

Installation & Maintenance Instructions

# UE 24 SERIES

Delta-Pro™  
Differential Pressure Switch



Supplied by

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# 24 Series

Delta-Pro™

Differential Pressure Switch



## Installation and Operation Instructions

Please read all instructional literature carefully and thoroughly before starting.

Refer to the final page for the Warranty.

### GENERAL

**⚠ MISUSE OF THIS PRODUCT MAY CAUSE DAMAGE TO EQUIPMENT OR PERSONAL INJURY. THESE INSTRUCTIONS MUST BE THOROUGHLY READ AND UNDERSTOOD BEFORE DEVICE IS INSTALLED.**

**ℹ PRIOR TO INSTALLATION, CHECK THE WETTED PARTS MATERIAL FOR COMPATIBILITY TO THE PROCESS MEDIA.**

The 24 Series differential pressure switch is activated when two diaphragms in opposition respond to a pressure change between two sources. This response at a pre-determined set point actuates a single, snap-acting switch converting the pressure signal into an electrical signal. Control set point may be varied by turning the external adjusting screw (See Adjustments – Part II).

**ℹ PROOF PRESSURE \* LIMITS LISTED ON NAMEPLATE MUST NEVER BE EXCEEDED, EVEN BY SURGES IN THE SYSTEM. OCCASIONAL OPERATION OF UNIT UP TO PROOF PRESSURE IS ACCEPTABLE, E.G., START-UP AND TESTING. EXCESSIVE CYCLING AT MAXIMUM PRESSURE LIMIT COULD REDUCE SENSOR LIFE. CONTINUOUS OPERATION SHOULD NOT EXCEED THE DESIGNATED OVER RANGE \*\* OR MAXIMUM WORKING PRESSURE \*\*\* RANGE.**

\* Proof Pressure - the maximum pressure to which a pressure sensor may be occasionally subjected, which causes no permanent damage (e.g., start-up, testing). The unit may require re-gapping (consult factory for re-gapping procedure).

\*\* Over Range Pressure - the maximum pressure to which a pressure sensor may be continuously subjected without causing damage and maintaining set point repeatability.

\*\*\* Working Pressure Range - the pressure range in which two opposing sensors can be safely operated and still maintain set point provided the difference in pressure between the low and high sides does not exceed the designated adjustable range.

**⚠ THIS PRODUCT DOES NOT HAVE ANY FIELD REPLACEABLE PARTS. ANY SUBSTITUTION OF COMPONENTS SHALL INVALIDATE AGENCY CERTIFICATION(S).**

**ℹ DEVICE MUST NOT BE ALTERED OR MODIFIED AFTER SHIPMENT. CONSULT UE IF MODIFICATION IS NECESSARY.**

Please refer to product datasheet at [www.ueonline.com](http://www.ueonline.com) for product specifications.

### Part I - Installation

#### Mounting

- Screwdriver to accommodate customer-supplied mounting screws
- Adjustable wrenches (2)

**⚠ INSTALL DEVICE WHERE SHOCK, VIBRATION AND TEMPERATURE FLUCTUATIONS ARE MINIMAL. DO NOT INSTALL DEVICE IN AMBIENT TEMPERATURES THAT EXCEED PUBLISHED LIMITS ON THE NAMEPLATE.**

**ℹ DEVICE CAN BE MOUNTED IN ANY ORIENTATION BUT VERTICAL MOUNTING IS RECOMMENDED TO PREVENT MOISTURE FROM ENTERING THE ENCLOSURE.**

**ℹ MOUNT USING A WRENCH ON LOW AND HIGH SIDE PRESSURE CONNECTION HEX. TEFLON TAPE MUST BE APPLIED TO FITTING FOR A TIGHT SEAL. CONNECTION TORQUE MUST NOT EXCEED 2 FT-LBS AS OVERTIGHTENING MAY DAMAGE THE PORT.**

#### SURFACE MOUNTING

Insert two #6 screws through mounting ear holes on 2" centers (recommended mounting for maximum vibration resistance).

#### PIPE MOUNTING

Mount unit from its port(s). Always hold a wrench on pressure port when tightening pressure connection. Use a wrench on the pressure port and thread a 1/4" NPT male fitting into the port. Be sure to connect high pressure source to port labeled "HIGH". Similarly, connect low pressure source to "LOW".

#### Wiring

**⚠ DISCONNECT ALL SUPPLY CIRCUITS BEFORE WIRING DEVICE. WIRE DEVICE IN ACCORDANCE WITH LOCAL AND NATIONAL ELECTRICAL CODES. USE 75 °C (167 °F) RATED COPPER CONDUCTORS ONLY. MAXIMUM RECOMMENDED WIRE SIZE IS 16 AWG AND NOMINAL TIGHTENING TORQUE FOR FIELD WIRING TERMINALS IS 9 IN-LBS.**



**DO NOT EXCEED ELECTRICAL RATINGS LISTED ON NAMEPLATE. OVERLOAD ON A SWITCH CAN CAUSE FAILURE EVEN ON THE FIRST CYCLE.**



**ENSURE ELECTRICAL CONDUIT ENTRIES ARE PROPERLY SEALED TO PREVENT MOISTURE ENTRY.**

Unscrew terminal just enough to put stripped wire under terminal block clamp. Nominal torque value for terminal block screw is 9.0 in-lbs. Use 75 °C rated copper conductors only.

## Part II - Adjustments



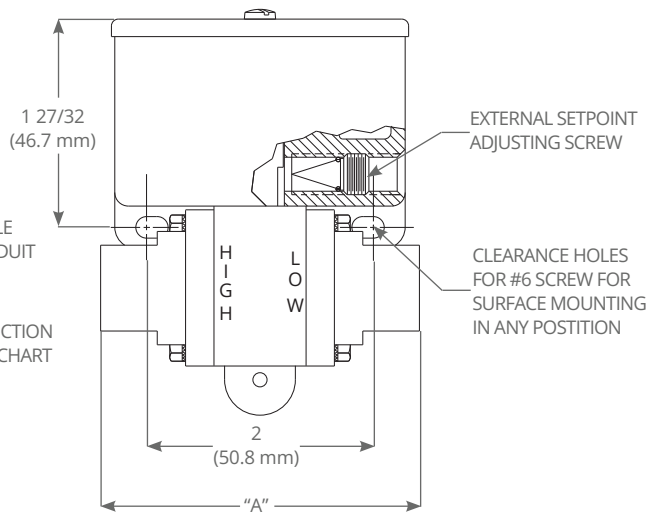
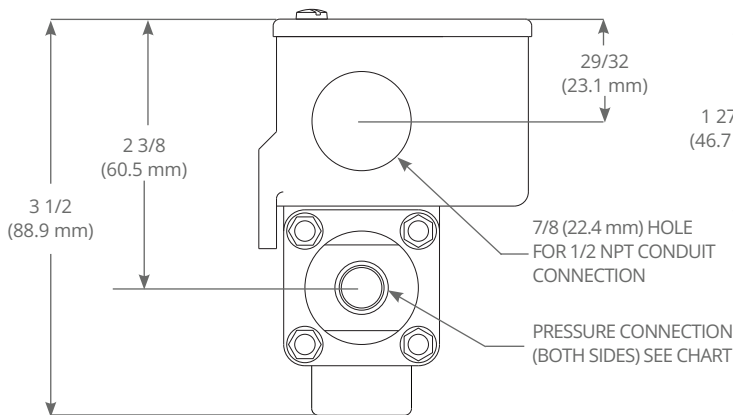
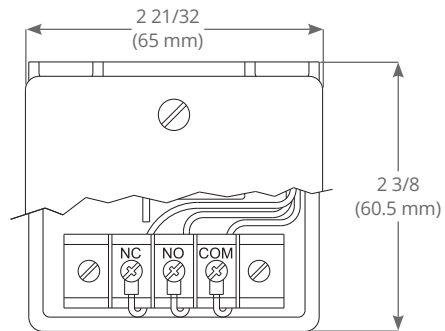
- Screwdriver

Use screwdriver to turn external adjusting screw, located on the side of the enclosure. Turn clockwise (right) to increase setting or counterclockwise (left) to decrease setting. For best setting accuracy, set the switch using the actual working pressures encountered in the application.

## Part III - Dimensions

Dimensional drawings for all models may be found at: [www.ueonline.com](http://www.ueonline.com)

Models	Dimension A		Pressure Connection
	Inches	mm	
011, 012	9.38	69.9	1/4" NPS (F) Polysulfone
013, 014	3.13	79.5	1/4" NPT (F) Brass



## Recommended Practices

- A redundant device is necessary for applications where damage to the primary device could endanger life, limb or property. A high or low limit switch is necessary for applications where a dangerous runaway condition could result.
- Monitor operation to observe warning signs of possible damage to device, such as drift in set point. Check device immediately.
- Preventative maintenance and periodic testing is necessary for critical applications where damage could endanger property or personnel.

## French Warnings Translations

Pg	Warning Text	Texte d'Avertissement
1	MISUSE OF THIS PRODUCT MAY CAUSE DAMAGE TO EQUIPMENT OR PERSONAL INJURY. THESE INSTRUCTIONS MUST BE THOROUGHLY READ AND UNDERSTOOD BEFORE UNIT IS INSTALLED..	Une mauvaise utilisation de cet appareil peut endommager l'équipement et/ou provoquer des blessures. Ces consignes doivent être lues attentivement et bien comprises avant l'installation de l'appareil.
1	THIS PRODUCT DOES NOT HAVE ANY FIELD REPLACEABLE PARTS. ANY SUBSTITUTION OF COMPONENTS SHALL INVALIDATE AGENCY CERTIFICATION(S).	Aucun composant ne peut être remplacé sur le terrain. Tout remplacement de composant peut invalider toutes les approbations et certifications données par un tiers.
1	INSTALL DEVICE WHERE SHOCK, VIBRATION AND TEMPERATURE FLUCTUATIONS ARE MINIMAL. DO NOT INSTALL DEVICE IN AMBIENT TEMPERATURES THAT EXCEED PUBLISHED LIMITS ON THE NAMEPLATE.	Installer l'appareil dans un endroit où les chocs, les vibrations et les variations de température sont minimales. Ne pas installer l'appareil dans un lieu où les températures ambiantes dépassent les limites indiquées sur la plaque signalétique de l'appareil.
1	DISCONNECT ALL SUPPLY CIRCUITS BEFORE WIRING DEVICE. WIRE DEVICE IN ACCORDANCE WITH LOCAL AND NATIONAL ELECTRICAL CODES. USE 75 °C (167 °F) RATED COPPER CONDUCTORS ONLY. MAXIMUM RECOMMENDED WIRE SIZE IS 16 AWG AND NOMINAL TIGHTENING TORQUE FOR FIELD WIRING TERMINALS IS 9 IN-LBS..	Avant le branchement de l'appareil, déconnecter l'installation sur laquelle l'appareil doit être monté. Réaliser le branchement électrique selon les codes électriques nationaux et locaux. N'utiliser que des conducteurs en cuivre approuvés 75 °C (167 °F). Le diamètre maximal recommandé pour les fils est de 16 AWG. Le couple de serrage pour la borne de raccordement est de 9 IN-LBS.
1	DO NOT EXCEED ELECTRICAL RATINGS LISTED ON NAMEPLATE. OVERLOAD ON A SWITCH CAN CAUSE FAILURE EVEN ON THE FIRST CYCLE.	Les seuils électriques indiqués dans la documentation et sur les plaques signalétiques ne doivent jamais être dépassés. La surtension peut causer une panne de l'appareil dès les premier cycle.

## LIMITED WARRANTY

Seller warrants that the device hereby purchased is, upon delivery, free from defects in material and workmanship and that any such device 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 device 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 devices 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 DEVICE, 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 device. 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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