ASHCROFT®
E2X EXPLOSION PROOF PRESSURE TRANSDUCER INSTALLATION MANUAL

Reference E2X I&M 011-10318 for French

⚠ WARNING! READ BEFORE INSTALLATION ⚠

A failure resulting in injury or damage may be caused by excessive overpressure, excessive vibration or pressure pulsation, excessive instrument temperature, corrosion of the pressure containing parts, or other misuse. Consult Ashcroft Inc., Stratford, Connecticut, USA before installing if there are any questions or concerns.

OVERPRESSURE:

Pressure spikes in excess of the rated overpressure capability of the transducer may cause irreversible electrical and/or mechanical damage to the pressure measuring and containing elements.

Fluid hammer and surges can destroy any pressure transducer and must always be avoided. A pressure snubber should be installed to eliminate the damaging hammer effects. Fluid hammer occurs when a liquid flow is suddenly stopped, as with quick closing solenoid valves. Surges occur when flow is suddenly begun, as when a pump is turned on at full power or a valve is quickly opened.

Liquid surges are particularly damaging to pressure transducers if the pipe is originally empty. To avoid damaging surges, fluid lines should remain full (if possible), pumps should be brought up to power slowly, and valves opened slowly. To avoid damage from both fluid hammer and surges, a surge chamber should be installed.

Symptoms of fluid hammer and surge's damaging effects:

- Pressure transducer exhibits an output at zero pressure (large zero offset).
- Pressure transducer output remains constant regardless of pressure
- In severe cases, there will be no output.

e2x_transducer_i&m_011-10267_RevE_11-09-23

FREEZING

Prohibit freezing of media in pressure port. Unit should be drained (mount in vertical position with electrical termination upward) to prevent possible over- pressure damage from frozen media.

STATIC ELECTRICAL CHARGES:

Any electrical device may be susceptible to damage when exposed to static electrical charges. To avoid damage to the transducer, observe the following:

- Operator/installer should follow the proper ESD (electrostatic discharge) protection procedures before handling the pressure transducer.
- Ground the body of the transducer BEFORE making any electrical connections
- When disconnecting, remove the ground LAST!

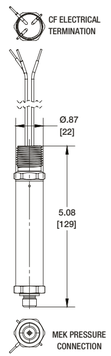
Note: The shield and drain wire in the cable (if supplied) is not connected to the transducer body, and is not a suitable ground.

VENT

All units with a pressure range less than 500 psi include a small Porex filter in the unit. This is necessary to equalize the internal pressure of the unit with the atmospheric pressure. While the Porex filter is hydrophobic, if it not properly protected it may be a source of water ingress.

WARNING

ASHCROFT® E2X PRESSURE TRANSMITTER, TYPICAL DIMENSIONS AND CONSTRUCTION



GROUNDING

Installer must connect the device to appropriate earthing connection. This can be done via metallic plumbing, use of metallic conduit/ junction box, and/or earthing clamp/strap.

DESCRIPTION

The Ashcroft® Model E2X is ideal for a broad range of pressure sensing requirements found in general and heavy industrial applications as well as applications in test and measurement. The E2X offers a wide variety of material, process and electrical connections to meet your application requirements. It is designed for use with both liquids and gases it provides an accurate, reliable and highly repeatable output. This is accomplished through the use of an onboard microprocessor that is programmed during a unique digital compensation process to provide an extremely linear performance over the entire specified pressure and temperature range.

SPECIFICATIONS

Reference condition: 70 °F (21°C)

Accuracy: ±0.25%, ±0.50% or ±1.00% of Span Terminal Point (* includes linearity, hysteresis, repeatability zero offset and span)

Repeatability: ≤ ±0.1 % of Span

Stability: ±0.25% of Span / Year

Zero / Span Adjustment: ±5% of Span

Standard Ranges: Vac to 20,000 psi

ENVIRONMENTAL SPECIFICATIONS

Enclosure Rating:
IP67 Standard (FM Certified)

Temperature Limits:

Storage Temp: -50 to 125 °C

Operating Ambient Temp: See drawing 825A030 for ambient temperature limits.

Media Temp: See drawing 825A030 for media temperature limits.
* (0-100% R.H. non-condensing)

Temperature Coefficients: Zero & Span ±0.009%/°C within -40 to 80 °C

Vibration: Random: 10g RMS 20-2000 Hz

Shock: 80g Peak, 6 msec, 3 axes, haversine

Proof pressure: 1.2X -2X the range

Burst pressure: 3X-8X the range minimum

RoHS FM APPROVED CE SR c UL us E363562

ELECTRICAL SPECIFICATIONS

Supply Voltage:

Explosion Proof Installations	
Supply Voltage	Output
9-36 Vdc	4-20 mA, 20-4 mA (2-wire), 0-5 Vdc, 1-5 Vdc, 1-6 Vdc, 0.1-5 Vdc, 0.5-4.5 Vdc
14-36 Vdc	0-10 Vdc, 1-11 Vdc, 0.1-10 Vdc

Intrinsic Safe & Non-Incendive Installations

For Intrinsically Safe and Non-Incendive Installations refer to Entity Parameters on Ashcroft drawing 825A030 (wiring and installation).

Supply Current: <8 mA (Vout)

Response Time (Output): 4 msec

Power-Up Response Time: 100 msec

Current Source/Sink for Voltage Output: 1mA (Source) / 0.1 mA (Sink) maximum

Withstand/Breakdown: 100 Vdc / 100 Vac. Optional 500 Vdc / 500 Vac

Insulation Resistance: >100 M @ 30 V

RoHS2: Yes

MECHANICAL SPECIFICATIONS

Process Connections: Male NPT (⅛, ¼ and ½), Female NPT (⅛, ¼ and ½), 7/16-20 UNF SAE (Male and Female), MIL 33656 (UNJF 7/16-20 w/ 37° Cone), G¼″ B EN837-1, G½″ B EN837-1, G¼″ A DIN3852-E, Autoclave HP 7/16″ (AMINCO), ⅛″ BSP Tapered Thread, ¼″ BSP Tapered Thread, ½″ BSP Tapered Thread, ¼″ Male VCR, ¼″ Female VCR, R⅛ ISO 7/1,1.5° Tri-Clamp, 2.0° Tri-Clamp

Electrical Connections: ½ NPT conduit with Flying Leads: 18AWG 3 conductor, non-vented, M20 Conduit with Flying Leads.

Diaphragm Materials: 17-4PH® Stainless steel, 316L Stainless steel or A286 Stainless steel

INSTALLATION AND ASSEMBLY

All supply lines should be arranged so that there are no mechanical forces acting on the device.

For units with NPT type pressure fittings apply Teflon™ tape or an equivalent sealant to the threads before installing. When tightening, apply a wrench to the hex wrench flats located just above the pressure fitting. **DO NOT** tighten by using a pipe wrench on the housing.

Process connection:

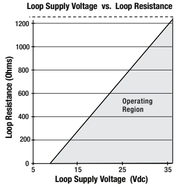
- By authorized and qualified personnel only.
- All lines need to be depressurized when the instrument is being connected.
- Appropriate steps must be taken to protect the device from pressure surges.
- Check the suitability of the device for the media to be measured.
- Maximum pressures shall be observed.
- Check that all connections are tight before use.

If during installation the pressure measuring lines are already under pressure, the zero point cannot be checked and nosettings can be adjusted. In these cases, the device should only be connected electrically first.

Electrical connection:
See drawing 825A030 for installation requirements.

EMC		
EMC:	Directive 2014/30/EU, and EN61326-1, EN61326-2-3 (Industrial Env.)	
Immunity:	61000-4-2 (ESD)	±4kV/±8kV (Contact/Air)
	61000-4-3 (Radiated RF)	10 V/m to 1GHZ, 3 V/m to 2GHz, 1 V/m to 2.7GHz
	61000-4-4 (EFT/Burst)	±1kV (5/50ns, 5kHz)
	61000-4-5 (Surge)	±1kV, Earth to Shield over all I/O lines
	61000-4-6 (Conducted RF)	3V (0.15 to 80MHz)
	61000-4-8 (Line Freq. Magnetic)	30A/m
Emissions:	EN 55011 (CISPR 11) Class A, Group 1 & FCC (47 CFR 15)	

FOR TRANSMITTERS WITH 4-20mA OUTPUT SIGNAL, THE MINIMUM VOLTAGE AT THE TERMINAL IS 9VDC



$V_{MIN} = 9V + (0.022^*A \times R_{LOOP})$ (*includes a 10% safety factor)
$R_{LOOP} = R_{SENSE} + R_{WIRING}$
R_{LOOP} = Loop Resistance (Ohms)
R_{SENSE} = Sense Resistance (Ohms)
R_{WIRING} = Wire Resistance (Ohms)

NOTE: See power supply requirement chart for maximum supply voltage limits

Noise

For minimum noise susceptibility, avoid running the transducers cable in a conduit that contains high current AC power cables. Where possible avoid running the cable near inductive equipment.

Shielded Cable

Units with shielded cable electrical termination, connect the drain wire to the guard terminal on the read out device or measuring instrument, if available. In all other cases connect to the ground or to the power supply negative terminal.

Range Type	Offset Value	Span Value
0 to Positive Pressure Range	0	Full Range
0 to Vacuum	Vacuum	0
Compound (Vac to pressure range)	Vacuum	Full Range
Absolute	Absolute Zero	Full Range Absolute

Offset and Span adjustments

1. **WARNING!** Disconnect the E2X transducer from the control system prior to performing offset and span adjustments.
2. Activate calibration mode by first cycling power off and on, and then within 30 seconds tap the Ashcroft calibration magnet near the specified area on the E2X label. The initial code to enter the calibration mode is 1-3-1 (Tap the unit for one second, release. Tap unit for three seconds, release, tap unit for one second, release).
3. When the calibration mode has been activated the output signal on the transducer will drive from over range to under range.
4. At the offset pressure record output offset to be used in the span adjustment in step 4. Increase pressure to 100% of span, this will allow you to adjust the span of the unit. The span is adjustable to +/- 5% of full scale.
5. Tap the magnet near specified area on the E2X label. Adjust span to desired span value plus the offset value recorded in step 3. (The span will increase from its current value up to +5% of scale. Once the output has reached the max value, the span will jump to -5% and continue to increase. (Note - holding the magnet in position while adjusting the span will increase the speed at which the span increases or decreases. Once you get close to your desired setting you should tap the magnet against the unit for finer adjustment. If you scroll past your desired value, repeat step three until you have reached your desired span value.
6. Decrease the pressure to 0% of span, this will allow you to adjust the zero of the unit. The offset is adjustable to +/- 5% of full scale.
7. Tap magnet near specified area on the E2X label. Adjust the offset to the desired value. (The offset will increase from its current value up to +5% of scale. Once the offset output has reached the max value, the zero will jump to -5% and continue to increase. (Note - holding the magnet in position while adjusting the offset will increase the speed at which the offset increases or decreases. Once you get close to your desired setting you should release the magnet and tap it against the unit for finer adjustment. If you scroll past your desired value, repeat step 6 until you have reached your desired offset value.
8. Once you have completed step 6, you can repeat step 3 through 6 to adjust or check your calibration
9. Once you have verified the calibration, the unit will exit the calibration mode after 30 seconds of magnetic inactivity. This will be signaled by the output of the transducer driving to over range, under range and back to the normally calibrated output.

MAINTENANCE

The device does not require maintenance. In order to ensure reliable operation and a long service life of the device we recommend regular checking of the device as follows:

- Check the function in connection with system components.

NOTE: Checkboxes provided on the label must be marked during installation. Installer - be sure to check each box as appropriate to indicate the protection methods used on a particular installation. Once the type of protection has been marked it shall not be changed.

- Check the tightness of the pressure connection lines.
- Check the electrical connections.

The exact test cycles have to be adapted to the operating and environmental conditions. The operating manuals of all other devices are also to be observed if there is an interaction of different device components.

TRANSPORT

The product must be protected against severe impacts therefore transport is to be effected only in the packaging intended for transport.

SERVICE

The E2X is not for repair. All defective or faulty devices are to be sent directly to Ashcroft Inc. We would ask you to coordinate all device returns with our inside sales department. Our inside sales department will issue an RMA number and give instructions on how to ship the return.

WARNING

Remaining process media in and on dismantled measuring instruments may cause danger to persons, environment and equipment. Take reasonable precautions! Clean the instrument thoroughly if necessary. To return the unit please choose the original packaging or a packaging intended for transport.

DISPOSAL

Incorrect disposal can put the environment at risk. Kindly help us protecting the environment and dispose of or recycle the used products in accordance with the relevant regulations.

STANDARD FLAME PROOF LABEL 238B777-01

ASHCROFT® 250 East Main Street, Stratford, CT 06614
INDUSTRIAL CONTROL EQUIPMENT FOR HAZARDOUS LOCATIONS
www.ashcroft.com

RANGE:	0 / 150 PSIG	RED:	V+
ACCURACY:	± 0.25 % of SPAN	BLACK:	V-
PROOF:	290 PSIG	WHITE:	N/C
OUTPUT:	4 - 20 mA		
WETTED MAT'L	17-4PH, 316L SS		

MODEL: E2XA3NM0242CFX15F150#G
SERIAL: EST1805070077

FM APPROVED FM18US0309X
SR 23CA80101892X
CE 2813
Ex FM18ATEX0080X EU / FM18ATEX0079X Type[]
IECEx FMG 20.0016X

IS CL II DIV1 GP EFG T135°C
☐ZN20 AEx ia IIIC T135°C Da — CL III DIV1 T135°C Ex ia IIIC T135°C Da — ☐II1D Ex ia IIIC T135°C Da -40°C≤Ta≤40°C
SUPPLY: 9-30 VDC
☐CL I ZN 0 AEx ia IIC T4 Ga — IS CL I DIV1 GP ABCD T4, Ex ia ☐II1G Ex ia IIC T4 Ga -40°C≤Ta≤80°C
SUPPLY: 9-36 VDC — CL I Ex ia IIC T4 Ga
☐CL I ZN 1 AEx ib IIC T4 Gb — CLT DIVT GP ABCD T4 — -40°C≤Ta≤80°C
FACTORY SEALED — CL II DIV1 GP EFG T135°C — ☐II2G Ex ib IIC T4 Gb
☐ZN21 AEx tb IIIC T135°C Db — CL III DIV1 T135°C — ☐II2D Ex tb IIIC T135°C Db
Ex tb IIIC T135°C Db — IP67 — M20x1.5 THD
Ex tb IIIC T135°C Db

WARNING - SPECIFIC CONDITIONS OF USE: SEE INSTALLATION DWG. 825A030 & MANUAL.
ATTENTION - CONDITION PARTICULIÈRE D'UTILISATION: VOIR INSTALLATION DWG. 825A030 & MANUEL.

DO NOT USE FOR OXYGEN SERVICE — NE PAS UTILISER POUR LE SERVICE D'OXYGÈNE

ZERO-SPAN ADJUST

WARNING: A failure resulting in injury or damage may be caused by pressure beyond full scale, excessive vibration or pressure pulsation,excessive instrument temperature, corrosion of the pressure containing parts or other misuse.

AVERTISSEMENT: Une défaillance entrainant des blessures ou des dommages peut être causée par une pression au-delà de la pleine échelle, des vibrations excessives ou des pulsations de pression, une température excessive de l'instrument, une corrosion des pièces contenant la pression ou par toute autre mauvaise utilisation.

NONINCENDIVE X3N LABEL 238B777-01NI

ASHCROFT® 250 East Main Street, Stratford, CT 06614
INDUSTRIAL CONTROL EQUIPMENT FOR HAZARDOUS LOCATIONS
www.ashcroft.com

RANGE:	0 / 150 PSIG	RED:	V+
ACCURACY:	± 0.25 % of SPAN	BLACK:	V-
PROOF:	290 PSIG	WHITE:	N/C
OUTPUT:	4 - 20 mA		
WETTED MAT'L	17-4PH, 316L SS		

MODEL: E2XA3NM0242CFX15F150#G
SERIAL: EST1805070077

FM APPROVED FM18US0309X
SR 23CA80101892X
CE 2813
Ex FM18ATEX0080X EU / FM18ATEX0079X Type[]
IECEx FMG 20.0016X

NI CL I DIV2 GP ABCD T4 — Ex ic IIC T4 Gc — ☐CL I ZN 2 AEx ic IIC T4 Gc — ☐II3G Ex ic IIC T4 Gc
NI CL II DIV2 GP FG T135°C — ☐ZN22 AEx ic IIIC T135°C Dc — CL III DIV2 T135°C Ex ic IIIC T135°C Dc — ☐II3D Ex ic IIIC T135°C Dc -40°C≤Ta≤80°C
SUPPLY: 9-30 VDC
SUPPLY: 9-36 VDC — CL I DIV1 GP ABCD T4 — -40°C≤Ta≤80°C
☐CL I ZN 1 AEx ib IIC T4 Gb — CL II DIV1 GP EFG T135°C — ☐II2G Ex ib IIC T4 Gb
☐ZN21 AEx tb IIIC T135°C Db — CL III DIV1 T135°C — ☐II2D Ex tb IIIC T135°C Db
FACTORY SEALED — Ex tb IIIC T135°C Db — IP67 — M20x1.5 THD

WARNING - SPECIFIC CONDITIONS OF USE: SEE INSTALLATION DWG. 825A030 & MANUAL.
ATTENTION - CONDITION PARTICULIÈRE D'UTILISATION: VOIR INSTALLATION DWG. 825A030 & MANUEL.

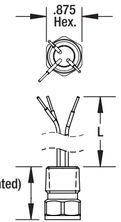
DO NOT USE FOR OXYGEN SERVICE — NE PAS UTILISER POUR LE SERVICE D'OXYGÈNE

ZERO-SPAN ADJUST

WARNING: A failure resulting in injury or damage may be caused by pressure beyond full scale, excessive vibration or pressure pulsation,excessive instrument temperature, corrosion of the pressure containing parts or other misuse.

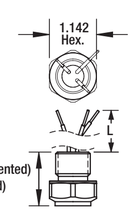
AVERTISSEMENT: Une défaillance entrainant des blessures ou des dommages peut être causée par une pression au-delà de la pleine échelle, des vibrations excessives ou des pulsations de pression, une température excessive de l'instrument, une corrosion des pièces contenant la pression ou par toute autre mauvaise utilisation.

CF	½ NPT Conduit With Flying Leads		
Pin	Voltage Ouput	4-20mA Output	Wire Color
-	V+	V+	Red
-	Common (V-)	V-	Black
-	Output	N/C	White



½ NPT Conduit w/ Flying Leads Code "CF"

MF	M20 X 1.5 Conduit Flying Leads		
Pin	Voltage Ouput	4-20mA Output	Wire Color
-	V+	V+	Red
-	Common (V-)	V-	Black
-	Output	N/C	White



M20 Conduit w/ Flying Leads Code "MF"

WARNING: Specific Conditions of Use. See Installation Drawing 825A030

E2X PRESSURE TRANSDUCER

Ashcroft Drawing 825A030

General Notes

- Control equipment connected to Associated Apparatus must not use or generate more than 250 Vrms or Vdc.
- Associated apparatus manufacturer's installation drawing must be followed when installing this equipment.
- Run shielded interconnection cable with shield connected to FM approved associated apparatus ground.
- Must use class 2/SELV power supply.

Warnings

- Do not disconnect equipment unless area is known to be non-hazardous.
- Substitution of components may impair suitability for hazardous (classified) locations.
- No revision to drawing without prior approval from FM
- Once the type of protection has been marked on the label, it shall not be changed

Specific Conditions of Use

Non-Incendive/Intrinsically safe installations

- The pressure transducer does not withstand a 500 Vrms dielectric strength test between the circuit and the earth ground. This must be taken into account during installation.
- The model E2X Series equipment is assembled with inputs rated Ex ia/Division1 and when connected to approved Ex [ia] barriers (associated apparatus) the I.S. equipment rating is Ex ia IIC, Ex ia IIIC/Class1, Class II, Class III, Division 1. When connected to approved EX [ic] barriers, the equipment rating is limited to Ex ic IIC, Ex ic IIIC/Class I, Class II, Class III, Division 2.
- The designated installation for Intrinsically Safe or Non-incendive protection is selected on the Ex Marking label using a permanent marking method prior to installation by applying a mark into the reserved checkbox for the protection
- Requires connection to mains by an appropriately certified and rated Limited Power Supply or Safety Extra Low Voltage (SELV) Power Supply

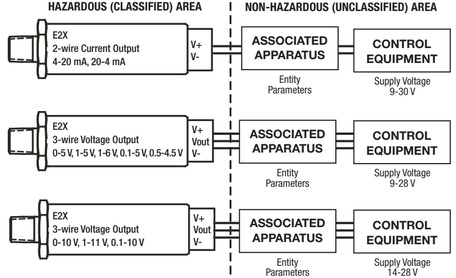
E2X INTRINSICALLY SAFE INSTALLATION

Class I, Division 1, Group A, B, C, D T4 -40 °C ≤ Ta ≤ 80 °C
Class II, Division 1, Group E,F,G T4 -40 °C ≤ Ta ≤ 80 °C
Class III, T4 -40 °C ≤ Ta ≤ 80 °C
Class I, Zone 0, AEx ia IIC T4 Ga -40 °C ≤ Ta ≤ 80°C
Zone 20, AEx ia IIIC T135 °C Da -40 °C ≤ Ta ≤ 40 °C
Class I, Zone 2, AEx ic IIC T4 Gc -40 °C ≤ Ta ≤ 80 °C
Zone 22 AEx ic IIIC T135°C Dc -40 °C ≤ Ta ≤ 80 °C
II 1 G Ex ia IIC T4 Ga -40 °C ≤ Ta ≤ 80 °C
II 1 D Ex ia IIIC T135°C Da -40 °C ≤ Ta ≤ 40 °C
II 3 G Ex ic IIC T4 Gc -40 °C ≤ Ta ≤ 80 °C
II 3 D Ex ic IIIC T135°C Dc -40 °C ≤ Ta ≤ 80 °C

Entity Parameters:

Ui < 30Vdc, Ii < 100mA, Pi < 0.7W, Li = 32.8µH, Ci = 36.2nF [if e= 24, 42, Cx for 2-wire Current Output]
Ui < 28Vdc, Ii < 85mA, Pi < 0.7W, Li = 36µH, Ci= 72.9nF [if e= 05, 10, 11, 12, 13, 15, 16, 45, Vx for 3-wire Voltage Output]

- The Intrinsic Safety Entity concept allows the interconnection of two intrinsically safe devices with entity parameters not specifically examined in combination as a system when: Uo or Voc ≤ Vmax, Io or Isc ≤ Imax, Ca or Co ≥ Ci + Ccable, La or Lo ≥ Li + Lcable, Po ≤ Pi.
- The Associated Apparatus must be FM Approved under Intrinsic Safety Entity concept.
- Dust-tight conduit seal must be used when installed in Class II and Class III environments.
- Installation should be in accordance with ANSI/ISA RP12.6 "Installation of Intrinsically Safe systems for Hazardous (Classified) locations" and the National Electrical Code (ANSI/NFPA 70) Section 504 and 505 or in accordance with European Standard EN60079-14 and applicable National regulations.



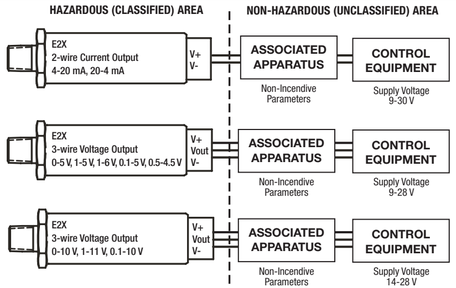
E2X NON-INCENDIVE INSTALLATION

Class I, Division 2, Group A, B, C, D T4 -40 °C ≤ Ta ≤ 80 °C
Class II, Division 2, Group F, G T4 -40 °C ≤ Ta ≤ 80 °C
Class III, T4 -40 °C ≤ Ta ≤ 80° C

Non-Incendive Parameters:

Ui < 30Vdc, Ii < 100mA, Pi < 0.7W, Li = 32.8µH, Ci = 36.2nF [if e= 24, 42, Cx for 2-wire Current Output]
Ui < 28Vdc, Ii < 85mA, Pi < 0.7W, Li = 36µH, Ci= 72.9nF [if e= 05, 10, 11, 12, 13, 15, 16, 45, Vx for 3-wire Voltage Output]

- The Non-Incendive Field Wiring concept allows the interconnection of two devices with non-incendive parameters not specifically examined in combination as a system when: Uo or Voc ≤ Vmax, Io or Isc ≤ Imax, Ca or Co ≥ Ci + Ccable, La or Lo ≥ Li + Lcable, Po ≤ Pi.
- The Associated Apparatus must be FM Approved under Intrinsic Safety Entity or Non-Incendive Field Wiring concept
- Dust-tight conduit seal must be used when installed in Class II and Class III environments.
- Installation should be in accordance with the National Electrical Code (ANSI/NFPA 70) Section 504 and 505 or in accordance with European Standard EN60079-14 and applicable National regulations.



HAZARDOUS AREA CERTIFICATIONS

FM APPROVED
23CA80101892X
FM18US0309X

CL I DIV 1 A,B,C,D T4
CL II DIV 1 E,F,G T4
CL III T4

CL I DIV 2 A,B,C,D T4
CL II DIV 2 F,G T4
CL III T4

CLI DIV 1 A,B,C,D T4, Ex ia
Ex ia IIC T4 Ga
CLII DIV 1 E,F,G T135°C
CLIII DIV 1 T135°C
Ex ia IIIC T135°C Da
CLI DIV 2 A,B,C,D T4
Ex ic IIC T4 Gc
CLII DIV 2 F,G T135°C
CLIII DIV 2 T135°C
Ex ic IIIC T135°C Dc

FM APPROVED
FM18US0309X

CL I Zone 0 AEx ia IIC T4 Ga -40 °C ≤ Ta ≤ 80 °C
Zone 20, AEx ia IIIC T135 °C Da -40 °C ≤ Ta ≤ 40 °C

CL 1 Zone 2 AEx ia IIC T4 Gc -40 °C ≤ Ta ≤ 80 °C
Zone 22 AEx ic IIIC T135 °C Dc -40 °C ≤ Ta ≤ 80 °C

CE 2809 Ex FM18ATEX0080 EU FM18ATEX0079 Type EU

II 1 G Ex ia IIC T4 Ga -40 °C ≤ Ta ≤ 80 °C
II 1 D Ex ia IIIC T135 °C Da -40 °C ≤ Ta ≤ 40 °C
II 3 G Ex ic IIC T4 Gc -40 °C ≤ Ta ≤ 80 °C
II 3 D Ex ic IIIC T135 °C Dc -40 °C ≤ Ta ≤ 80 °C

IECEx
FMG 20.0016X
23CA80101892X

Ex ia IIC T4 Ga -40 °C ≤ Ta ≤ 80 °C
Ex ia IIIC T135 °C Da -40 °C ≤ Ta ≤ 40 °C
Ex ic IIC T4 Gc -40 °C ≤ Ta ≤ 80 °C
Ex ic IIIC T135 °C Dc -40 °C ≤ Ta ≤ 80 °C

WARNING: Specific Conditions of Use. See Installation Drawing 825A030

E2X PRESSURE TRANSDUCER

Ashcroft Drawing 825A030

General Notes

- Control equipment connected to Associated Apparatus must not use or generate more than 250 Vrms or Vdc.
- Associated apparatus manufacturer's installation drawing must be followed when installing this equipment.
- Run shielded interconnection cable with shield connected to FM approved associated apparatus ground.
- Must use class 2/SELV power supply.

Warnings

- Do not disconnect equipment unless area is known to be non-hazardous.
- Substitution of components may impair suitability for hazardous (classified) locations.
- No revision to drawing without prior approval from FM
- Once the type of protection has been marked on the label, it shall not be changed.

Specific Conditions of Use

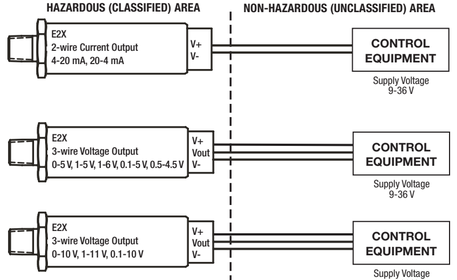
Explosion/Flame/Dust Ignition Proof installations

- Flamepaths are not for repair.
- The model E2X series equipment has flying lead conductors that exit the enclosure. A suitably certified terminal box suitable for use is required to be connected to equipment enclosure for completing to external supply circuit.
- Installer must connect the device to appropriate earthing connection. This can be done via use of metallic conduit/junction box, and/or earthing clamp/strap
- The designated installation for Explosion/Flame/Dust Ignition proof protection is selected on the Ex Marking label using a permanent marking method prior to installation by applying a mark into the reserved checkbox for the protection.
- Requires connection to mains by an appropriately certified and rated Limited Power Supply or Safety Extra Low Voltage (SELV) Power Supply

E2X EXPLOSION/FLAME/DUST IGNITION PROOF INSTALLATION

Class I, Division 1, Group A, B, C, D T4 -40 °C ≤ Ta ≤ 80 °C
Class II, Division 1, Group E, F, G T4 -40 °C ≤ Ta ≤ 80 °C
Class III T4 -40 °C ≤ Ta ≤ 80 °C
Class I, Zone 1, AEx db IIC T4 Gb -40 °C ≤ Ta ≤ 80 °C
Zone 21, AEx tb IIIC T135 °C Db -40 °C ≤ Ta ≤ 80 °C
II 2 G Ex db IIC T4 Gb -40 °C ≤ Ta ≤ 80 °C
II 2 D Ex tb IIIC T135°C Db -40 °C ≤ Ta ≤ 80 °C

- Installation should be in accordance with the National Code (ANSI / NFPA 70)
- Dust-tight conduit seal must be used when installed in Class II and Class III environments
- Use conduit and connectors suitable for the application. Seal all conduit using approved NEC procedures and local codes.



HAZARDOUS AREA CERTIFICATIONS

FM APPROVED
23CA80101892X
FM18US0309X

CL I Div 1 A,B,C,D T4
CL II Div 1 E,F,G T4
CL III T4

CLI DIV 1 A,B,C,D T4
CLII DIV 1 E,F,G T135°C
CLIII DIV 1 T135°C
Ex db IIC T4 Gb
Ex tb IIIC T135°C Db

FM APPROVED
FM18US0309X

CL I, Zone 1 AEx db IIC T4 Gb -40 °C ≤ Ta ≤ 80 °C
Zone 21, AEx tb IIIC T135 °C Db -40 °C ≤ Ta ≤ 80 °C

CE 2809 Ex FM18ATEX0080 EU FM18ATEX0079 Type EU

II 2 G Ex db IIC T4 Gb -40 °C ≤ Ta ≤ 80 °C
II 2 D Ex tb IIIC T135 °C Db -40 °C ≤ Ta ≤ 80 °C

IECEx
FMG 20.0016X
23CA80101892X

Ex db IIC T4 Gb -40 °C ≤ Ta ≤ 80 °C
Ex tb IIIC T135 °C Db -40 °C ≤ Ta ≤ 80 °C

Factory Sealed M20X1.5 THD or ½ Male NPT IP67