABLE ON TYPES E55S, E55AS, & MODELS R25HT, L24HT
2000	20 A 125/250 VAC resistive. NOT AVAILABLE ON MODELS R25HT, L24HT

GENERAL

M020	Pilot light. AVAILABLE HEAT TRACE MODELS R25HT, L24HT ONLY
M201	Factory set one switch; specify increasing or decreasing temperature and set point. NOT AVAILABLE ON TYPES E55A, E55AS
M202	Factory set two switches; specify increasing or decreasing temperature and set point. NOT AVAILABLE ON TYPES E55, E55S
M270	Calibrated dial in Celsius. NOT AVAILABLE ON HEAT TRACE MODELS R25HT, L24HT
M444	Paper ID tag. NOT AVAILABLE ON HEAT TRACE MODELS R25HT, L24HT
M446	Stainless steel ID tag & wire attachment

UNION CONNECTORS**
(Not available on model L24HT or R25HT)

Option	Replacement Number	Description
	Brass	
W027	SD6213-27	1/2" NPT w/ 3/4" bushing
W045	SD6213-45	3/4" NPT
W051	SD6213-51	1/2" NPT
	304 Stainless Steel	
W028	SD6213-28	1/2" NPT w/ 3/4" bushing
W046	SD6213-46	3/4" NPT
W050	SD6213-50	1/2" NPT

THERMOWELLS**
For all bulb & capillary switches, all 1/2" NPT Internal (Not available on models R25HT, L24HT)

	Brass	
W075	SD6225-75	1/2" NPT with 3/4" NPT bushing adapter, 4" BT
W191	SD6225-191	1/2" NPT, 4" BT
W118	SD6225-118	1/2" NPT with 3/4" NPT bushing adapter, 7" BT
W192	SD6225-192	1/2" NPT, 7" BT
	316 Stainless Steel	
W076	SD6225-76	3/4" NPT, 4.5" BT
W193	SD6225-193	1/2" NPT, 4.5" BT
W119	SD6225-119	3/4" NPT, 7.5" BT
W177	SD6225-177	1/2" NPT, 7.5" BT

OPTIONAL LENGTHS:
Optional capillary length to 50' available in copper or 304 st/st. Armor or Teflon® capillary protection available to lengths less than or equal to capillary length. Consult UE for additional information.

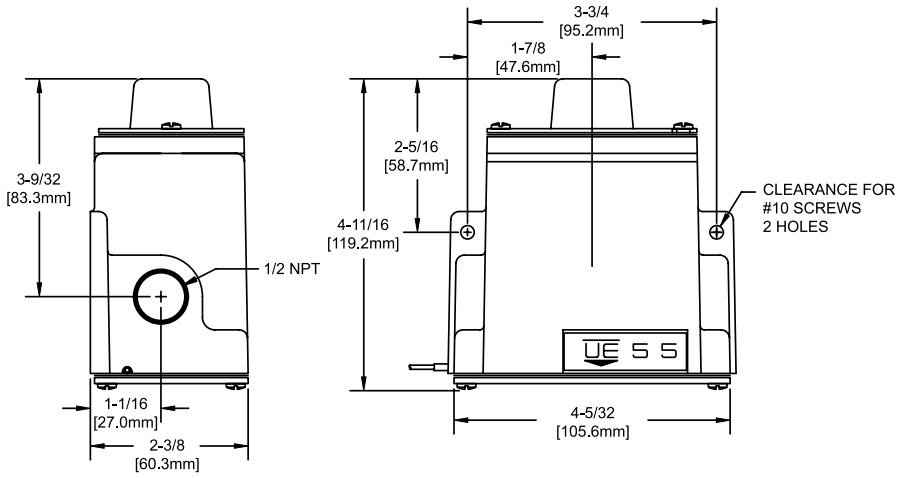
Consult UE regarding repeatability and ambient effects on capillary lengths over 30'.

** All switch options have limited DC capabilities. Consult factory for details.*
*** Dimensional drawings for union connector and thermowells may be found at www.ueonline.com*

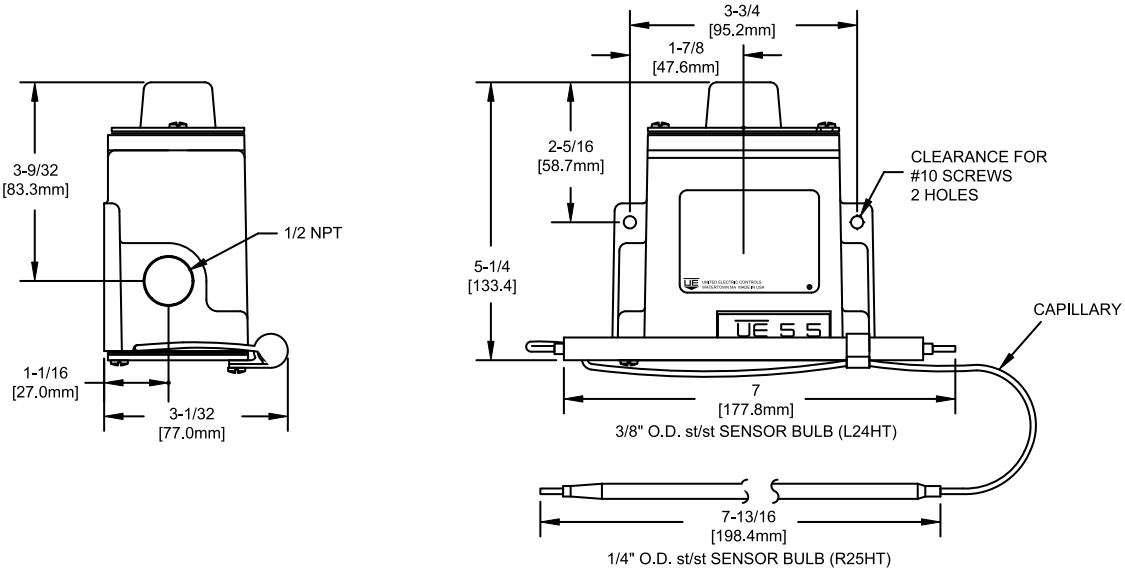
DIMENSIONAL DRAWINGS

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

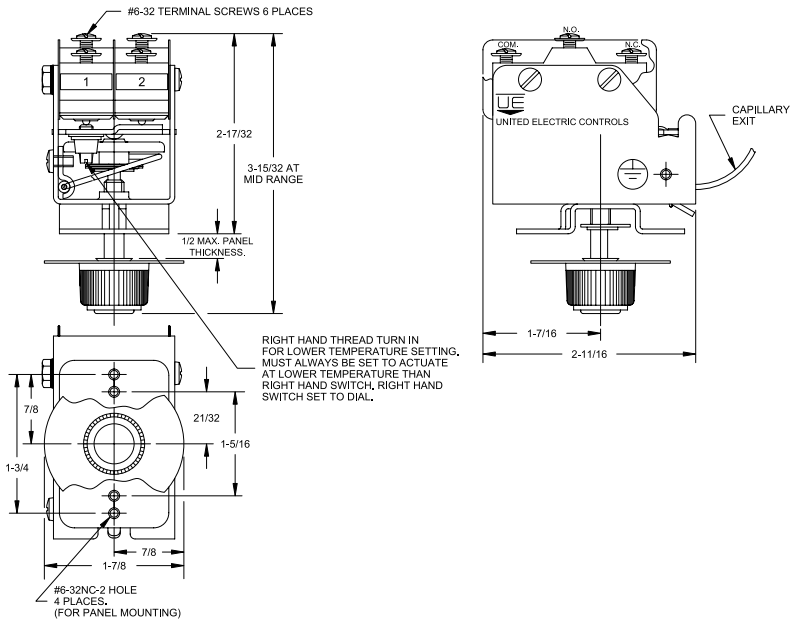
Types E55 /E55A



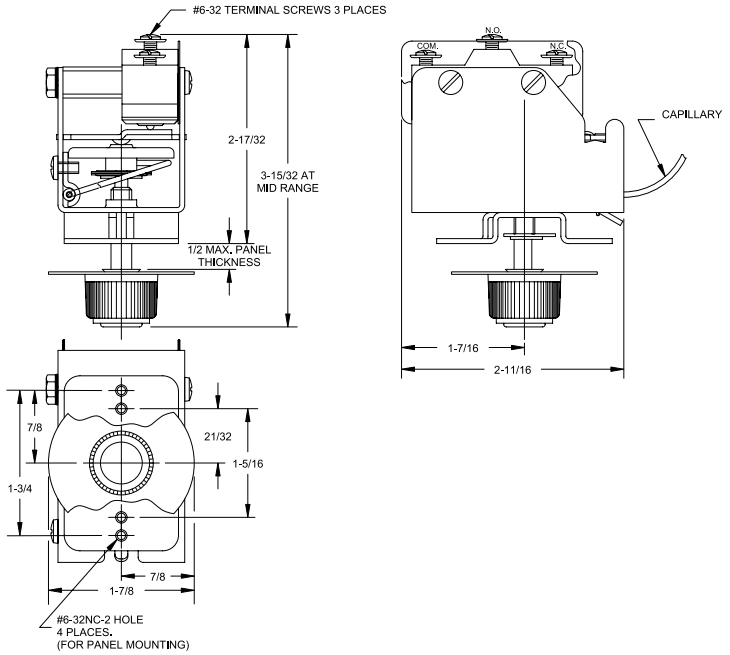
Type E55 Heat Tracing Models



Type E55AS



Type E55S



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 pressure or temperature is acceptable on a limited basis (e.g., start-up, testing) but continuous operation must be restricted to the designated adjustable range. Excessive cycling at maximum pressure or 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. When applicable, 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.
- 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.
- Do not mount unit in ambient temp. exceeding published limits.

LIMITED WARRANTY

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 (Ex-works, Factory, Watertown, Massachusetts. INCOTERMS); provided, however, that this warranty applies only to equipment found to be so defective within a period of 24 months from the date of manufacture by the Seller. 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. EXCEPT FOR THE LIMITED WARRANTY OF REPAIR AND REPLACEMENT STATED ABOVE, SELLER DISCLAIMS ALL WARRANTIES WHATSOEVER WITH RESPECT TO THE PRODUCT, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

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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 INPUTTED TO SELLER, IS LIMITED TO THE "LIMITED WARRANTY" OF REPAIR AND/OR REPLACEMENT AS SO STATED IN OUR WARRANTY OF PRODUCT. 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

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CP04101000

J40 Series

SKELETON PRESSURE AND VACUUM SWITCHES

FEATURES

- Sealed Metal Bellows Sensor
- Brass or Phosphor Bronze Wetted Material
- Small Size
- I5 A SPDT Switch Output
- Easy to Wire Screw Terminals
- Adjustable Ranges from 30" Hg Vac to 300 psi (-1 to 20,7 bar)

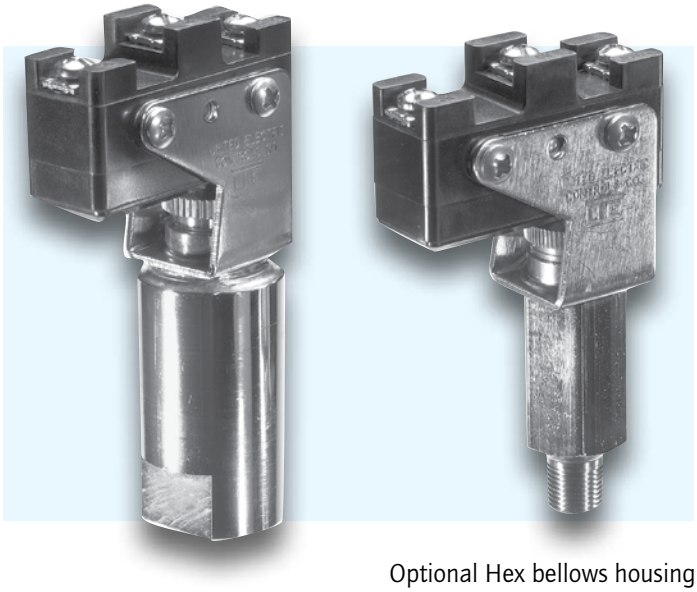
UNITED ELECTRIC CONTROLS

OVERVIEW

The J40 can be utilized in OEM applications where compact size and performance are required. The sealed bellows sensor provides a "leak-free" sensor for applications where elastomers are unacceptable. Proven reliability involving sterilizers, plasma-cutting, anesthesia equipment, and even protective switching devices for power equipment, have made the J40 a versatile OEM pressure switch.

FEATURES

- Sealed metal bellows sensor
- Brass or phosphor bronze wetted material
- Compact size
- Easy external adjustment
- Optional adjustable deadband switch
- UL recognized for the US and Canada; CE compliant to LVD & PED



Optional Hex bellows housing

SPECIFICATIONS

STORAGE TEMPERATURE	-65 to 160°F (-54 to 71°C)
AMBIENT TEMPERATURE LIMITS	-40 to 160°F (-40 to 71°C)
SHOCK	Set point repeats after 15 G, 10 millisecond duration
VIBRATION	Set point repeats after 2.5 G, 5-500 CPS
ENCLOSURE CLASSIFICATION	Not applicable
SET POINT REPEATABILITY	± 1% of full scale range
SWITCH OUTPUT	One SPDT; switch may be wired "normally open" or "normally closed"
ELECTRICAL RATING	15 A 125/250 VAC resistive. Electrical switches have limited DC capabilities. Consult UE for additional information.
ENCLOSURE	Skeleton construction
WEIGHT	Approx. 4 oz.
ELECTRICAL CONNECTION	Direct to switch terminals
PRESSURE CONNECTION	Models 218-230: 1/4" NPT (female); Models 256-274: 1/8" NPT (male)
MOUNTING	Via NPT pressure connection

APPROVALS

UNITED STATES AND CANADA
UL Recognized, cUL Recognized
UL 508; CSA C22.2 No. 14, file #E42272

EUROPE
Low Voltage Directive (LVD) (73/23/ED & 93/68/EEC
UEC Compliant to LVD
Products rated lower than 50 VAC and 75 VDC are outside of the scope of the LVD

Pressure Equipment Directive (PED) (97/23/EC)
Compliant to PED
Products rated below 7.5 psi are outside of the scope of the PED

MODEL CHART

Model	Adjustable Set Point Range		Deadband		*Proof Pressure	
	psi (unless noted)	bar	psi (unless noted)	bar (unless noted)	psi	bar
Phosphor bronze bellows with brass 1/8" NPT (male) pressure connection						
256	0 to 30	0 to 2,1	1.5 to 2.5	0,1 to 0,2	45	3,1
260	0 to 60	0 to 4,1	1.5 to 4	0,1 to 0,3	90	6,2
262	0 to 90	0 to 6,2	1.5 to 4	0,1 to 0,3	135	9,3
266	0 to 100	0 to 6,9	2 to 4	0,1 to 0,3	150	10,3
271	0 to 240	0 to 16,5	2 to 6	0,1 to 0,4	330	22,8
274	0 to 300	0 to 20,7	4 to 6	0,3 to 0,4	350	24,1
Phosphor bronze bellows with brass 1/4" NPT (female) pressure connection						
218	30" Hg Vac to 0	-1 to 0	1 to 2.5" Hg Vac	33,9 to 84,7 mbar	5	0,3
222	0 to 20	0 to 1,4	0.2 to 1.3	13,8 to 89,6 mbar	30	2,1
224	0 to 30	0 to 2,1	0.2 to 1.3	13,8 to 89,6 mbar	45	3,1
226	0 to 50	0 to 3,4	0.2 to 1.3	13,8 to 89,6 mbar	75	5,2
230	0 to 100	0 to 6,9	1 to 2.3	0,1 to 0,2	110	7,6

* **Proof Pressure:** The maximum 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
J40	One SPDT output; skeleton open frame construction; external adjustment with no reference dial

SWITCH OPTIONS*

0140	Gold contacts, 1 A 125 VAC resistive
0500	Close deadband, 5 A 125/250 VAC resistive
1070	10 A 125 VDC or VAC resistive; deadband and minimum set point will increase; consult factory for information
1520	Adjustable deadband, 15 A 125/250/277 VAC resistive. Adjustable wheel changes rise setting only. If adjustment of fall setting is required, use primary adjustment
1535	High ambient, 15 A 125/250 VAC resistive; temperatures up to 250°F (121°C)

GENERAL

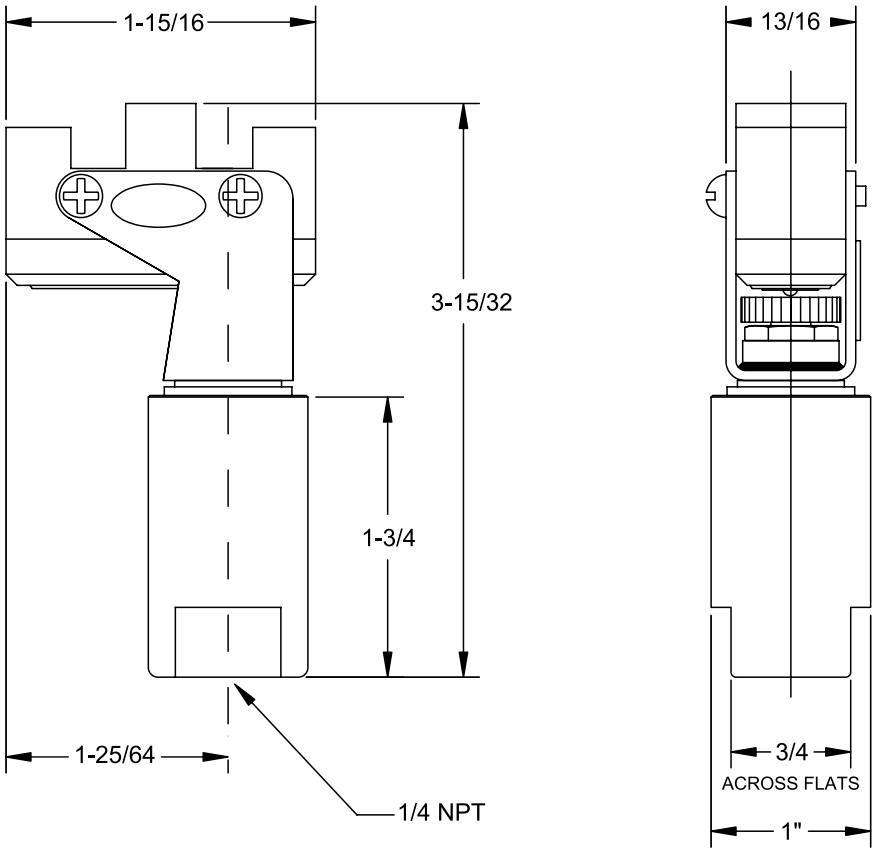
M201	Factory set one switch; specify set point on increasing or decreasing pressure
M444	Paper ID tag
M446	Stainless steel ID tag and wire attachment
M514	Hex bellows housing. NOT AVAILABLE ON MODELS 218-230
M550	Oxygen service cleaning; alcohol cleaning to remove residue from the process connection.

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

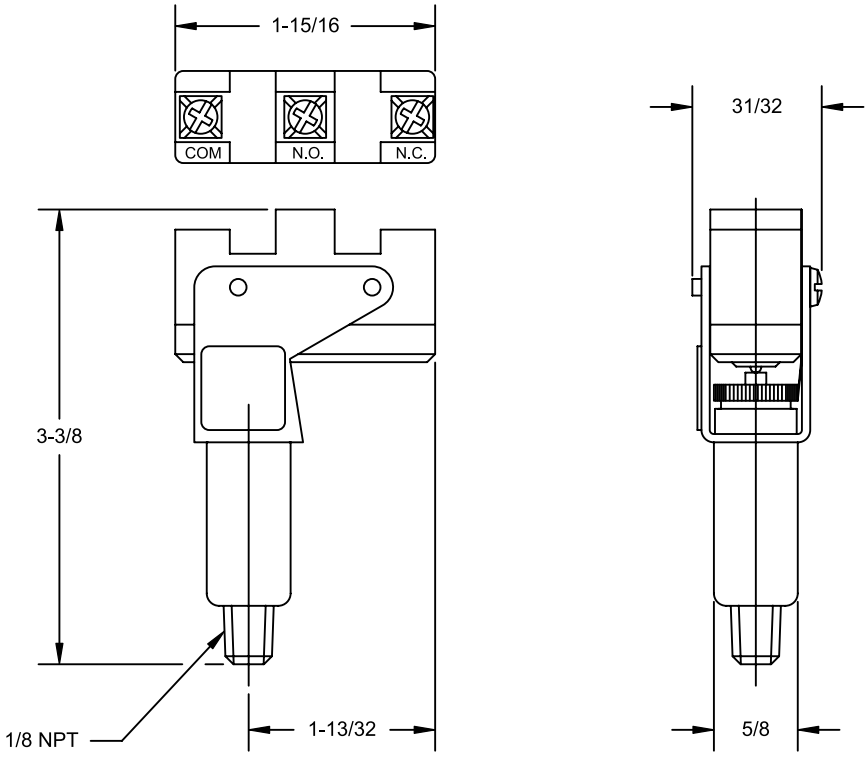
DIMENSIONAL DRAWINGS

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

Type J40, Models 218-230



Type J40, Models 256-274



RECOMMENDED PRACTICES AND WARNINGS

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- 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.
- 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.
- Do not mount unit in ambient temp. exceeding published limits.

LIMITED WARRANTY

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