

UNITED ELECTRIC CONTROLS

TX300™ SERIES
Pressure Transmitter

Installation and Operation Instructions

Please read all instructional literature carefully and thoroughly before starting.
For warranty information, scan the QR code on the final page.

GENERAL

MISUSE OF THIS PRODUCT MAY CAUSE EXPLOSION AND PERSONAL INJURY. THESE INSTRUCTIONS MUST BE THOROUGHLY READ AND UNDERSTOOD BEFORE UNIT IS INSTALLED.

North America UL/CSA	**Certification: E226592**
	Markings: UL Listed Class I, Division 1, Groups A, B, C and D Class II, Division 1, Groups E, F and G Class III; Enclosure Type 4X -40 °C ≤ Ta ≤ +85 °C **Applicable Standards:** UL 1203, UL 61010-1, UL 50E CSA C22.2 No. 25, 30, 94.2, and 61010-1 Electromagnetic Compatibility: CFR Title 47 FCC, Class A ICES-001 Class A
Europe (EU) ATEX 0539	**Certification: UL 26 ATEX 3589X**
	Markings: II 2 G Ex db IIC T5 Gb II 2 D Ex tb IIIC T90°C Db; IP66 -40 °C ≤ Ta ≤ +85 °C **Applicable Standards:** EN IEC 60079-0; EN 60079-1; EN 60079-31
International	**Certification: IECEx UL 26.0054X**
	Markings: Ex db IIC T5 Gb Ex tb IIIC T90°C Db; IP66 -40 °C ≤ Ta ≤ +85 °C **Applicable Standards:** IEC 60079-0; IEC 60079-1; IEC 60079-31

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

THIS PRODUCT DOES NOT HAVE ANY FIELD-REPLACEABLE PARTS. ANY SUBSTITUTION OF COMPONENTS SHALL INVALIDATE AGENCY CERTIFICATION(S) AND IMPAIR SUITABILITY FOR CLASS I, DIV. 1 LOCATION.

ATEX AND IECEx SPECIFIC CONDITIONS OF USE:
- THE EPOXY RESIN SHALL NOT BE SUBJECTED TO A TEMPERATURE GREATER THAN 93 °C.
- THE FLAMEPATH JOINTS ARE NOT INTENDED FOR REPAIR.

UE declarations and agency certifications issued by third parties are available for download at www.ueonline.com.

PROOF PRESSURE * LIMITS STATED IN THE LITERATURE AND ON NAMEPLATES MUST NEVER BE EXCEEDED, EVEN BY SURGES IN THE SYSTEM. OCCASIONAL OPERATION OF UNIT UP TO PROOF PRESSURE IS ACCEPTABLE (E.G., START-UP, TESTING).

* 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 TX300 is a fixed range transmitter with piezo-resistive (ranges ≤ 10,000 psi) or thin-film (ranges > 10,000 psi) technology to continuously monitor pressure in a system. Changes in system pressure change the sensor's resistance, producing either a 4-20 mA or voltage (1-5, 0-10 VDC) output to a digital meter, gauge, PLC (programmable logic controller), or other device.

Date code format on nameplate is "YYWW" for year and week. Please refer to product datasheet at www.ueonline.com for product specifications.

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

Part I - Installation

Mounting

- 1 1/8" open-end wrench

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

ELECTRICAL CONDUIT FITTING THREADED CONNECTION: M20 X 1.5, MINIMUM 8 THREADS PROVIDED OR 1/2"-14 NPT, MINIMUM 5 THREADS PROVIDED.

DEVICE SHOULD BE MOUNTED TO PREVENT MOISTURE FROM ENTERING THE ENCLOSURE. VERTICAL MOUNTING IS RECOMMENDED. WHEN MOUNTED HORIZONTALLY, VENT SHOULD BE ORIENTED DOWN.

CONSIDER THE USE OF A PRESSURE SNUBBER IF SEVERE PRESSURE SURGES ARE EXPECTED.

MODELS WITH AUTOCLAVE PRESSURE CONNECTIONS SHOULD BE INSTALLED AT 25 FT-LB (30 FT-LB MAX.). OVER-TORQUING MAY CAUSE AN OUTPUT SHIFT REQUIRING FACTORY RECALIBRATION.

Panel Mounting via 1/2" NPT (male) or M20 Electrical Connection

When panel mounting, mount through 7/8" clearance hole in panel. Use 1/2" NPT or M20 conduit nut depending on connection thread to secure in place. To attach conduit connection, hold electrical connection steady with wrench on hex, then thread on conduit. Torque to 10-20 ft-lb.

CONDUIT CONNECTION SUPPLIED WITH PRODUCT IS DETERMINED FROM THE 6TH POSITION IN THE PART NUMBER, WHERE N REPRESENTS THE 1/2" NPT AND M REPRESENTS THE M20 THREADED CONNECTION.

ALWAYS USE A WRENCH ON PRESSURE CONNECTION HEX. DO NOT TIGHTEN ACROSS THE ENCLOSURE AS THIS WILL NULLIFY THE Ex d PROTECTION AND WEAKEN WELDED JOINTS.

Wiring

DISCONNECT ALL SUPPLY CIRCUITS BEFORE WIRING UNIT. WIRE UNITS ACCORDING TO NATIONAL AND LOCAL ELECTRICAL CODES. THE WIRES SHOULD BE PROTECTED AGAINST MECHANICAL DAMAGE BY USE OF A CONDUIT OR OTHER SUITABLE MEANS.

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

FOR ATEX/IECEx INSTALLATIONS, AN EXTERNAL GROUNDING SCREW (OPTION M460) IS REQUIRED FOR NON-METALLIC CONDUIT SYSTEMS. (SEE FIGURE 2)

IN ORDER TO MEET EUROPEAN EMC REQUIREMENTS, THE PRODUCT WIRING MUST BE INSTALLED IN A GROUNDED METAL CONDUIT OR OTHER SUITABLE SHIELDING.

THE PRODUCT ACCEPTS 10-30 VDC FOR 4-20 mA AND 1-5 VDC OUTPUTS, AND 12-30 VDC (0-10 V OUTPUT, 12 V MAX) FOR VOLTAGE (VDC) OUTPUT. THE SUPPLY VOLTAGE SHALL NOT EXCEED 30 VDC FOR 4-20 mA OUTPUT AND 30 VDC FOR VOLTAGE (VDC) OUTPUT. THE SUPPLY MUST BE ISOLATED FROM MAINS VOLTAGE BY DOUBLE/ REINFORCED INSULATION.

BY THE INSTALLATION, THE WIRES SHALL BE PROTECTED AGAINST MECHANICAL DAMAGE (E.G., BY USE OF CONDUIT).

THE WIRING MUST ONLY BE CONNECTED IN A SAFE AREA OR BY AN APPROVED TERMINAL BOX CERTIFIED TO IEC 60079-0 ED. 7, IEC 60079-1 ED. 7, AND IEC 60079-31 ED. 2 OR IEC 60079-0 ED. 7, IEC 60079-7 ED. 5, AND IEC 60079-31 ED. 2 FOR HAZARDOUS LOCATIONS.

EARTH GROUND MUST ALWAYS BE CONNECTED TO THE GREEN WIRE TO PROVIDE SHIELDING AND ELECTRICAL SAFETY.

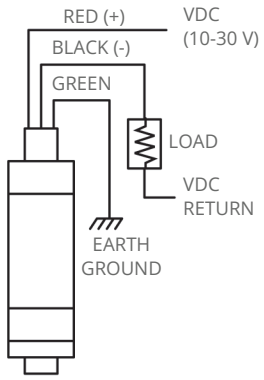
1/2" NPT (male) or M20 is provided on top of the product with 72" long, 18 AWG leadwires. An external grounding screw and clamp are provided with option M460 for ATEX and IECEx installation with non-metallic conduit systems (see Figure 2).

Factory-sealed leadwires are color-coded:

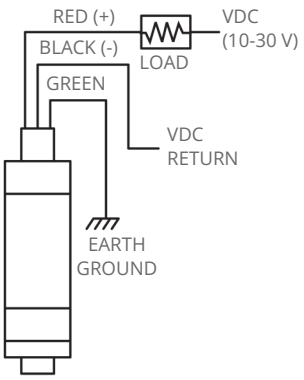
4-20 mA Output	
Red	+ signal
Black	- signal
Green	Earth Ground

Voltage (VDC) Output	
Red	+ VDC signal
Black	- VDC signal
Green	Earth Ground
Blue	1-5 V or 0-10V Output

The product may be wired in either a sourcing (see Figure 1A) or sinking (see Figure 1B) circuit for 4-20 mA output. See Figure 1C for voltage output.



Sourcing Circuit
Figure 1A



Sinking Circuit
Figure 1B

4-20 mA Output

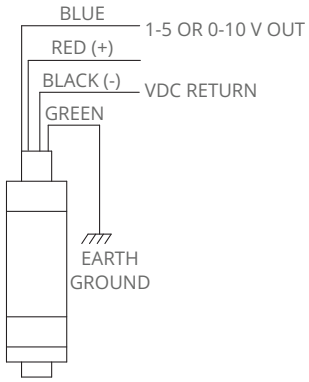
Load Impedance:

4-20 mA output:

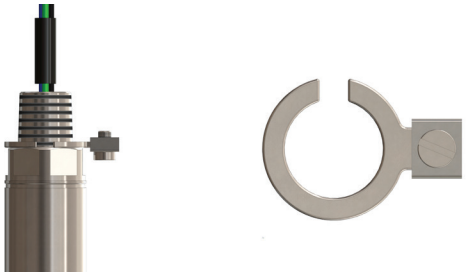
- 1300 ohms max at 30 VDC
- 700 ohms max at 24 VDC

Voltage (VDC) output:

- 2000 ohms min



Voltage Output
Figure 1C



Option M460 External Grounding Screw
Figure 2

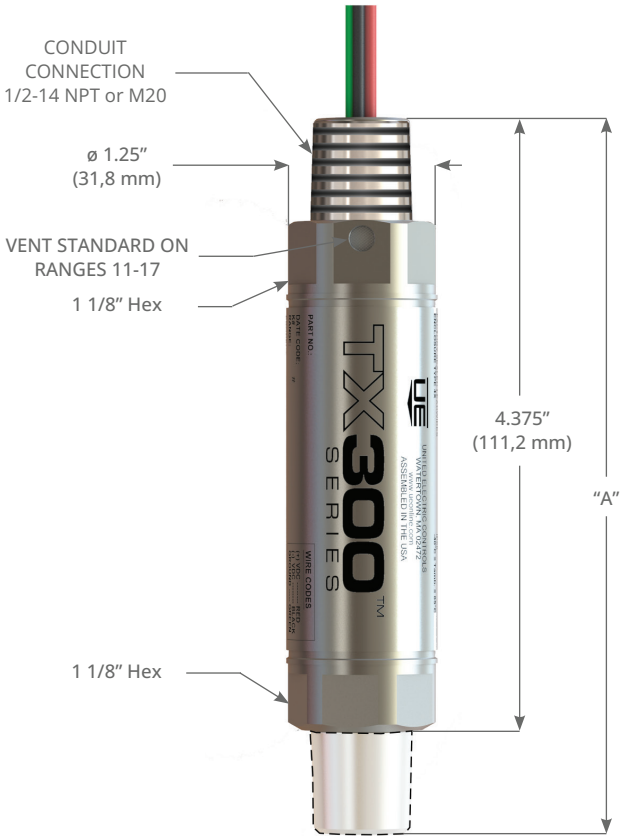
Recommended Practices

- 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. Check device immediately.
- Preventative maintenance and periodic testing are necessary for critical applications where damage could endanger property or personnel.

Part II - Dimensions

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

Ranges	Pressure Connection	"A" in inches	"A" in mm
03-07 & 11-23	1/4 x 1/2 NPT	5.80	147,4
	1/2 NPT	5.80	147,4
	1/4 NPT	5.42	137,7
	7/16 - 20 SAE	5.35	135,9
24-26	1/4 x 1/2 NPT	5.91	150,2
	1/2 NPT	5.91	150,2
	HF6	5.91	150,2
	HF4	5.66	143,8
	1/4 NPT	5.54	140.8
	7/16 - 20 SAE	5.54	140.8
27-30	HF6	5.80	147,4
	HF4	5.32	135,2
	1/4 NPT	5.12	130,1



FRENCH TRANSLATIONS OF WARNINGS		
Pg	Warning Text	Texte d'avertissement
1	MISUSE OF THIS PRODUCT MAY CAUSE EXPLOSION AND PERSONAL INJURY. THESE INSTRUCTIONS MUST BE THOROUGHLY READ AND UNDERSTOOD BEFORE UNIT IS INSTALLED.	Une mauvaise utilisation de cet appareil peut provoquer une explosion et/ou 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) AND IMPAIR SUITABILITY FOR CLASS I, DIV. 1 LOCATION.	Aucun composant ne peut être remplacé sur le terrain. Toute substitution de composant invalidera toutes les approbations, homologations et certifications données par un tiers et compromettra l'aptitude de l'appareil à être utilisé dans une zone de Classe I, Division 1.
1	ATEX AND IECEx SPECIFIC CONDITIONS OF USE: THE EPOXY RESIN SHALL NOT BE SUBJECTED TO A TEMPERATURE GREATER THAN 93 °C. THE FLAMEPATH JOINTS ARE NOT INTENDED FOR REPAIR.	Conditions spécifiques d'utilisation ATEX et IECEx : La résine époxy ne doit pas être soumise à une température supérieure à 93 °C (199.4 °F). Les joints antidéflagrants ne sont pas conçus pour être réparés.
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.	Installer l'appareil dans un endroit où les chocs, les vibrations et les variations de température sont minimes. Ne pas installer l'appareil dans un lieu où les températures ambiantes dépassent les limites indiquées sur la plaque signalétique de l'appareil.
2	ELECTRICAL CONDUIT FITTING THREADED CONNECTION: M20 X 1.5, MINIMUM 8 THREADS PROVIDED OR 1/2"-14 NPT, MINIMUM 5 THREADS PROVIDED.	Raccord fileté pour gaine électrique : M20 x 1,5", avec au moins 8 filets, ou 1/2"–14 NPT, avec au moins 5 filets
2	CONDUIT CONNECTION SUPPLIED WITH PRODUCT IS DETERMINED FROM THE 6TH POSITION IN THE PART NUMBER, WHERE N REPRESENTS THE 1/2" NPT AND M REPRESENTS THE M20 THREADED CONNECTION.	Le type de raccord fourni avec l'appareil est déterminé par la lettre indiquée en 6e position du numéro de référence, où N correspond au raccord NPT 1/2 pouce et M au raccord fileté M20.
2	DISCONNECT ALL SUPPLY CIRCUITS BEFORE WIRING DEVICE. WIRE DEVICE IN ACCORDANCE WITH LOCAL AND NATIONAL ELECTRICAL CODES. WIRES SHOULD BE PROTECTED AGAINST MECHANICAL DAMAGE BY USE OF A CONDUIT OR OTHER SUITABLE MEANS.	Déconnecter tous les circuits d'alimentation avant de procéder au câblage de l'appareil. Réaliser le branchement électrique selon les codes électriques nationaux et locaux. Les fils doivent être protégés contre les dommages mécaniques par un conduit ou par un autre moyen approprié.
2	DO NOT EXCEED ELECTRICAL RATINGS LISTED ON NAMEPLATE. OVERLOAD ON A SENSOR CAN CAUSE FAILURE, EVEN ON THE FIRST CYCLE.	Les valeurs nominales électriques indiquées sur la plaque signalétique ne doivent jamais être dépassées. Une surcharge peut entraîner une défaillance du capteur, même dès le premier cycle
2	FOR ATEX/IECEx INSTALLATIONS, AN EXTERNAL GROUNDING SCREW (OPTION M460) IS REQUIRED FOR NON-METALLIC CONDUIT SYSTEMS.	Pour les installations ATEX/IECEx, une vis de mise à la terre externe (option M460) est requise pour les systèmes de conduits non métalliques.
2	IN ORDER TO MEET EUROPEAN EMC REQUIREMENTS, THE PRODUCT WIRING MUST BE INSTALLED IN A GROUNDED METAL CONDUIT OR OTHER SUITABLE SHIELDING.	Afin de satisfaire aux exigences européennes en matière de CEM, le câblage du produit doit être installé dans un conduit métallique mis à la terre ou être protégé par un autre blindage approprié.
2	BY THE INSTALLATION, THE WIRES SHALL BE PROTECTED AGAINST MECHANICAL DAMAGE (E.G., BY USE OF CONDUIT).	Lors de l'installation, les câbles doivent être protégés contre les dommages mécaniques, par exemple à l'aide d'un conduit.
2	THE WIRING MUST ONLY BE CONNECTED IN A SAFE AREA OR BY AN APPROVED TERMINAL BOX CERTIFIED TO IEC 60079-0 ED. 7, IEC 60079-1 ED. 7, AND IEC 60079-31 ED. 2 OR IEC 60079-0 ED. 7, IEC 60079-7 ED. 5, AND IEC 60079-31 ED. 2 FOR HAZARDOUS LOCATIONS.	Le câblage ne doit être raccordé que dans une zone sûre ou à l'aide d'un boîtier de raccordement homologué conforme aux normes CEI 60079-0 éd. 7, CEI 60079-1 éd. 7 et CEI 60079-31 éd. 2 ou CEI 60079-0 éd. 7, CEI 60079-7 éd. 5 et CEI 60079-31 éd. 2 pour les zones à risque.
2	THE PRODUCT ACCEPTS 10-30 VDC FOR 4-20 mA AND 1-5 VDC OUTPUTS, AND 12-30 VDC (0-10V OUTPUT, 12 V MAX) FOR VOLTAGE (VDC) OUTPUT. THE SUPPLY VOLTAGE SHALL NOT EXCEED 30 VDC FOR 4-20 mA OUTPUT AND 30 VDC FOR VOLTAGE (VDC) OUTPUT. THE SUPPLY MUST BE ISOLATED FROM MAINS VOLTAGE BY DOUBLE/ REINFORCED INSULATION.	Le produit accepte une alimentation de 10 à 30 VDC pour les sorties 4-20 mA et 1-5 VDC, et de 12 à 30 VDC pour une sortie en tension (VDC) (sortie 0-10 V, 12 V max.). La tension d'alimentation ne doit pas dépasser 30 VDC pour la sortie 4-20 mA ni 30 VDC pour la sortie en tension (VDC). L'alimentation doit être isolée de la tension secteur par une isolation double ou renforcée.

TERMS AND CONDITIONS OF SALE

UE specifications subject to change without notice.

UNITED ELECTRIC CONTROLS

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