

“ Kele has great service. Tech support has helped me tremendously over the past 20 years. ”

Hazardous
Locations



HAZARDOUS LOCATIONS



Products manufactured in the United States



Products that are new to the catalog



SPXCD pg. 401



ST-X Series pg. 378



ELP Series pg. 397



www.kele.com

MODEL/SERIES

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■ Indicates New Products



The Application Guide below is a quick reference guide to applying Kele automation system interface devices in hazardous locations. Additional information on an explosionproof and intrinsically safe systems can be found in the Technical Reference section at the back of this catalog. The Application Guide covers the most common applications based upon customer requests and is not intended to be all-inclusive. If the application desired is not listed, please contact Kele for assistance at 888-397-KELE (5353)

APPLICATION	INTRINSICALLY SAFE SOLUTION	EXPLOSION PROOF SOLUTION
Space Temperature Sensor	TT211 Transmitter, MTL7706+ barrier, and any ST-81 or ST-91 RTD sensor	ST-X wall mount RTD or thermistor sensor
Duct Temperature Sensor	TT211 Transmitter, MTL7706+ barrier, and any ST-D81, ST-U81, or ST-D91, ST-U91 RTD sensor	TT881 RTD transmitter with probe
Immersion Temperature Sensor	TT211 Transmitter, MTL7706+ barrier, and any ST-W81, ST-U81, or ST-W91, ST-U91 RTD sensor	TT881 RTD transmitter with probe
Space Humidity Sensor	HT880 humidity transmitter with probe, MTL7706+ barrier	TT880 humidity transmitter with probe
Duct Humidity Sensor	HT880 humidity transmitter with probe, MTL7706+ barrier	TT880 humidity transmitter with probe
Space or Duct Humidistat	HC-101, HC-201, or W43 humidistat (note 1 below) with MTL5011B isolators as needed	Call Kele
Duct High and Low Temperature Limit Controller	A11 or A70 limit controller (note 1 below) with MTL5011B isolators as needed	HZLIM Series field-assembled limit controls or A19AUC-2
Wall Thermostat	TC-110X, T26, or other simple dry contact thermostat (note 1 below) with MTL5011B isolators as needed	EPET, HLT, or T6051B thermostat
Pressure or Differential Pressure Transmitter	IXLdp or K1 transmitter with MTL7706+ barrier	Call Kele
Pressure or Differential Pressure Switch	RH-3, P74, 1910, P10, or other simple dry contact switch (note 1 below) with MTL5011B isolators as needed	1950G differential pressure switches
Liquid Flow Transmitter	200-15 Series intrinsically safe flow sensors, UFT-1 flow transmitter, and MTL7765ac isolators as needed	Call Kele
Liquid Flow Switch	FS1-6 or F61 Series flow switch (note 1 below) with MTL5011B isolators as needed	V4 vane-operated flow switch
Liquid Level Transmitter	ELP ultrasonic intrinsically safe transmitter with MTL7706+ barrier	XP88-00 level transmitter
Liquid Level Switch	F7, L8, or simple dry contact switch (note 1 below) with MTL5011B isolators as needed	L4 float switch
Toxic/Combustible Gas Sensors	Call Kele	SPXCD gas sensors
Duct Smoke Detector	Call Kele	30-3003D duct smoke detector
Vibration Monitor or Switch	140T Intrinsically safe transmitter with MTL7706+ barrier	550-X transmitter/switch
Damper/Valve Actuators	Call Kele	ZS-260, MA6, MP6 actuator enclosures
Relays, Contactors, and other Electronic Controls	Call Kele	AXH and XJAT series of explosion proof enclosures (note 2 below)
Customer Enclosures, Strobes, Horns, Emergency Stations	Call Kele	CXJ, 5530M, 878EX, 105, 116EXMST, HL600

Notes:

1. Dry contacts, thermistors, RTDs, and other devices conforming to the definition of "simple apparatus" require that the sensing circuit limit the applied voltage and current to 1.2V and 100 mA maximum. Power dissipation and stored energy in the hazardous area must be limited to 25 mW and 20 mJ. Switches, thermistors, and RTDs used to sense ambient conditions may generally be given a temperature rating of T6 (185°F/85°C), but they must always be checked against the ignition temperature of the hazardous atmosphere.
2. AXJ and XJAT enclosures are available in a wide range of sizes and configurations. If the project calls for something other than the standard products shown in this catalog, contact Kele for availability of custom configurations.



HAZARDOUS LOCATIONS

PRECON EXPLOSIONPROOF ROOM TEMPERATURE SENSOR ST-X SERIES

DESCRIPTION

The **Model ST-X** explosionproof room temperature sensor provides accurate space temperature sensing in a compact, unobtrusive housing suitable for wall mounting. The all aluminum NEMA 7 / NEMA 9 enclosure minimizes time lag and allows installation in most atmospheres containing flammable gases or dusts (Groups C, D, E, F, G).



SPECIFICATIONS

Dimensions	5.75" H x 1.63" W x 2.13" D (14.3 x 16.2 x 11.4 cm)
Warranty	18 months
Weight	1.9 lb (0.9 kg)
Accuracy	
Thermistor	±0.36°F (0.2°C)
Type 63	±0.72°F (0.40°C)
Type 71	±0.054°F (0.03°C)
Type 81 and 85	±0.48°F (0.27°C) @ 32°F (0°C),
Type 91	±0.91°F (0.46°C) @ 32°F (0°C)
Lead Wires	#24 AWG, 8'L (2.4m)
Materials Of Construction	Copper-free aluminum enclosure
Sensor Type	Thermistor, Platinum thin film RTD
Temperature Range	-30° to 240°F (-34° to 115°C)

FEATURES

- **Class I, Division 1, Group C, D; Class II, Division 1, Groups E, F, G**
- **NEMA 7CD, 9EFG**
- **RTD or thermistor styles available**
- **E-Z mount (1/2" NPT conduit entries top and bottom)**
- **Compact, unobtrusive package**

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HAZARDOUS LOCATIONS

CAUTION: Conduit seal **MUST** be installed within code-required distance from sensor to maintain explosionproof rating.

WARNING: This device is not listed for use in areas classified as Group A (acetylene) or Group B (hydrogen and others). Where temperature sensing in these areas is required, an intrinsically safe system using the Model TT211 transmitter is recommended.

ORDERING INFORMATION

MODEL	DESCRIPTION
ST-X3	10,000Ω thermistor @ 77°F (25°C), Type III material (gray leads)
ST-X21	2252Ω thermistor @ 77°F (25°C), Type II material (green leads)
ST-X22	3000Ω thermistor @ 77°F (25°C), Type II material (blue leads)
ST-X24	10,000Ω thermistor @ 77°F (25°C), Type II material (yellow leads)
ST-X27	100,000Ω thermistor @ 77°F (25°C), Type II material (gray leads)
ST-X42	20,000Ω thermistor @ 77°F (25°C), Type IV material (green leads)
ST-X63	1000Ω nickel RTD @ 70°F (21°C) (yellow leads)
ST-X71	100Ω high accuracy RTD @ 32°F (0°C), 0.00385 Ω/Ω/°C (yellow leads)
ST-X81	100Ω RTD @ 32°F (0°C), 0.00385 Ω/Ω/°C (yellow leads)
ST-X85	1000Ω RTD @ 32°F (0°C), 0.00385 Ω/Ω/°C (blue leads)
ST-X91	1000Ω RTD @ 32°F (0°C), 0.00375 Ω/Ω/°C (green leads)

HAZARDOUS LOCATIONS

MINCO INTRINSICALLY SAFE RTD TRANSMITTER TT211



MINCO



DESCRIPTION

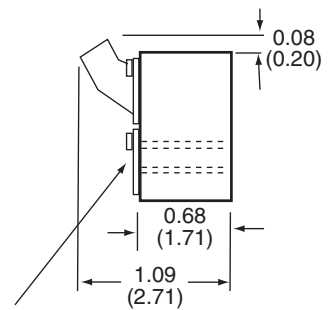
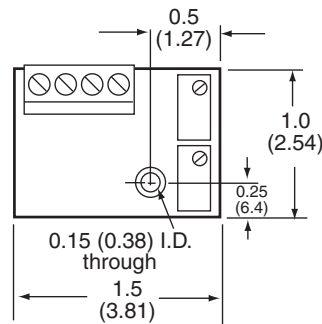
The **Model TT211 Intrinsic Safe RTD Transmitter** takes a standard RTD input and provides an accurate 4-20 mA output over any of three factory-calibrated temperature ranges. When coupled with a Model MTL7706 Safety Barrier and appropriate cabling, both the **Model TT211** and the RTD are suitable for use in hazardous locations without the use of explosion proof enclosures.

FEATURES

- **Class I, Division 1, Groups A, B, C, D with intrinsic safety barrier**
- **Nonincendive for use in Class I Division 2 areas without barrier**
- **Accuracy $\pm 0.1\%$ of span**
- **Compact size**
- **Epoxy potted for moisture resistance**
- **Zero and span adjustable to $\pm 5\%$ of span**

DIMENSIONS

in
(cm)



Mounting: Use #6 screw through or #8 thread forming screw

SPECIFICATIONS

Supply Voltage	20-35 VDC	Thermal Effect	$\pm 0.007\%$ of span per $^{\circ}\text{F}$ ($\pm 0.013\%$ per $^{\circ}\text{C}$)
Input	Platinum RTD, 100 Ω (0.00385 Ω/Ω)	Area	Intrinsically safe Class I, Division 1, Groups A,B,C,D
Configuration	Two-wire, loop powered	Entity Parameters	Vmax: 25V; Imax: 150 mA; Ci: 0 μF ; Li: 0 mH
Output	4-20 mA	Weight	0.75 lb (0.34 kg)
Linearity	(accuracy) $\pm 0.1\%$ of span	Approvals	FM approved
Maximum Output Impedance	775 Ω @ 24 VDC, 575 Ω @ 20 VDC, 325 Ω @ 15 VDC	Warranty	1 year
Operating Temperature	-13 $^{\circ}$ to 185 (-25 $^{\circ}$ to 85)		
Operating Humidity	0% to 100% non-condensing		

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HAZARDOUS LOCATIONS



HAZARDOUS LOCATIONS

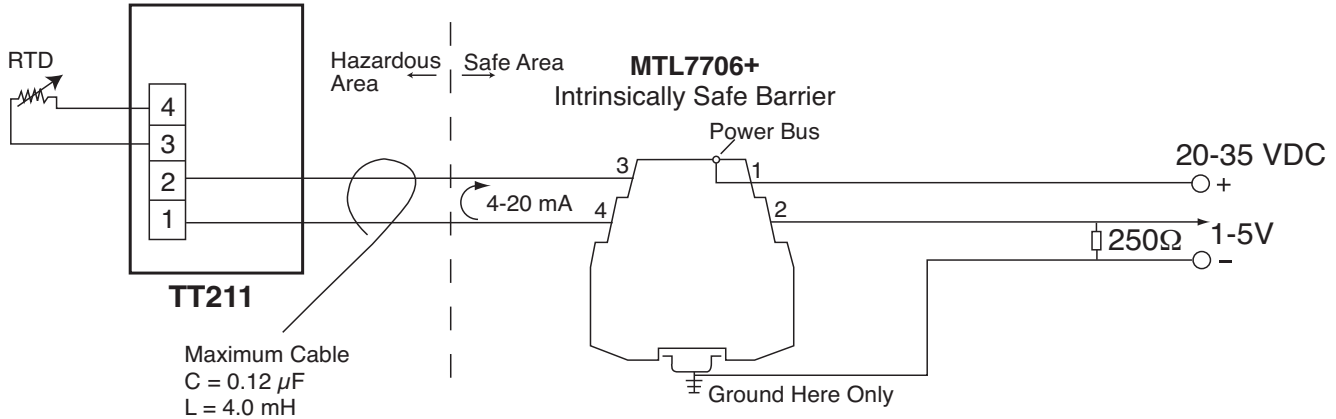
MINCO INTRINSICALLY SAFE RTD TRANSMITTER TT211

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HAZARDOUS LOCATIONS

CAUTION: Intrinsically safe devices require the use of an intrinsic safety barrier when applied in hazardous locations. Provide wiring and grounding strictly in accordance with manufacturer's instructions. When the Model TT211 transmitter is combined with the Model MTL7706+ intrinsic safety barrier, total cable capacitance between the two must be limited to 0.12 μF , and total cable inductance must be limited to 4.0 mH (equivalent to 2200'/823m maximum Belden® #8760 18/2 shielded twisted pair cable 0.18 $\mu\text{H/FT}$, 44 pF/FT).

WIRING



ORDERING INFORMATION

MODEL	DESCRIPTION
TT211	Intrinsically-safe RTD transmitter
PD	For 100 Ω platinum RTD, TCR=0.00385 $\Omega/\Omega/^{\circ}\text{C}$
PW	For 1000 Ω platinum RTD, TCR=0.00375 $\Omega/\Omega/^{\circ}\text{C}$
RANGE	
1EN	-20° to 140°F (-28.9° to 60°C)
1S	0° to 100°F (-17.8° to 37.8°C)
1BN	30° to 240°F (-1.1° to 115.6°C)

Note: Contact Kele for additional ranges and RTD types.

TT211 - PW - 1EN **Example:** TT211-PW-1EN Transmitter with range of -20° to 140°F (-28.9° to 60°C) for 1000 Ω platinum RTD (TCR=0.00375 $\Omega/\Omega/^{\circ}\text{C}$)

RELATED PRODUCTS

		PAGE
250R-3-1	250 OHM 3 WATT 1% Resistor Long Leads	89
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	837
MTL7706+	Intrinsic safety barrier, 4-20 mA two-wire transmitters	409
ST-A81	100 Ω platinum RTD all-purpose temperature probe	1011
ST-A91	1000 Ω platinum RTD all-purpose temperature probe	1011
ST-D81	100 Ω platinum RTD duct temperature sensor	998
ST-D91	1000 Ω platinum RTD duct temperature sensor	998
ST-S81	100 Ω platinum RTD space temperature sensor	983
ST-S91	1000 Ω platinum RTD space temperature sensor	983
ST-W81	100 Ω platinum immersion temperature probe	1015
ST-W91	1000 Ω platinum immersion temperature probe	1015

HAZARDOUS LOCATIONS

MINCO EXPLOSION-PROOF PLATINUM RTD TRANSMITTER TT881



DESCRIPTION

Minco's **Model TT881** explosion proof platinum RTD transmitter is designed for temperature measurement in applications calling for a rugged industrial housing. This RTD transmitter may be ordered for 100 ohm and 1000 ohm 385 platinum RTD or 1000 ohm 375 platinum RTD.

FEATURES

- *Class I, Division 1, Groups B, C, D*
- *Class II, Division 1, Groups E, F, G*
- *NEMA 4X, 7BCD, 9EFG*
- *Available in 100Ω or 1000Ω RTDs*
- *High RFI/EMI immunity*
- *NIST certificate available*
- *4-20 mA loop powered*
- *Substitute replacement for discontinued HCT-881 Hy-Cal transmitters*
- *FM approved*



TT881-A with Probe

MINCO



SPECIFICATIONS	
TT881	
Accuracy	±0.01% of span
Rangeability	
Zero	-58° to 122°F (-50° to 50°C)
Span	45° to 1080°F (25° to 600°C)
Zero Span Adjust	Noninteractive
Output	4-20 mA, two-wire standard
Input Voltage Effect	0.001% of span/volt max (negligible) for 10-45 VDC
Linearity	±0.2% of span for any range from -58° to 1022°F (-50° to 550°C)
Temperature Coefficient	±0.002% of span/°C
Housing Type	NEMA 4X, FM approved, explosion-proof Class I, Div 1, Groups B, C, D; Class II, Div 1, Groups E, F, G
Terminations	Terminal Screws
Weight	2.91 lb (1.3kg)
Mounting	
Immersion	Includes an integral sensor mounted via 1/2" NPT threads with 1/4" probe
Wall/Pipe	Mounting hardware available for surface installations with accessory AC103168
Supply Voltage	10-35 VDC
Maximum Load	(Supply voltage - 10 VDC) / 0.02A, i.e., (24-10 VDC) / 0.02 = 700Ω
Operating Temperature	-40° to 185°F (-40° to 85°C) noncondensing
SENSOR	
Temperature Range	-58° to 500°F (-50° to 260°C)
Sensing Element	
PD	100Ω, 385 platinum, three-wire sensor 0.00385 Ω/Ω/°C
PF	1000Ω, 385 platinum, two-wire sensor 0.00385 Ω/Ω/°C
PW	1000Ω, 375 platinum, two-wire sensor 0.00375 Ω/Ω/°C
Ice Point Resistance [Ro]	100Ω ±0.1Ω, ±0.12%
1000Ω ±1Ω, ±0.12%	
Stability	Better than 0.25°C per year
Insulation Resistance	Sheath: 500°F (260°C), 100 mΩ @ 50 VDC min
Probe Material	Stainless steel body
Area	Explosionproof Class I, Div 1, Groups B, C, D; Class II, Div 1, Groups E, F, G; NEMA 4X with thermowell; without thermowell, explosionproof indoor only Factory Mutual, File #3012833
Pressure	2750 psig (18,961 kPa) max @ 500°F
Standard Length	5.5"L (13.97 cm), 0.25" (0.64 cm) probe, 1/2" NPT mounting
Warranty	1 year

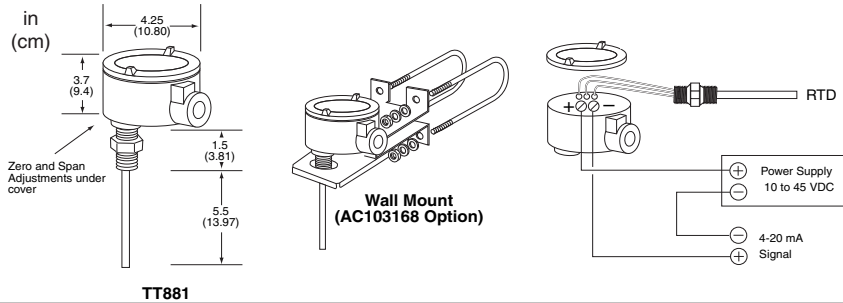


HAZARDOUS LOCATIONS

MINCO EXPLOSION-PROOF PLATINUM RTD TRANSMITTER

TT881

DIMENSIONS



TT881

CAUTION: Conduit seal **MUST** be installed within code-required distance from junction box to maintain explosionproof rating. For Group B and C atmospheres, conduit seals must be installed within 2" (5.08 cm) of the enclosure regardless of less stringent code requirements.

WARNING: All circuits **MUST** be de-energized before opening the cover of this device for any purpose, including resetting a manual reset controller or adjusting a set point. If work must be performed with an energized circuit, the atmosphere inside and outside the enclosure must be proven safe with a listed intrinsically safe combustible gas detector.

ORDERING INFORMATION

MODEL	DESCRIPTION
* TT881	Assembly probe for two-wire RTDs
* PD	100Ω 0.00385 Ω/Ω/°C platinum curve, 6" leads
PF	1000Ω 0.00385 Ω/Ω/°C platinum curve, 6" leads
* PW	1000Ω 0.00375 Ω/Ω/°C platinum curve, 6" leads
LLL	Length LLL in .1" increments 055 = 5.5", 120 = 12.0", 000 for "W" without sensors
E	Duct mount, NEMA 4X box, LLL typically 8.0"
* P	Immersion, NEMA 4X box, LLL typically 5.5" for 6" well insertion
W	Wall mount, NEMA 4X box, LLL typically 2.0" or 000 for no probe
1	4-20 mA DC output
EN	Range codes per Minco letter ranges (-20°/140°F) or (-29°/60°C)
* S	Range codes per Minco letter ranges (0°/100°F) or (-18°/38°C)
N	Range codes per Minco letter ranges (32°/122°F) or (0°/50°C)
H	Range codes per Minco letter ranges (40°/90°F) or (4°/32°C)
C	Range codes per Minco letter ranges (0°/100°C)
--	Range codes per Minco letter ranges in the catalog
SX	Special range on next item line, -xxx/-yyyE, i.e., -40°/-10°F
1	No calibration data, sensor or transmitter
* 2	Sensor/Transmitter matched at 0°C with NIST
3	Sensor/Transmitter matched at 0°, 100°, and 260°C with NIST

TT881 PW 055 P 1 S 2 Example: TT881PW055P1S2 Transmitter with 5.5" immersion probe, 1000Ω 375 curve platinum RTD, ranged for 0°/100°F, with NIST matched @ 0°C

*Normally stocked item

RELATED PRODUCTS

		PAGE
AC103168	Separate pipe/wall mounting hardware kit	
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	837
DCPA-1.2	Power supply, 120 VAC IN to 24 VDC/24 VDC OUT	836
EYM-50	1/2" size, 1.06" turning radius, 1 oz Kwiko cement required, Malleable Iron construction	423
GFF-50	1/2" galvanized mounting flange	1061
WB-6	Brass well	1079
WS-6	Stainless steel well	1079

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HAZARDOUS LOCATIONS

HAZARDOUS LOCATIONS



MINCO EXPLOSION PROOF/INTRINSICALLY SAFE HUMIDITY AND TEMPERATURE TRANSMITTER HT880 SERIES

DESCRIPTION

The **Model HT880** explosion proof/intrinsically safe humidity transmitter is designed for rugged industrial use. Approved by FM for hazardous location, this system provides safe, reliable, and accurate humidity and optional temperature measurement. The capacitive film sensor is ideal for low and high humidity measurement with 4-20mA outputs. The HT880 comes with a stainless steel sintered filter and an optional NIST traceable certificate. The HT885 has a digital display.

FEATURES

- Replaces Hy-Cal HCT880 Series
- Class I, Divisions 1 and 2, Groups A,B,C,D
- Class II, Divisions 1 and 2, Groups E,F,G
- Class III, Divisions 1 and 2
- Available with digital display
- Intrinsically safe with MTL7706 barrier



HT880 with AC103168 bracket

MINCO



HT885



SPECIFICATIONS

Supply Voltage	16.5 to 28.0 VDC	Operating Temperature	Transmitter (HT880) -40° to 176°F (-40° to 80°C) Transmitter (HT885) -40° to 176°F (-40° to 80°C) Sensor probe -40° to 302°F (-40° to 150°C)
Maximum Output Impedance	@24 VDC, F I= 725Ω, FX = 375Ω Intrinsically safe (FI) R = (SV - 9.5V)/0.02A Explosionproof (FX) R = (SV - 16.5V)/0.02A	Conduit Connection	1/2" FNPT
Entity Parameters Area	Vamx 28V, I _{max} 100 mA, Ci Oμ, Li O mH Explosionproof/intrinsically safe Class I, Div 1, 2, Groups A, B, C, D; Class II, Div 1, 2, Groups E, F, G; Class III, Div 1, 2; Class I, Zone 0, Aex [ia] IIC T4	Mounting	1/2" MNPT and bracket sold separately
Accuracy	±2.5% RH from 10 to 80% RH Includes Hysteresis, linearity, repeatability, and all temperature and voltage effects	Approvals	FM
Sensor Type	Thin film capacitive element	Weight	HT880 2.8 lb (1.3 kg) HT885 4.5 lb (2.02 kg)
RH:	1000Ω platinum RTD, 385 curve	Warranty	1 year
Optional Temperature:	50 seconds in slow moving air	Adjustments	Non-interacting zero/span (HT885) 3.5 digit LCD display, % RH and optional °F or °C
Response Time	0 to 100% RH	Display	Metal with screw-on cover
Operating Humidity		Enclosure	3.8 to 22 mA
		Output Current Limit	60 micron stainless steel sintered filter
		Sensor Filter	0% to 100% RH
		Sensor Range	Terminals, 22-14 AWG
		Wiring	

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CAUTION: Intrinsically safe devices require the use of an intrinsic safety barrier when applied in hazardous locations. Provide wiring and grounding in accordance with manufacturer's instructions. When the Model HT-880 is combined with the MTL7706 intrinsic safety barrier, total cable capacitance must be limited to 0.22 μF, and inductance must be limited to 4.0 mH (equivalent to 2700'/823m maximum Belden® #8760 18/2 shielded cable 0.18 μH/FT, 44 pF/FT).

CAUTION: Conduit seals **MUST** be installed within code-required distance from the enclosure to maintain explosionproof rating. For Group B and C atmospheres, conduit seals must be within 2" (5 cm) of the enclosure regardless of less stringent code requirements. **NOTE:** When using the temperature option, both humidity and temperature loops must be connected to operate.

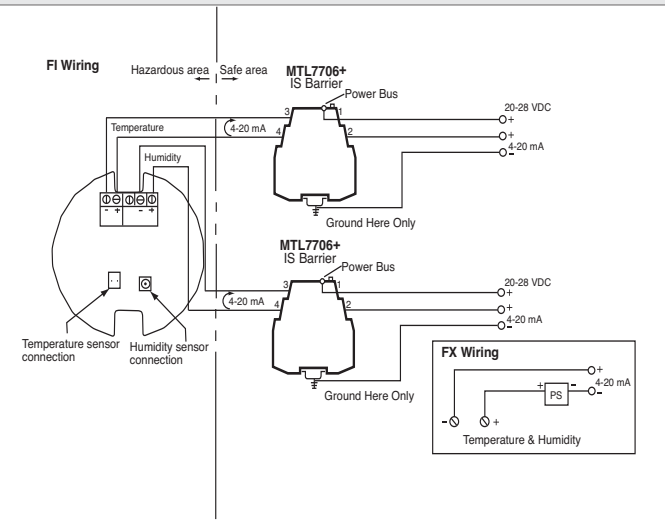


HAZARDOUS LOCATIONS

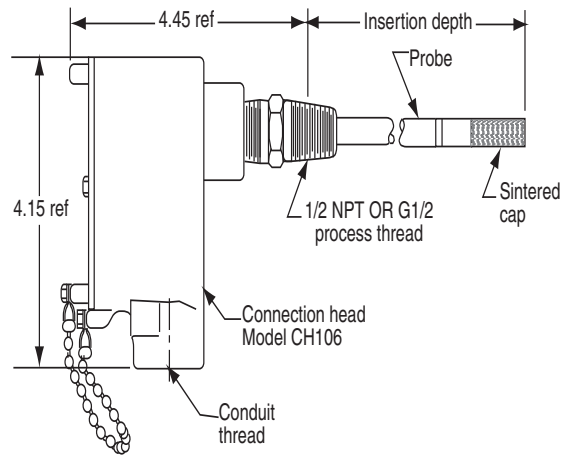
MINCO EXPLOSION PROOF/INTRINSICALLY SAFE HUMIDITY AND TEMPERATURE TRANSMITTER

HT880 SERIES

WIRING



DIMENSIONS



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HAZARDOUS LOCATIONS

WARNING: All circuits MUST be de-energized before opening the cover of this device for any purpose. If work must be performed with an energized circuit, the atmosphere inside and outside the enclosure must be proven safe with a listed intrinsically safe combustible gas detector.

ORDERING INFORMATION

MODEL	DESCRIPTION
HT880	Industrial-grade, $\pm 2.5\%$ RH, 4-20 mA transmitter
HT885D	Industrial-grade, $\pm 2.5\%$ RH, 4-20 mA transmitter with LCD display
CALIBRATION	
N25	NIST three-point $\pm 2.5\%$ calibration certificate
S25	Standard $\pm 2.5\%$ calibration
TEMPERATURE OPTIONS (other ranges available)	
NT	No temperature transmitter
EN	-20° to 140°F (-28° to 60°C)
S	0° to 100°F (-18° to 38°C)
SX	Special calibration range
PROBE LENGTH	
60	6" inch probe length
120	12" inch probe length
AGENCY APPROVAL	
FX	FM approved, explosionproof (NT option only)*
FI	FM approved, intrinsically safe

* Not for use as intrinsically safe

RELATED PRODUCTS

		PAGE
AC102765	HT885 pipe/wall bracket	384
AC103168	Separate pipe/wall mounting hardware kit	382
AC103253	Duct mount kit for HT880	384
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	837
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	836
EYM-50	1/2" size, 1.06" turning radius, 1 oz Kwiko cement required, Malleable Iron construction	423
GFF-50	1/2" galvanized mounting flange	1061
MTL7706+	Intrinsic safety barrier, 4-20 mA two-wire transmitters	411

HAZARDOUS LOCATIONS

EXPLOSIONPROOF HIGH AND LOW LIMIT CONTROLS HZLIM SERIES



DESCRIPTION

The **HZLIM Series** explosion proof high and low limit controls are field-assembled combinations of industry standard controls, heavy duty explosion proof enclosures, and seals for use in atmospheres that may contain hazardous gases or dusts (Groups B, C, D, E, F).

The **HZLIM-LO-A** includes the ultra reliable A11A-1 manual reset low limit control, a **GUBB-22A** explosionproof enclosure, two EYM-75 conduit seals, and an ACK6F fiber/cement kit.

The **HZLIM-LO-B** is identical to the **HZLIM-LO-A** but includes the equally reliable A11B-1 automatic reset low limit control instead of the A11A-1.

The **HZLIM-HI** is also identical to the **HZLIM-LO-A** but includes the time proven A70KA-1 manual reset high limit control in place of the A11A-1.



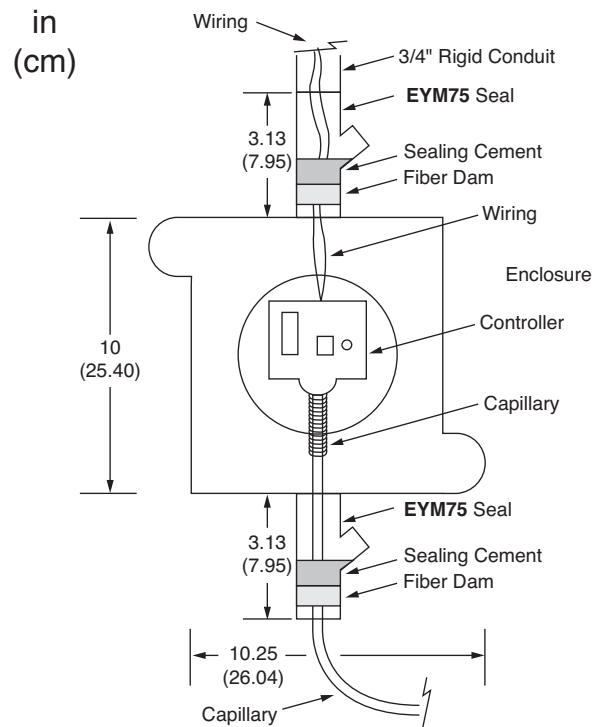
FEATURES

- **Class I Division 1 Groups B, C, D;**
- **Class II Division 1 Groups E, F, G**
- **NEMA 7BCD, 9EFG**
- **Long life, snap acting contacts**
- **Easy set point adjust**
- **Freeze protection for hazardous locations**
- **Code required AHU high limit protection for hazardous locations**

WARNING: All circuits **MUST** be de-energized before opening the cover of this device for any purpose, including resetting a manual reset controller or adjusting a set point. If work must be performed with an energized circuit, the atmosphere inside and outside the enclosure must be proven safe with a listed intrinsically safe combustible gas detector.

CAUTION: Conduit seal **MUST** be installed within coderequired distance from junction box to maintain explosionproof rating. For Group B and C atmospheres, conduit seals must be installed within 2" (5.08 cm) of the enclosure regardless of less stringent code requirements.

DIMENSIONS



9

HAZARDOUS LOCATIONS

SPECIFICATIONS

Refer to the A70 and A11 Series in the Thermostats and Controllers section for specifications, capillary, installation and wiring information.



HAZARDOUS LOCATIONS

EXPLOSIONPROOF HIGH AND LOW LIMIT CONTROLS HZLIM SERIES

INSTALLATION/MOUNTING

OPERATION

Install the XJATS14C2M2N1 enclosure, included with each kit, in its intended location. Install the two EYM75 conduit seals in the two tapped holes of the XJATS14C2M2N1 enclosure, making sure to engage a minimum of five full threads. Also be sure that the plugs on the conduit seals are both facing up and to the front (cement will be poured into them later). The male nipple, supplied with fittings, can be easily removed and replaced in the opposite side for proper orientation.

Unpack the A11 or A70 controller, and fully uncoil the capillary tubing. Place plastic bushings in both openings inside the enclosure and also in the bottom of the lower conduit seal. Gently feed the end of the capillary (or capillary and bulb) through the bottom opening and conduit seal from inside the XJATS14C2M2N1 enclosure, taking care not to nick or kink the capillary. Once the end is out, slowly feed the rest of the capillary fully through to the outside of the conduit seal. Use an assistant, if needed, to make sure that the inner and outer plastic bushings stay in place to protect the capillary from damage. Once this is accomplished, mount the A11 or A70 controller to the panel inside the enclosure. Install the capillary (or capillary and bulb) on the equipment according to the included instructions. Install rigid conduit and wiring as required by code from the upper conduit seal, engaging a minimum of five full threads at each joint. Only individual insulated conductors may pass through the conduit seal. If jacketed cable is used, the jacket must be stripped back beyond the seal or else a listed cable seal must be applied within the enclosure. Remove the plugs from the two conduit seals. Make sure that the wires and capillary are centered in the seals. Then install fiber dams and sealing compound in each according to the included instructions (minimum 0.75"/2 cm cement depth), and replace the plugs. Adjust the setpoint on the controller, install the cover for the XJATS14C2M2N1 enclosure, and tighten securely.

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HAZARDOUS LOCATIONS

ORDERING INFORMATION

MODEL	DESCRIPTION
HZLIM-HI	Kit with one A70KA-1 manual reset high limit control, one XJATS14C2M2N1 enclosure, two EYM75 conduit seals, three plastic conduit bushings, and one ACK6F sealing kit Weight: 26.9 lb (12.2 kg)
HZLIM-LO-A	Kit with one A11A-1 manual reset low limit control, one XJATS14C2M2N1 enclosure, two EYM75 conduit seals, three plastic conduit bushings, and one ACK6F sealing kit Weight: 25.7 lb (11.7 kg)
HZLIM-LO-B	Kit with one A11B-1 automatic reset low limit control, one XJATS14C2M2N1 enclosure, two EYM75 conduit seals, three plastic conduit bushings, and one ACK6F sealing kit Weight: 25.7 lb (11.7 kg)

	RELATED PRODUCTS	PAGE
ACK6F	Cement: 30 oz * (850g) Fiber: 5 oz (142g), 25 cu in (410 cu cm) volume when set * Consists of five 6 oz (187g) cement pouches	424
EYM-75	3/4" size, 1.19" turning radius, 2 oz Kwiko cement required, Malleable Iron construction	423

HAZARDOUS LOCATIONS



EXPLOSION-PROOF THERMOSTATS EPETD8S, T6051B1006

DESCRIPTION

The EPET and T6051B Series explosion proof Thermostats are two-position room thermostats designed for on/off control with set points from 50°F to 90°F (EPET) and 50°F to 80°F (T6051B). These snap-acting switch type devices are suitable for line- or low-voltage applications and have SPDT contacts for heating or cooling control.

FEATURES

- **Class I Division 1 Groups C, D; Class II Division 1 Groups E, F, G**
- **NEMA 7CD, 9EFG**
- **Line or low voltage control of heating and/or cooling systems**



EPETD8S

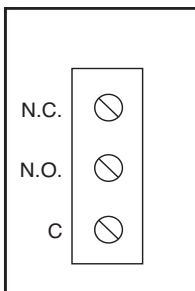
T6051B1006



SPECIFICATIONS

Model	Voltage Range	Differential	Contact Arrangement	Weight	Dimensions	Setpoint Range
EPETD8S	24-244 VAC, 22A heating and cooling	Heating 2°F (1.1 °C), Cooling 4°F (2.2°C)	SPDT	5.3 lb (2.4 kg)	5.6" x 6.4" x 4.5" (14.3 x 16.2 x 11.4 cm)	50° to 90°F (10° to 32°C)
T6051B1006	24-120 VAC 10A heating, 7A cooling; 240 VAC 6A heating, 4A cooling	Heating 1°F (0.6°C), Cooling 1°F (0.6°C)	SPDT	5.3 lb (2.4 kg)	5.6" x 6.4" x 4.75" (14.3 x 16.2 x 12.1 cm)	50° to 90°F (10° to 32°C)

WIRING



C - N.C. Open on temp rise
C - N.O. Close on temp rise

INSTALLATION/MOUNTING

Surface-mount explosionproof box using the mounting ears for surface applications. Each includes two 3/4" tapped conduit entries (top and bottom).

CAUTION: Conduit seal **MUST** be installed within code-required distance from thermostat to maintain explosionproof rating.

ORDERING INFORMATION

MODEL
EPETD8S
T6051B1006

DESCRIPTION
Line- or low-voltage heating/cooling thermostat
Line- or low-voltage heating/cooling thermostat

ACK6F

RELATED PRODUCTS
Cement: 30 oz * (850g) Fiber: 5 oz (142g), 25 cu in (410 cu cm) volume when set
* Consists of five 6 oz (187g) cement pouches

PAGE

424

EYM-75

3/4" size, 1.19" turning radius,
2 oz Kwiko cement required, Malleable Iron construction

423



HAZARDOUS LOCATIONS

EXPLOSIONPROOF BULB THERMOSTAT A19AUC-2

DESCRIPTION

The **Model A19AUC-2** is an ideal solution for air or fluid temperature control in potentially hazardous areas. Its 6' capillary and bulb make mounting convenient, and its external setpoint adjustment knob provides easy operation without having to verify that the atmosphere is safe. An optional thermowell makes immersion applications a snap.



• A19AUC-2



FEATURES

- *Class I, Division 1, Group D*
- *Class II, Division 1, Groups E, F, and G*
- *NEMA 7D, 9EFG*
- *Line or low voltage control of heating or cooling systems*
- *6' (1.83m) capillary for flexible bulb placement*
- *Immersion well available*
- *20° to 80°F range*
- *Duct bulb holders available*

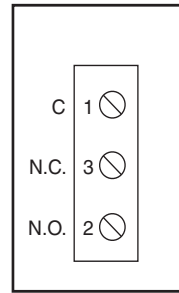
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HAZARDOUS LOCATIONS

SPECIFICATIONS

Switch	SPDT
Non Inductive Amps	22.0 A @ 277 VAC maximum
Full Load Amps	16.0 A @ 120VAC; 9.2 A @ 208 VAC; 8.0 A @ 240 VAC
Locked Rotor Amps	96.0 A @ 120 VAC, 55.2A @ 208 VAC, 48.0A @ 240 VAC
Pilot Duty	125 VA @ 24-600 VAC
Range	20° to 80 (-7° to 27)
Differential	3.5 (1.9)
Bulb	0.38" x 4.97" (0.95 x 12.6 cm)
Capillary	6' (1.83 m)
Dimensions	6.25" H x 3" W x 4.25" D (15.9 x 7.6 x 10.8 cm)
Weight	2.6 lb (1.2 kg)
Approvals	UL listed File #E37739, CSA Explosionproof Class1, Division 1, Group D; Class II, Division 2, Groups E, F, G
Area	
Warranty	1 year

WIRING



A19AUC

C - N.C. Open on temp rise
C - N.O. Close on temp rise

CAUTION: Conduit seal **MUST** be installed within code-required distance from thermostat to maintain explosionproof rating.

INSTALLATION / MOUNTING

Each explosionproof box has mounting ears for surface applications and includes 3/4" FNPT tapped conduit entry on the top side.

ORDERING INFORMATION

MODEL	DESCRIPTION
A19AUC-2	Remote bulb thermostat

	RELATED PRODUCTS	PAGE
TE-6001-1	Duct temperature element holder with box	1148
WEL14A-603R	5-13/16 COPPER BULB WELL	1136

HAZARDOUS LOCATIONS



EXPLOSIONPROOF THERMOSTAT HLT SERIES



DESCRIPTION

The **HLT Series** explosion proof thermostats are two-position room thermostats designed for on/off control with setpoints from 40° to 110°F (4° to 43°C). The **HLT Series** has a bulb and capillary room temperature sensor and adjustment slot for changing the setpoint. The thermostats are suitable for line- or low-voltage applications and have either SPDT or DPDT contacts for heating or cooling control.



• HLT

FEATURES

- **Class I, Division 1, Groups C, D; Class II, Division 1, Groups E, F, G**
- **NEMA 7CD, 9EFG**
- **Line or low voltage control of heating and/or cooling systems**

APPLICATION

On/Off control in hazardous classified areas.

SPECIFICATIONS

Model	Contact Rating	Differential	Contact Arrangement	Weight	Dimensions	Setpoint Range
HLT-1	24-277 VAC, 22A heating or cooling	Heating: 2°F (1.1°C); Cooling 4°F (2.2°C)	SPDT	5.3 lb (2.4 kg)	5.6" H x 5.75" W x 4.5" D (14.3 x 14.6 x 11.4 cm)	40° to 110°F (4° to 43°C)
HLT-2	24-277 VAC, 22A heating and cooling	Heating: 2°F (1.1°C); Cooling 4°F (2.2°C)	DPDT	5.3 lb (2.4 kg)	5.6" H x 5.75" W x 4.5" D (14.3 x 14.6 x 11.4 cm)	40° to 110°F (4° to 43°C)

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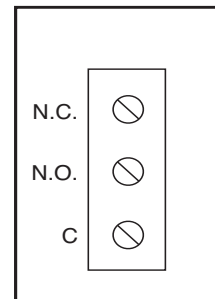
HAZARDOUS LOCATIONS

CAUTION: Conduit seal **MUST** be installed within coderequired distance from thermostat to maintain explosionproof rating.

INSTALLATION/MOUNTING

Surface-mount explosionproof box using the mounting ears for surface applications. Each includes two 3/4" tapped conduit entries (top and bottom).

WIRING



C - N.C. Open on temp rise
C - N.O. Close on temp rise

HLT-1 (SPDT) & HLT-2 (DPDT)

ORDERING INFORMATION

MODEL	DESCRIPTION
HLT-1	Line- or low-voltage heating/cooling thermostat, SPDT
HLT-2	Line- or low-voltage heating/cooling thermostat, DPDT

RELATED PRODUCTS	PAGE
ACK6F Cement: 30 oz * (850g) Fiber: 5 oz (142g), 25 cu in (410 cu cm) volume when set * Consists of five 6 oz (187g) cement pouches	424
EYM-75 3/4" size, 1.19" turning radius, 2 oz Kwiko cement required, Malleable Iron construction	423



HAZARDOUS LOCATIONS

INTRINSICALLY SAFE PRESSURE TRANSMITTER

K1 SERIES

DESCRIPTION

The **K1 Series** of thin film pressure transmitters is exceptionally stable and is virtually unaffected by shock, vibration, or orientation. Performance is directly traceable to NIST standards, and a calibration certificate is available for each unit upon request. These intrinsically safe (IS) transmitters are ideal for monitoring pressures in explosive atmospheres.

FEATURES

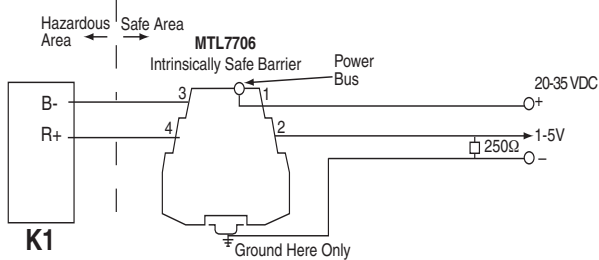
- **Class I, Division 1, Groups C, D; Class II, Division 1, Group G; Class III**
- **Nonincendive for Class I, Division 2, Groups A, B, C, and D**
- **0.5% accuracy, all ranges**
- **4-20 mA, loop powered**
- **Ranges from 100-3000 psig (690-20,685 kPa)**



SPECIFICATIONS

Supply Voltage	20-35 VDC	Process Connection	1/8" BNPT male 316 stainless steel
Accuracy	±0.5% full scale	Diaphragm Material	17-4 PH stainless steel
Thermal Effect	±0.03 full scale/ zero and span	Zero Span Adjust	Field adjustable ±10%
Output	4-20 mA	Dimensions	4" L x 5/8" dia (10.2 x 1.6 cm)
Maximum Output Impedance	650Ω @ 24 VDC	Weight	0.5 lb (0.2 kg)
Overpressure	Proof: 150%; Burst: 300%	Area	Intrinsically safe Class I, Division 1, Groups C, D; Class II, Division 1, Groups G; Class III
Temperature Compensation	-20 to 160 (-29° to 71 °C)	Approvals	UL listed, Factory Mutual
Operating Temperature	-20 to 180 (-29° to 93 °C)	Entity Parameters	V _{max} =30V, I _{max} = 250 mA, L _i = 0, C _i = 0.1 μF
Response Time	5 ms	Warranty	1 year
Materials Of Construction	304 stainless steel case		

WIRING



CAUTION: Intrinsically safe devices require the use of an intrinsic safety barrier when applied in hazardous locations. Provide wiring and grounding strictly in accordance with manufacturer's instructions. When a K1 Series transmitter is combined with the Model MTL7706 intrinsic safety barrier, total cable capacitance between the two must be limited to 0.12 μF. Total cable inductance must be limited to 4.0 mH (equivalent to 2700'/823m maximum Belden™ #8760 18/2 shielded twisted pair cable 0.18 μH/FT, 44 pF/FT).

ORDERING INFORMATION

MODEL	DESCRIPTION
K15M0142F2-100-XFM	4-20 mA intrinsically safe pressure transmitter 0-100 psig (690 kPa)
K15M0142F2-200-XFM	4-20 mA intrinsically safe pressure transmitter 0-200 psig (1379 kPa)
K15M0142F2-500-XFM	4-20 mA intrinsically safe pressure transmitter 0-500 psig (3448 kPa)
K15M0142F2-1000-XFM	4-20 mA intrinsically safe pressure transmitter 0-1000 psig (6895 kPa)
K15M0142F2-3000-XFM	4-20 mA intrinsically safe pressure transmitter 0-3000 psig (20,685 kPa)

	RELATED PRODUCTS	PAGE
250R-3-1	250 OHM 3 WATT 1% Resistor Long Leads	89
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	837
DCPA-1.2	Power supply, 120 VAC IN to 24 VDC/24 VDC OUT	836
MTL7706+	Intrinsic safety barrier, 4-20 mA two-wire transmitters	411
PT	1/4" pigtail syphon with fittings	924



Automation dealers are continuing to gain business that was once reserved only for specialty and industrial contractors. It's a trend that is accelerating very rapidly, and the fastest growth is in the areas of hazardous locations and the monitoring of toxic and combustible gases. Kele is committed to providing the products and technical support needed to assist our customers in these important areas. By way of introduction, this article covers the basics of a hazardous atmosphere and the equipment we use to monitor combustible gases.



The widely known "Fire Triangle" illustration shows the three components required to support combustion. All three must be present, and the methods we use to prevent explosions are designed to eliminate one of the three legs of the triangle. What the triangle doesn't show, though, is that fuel and oxygen must be mixed in the proper proportion in order to burn. If the fuel is methane, or CH₄ (the major component of natural gas), the concentration in air must be between 5 percent and 15 percent or else the mixture will not ignite. Those of us old enough to have worked with finicky carburetors on gasoline engines are familiar with this principle. If the mixture was too lean (not enough fuel) or too rich (too much fuel), the engine would not start. The same applies to ignition of any combustible gas in air.

The lowest concentration of a gas in air that will ignite is its lower explosive limit (LEL), and the highest concentration that will ignite is its upper explosive limit (UEL). These values are also sometimes referred to as the lower and upper flammability limits (LFL, UFL). Limits for some common fuels are shown in the table of flammability limits at right. If a system is designed to keep the fuel concentration below the LEL, the fuel leg is effectively removed from the fire triangle. Under certain conditions (in an oil field, for example), it is easier to maintain the concentration above the UEL. In this case, the oxygen leg is eliminated. In either case, combustion cannot happen.

TABLE OF FLAMMITORY LIMITS

Fuel	Lower Explosive Limit (LEL) (Percent by volume in air)	Upper Explosive Limit (UEL) (Percent by volume in air)
Methane	5.0	15.0
Butane	1.6	8.4
Propane	2.1	9.6
Ethanol	3.3	19.0
Gasoline (100 Octane)	1.4	7.8
Isopropyl alcohol	2.0	12.7
Ethyl ether	1.9	36.0
Xylene	0.9	7.0
Toluene	1.0	7.1
Hydrogen	4.0	75.0
Acetylene	2.5	85.0

Note: Multiply percentages by 10,000 to convert to parts per million (ppm)



HAZARDOUS LOCATIONS

ASHCROFT INTRINSICALLY SAFE DIFFERENTIAL PRESSURE TRANSMITTER

IXLDP

DESCRIPTION

The Ashcroft **Model IXLdp** (XFM option) is an intrinsically safe, industrial-quality, differential pressure transmitter for use on air and other noncorrosive gases. The **Model IXLdp** is available with accuracies of 0.25% and 0.50% in ranges of 0.1 "W.C. to 200 "W.C. uni-directional or bi-directional pressure ranges.

FEATURES

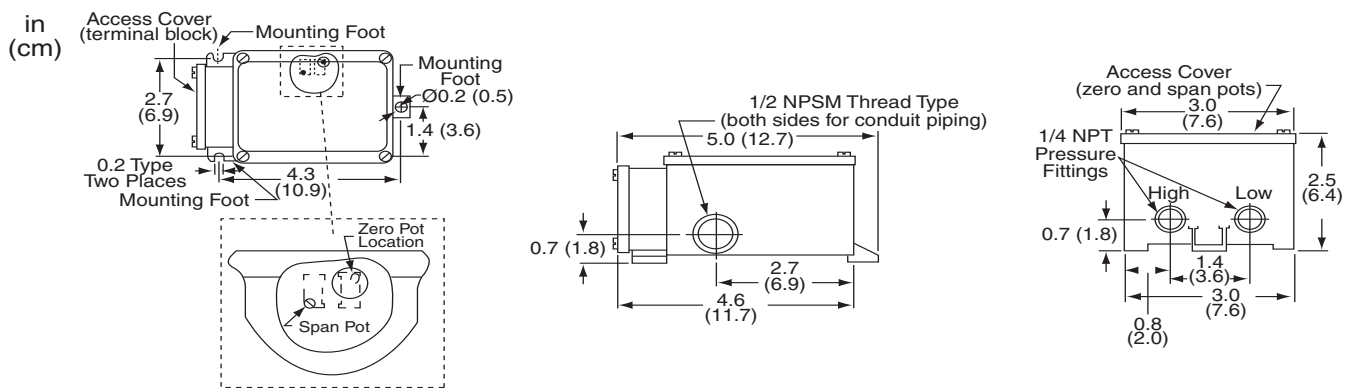
- 100 psig static line pressure
- 0.25% or 0.5% accuracy down to 0.05 "W.C.
- Uni-directional or bidirectional ranges
- 300 Series cast stainless steel body
- NEMA 4X
- NIST certificate included



SPECIFICATIONS

Supply Voltage	20 to 35 VDC	Accuracy	0.25 % or 0.5%
Signal Output	4-20 mA @ 1000Ω maximum impedance	Response Time	250 ms
Entity Parameters	V _{max} = 36V, I _{max} = 250 mA, C _i = 12 nF, L _i = 0	Operating Temperature	-20° to 185°F (-29° to 85°C)
Maximum supply voltage	36V	Conduit Connection	Two 1/2" female
Maximum supply current	250 mA	Process Connection	Two 1/4" NPT female
Area	Intrinsically Safe Class I, II, III; Div 1 and 2, Groups A through G Non-enclosed Class I, Div 2, Groups A through D; Class II, Div 2, Groups F, G, Class III	Enclosure	NEMA 4X
		Maximum Static Pressure	100 psig
		Media	Clean, dry, noncorrosive gas
		Proof Pressure	15 psid
		Burst differential pressure	50 psid
		Approvals	FM
		Weight	2 lb (0.9 kg)
		Warranty	1 year

DIMENSIONS



INSTALLATION

The transducer should be used with clean, dry air or other dry noncorrosive gases. The unit should be mounted with #8 or #10 screws using the three mounting feet provided. The transducer can be mounted in any orientation with virtually no effect on calibration. Any minor zero pressure offsets that are encountered can be adjusted using the zero-adjust potentiometer. The high and low-pressure connection ports are plugged to avoid debris entering the unit. The plugs should be left in place until the tubing and fittings are connected. The two 1/4" NPT pressure connections should be sealed to the transducer housing using Teflon® tape. Do not use dope-type sealant.

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HAZARDOUS LOCATIONS

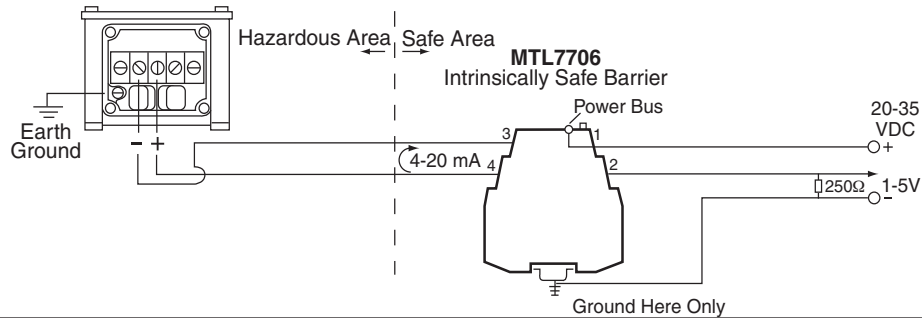
HAZARDOUS LOCATIONS



ASHCROFT INTRINSICALLY SAFE DIFFERENTIAL PRESSURE TRANSMITTER IXLDP

CAUTION: Intrinsically safe devices require the use of an intrinsic safety barrier when applied in hazardous locations. Provide wiring and grounding strictly in accordance with manufacturer's instructions. When the Model IXLdp transmitter is combined with the Model MTL7706 intrinsic safety barrier, total cable capacitance between the two must be limited to 0.12 μF , and total cable inductance must be limited to 4.0 mH (equivalent to 2700'/823m maximum Belden® #8760 18/2 shielded twisted pair cable 0.18 $\mu\text{H}/\text{FT}$, 44 pF/FT).

WIRING



ORDERING INFORMATION

MODEL	DESCRIPTION
IX	Differential pressure transmitter
ACCURACY	
3	0.25% accuracy
5	0.5% accuracy
PRESSURE CONNECTION	
FO2	1/4" NPT female pressure connection
OUTPUT SIGNAL	
42	4-20 mA output signal
ELECTRICAL CONNECTION	
ST	Screw terminals
PRESSURE RANGE	
Differential or Gauge	
P1IW	0.10" W.C. (24.9 Pa)
P25IW	0.25" W.C. (62.24 Pa)
P5IW	0.50" W.C. (124.6 Pa)
1IW	1.00" W.C. (249.1 Pa)
2IW	2.00" W.C. (498.2 Pa)
2P5IW	2.50" W.C. (622.4 Pa)
3IW	3.00" W.C. (747.3 Pa)
5IW	5.00" W.C. (1245.5 Pa)
10IW	10.00" W.C. (2491.0 Pa)
15IW	15.00" W.C. (3734.5 Pa)
20IW	20.00" W.C. (4979.3 Pa)
25IW	25.00" W.C. (6224.1 Pa)
50IW	50.00" W.C. (12.4 kPa)
100IW	100.00" W.C. (24.9 kPa)
150IW	150.00" W.C. (37.3 kPa)
200IW	200.00" W.C. (49.8 kPa)
Compound	
P05IWL	±0.05" W.C. (12.4 Pa)
P1IWL	±0.10" W.C. (24.9 Pa)
P2IWL	±0.20" W.C. (49.8 Pa)
P25IWL	±0.25" W.C. (62.24 Pa)
P5IWL	±0.50" W.C. (124.6 Pa)
1IWL	±1.00" W.C. (249.1 Pa)
2IWL	±2.00" W.C. (498.2 Pa)
2P5IWL	±2.50" W.C. (622.4 Pa)
3IWL	±3.00" W.C. (747.3 Pa)
5IWL	±5.00" W.C. (1245.5 Pa)
10IWL	±10.00" W.C. (2491.0 Pa)
15IWL	±15.00" W.C. (3734.5 Pa)
20IWL	±20.00" W.C. (4979.3 Pa)
25IWL	±25.00" W.C. (6224.1 Pa)
50IWL	±50.00" W.C. (12.4 kPa)
100IWL	±100.00" W.C. (24.9 kPa)
OPTIONS	
XFM	Factory mutual approval (required for intrinsically safe)

IX - 3 - FO2 - 42 - ST - 10IW - XFM **Example: IX-3-FO2-42-ST-10IW-XFM-X41** Intrinsically safe differential pressure transducer with 0.25% accuracy, 4-20 mA output, and 10" W.C. range.

RELATED PRODUCTS

MODEL	DESCRIPTION	PAGE
250R-3-1	250 OHM 3 WATT 1% Resistor Long Leads	89
A-602	Mounting kit for air filter applications. Includes two pressure tips, two 5-foot lengths of aluminum tubing and two adapters.	393
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	837
MTL7706+	Intrinsic safety barrier, 4-20 mA two-wire transmitters	441



HAZARDOUS LOCATIONS

EXPLOSION PROOF AIR DIFFERENTIAL PRESSURE SWITCH 1950G SERIES

DESCRIPTION

The **1950G Series** explosion proof air differential pressure switch monitors differential air pressure in a hazardous environment. The **1950G Series** has an external screw type setpoint adjustment and a NEMA 7 and 9 rated enclosure. The enclosure is anodized cast aluminum with explosion proof rating for Class I, Division 1, Groups A, B, C, D and Class II, Division 1, Groups E, F, G. The optional Model A-602 pressure probe kit allows the **1950G Series** to monitor filter pressure drop.



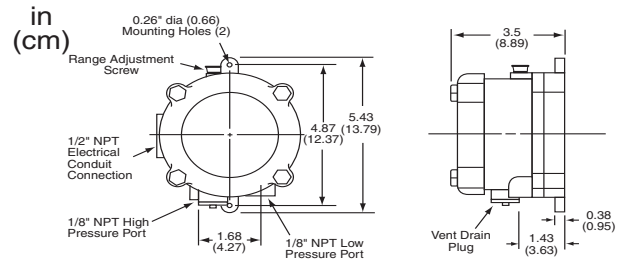
FEATURES

- **Class I, Division 1, Groups A, B, C, D**
- **Class II, Division 1, Groups E, F, G; Class III**
- **Ranges from 0.07" to 20" W.C. (17.4 to 4981 Pa)**
- **Adjustable setpoint within range**
- **SPDT 10A contacts**

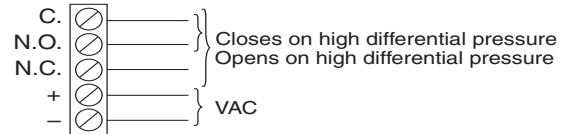
SPECIFICATIONS

Operating Temperature	0° to 140 (-18° to 60)
Burst Pressure	10 psig (69 kPa)
Supply Voltage	24 VAC, 120 VAC, 240 VAC, 5 VA
Switch	SPDT, 10A @ 240 VAC/28 VDC
Connections	1/8" NPT
Diaphragm	Buna-N
Area	Class I, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, D, G; Class III
Approvals	UL File #E62583, FM, CSA, CE, ATEX
Weight	3.5 lb (1.6 kg)
Warranty	1 year

DIMENSIONS



WIRING



CAUTION: CAUTION: Conduit seal MUST be installed within code-required distance from DP switch to maintain explosionproof rating.

9

HAZARDOUS LOCATIONS

ORDERING INFORMATION

MODEL	DESCRIPTION																																			
1950G	Explosionproof air differential pressure switch																																			
	<table border="1"> <thead> <tr> <th>RANGE</th> <th>OPERATING RANGE "W.C."</th> <th>OPERATING RANGE Pa</th> <th>APPROXIMATE DEADBAND "W.C. (Pa) At Min Setpoint</th> <th>APPROXIMATE DEADBAND "W.C. (Pa) At Max Setpoint</th> </tr> </thead> <tbody> <tr> <td>00</td> <td>0.07-0.15</td> <td>17.4-37.3</td> <td>0.04 (10)</td> <td>0.06 (14.9)</td> </tr> <tr> <td>0</td> <td>0.15-0.5</td> <td>37.3-124.5</td> <td>0.06 (14.9)</td> <td>0.11 (27.4)</td> </tr> <tr> <td>1</td> <td>0.4-1.6</td> <td>99.6-398.5</td> <td>0.11 (27.4)</td> <td>0.29 (72.2)</td> </tr> <tr> <td>5</td> <td>1.4-5.5</td> <td>348.7-1370</td> <td>0.4 (99.6)</td> <td>0.9 (224)</td> </tr> <tr> <td>10</td> <td>3.0-11.0</td> <td>747.2-2740</td> <td>0.9 (224)</td> <td>1.8 (448)</td> </tr> <tr> <td>20</td> <td>4.0-20</td> <td>996-4981</td> <td>1.2 (299)</td> <td>3.0 (747)</td> </tr> </tbody> </table>	RANGE	OPERATING RANGE "W.C."	OPERATING RANGE Pa	APPROXIMATE DEADBAND "W.C. (Pa) At Min Setpoint	APPROXIMATE DEADBAND "W.C. (Pa) At Max Setpoint	00	0.07-0.15	17.4-37.3	0.04 (10)	0.06 (14.9)	0	0.15-0.5	37.3-124.5	0.06 (14.9)	0.11 (27.4)	1	0.4-1.6	99.6-398.5	0.11 (27.4)	0.29 (72.2)	5	1.4-5.5	348.7-1370	0.4 (99.6)	0.9 (224)	10	3.0-11.0	747.2-2740	0.9 (224)	1.8 (448)	20	4.0-20	996-4981	1.2 (299)	3.0 (747)
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B-120	120 VAC																																			
B-240	240 VAC																																			
1950G - 1 - B-120	<i>Example: 1950G-1-B-120 0.4-1.6" W.C., explosionproof air differential pressure switch with 120 VAC supply voltage</i>																																			

	RELATED PRODUCTS	PAGE
A-602	Mounting kit for air filter applications. Includes two pressure tips, two 5-foot lengths of aluminum tubing and two adapters.	393
ACK6F	Cement: 30 oz * (850g) Fiber: 5 oz (142g), 25 cu in (410 cu cm) volume when set * Consists of five 6 oz (187g) cement pouches	424
EYM-50	1/2" size, 1.06" turning radius, 1 oz Kwiko cement required, Malleable Iron construction	423

HAZARDOUS LOCATIONS

FLOWLINE EXPLOSIONPROOF LEVEL TRANSMITTER

ECHOSAFE



DESCRIPTION

The **Model EchoSafe** is an explosionproof, industrial-grade ultrasonic liquid-level transmitter with automatic temperature compensation. Liquid conductivity, clarity, foam, or suspended solids do not affect the highly accurate 4-20 mA output since no contact is made with the material being measured.



FLOWLINE



EchoSafe

FEATURES

- **Class I Division 1, Groups A, B, C, D; Class II, Groups E, F, G; Class III Division 1, Groups E, F, G**
- **Compact XP enclosure with viewing window and dual conduit ports**
- **Narrow (3") beam for use in tight locations**
- **Integral display**
- **Simple pushbutton calibration**
- **Suitable for a wide variety of liquids**
- **Not affected by foam, dirty liquids, etc.**
- **8" to 24.6' range (20 cm to 7.5m)**
- **Fail-Safe intelligence with diagnostic feedback**
- **Display in inches or centimeters**

SPECIFICATIONS

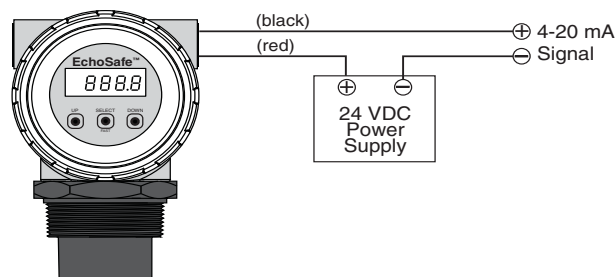
Range	8" to 24.6' (20 cm to 7.5 m)	Pressure Rating	30 psig (207 kPa)
Accuracy	0.2% of maximum range	Enclosure Rating	NEMA 4X
Resolution	0.079" (2 mm)	Mounting	2" NPT threads
Display Type	LCD, 6-digits	Conduit Connection	Two 1/2" NPT
Display Units	Inch, cm, ft, m, percent	Materials of Construction	Transducer: PVDF, Enclosure: Aluminum, Window: Glass
Supply Voltage	18-28 VDC (loop powered)	Area	Class I, Division 1, Groups A, B, C, D; Class II, Groups E,F,G; Class III
Signal Output	4-20 mA or 20-4 mA, two-wire	Approvals	FM approved, RoHS compliant
Fail Safe	4 mA, 20 mA, 21 mA, 22 mA, or hold last	Weight	2.0 lb (0.9 kg)
Maximum Output Impedance	250Ω @ 24 VDC	Warranty	1 year
Operating Temperature	-4° to 140 (-20° to 60)		
Temperature Compensation	Automatic over entire range		

9

HAZARDOUS LOCATIONS

WIRING

The **EchoSafe** requires 14-28 VDC power and a load that receives a 4-20 mA current input. Connect the red wire of the transmitter to the positive VDC terminal on the power supply. Connect the black wire on the transmitter to the (+) terminal on the load. Connect the (-) of the load to the (-) of the power supply.

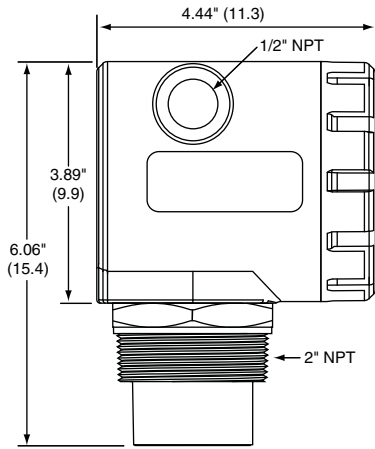




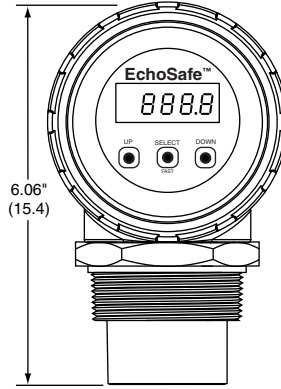
HAZARDOUS LOCATIONS

FLOWLINE EXPLOSION PROOF LEVEL TRANSMITTER *ECHOSAFE*

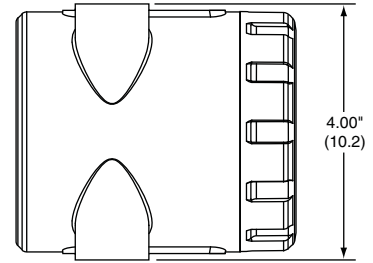
DIMENSIONS



Side View



Front View



Top View

9

HAZARDOUS LOCATIONS

ORDERING INFORMATION

MODEL	DESCRIPTION	
XP88-00	Explosionproof level transmitter, 8" to 24.6'	
	ACCESSORIES	PAGE
LM50-1001	2" Mounting bracket (included with "B" option)	396
	RELATED PRODUCTS	PAGE
ACK6F	Cement: 30 oz * (850g) Fiber: 5 oz (142g), 25 cu in (410 cu cm) volume when set * Consists of five 6 oz (187g) cement pouches	424
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	837
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	836
EYM-50	1/2" size, 1.06" turning radius, 1 oz Kwiko cement required, Malleable Iron construction	423

HAZARDOUS LOCATIONS



FLOWLINE INTRINSICALLY SAFE ULTRASONIC LEVEL TRANSMITTER ELP

DESCRIPTION

The **Model ELP Echo Touch** is an industrial-grade ultrasonic liquid-level transmitter with automatic temperature compensation. Liquid conductivity, clarity, foam, or suspended solids do not affect the highly accurate 4-20 mA output since no contact is made with the material being measured. When coupled with Model MTL7706 intrinsic safety barrier, the intrinsically safe design and NEMA 4X(IP65) housing allow use in nearly all atmospheres containing hazardous gases, dusts, or fibers.



ELP



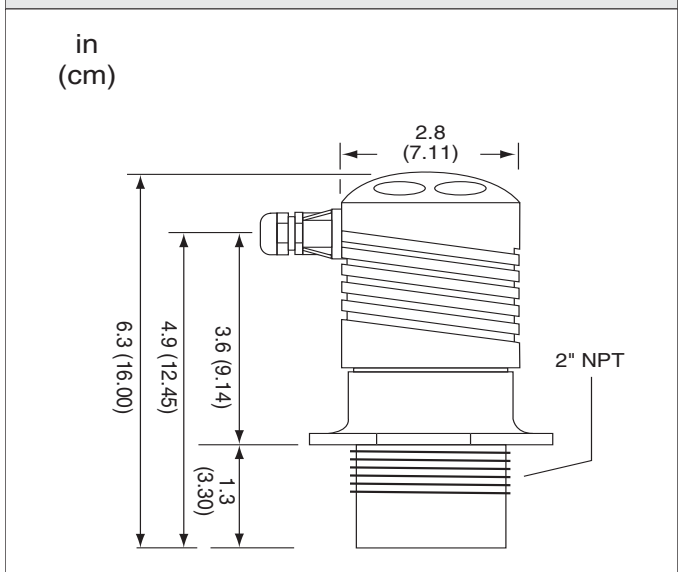
SPECIFICATIONS

Range	6" to 18' (0.15 to 5.5 m)
Accuracy	0.25% of span
Resolution	0.125" (0.3 cm)
Pulse Rate	Two per second
Supply Voltage	20-35 VDC
Signal Output	4-20 mA
Maximum Output Impedance	600Ω @ 24 VDC
Operating Temperature	-40° to 140 (-40° to 60)
Temperature Compensation	Automatic over entire range
Pressure Rating	30 psig (207 kPa) @ 77 (25) derated 0.93 psig per (11.6 kPa per) above 77 (25)
Enclosure Rating	NEMA 4X (IP65)
Mounting	2" NPT threads
Conduit Connection	1/2" NPT
Area	Intrinsically safe Class I, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III, Division 1
Approvals	CSA approved, CE
Entity Parameters	V _{max} = 32V, I _{max} = 130 mA, C _i = 0 μF, L _i = 0 mH
Weight	ELP: 2.0 lb (0.9 kg), ELP-B 2.6 lb (1.2 kg)
Warranty	1 year

FEATURES

- *Class I, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III, Division 1*
- *Continuous level measurement with 4-20 mA output*
- *Narrow (eight-degree) beam for use in tight locations*
- *Simple pushbutton calibration*
- *Automatic temperature compensation*
- *NEMA 4X (IP65) housing*
- *Suitable for a wide variety of liquids*
- *Not affected by foam, dirty liquids, etc.*
- *0.5' to 18' range (0.15 to 5.5m)*

DIMENSIONS



CAUTION: Intrinsically safe devices require the use of an intrinsic safety barrier when applied in hazardous locations. Provide wiring and grounding strictly in accordance with manufacturer's instructions. When the Model ELP transmitter is combined with the Model MTL7706+ intrinsic safety barrier, total cable capacitance between the two must be limited to 0.12 μF, and total cable inductance must be limited to 4.0 mH (equivalent to 2700'/823m maximum Belden™ #8760 18/2 shielded twisted pair cable 0.18 μH/FT, 44 pF/F).

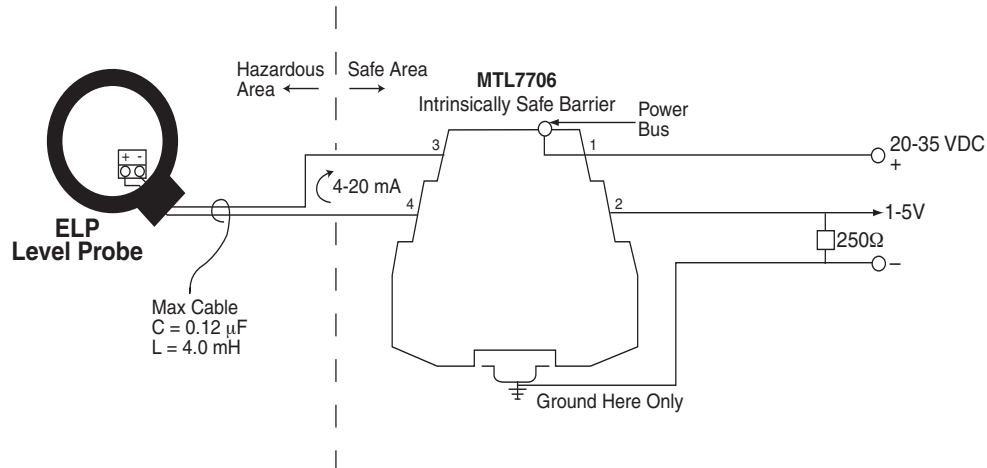


HAZARDOUS LOCATIONS

FLOWLINE INTRINSICALLY SAFE ULTRASONIC LEVEL TRANSMITTER

ELP

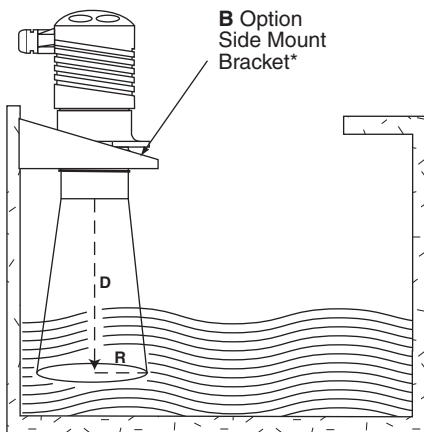
INSTALLATION



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HAZARDOUS LOCATIONS

MOUNTING



The **ELP** can be mounted through any threaded (2" NPT) opening in a tank top or with the optional side-mount bracket. Care should be taken to locate the **ELP** far enough from tank walls to avoid interference with the beam. Avoid locations near motors or other sources of vibration.

* For depths (D) greater than 5' (1.5m), the side-mount bracket must be extended away from the tank wall according to Table 1. The side-mount bracket provides 4.5" (11.4 cm) clearance from the wall only.

TABLE 1. BEAM RADIUS

DEPTH	RADIUS			
	feet	meters	inches	cm
1		0.3	1.2	3.1
2		0.61	2.1	5.2
3		0.91	2.9	7.3
4		1.22	3.7	9.5
5		1.5	4.6	11.6
6		1.8	5.4	13.7
7		2.1	6.2	15.9
8		2.4	7.1	18.0
9		2.7	7.9	20.1
10		3.0	8.8	22.3
11		3.4	9.6	24.4
12		3.7	10.4	26.5
13		4.0	11.3	28.7
14		4.3	12.1	30.8
15		4.6	13.0	32.9
16		4.9	13.8	35.1
17		5.2	14.6	37.2
18		5.5	15.5	39.3

ORDERING INFORMATION

MODEL	DESCRIPTION
ELP	Intrinsically-safe ultrasonic level transmitter
ELP-B	Intrinsically-safe ultrasonic level transmitter with side-mount bracket

	RELATED PRODUCTS	PAGE
250R-3-1	250 OHM 3 WATT 1% Resistor Long Leads	89
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	837
MTL7706+	Intrinsic safety barrier, 4-20 mA two-wire transmitters	411



EXPLOSIONPROOF FLOAT SWITCH

L4

DESCRIPTION

The **Model L4** Explosionproof Float Switch is a heavy duty explosionproof switch for the most critical applications.

FEATURES

- *Explosionproof construction*
- *Stainless steel float*
- *Magnetically actuated*
- *Good for specific gravities 0.7 and up*
- *CE, CSA and UL listed; FM approved*
- *1-1/2" NPT mounting*
- *Class I, Division 1, Groups C, D;*
- *Class II, Division 1, Groups E, F, G*

WARNING: Models L4 and V4-2-U are not listed for use in areas classified as Group A (acetylene) or Group B (hydrogen and others). For these atmospheres, an intrinsically safe system using standard dry-contact switch, intrinsic safety barriers, and voltage-limiting circuitry is recommended.



SPECIFICATIONS	
Limits	Temperature: 275 (135)
Operating Pressure	100 psig (690 kPa)
Contact Rating	SPDT, 10A, 125/250 VAC
Installation	Horizontal
Dimensions	19-5/32" L (48.7 cm)
Weight	3.2 lb (1.5 kg)
Area	Explosionproof Class I, Division 1, Groups C, D; Class II, Division 1, Groups E, F, G
Approvals	UL listed, CSA, CE, FM
Warranty	1 year

EXPLOSIONPROOF FLOW SWITCH

V4-2-U

DESCRIPTION

The **Model V4-2-U** Explosion-proof Flow Switch is a dependable solution for protecting against low flow conditions in pipelines for liquids, gases, and flowing solids.

FEATURES

- *Explosion-proof construction*
- *Stainless steel vanes*
- *Accommodates pipe sizes 1-1/2" and up*
- *Magnetically actuated*
- *CE, CSA, and UL listed; FM approved*
- *1-1/2" NPT mounting*
- *Class I Division 1 Groups C, D;*
- *Class II Division 1 Groups E, F, G*



SPECIFICATIONS	
Limits	Temperature: 275 (135)
Operating Pressure	1000 psig (6900 kPa)
Contact Rating	SPDT, 10A @ 125/250 VAC
Dimensions	13-1/2" (34.3 cm) overall length; 6-3/4" (17.1 cm) top of cover to bottom of threads
Installation	Within 5 degrees of vertical
Weight	4.5 lb (2.0 kg)
Area	Explosionproof Class I, Division 1, Group C, D; Class II, Division 1, Groups E,F,G
Approvals	UL listed File #E31755, CSA, CE, FM
Warranty	1 year

ORDERING INFORMATION

MODEL	DESCRIPTION
V4-2-U	Explosionproof flow switch
L4	Explosionproof float switch

	RELATED PRODUCTS	PAGE
ACK6F	Cement: 30 oz * (850g) Fiber: 5 oz (142g), 25 cu in (410 cu cm) volume when set * Consists of five 6 oz (187g) cement pouches	424
EYM-75	3/4" size, 1.19" turning radius, 2 oz Kwiko cement required, Malleable Iron construction	423



HAZARDOUS LOCATIONS

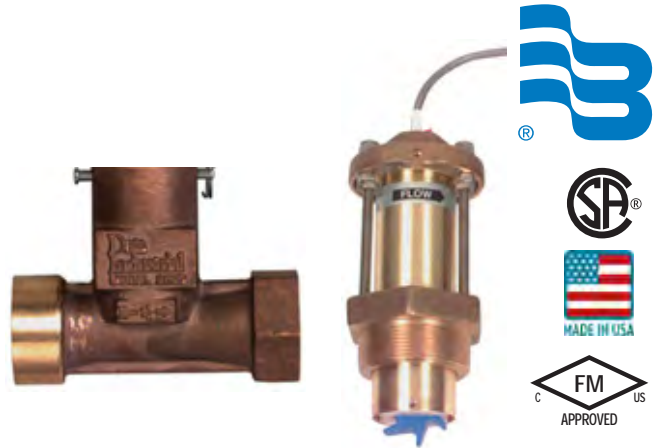
BADGER METER INTRINSICALLY SAFE WATER FLOW SENSOR 200-IS SERIES

DESCRIPTION

The **200-IS Series** Intrinsically Safe Water Flow Sensor is designed to monitor water flow velocity in a hazardous environment. The **200-IS Series** sensor uses a standard 4-20mA transmitter proportional to water flow in pipes from 1/2" to 36" (1.27 to 91.44 cm). The sensor is a glass-reinforced nylon impeller with an intrinsically safe rating for Class I, Division I, Groups A, B, C, D.

FEATURES

- **Class I, Division I, Groups A, B, C, D**
- **400 psig (3102 kPa) @ 221 °F (105 °C)**
- **Uses standard 4-20 mA transmitters**
- **Pipe sizes from 1/2" to 36" (1.27 to 91.44 cm)**
- **Polarity reversal protection**



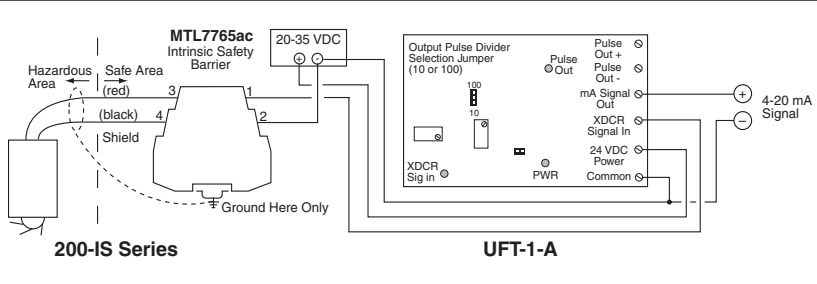
SPECIFICATIONS

Accuracy	±1% of full scale	Approvals	FM, CSA
Flow Range	0.5-30 ft/sec (9.1-549 m/min)	Wire Type	20' (6.10 cm), two wire #20 AWG in PVC jacket
Maximum Pressure	400 psig (2758 kPa)	Transmitter	UFT-1-A (required for operation)
Maximum Temperature	221 °F (105 °C)	Supply Voltage	24 VDC @ 60 mA
Wetted Parts	Impeller: Glass-reinforced nylon; Bearing: Pennion (UHMWPE); Shaft: Tugsten carbide; Ryton glass reinforced PPS	Signal Output	4-20 mA @ 750Ω maximum impedance
Entity Parameters	Vmax = 15V, Imax - 150 mA, Ci = 0.033 μF, Li = 0.91 nH	Zero Span Adjust	Factory calibrated
Area	Intrinsically safe Class I, Division 1, Groups A, B, C, D	Connections	Terminals
		Warranty	1 year

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HAZARDOUS LOCATIONS

WIRING



CAUTION: Intrinsic safety barrier is required when applied in hazardous locations. For the system shown left, maximum cable capacitance is 0.67 μF, and maximum cable inductance is 0.3 mH (equal to 447' (136m) Belden™ #8760 18/2 shielded cable 0.18 μH/FT, 44 pF/F).

ORDERING INFORMATION

MODEL	SIZE	CONNECTIONS	TYPE	MAX PRESSURE psig (kPa)	WEIGHT lbs (kg)
250B-IS-(0.5, 0.75, 1, 1.25, 1.5)	1/2" to 1-1/2"	Size NPT	Inline	400 (2758)	7.0 (3.2)
228B-IS-2	2"	2" NPT	Inline	200 (1379)	7.4 (3.4)
220B-IS	2-1/2" and up	2" Saddle	Insertion	400 (2758)	4.1 (1.9)

RELATED PRODUCTS

		PAGE
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	837
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	836
MTL7765AC	Intrinsic safety barrier	
	Passive barrier for DI 200 Series flow sensors and other general-purpose 12 VAC or VDC devices	4121
UFT-1A	Universal flow transmitter, pulse and calibrated 4-20 mA output	256

HAZARDOUS LOCATIONS

EXPLOSIONPROOF GAS MONITOR / TRANSMITTER SPXCD SERIES



NEW!



9

HAZARDOUS LOCATIONS

DESCRIPTION

The **XCD Series** Explosionproof Gas Monitor/Transmitter provides comprehensive monitoring of flammable, toxic, and oxygen gas hazards in potentially explosive atmospheres. Users can modify detector operation using the LCD and magnet switches without ever needing to open the Unit. This enables one-man, non-intrusive operation and reduces routine maintenance time and costs. The **XCD series** is suitable for both indoor and outdoor use.

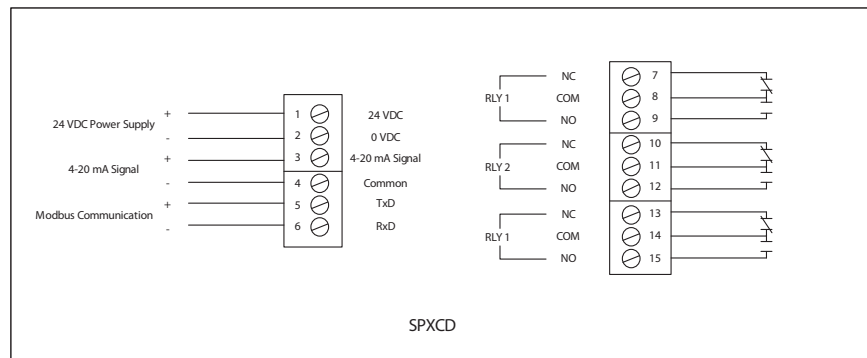
FEATURES

- *User friendly and intuitive tri-colored backlit display with digits, bar graph, and icons*
- *Fully configurable via magnetic switches*
- *Selectable sink or source 4-20 mA output*
- *Built in Alarm and Fault relays*
- *MODBUS communications for remote diagnostics/configuration*
- *Removable plug in display module provides easy access to terminal area*
- *Integral mounting bracket*
- *2 x M20 or 3/4" NPT cable/conduit entries*
- *Epoxy painted aluminum alloy housing*
- *Class I, Division 1 Groups B, C, and D; Class I, Division 2, Groups B, C, and D; Class II, Division 1 Groups E, F, and G; Class II, Division 2, Groups F and G*

COMMON SPECIFICATIONS

Supply Voltage	16 to 32 VDC (24 VDC nominal)	Relays	3 x 5A@250VAC. Selectable normally open or normally closed (switch) and energized/de-energized (programmable). Alarm relays default normally open/de-energized. Fault relay default normally open/energized
Supply Current	208.3 mA @ 24 VDC	Terminals	15 x screw terminals
Operating Temperature	-40° to 149°F (-40° to 65°C)	Wire Size	20 to 14 AWG
Conduit Connection	2 x 3/4" NPT	Approvals	Class I, Division 1 Groups B, C, and D; Class I, Division 2, Groups B, C, and D; Class II, Division 1 Groups E, F, and G; Class II, Division 2, Groups F and G, CUL File #E186567, CE
Materials of Construction	Housing: Epoxy painted aluminum alloy LM25; Sensor: stainless steel	Weight	4.4 lb (2 kg)
Housing Type	IP66	Warranty	1 Year
Mounting	Integral mounting plate with 4 x mounting holes suitable for M8 bolts		
Communication	RS485, MODBUS RTU		
Inrush Current	800 mA @ 24 VDC maximum		
Output Current	4 - 20 mA sink or source		

WIRING



NEW!



HAZARDOUS LOCATIONS

EXPLOSIONPROOF GAS MONITOR / TRANSMITTER SPXCD SERIES

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HAZARDOUS LOCATIONS

INDIVIDUAL SPECIFICATIONS

GAS	User Selectable Full Scale Range	Default Range	Steps	User Selectable Calibration Gas Range	Default Calibration Point	Response Time (T90)	Accuracy	Default Alarm Points	
								A1	A2
Electrochemical Sensors									
Oxygen (O ₂)	25.0% V/V only	25.0% V/V	n/a	20.9 V/V (fixed)	20.9 V/V	<30 sec	≤± 0.5% Vol.	19.5 V/V ▼	23.5 V/V ▲
Hydrogen Sulfide (H ₂ S)	10 to 100 ppm	50 ppm	1.0 ppm	30 to 70% of selected full scale range	25 ppm	<50 sec	≤± 1 ppm	10.0 ppm ▲	20.0 ppm ▲
Carbon Monoxide (CO)	100 to 1000 ppm	300 ppm	100 ppm		100 ppm	<30 sec	≤± 6 ppm	30 ppm ▲	100 ppm ▲
Hydrogen (H ₂)	1000 ppm only	1000 ppm	n/a		500 ppm	<65 sec	≤± 25 ppm	200 ppm ▲	400 ppm ▲
Nitrogen Dioxide (NO ₂)	10 to 50 ppm	10 ppm	5.0 ppm		5 ppm	<40 sec	± 3 ppm or ± 20%	5.0 ppm ▲	10.0 ppm ▲
Catalytic Bead Sensors									
Flammable	20 to 100% LEL	100% LEL	10% LEL	25 to 95% of selected full scale range	50% LEL	<25 sec	≤± 1.5% LEL	20% LEL ▲	40% LEL ▲
Infrared Sensors									
Methane (CH ₄)	20 to 100%	100% LEL	10% LEL	30 to 70% of selected full scale range	50% LEL	<30 sec	≤± 1.5% LEL	20% LEL ▲	40% LEL ▲
Propane (C ₃ H ₈)	20 to 100% LEL	100% LEL	10% LEL		50% LEL	<30 sec	≤± 1.5% LEL	20% LEL ▲	40% LEL ▲
Carbon Dioxide (CO ₂)	2% Vol only	2% V/V	0.1% V/V		1% V/V	<30 sec	≤± 0.04% Vol.	0.40% V/V ▲	0.80% V/V ▲

ORDERING INFORMATION

MODEL	DESCRIPTION
SPXCDULNCXM	UL/CSA Approved Carbon Monoxide 0-250ppm, 4-20mA, 3 Relays, ModBus, Aluminum Enclosure
SPXCDULNFXM	UL/CSA Approved Combustibles 0-100% LEL, 4-20mA, 3 Relays, ModBus, Aluminum Enclosure
SPXCDULNHXM	UL/CSA Approved Hydrogen Sulfide 0-50ppm, 4-20mA, 3 Relays, ModBus, Aluminum Enclosure
SPXCDULNNXM	UL/CSA Approved Nitrogen Dioxide 0-50ppm, 4-20mA, 3 Relays, ModBus, Aluminum Enclosure
SPXCDULNO1M	UL/CSA Approved Oxygen 0-25%, 4-20mA, 3 Relays, ModBus, Aluminum Enclosure
SPXCDULNG1M	UL/CSA Approved Hydrogen 0-1000ppm, 4-20mA, 3 Relays, ModBus, Aluminum Enclosure
SPXCDULNRXM	UL Approved Methane 0-100% LEL, 4-20mA, 3 Relays, ModBus, Aluminum Enclosure
SPXCDULNPXM	UL Approved Propane 0-100% LEL, 4-20mA, 3 Relays, ModBus, Aluminum Enclosure
SPXCDULNB1M	UL Approved Carbon Dioxide 0-2% VOL, 4-20mA, 3 Relays, ModBus, Aluminum Enclosure
S3KCAL	Calibration cap
SPXCDCC	Collecting cone for use with lighter than air gases
SPXCDDMK	Duct mounting kit
SPXCDMTBR	Mounting bracket (inc. bolts, nuts, brackets)
SPXCDSPD	Sunshade / Deluge Protection

NEW!

HAZARDOUS LOCATIONS



DET-TRONICS EXPLOSIONPROOF DUCT SMOKE DETECTOR 30-3003D



DESCRIPTION

The **Model 30-3003D** explosion proof duct smoke detector provides early detection of smoke and products of combustion in air moving through HVAC ducts. An intake tube accomplishes air sampling. A return tube, duct enclosure, junction box, and instruction manual are included with the base unit. The detector and junction box are listed for use in atmospheres with hazardous gases or dusts (Groups C, D, E, F).

FEATURES

- **Class I, Division 2, Groups C, D;**
Class II, Division 2, Groups E, F, G; Class III
- **NEMA 7CD, 9EFG**
- **Trouble-free photoelectric detector**
- **24 VDC operation**
- **Contacts (3): N.O. (alarm), N.C. (supervisory), SPDT (auxiliary)**

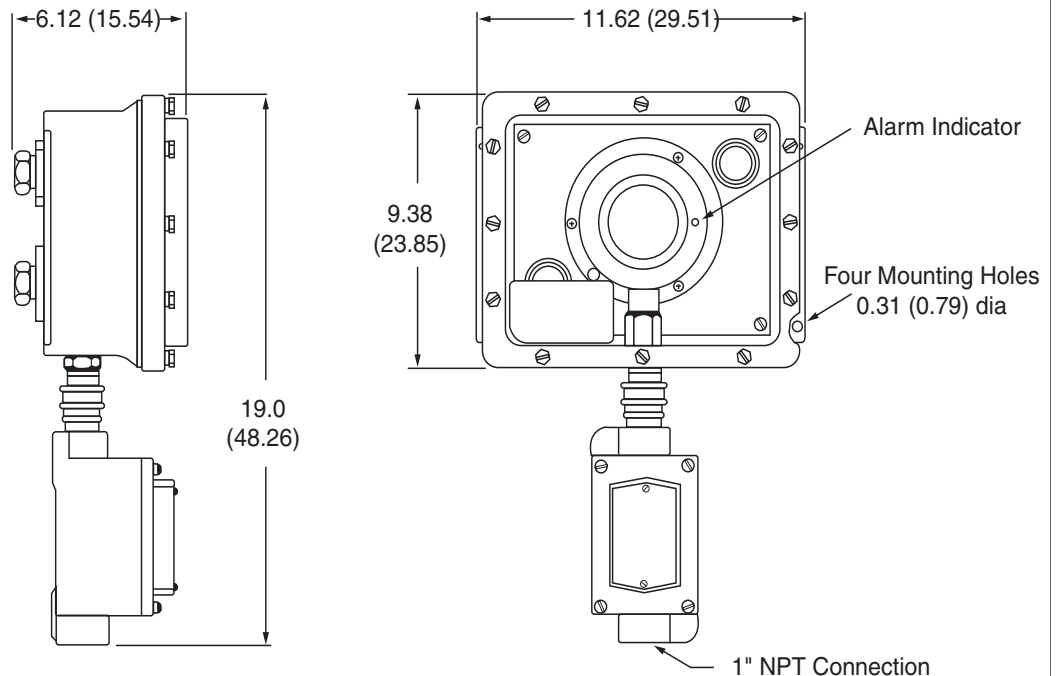


9

HAZARDOUS LOCATIONS

DIMENSIONS

in
(cm)





HAZARDOUS LOCATIONS

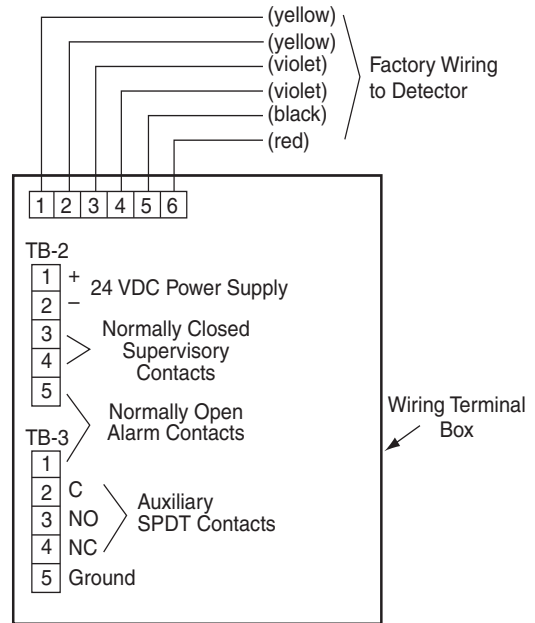
DET-TRONICS EXPLOSIONPROOF DUCT SMOKE DETECTOR 30-3003D

SPECIFICATIONS

Supply Voltage	20-28 VDC @ 10 mA standby, 50 mA alarm
Contact Rating	Alarm SPST (N.O); supervisory SPST (N.C.); auxiliary SPDT, 1.0 A @ 30 VDC, 0.5 A @ 120 VAC
Air Velocity Area	600-4000 fpm (3-20 mps) Explosionproof Class I, Division 2, Groups C,D; Class II, Division 2, Groups E, F, G; Class III
Approvals	CSA
Enclosure Rating	Detector :NEMA 4X fiberglass; Detector and junction box: NEMA3, 7CD, 9EF, 12
Weight	13.0 lb (5.9 kg)
Sampling Tube	3/4" galvanized EMT in 1', 3', 6', or 10'L (0.3, 0.9, 1.8, or 3m)
Return Tube	12"L (30.5 cm), included
Warranty	1 year

CAUTION: Conduit seal **MUST** be installed within coderequired distance from junction box to maintain explosionproof rating

WIRING



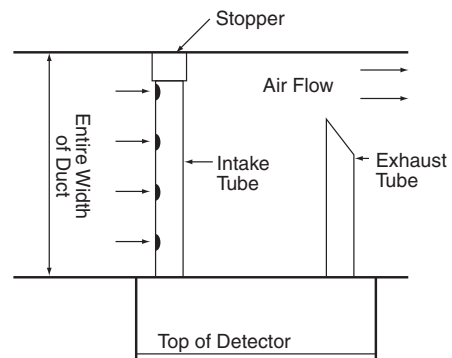
Note: Circuit shown in the normal standby energized mode.

MOUNTING

Mount the detector in an air duct using the provided template. Detector must be mounted at least six duct widths from the fan or other sources of turbulence.

The intake sampling tube has holes drilled the entire length of the tube and should extend the entire width of the duct. The holes must be facing into the air flow.

1. Cut the intake sampling tube to the desired length.
2. Firmly insert the stopper (packaged in the installation kit) in the end of the intake sampling tube.
3. Follow instruction sheet provided with each detector.



ORDERING INFORMATION

MODEL	DESCRIPTION
30-300D-1	Explosionproof duct smoke detector, photoelectric with 1' duct sampling tube
30-3003D-3	Explosionproof duct smoke detector, photoelectric with 3' duct sampling tube
30-3003D-6	Explosionproof duct smoke detector, photoelectric with 6' duct sampling tube
30-3003D-10	Explosionproof duct smoke detector, photoelectric with 10' duct sampling tube

	RELATED PRODUCTS	PAGE
ACK6F	Cement: 30 oz * (850g) Fiber: 5 oz (142g), 25 cu in (410 cu cm) volume when set	424
EYM-100	* Consists of five 6 oz (187g) cement pouches 1" size, 1.38" turning radius, 4 oz Kwiko cement required, Malleable Iron construction	423

HAZARDOUS LOCATIONS

BALMAC VIBRATION TRANSMITTER / SWITCH 550-X



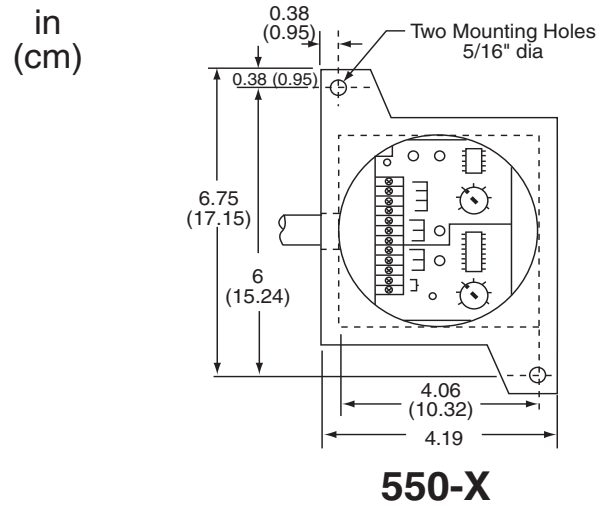
DESCRIPTION

The **Model 550-X** Vibration Switch provides low cost, reliable vibration protection for rotating machinery operating within the range of 120-60,000 rpm. The switch's vibration sensor, mounted perpendicular to the unit's base, responds to the velocity (in/sec) signal and effects automatic shut-down or alarm when pre-set limits are exceeded. The unit may be mounted with the sensitive axis in any plane (horizontal, vertical or axial), even in an inverted position. Two limit set points are provided. One is set for the maximum allowable vibration (in/sec), while the other is set for a percentage of that setting, tripping the alarm relay when that percentage is reached. A built-in, adjustable time delay prevents triggering due to transient vibrations. The switch can be wired for latch and remote reset or for automatic reset when vibration falls below set point. The unit has a 4-20 mA output that may be used with a panel meter or data logger, permitting analysis of vibration trends. Once the switch has been installed and the limits set, it requires no attention. The **Model 550-X Vibration Switch** is enclosed in an explosion proof housing suitable for Class I, Division 1, Groups C, D and Class II, Division 1, Groups E, F, G.

FEATURES

- **Reliable performance**
- **Dual SPDT relay and 4-20 mA output**
- **Easy to install**
- **Two-year warranty**
- **Class I, Division 1, Groups C, D; Class II, Division 1, Groups E, F, G**

DIMENSIONS



9

HAZARDOUS LOCATIONS

SPECIFICATIONS

Limits		Remote Reset	Circuit closure between latch and common will reset both outputs
Limit #1 (alarm)	Set as a percent of Limit #2 (shutdown)	Supply Voltage	115 VAC 50/60 Hz
Limit #2 (shutdown)	Set at a velocity level in inches/sec	Area	Explosion proof housing Class I, Div 1, Groups C, D; Class II, Div 1, Groups E, F, G; NEMA 7CD, 9EG
Measurement Range	0.1-2.75 in/sec (2.5-70 mm/sec)	Conduit Connections	3/4" NPT
Frequency Range	2-1000 Hz (120-60,000 rpm)	Wiring Terminations	Accept 12 AWG wire
Time Delay	1-30 seconds	Operating Temperature	-30° to 165°F (-34° to 74°C)
Relay Output	SPDT relay 5A @ 125 VAC; 5A @ 28 VDC	Dimensions	4.81"W x 7.13"H x 4.5"D (12.2 x 18.1 x 11.4 cm)
Signal Output	4-20 mA DC	Mounting	1/4" hardware, 3 mounting holes
Accuracy	±5%	Weight	5.5 lb (2.5 kg)
Maximum Output Impedance	500Ω	Approvals	CSA
Vibration Sensitive Axis	Perpendicular to the base, omnidirectional mounting	Warranty	2 years



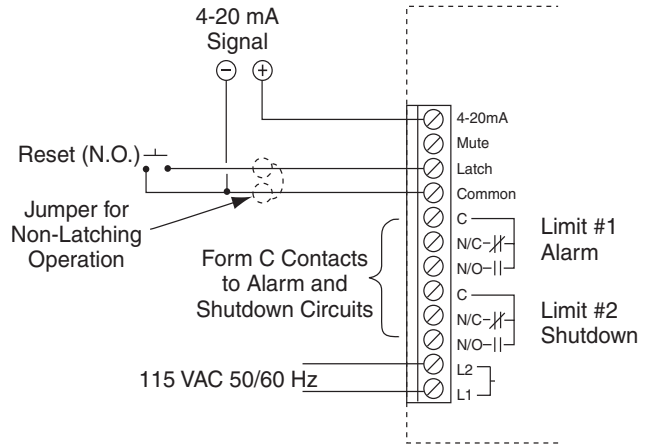
HAZARDOUS LOCATIONS

BALMAC VIBRATION TRANSMITTER / SWITCH 550-X

WIRING

The wiring access is through the 3/4" NPT conduit hole on the side of the switch enclosure. Wiring subject to physical damage should be adequately protected. When installing electrical conduit, a short length (12"/30 cm) of flexible conduit must be used between the vibration switch and an associated junction box. This construction will provide some vibration isolation in the conduit line. Conduit and fittings should conform to the environment of the vibration switch location. Weather-resistant or rain-tight fittings should be used to protect the switch wiring from a humid or corrosive atmosphere. Make all connections in accordance with national and local codes.

Note: Model EYM-75 conduit seal is required within 18" (45 cm) of the enclosure to maintain explosionproof rating.



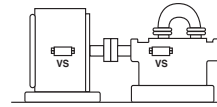
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HAZARDOUS LOCATIONS

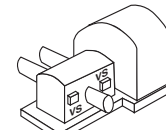
OPERATION

The **Model 550-X** is a self-contained, vibration protection limit switch. It guards against destructive levels of vibration by tripping a relay that has a user-adjustable limit setpoint in terms of vibration velocity (in/sec). This relay output is connected to an alarm or control system to provide a warning or shutdown. It mounts at the monitoring point and is enclosed in a water-tight, heavy-cast aluminum housing. Terminals are provided for remote or manual reset. A 4-20 mA output for recording or metering can connect to a remote readout panel meter or BAS controller.

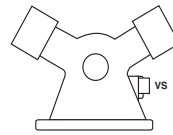
TYPICAL INSTALLATION



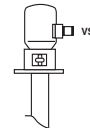
Centrifugal Compressor



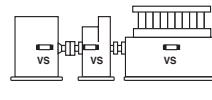
Reciprocating Compressor



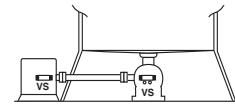
Y-Type Compressor



Vertical Pump



Engine Gear Compressor



Cooling Tower Fan

CAUTION: Ensure that the switch is rigidly attached to the monitoring point for the proper sensing of the vibration.

ORDERING INFORMATION

MODEL
550-X

DESCRIPTION

Vibration transmitter/switch with 0.1-2.75 in/sec (2.5-70 mm/sec) range, two limits, and NEMA 7CD, 9EFG enclosure

ACK6F

RELATED PRODUCTS

Cement: 30 oz * (850g) Fiber: 5 oz (142g), 25 cu in (410 cu cm) volume when set
* Consists of five 6 oz (187g) cement pouches

PAGE

EYM-50

1/2" size, 1.06" turning radius, 1 oz Kwiko cement required, Malleable Iron construction

424

423

HAZARDOUS LOCATIONS



INTRINSICALLY SAFE VIBRATION TRANSMITTER 140T- HAZARDOUS

DESCRIPTION

The **Model 140T** Intrinsically safe Vibration Transmitter is low cost, yet highly accurate and rugged. It is ideal for use with all machines, even those which previously may have been considered uneconomical to monitor. The **Model 140T** easily mounts by use of a standard 1/4"-20 stud. It is a two-wire, loop-powered transmitter which can feed the vibration level of operating machinery to a data logger, milliamp monitor, or process control computer. Solid state accelerometer and circuit design provide a 4-20 mA signal proportional to vibration velocity. Intrinsically safe, it can be used in hazardous environments when coupled with a Model MTL7706 Intrinsic Safety barrier.

FEATURES

- **Reliable performance**
- **Easy to install**
- **4-20 mA output**
- **Intrinsically safe Class I, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, F, G**
- **Two-year warranty**

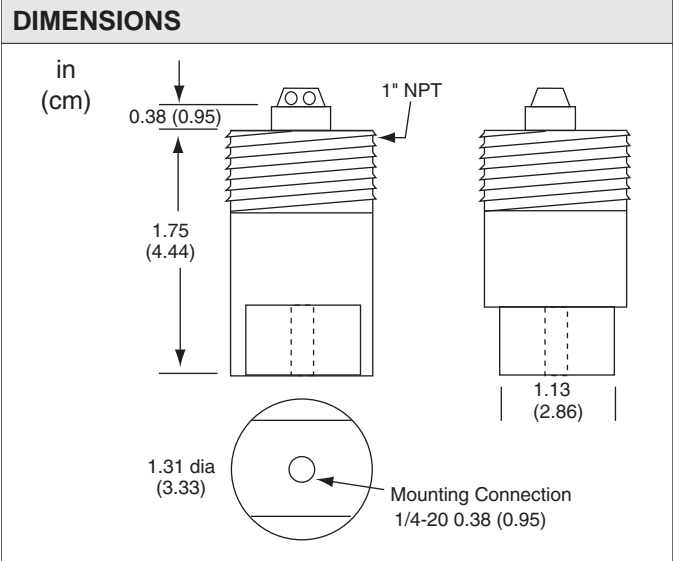
APPLICATION

Vibration monitoring can help alert the maintenance staff to the destructive effects of vibration on mechanical system equipment such as air handler fans, cooling tower fans, pumps, and compressors.



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HAZARDOUS LOCATIONS



SPECIFICATIONS	
Supply Voltage	12-50 VDC, black=negative, red=positive, with reverse voltage protection
Frequency Range	7-1300 Hz ±3% (420-78,000 rpm)
Maximum Output Impedance	RL = 50 (Vs-12)Ω; 600Ω @ 24 VDC
Signal Output	4-20 mA
Accuracy	5% to 10% of scale
Measurement Range	0-1 in/sec vibration, 0-2 in/sec vibration
Operating Temperature	-4° to 185°F (-20° to 85°C)
Enclosure Rating	NEMA 4, weatherproof, Cadmium-plated steel
Process Connection	1" MNPT
Mounting	1/4"-20 stud
Weight	1.4 lb (0.64 kg)
Isolation	500V, circuit-to-case
Vibration Range	Output 4-20 mA, proportional to vibration level, 0-1 in/sec (25.4 mm/sec), Output 4-20 mA, proportional to vibration level, 0-2 in/sec (25.4 mm/sec)
Approvals	UL listed file #E126345
Weight	1.41 lb (0.64 kg)
Warranty	1 year



HAZARDOUS LOCATIONS

INTRINSICALLY SAFE VIBRATION TRANSMITTER

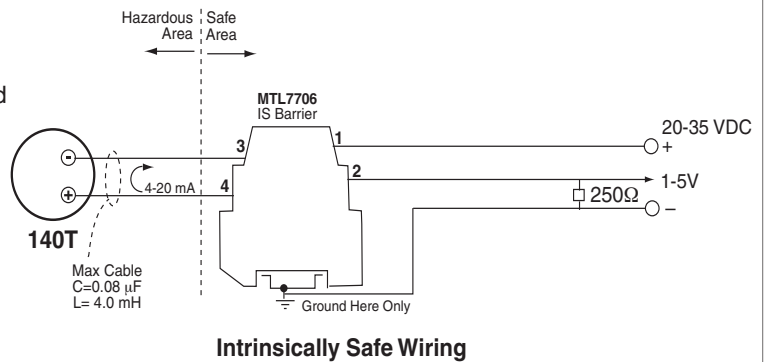
140T- HAZARDOUS

INSTALLATION

The mounting orientation can be in any position. This position should be in an area for the best vibration signal definition or where there is a good transfer of the machines (fans, pumps, etc.) vibrations. The best location will vary from machine to machine. The location of the transmitter should be selected carefully. When selecting the site for the mounting location, it is helpful to survey the site with the aid of a vibration meter.

WIRING

Wiring subject to physical damage should be adequately protected. When installing electrical conduit, it is recommended that a short length (12"/30 cm) of flexible conduit be used between the transmitter and an associated junction box. This construction will provide some vibration isolation in the conduit line. Conduit and fittings should conform to the environment of the transmitter location. Weather-resistant or rain-tight fittings should be used to protect the transmitter wiring from a humid or corrosive atmosphere. Make all connections in accordance with national and local codes.



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HAZARDOUS LOCATIONS

CAUTION: Intrinsically safe devices require the use of an intrinsic safety barrier when applied in hazardous locations. Provide wiring and grounding strictly in accordance with manufacturer's instructions. When the Model 140T transmitter is combined with the Model MTL7706 intrinsic safety barrier, total cable capacitance between the two must be limited to 0.08 μF , and total cable inductance must be limited to 4.0 mH (equivalent to 1800'/548m maximum Belden® #8760 18/2 twisted pair cable 0.18 $\mu\text{H}/\text{FT}$, 44 pF/F).

You must ensure that the transmitter is rigidly attached to the monitoring point for the proper sensing of the vibration.

ORDERING INFORMATION

MODEL	DESCRIPTION
140T-1	Intrinsically-safe vibration transmitter, range 0-1 in/sec (25.4 mm/sec)
140T-2	Intrinsically-safe vibration transmitter, range 0-2 in/sec (50.8 mm/sec)

	RELATED PRODUCTS	PAGE
250R-3-1	250 OHM 3 WATT 1% Resistor Long Leads	89
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	837
MTL7706+	Intrinsic safety barrier, 4-20 mA two-wire transmitters	412



INTRINSIC SAFETY BARRIERS MTL5000, MTL7000, MTL7700 SERIES

DESCRIPTION

The **MTL7000, MTL7700** and **MTL5000 Series** of ultra-slim intrinsic safety barriers is the worldwide standard in protection and accuracy for intrinsically safe sensing and controlling devices in hazardous locations. The electronic design limits the amount of electrical energy that can be transmitted into the hazardous area to a level below the ignition energy of even the worst-case explosive mixture of fuel and air. This level of protection remains intact even in the event of two simultaneous faults, thus providing the highest possible safety rating for this type of system.

All **MTL7000, MTL7700** and **MTL5000 Series** barriers are FM approved for use in intrinsically safe systems under the entity concept and can thus be applied with the widest possible array of intrinsically safe devices. Designed for ease of installation, these barriers provide a positive intrinsic safety ground through the DIN rail. Isolating spacers are available for applications in which the intrinsic safety ground must be separate from the mounting panel's earth ground (ANSI / ISA RP-12.6 specifies grounding requirements).

FEATURES

- **FM entity approval Class I, II, and III, Division 1, Groups A, B, C, D, E, F, G**
- **BASEEFA approval EEx [ia], IIC**
- **DIN rail mounting with integral intrinsic safety ground**
- **Compact size**

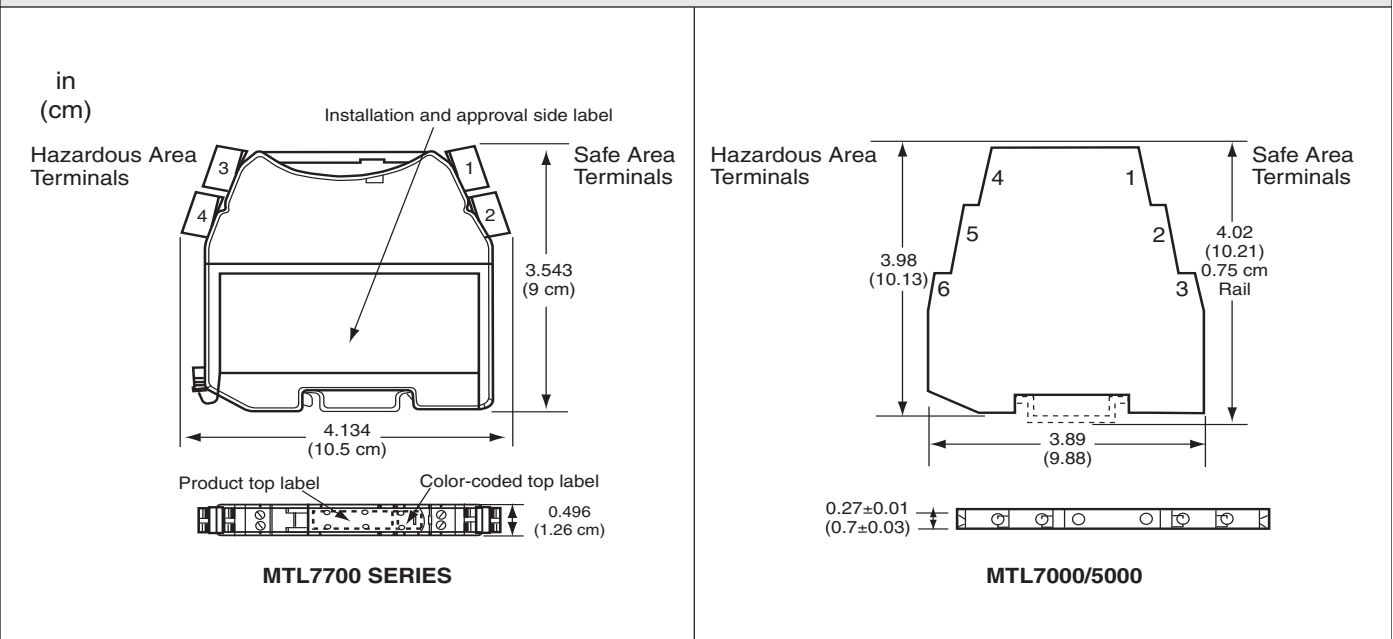


MLT7700 SERIES

APPLICATION

According to the entity concept, barriers must be selected to limit the available hazardous area voltage (V) and current (I) to levels below the rating of the intrinsically safe device (V_{max} , I_{max}). Also, the combined capacitance (C) and inductance (L) of the intrinsically safe device and cabling must be less than the maximum ratings for the barrier (L_a , C_a). The great majority of applications can be satisfied with one of the six key barrier types stocked by Kele. Other types are available to suit most every application, contact Kele for assistance. Refer to the Hazardous Location Application Guide in the Technical Reference section for more detailed barrier selection procedures.

DIMENSIONS





HAZARDOUS LOCATIONS

INTRINSIC SAFETY BARRIERS

MTL5000, MTL7000, MTL7700 SERIES

SAFETY SPECIFICATIONS

Application	Model	Entity Safety Parameters					Max Voltage	End to End Resistance (Ω)
		V	I (mA)	Ω	C(max) (μF)	L(max) (mH)		
4-20 mA Two-wire transmitter	MTL7706+	28	93	300	0.083	4.2	35	N/A
DI 200 Series flow sensors	MTL7765ac	15	150	100	0.58	1.45	12.5	124
Controller output 4-20 mA	MTL7728+	28	93	300	0.12	4.2	27	333
Dry contact/Dry contact	MTL5011B	10.5	14	800	2.4	165	35	N/A *
Digital output	MTL7728+	28	93	300	0.083	4.2	35	333

* The **MTL5011B** is isolated end to end.

ADDITIONAL SPECIFICATIONS

MTL7706+ (for loop-powered 4-20 mA transmitters)

Supply Voltage 20-35 VDC

Current 45 mA typical @ 20 mA with 24 VDC supply
60 mA max @ 20 mA with 20 VDC supply

Transmitter voltage 16 VDC min @ 20 mA with 250Ω load
11 VDC min @ 20 mA with 500Ω load

Safe area load 500Ω max

Accuracy ±2 μA over 4-20 mA range

Max safe area voltage 250 VAC/VDC

Area Class I, II, III, Div 1, Groups A, B, C, D, E, F, G

Agency approvals FM BASEEFA EEx [ia] IIC

Weight 0.3 lb (0.14 kg)

MTL7765ac (for DI 200 Series flow sensors and other general AC and DC systems)

Working voltage 12.0 VDC @ 10 μA leakage current

Max safe area voltage 250 VAC/VDC

Area Class I, II, III, Div 1, Groups A, B, C, D, E, F, G

Agency approvals FM BASEEFA EEx [ia] IIC

Weight 0.3 lb (0.14 kg)

MTL5011B (dry contact to dry contact isolator)

Supply voltage 20-35 VDC, 40 mA max

Contacts 2A @ 250 VAC, 40 VDC

Max safe area voltage 250 VAC/VDC

Area Class I, II, III, Div 1, Groups A, B, C, D, E, F, G

Agency approvals FM/UL BASEEFA EEx [ia] IIC

Weight 0.3 lb (0.14 kg)

MTL 7728+ (for switched digital outputs)

Supply voltage 10-35 VDC (regulated)

Supply current 1.5 mA plus load current, actively limited to 50 mA total to protect safety fusing (50 mA)

Output current (Iout) Up to 35 mA

Max safe area voltage 250 VAC/VDC

Area Class I, II, III, Div 1, Groups A, B, C, D, E, F, G

Agency approvals FM BASEEFA EEx ia IIC

Weight 0.3 lb (0.14 kg)

WARNING: Check compatibility of the electrical safety parameters of the field equipment with those of the barriers to make sure that the combination is safe. If an intrinsically safe device does not have entity approval, it must be paired with a barrier specifically listed in its intrinsic safety drawing (control drawing).

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HAZARDOUS LOCATIONS

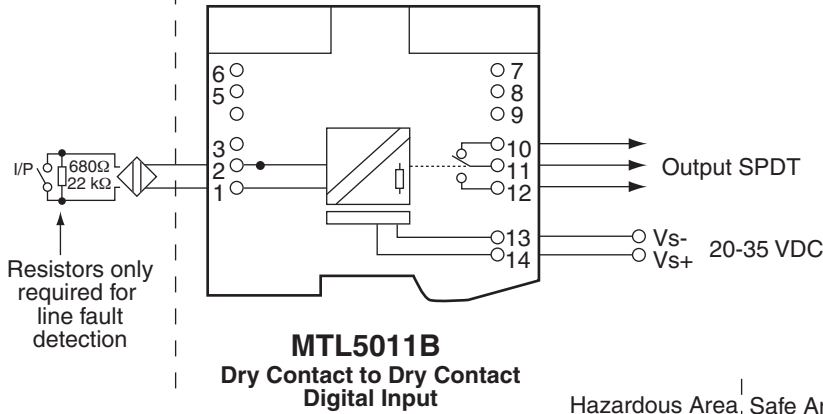
HAZARDOUS LOCATIONS



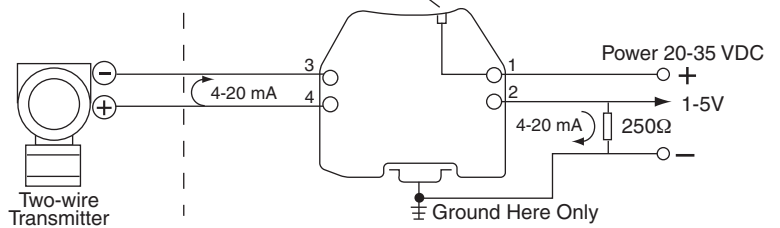
INTRINSIC SAFETY BARRIERS MTL5000, MTL7000, MTL7700 SERIES

WIRING

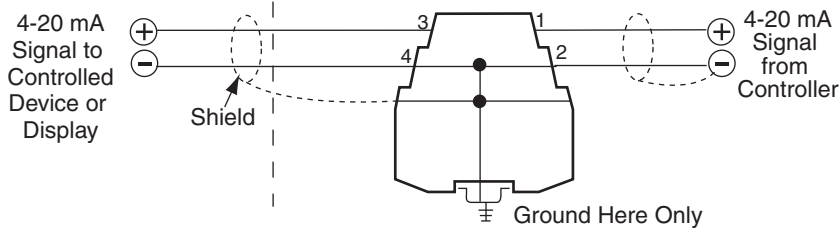
Hazardous Area | Safe Area



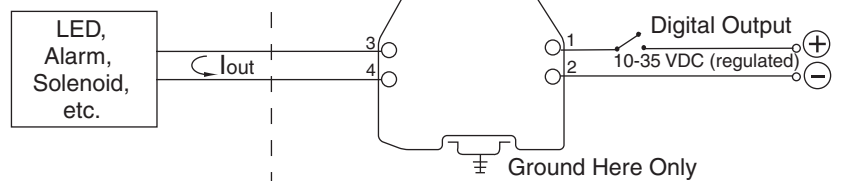
Hazardous Area | Safe Area



Hazardous Area | Safe Area



Hazardous Area | Safe Area



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HAZARDOUS LOCATIONS

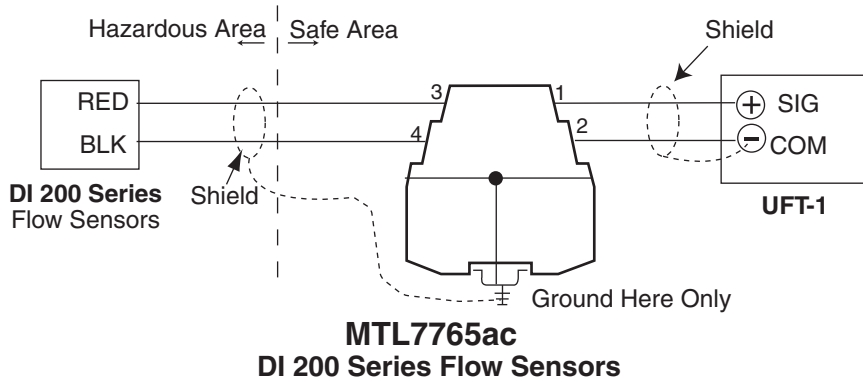


HAZARDOUS LOCATIONS

INTRINSIC SAFETY BARRIERS

MTL5000, MTL7000, MTL7700 SERIES

WIRING (CONTINUED)



9

HAZARDOUS LOCATIONS

ORDERING INFORMATION

MODEL	DESCRIPTION
MTL5011B	Isolator for digital (dry contact) inputs, SPDT
MTL7706+	Intrinsic safety barrier, 4-20 mA two-wire transmitters
MTL7728+	Passive barrier for 4-20 mA outputs to hazardous area devices

Active barrier for switched digital outputs (power supply must be regulated)

MTL7765AC Intrinsic safety barrier

Passive barrier for DI 200 Series flow sensors and other general-purpose 12 VAC or VDC devices

	RELATED PRODUCTS	PAGE
250R-3-1	250 OHM 3 WATT 1% Resistor Long Leads	89
DGP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	837
DGPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	836
DIN-3F	35 mm DIN rail, steel, 39.4" (1m), RoHS compliant	714

HAZARDOUS LOCATIONS



EXPLOSION PROOF WHISKER SWITCH 10316H2176

DESCRIPTION

The **Model 10316H2176** explosionproof limit switch combined with the **Model E50KL421** Whisker spring rod offers an ideal solution for sensing equipment position in extreme environments. The switch also carries standard NEMA ratings for most environments. Isolated normally-open and normally-closed contacts are included. The aluminum housing and stainless steel whisker gives corrosion resistance.

FEATURES

- *One-way gasket keeps liquids out, but allows gases to escape*
- *Aluminum housing offers corrosion resistance*
- *Whisker spring rod gives mounting options*
- *NEMA 1,4, 7, 9, 13 ratings*

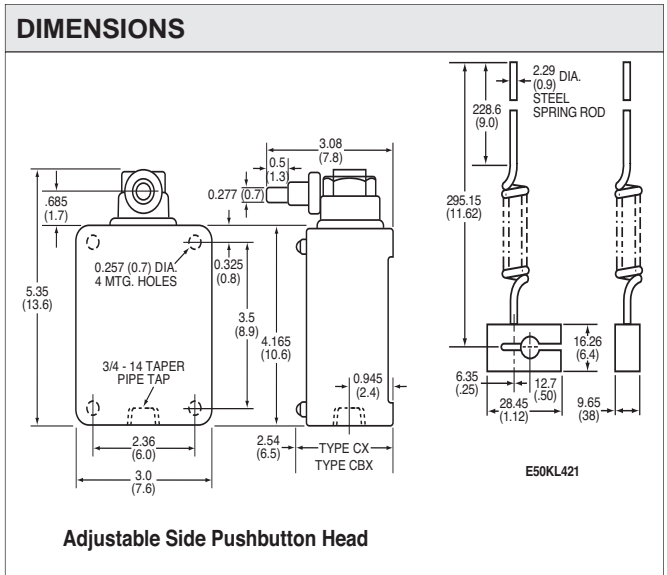


103161-12176



E50KL421

SPECIFICATIONS	
Switch	
Materials Of Construction	
Conduit Entrance	Cast aluminum die cast
Mounting	3/4" pipe tap
Enclosure Rating	Surface mount
Operating Temperature	NEMA 1, 4, 13, 7 Division 1, Class I BCD, 9 Division 1, Class II EFG (Note: a conduit seal-off kit is required for these switches)
Weight	-20° to 200 (-29° to 93)
Operator	3.5 lb (1.6 kg), 0.175 lb (0.079 lg)
Materials Of Construction	
Rod Diameter	Stainless steel
Rod Length	0.09 in (0.23 cm)
Minimum Return Torque	11.612 in (29.5 cm)
	2.8 in-oz



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HAZARDOUS LOCATIONS

Electrical Data — Maximum Contact Ratings, per Pole							
AC Volts	Current, Amperes			Volt Amperes		DC Volts	DC Current, Ampere
	Make	Break	Cont.	Make	Break		
B600							
120	30	3	5	3600	360	120	0.1
240	15	1.5				240	0.05
480	7.5	0.75					
600	6	0.60					

ORDERING INFORMATION	
MODEL 10316H2176 E50KL421	DESCRIPTION Explosionproof whisker switch 1 normally-open, 1 normally-closed contact Whisker spring rod



HAZARDOUS LOCATIONS

EXPLOSIONPROOF HORNS AND STROBES

MODELS 878EX, 879EX, 116EXMST

DIVISION 1 AND 2 HORNS
MODELS 8783X, 879EX

FEATURES

- 878 EX, 879EX
- Heavy-duty, high-decibel vibrating horn
- Corrosion-resistant epoxy finish
- NEMA 4X
- Wall-mounting with side brackets
- Power connection wires embedded in sealing compound
- Tapped for 3/4" conduit
- 97 dB at 10 feet
- 120 VAC (878EX-N5), 24 VDC (879EX-G1)
- UL listed for Class 1, Divisions 1 and 2, Groups B, C, D; Class II, Divisions 1 and 2, Groups E, F; Class III locations
- UL listed for outdoor locations



ORDERING INFORMATION

MODEL	DESCRIPTION
878EX-N5	Divisions 1 and 2 horn 120 VAC
879EX-G1	Divisions 1 and 2 horn 24 VDC

9

DIVISION 2 STROBE
MODEL 105

FEATURES

- NEMA 4X enclosure with brass hardware
- 300,000 peak candlepower 3 Joule strobe
- Mounting bases available for 3/4" NPT conduit, surface mount, or wall mount
- 3000-hour lamp rating
- Amber, blue, and red lens available
- 120 VAC
- UL listed Class I, Division 2, Groups A, B, C, D; Class II, Division 2, Groups F, G; Class III location, UL listed 1638, 1604, Marine UL595 (Category UXUB), Marine UL 1598A, UL 1971



ORDERING INFORMATION

MODEL	DESCRIPTION
105STR-N5	Division 2 strobe, red lens 120 VAC
105STA-N5	Division 2 strobe, amber lens 120 VAC
105STB-N5	Division 2 strobe, blue lens 120 VAC
105PM	Pipe-mount base
105BX	Surface-mount box
105BM	Wall-mount bracket (requires 105BX)
91B-ST	Replacement lamp
92-ST	Replacement strobe tube

HAZARDOUS LOCATIONS

DIVISIONS 1 AND 2 STROBE
MODEL 116EXMST

FEATURES

- High-impact glass dome
- 65 flashes per minute
- 800,000 peak candlepower
- 3000-hour lamp rating
- NEMA 3R and 4X rated
- UL listed 1638, 1203, Marine 1598A; CUL listed C22.2 No. 205; Class I, Division 1, Groups C, D; Class I, Division 2, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class II, Division 2, Group G; Class III, Division 1, Groups E, F, G; Class III, Division 2, Group G



ORDERING INFORMATION

MODEL	DESCRIPTION
116EXMSTR-N5*	Divisions 1 and 2 strobe, red lens 120 VAC
116EXMSTA-N5*	Divisions 1 and 2 strobe, amber lens 120 VAC
116EXMSTB-N5*	Divisions 1 and 2 strobe, blue lens 120 VAC
116-GRD	Optional dome guard
92-ST	Replacement strobe tube
116EX-P	Pendant mount
116EX-B	Wall bracket mount (requires 116EX-C)
116EX-C	Ceiling mount
116EX-S	Stanchion mount

* Requires mount

HAZARDOUS LOCATIONS

HAZARDOUS LOCATION CONTROL STATIONS HL600 SERIES



DESCRIPTION

The **HL600 Series** Hazardous location control stations allow alarm and control interface in a hazardous environment. The standard unit enclosure is rated NEMA 7/9 in a diecast aluminum enclosure. Contacts are included. A 1/2" - 14 NPT threaded opening is on the bottom. There are 12 standard legends, but special legends can be provided.



HL600-FUEL-CI

FEATURES

- **NEMA 7/NEMA 9 diecast aluminum enclosure surface mount**
- **Rated Class I, Divisions 1 and 2, Groups B, C, D; Class II, Divisions 1 and 2, Groups E, F, G**
- **Contacts included**
- **Momentary contacts available on special order**
- **Twelve standard legends, specials available**
- **Mechanically interlocked maintained contacts**
- **One year warranty**

CONTACT ELECTRICAL RATINGS										
MODEL HL600										
AC - NEMA TYPE B600						DC - NEMA TYPE P600				
Volts	Inductive 35% Power Factor			Resistive 75% Power Factor			Volts	Inductive and Resistive		
	Make Amps	Break VA	Continuous Carrying Amps	Make, Break, and Continuous Carrying Amps	Make and Break Amps	Continuous Carrying Amps				
120	30.5	3600	3.75	360	5	5	120	1.1	5	
240	15.0	3600	1.5	360	5	5	240	.55	5	
480	7.5	3600	.75	360	5	5	600	.2	5	
600	6.0	3600	.6	360	5	5				

ORDERING INFORMATION

MODEL	DESCRIPTION
HL600	Hazardous location control station - surface mount - buttons labeled "ON" and "OFF"
	STOP EMERGENCY - STOP
	POWER EMERGENCY - POWER OFF
	SHUTDOWN EMERGENCY - SHUTDOWN
	FUEL FUEL SHUT-OFF
	FUEL PUMP FUEL PUMP CONTROL
	GAS GAS SHUT-OFF
	BOILER BOILER SHUTDOWN
	HVAC HVAC SHUTDOWN
	VENT VENTILATION STOP
	VENTSTART VENTILATION START
	REFRIG REFRIGERATION STOP
	CHILLER CHILLER STOP
	SL SPECIFIC LEGEND - SPECIFY
	- Maintained mechanically interlocked contacts (1 N.O. and 1 N.C.)
	MO Momentary contacts (2 N.O.)
	EX Extended head on red button
	RS Green button labeled "RESET," red button labeled "STOP"
	CI Custom inscriptions on one or both buttons (specify)

HL600 - CHILLER - EX

Example: HL600-CHILLER-EX Hazardous location control station labeled "CHILLER STOP" with extended head on "OFF" button.



HAZARDOUS LOCATIONS

EXPLOSION PROOF CUSTOM CONTROL STATIONS

CXJ SERIES

DESCRIPTION

CXJ Series Explosionproof Custom Control Stations can be built to customer specifications with door-mounted pushbuttons, pilot lights, selector switches or potentiometers. Any combination of devices can be assembled in one of 75 sizes of aluminum enclosures.

FEATURES

- *Copper-free aluminum enclosures*
- *Integral cast mounting feet*
- *Enclosures suitable for drilling and tapping*
- *Factory-installed operators in the cover*
- *Controls installed and wired per specifications*
- *Windows available*
- *NEMA 3, 7, and 9 (4X optional)*
- *UL and CSA available*
- *Class I, Division 1 and 2, Groups B,C, D; Class II, Division 1 and 2, Groups E,F, G; Class III*
- *Separate operator devices available*

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HAZARDOUS LOCATIONS

CUSTOM PUSH-BUTTON STATIONS

Custom Push-button stations are for applications requiring only operator interface and/or pilot light indication. Stations are available in one-hole to nine-hole arrangements. Operators can be purchased separately.



CUSTOM CONTROL STATIONS

Control stations are used to house control components and have the ability to add operators on the cover. The enclosures are available in 75 shapes and sizes that fit any application.



WINDOW ENCLOSURES

Window Enclosures: Window enclosures are available with square or rectangular windows. This provides convenient viewing of gauges, meters, or control device displays.



CIRCUIT BREAKERS

Circuit Breakers: Circuit breakers provide overload and short-circuit protection on feeder or branch circuits, as well as lighting, heating, and motor circuits. The enclosure includes an external breaker operator handle that can be padlocked in on or off position. The circuit breaker can be used as a general service disconnect.



ORDERING INFORMATION

Call Kele to Order

HAZARDOUS LOCATIONS



EXPLOSION PROOF ENCLOSURES AXJ, XJAT SERIES

DESCRIPTION

The **AXJ Series** and **XJAT Series** consist of cast aluminum instrument housings and junction boxes for explosion proof and dust ignition proof applications. They are suitable for Class I, Division 1 and 2, Groups B, C, D; Class II, Division 1 and 2, Groups E, F, G; and Class III. They are furnished with mounting feet, cover, and two 3/4" drilled and tapped conduit openings. **AXJ Series** enclosures include cover hinges. The N1 suffix adds a mounting panel which is 3/16" (0.476 cm) thick aluminum. The **XJAT Series** is available in a glass window and backplate version.

FEATURES

- **Machined flange on AXJ Series**
- **Threaded opening on XJAT Series**
- **Cast copper-free aluminum**
- **Stainless steel hinge on AXJ Series**
- **Optional aluminum backplate**
- **3/4" NPT holes, top and bottom**
- **Class I, Divisions 1 and 2, Groups B,C,D**
- **Class II, Divisions 1 and 2, Groups E,F,G**
- **Class III**
- **UL File #146600 (AXJ, XJATG)**
- **UL File #E94590 (XJATS)**



XJATG

AXJ



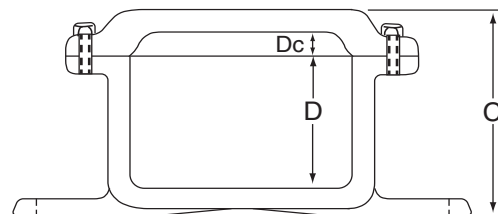
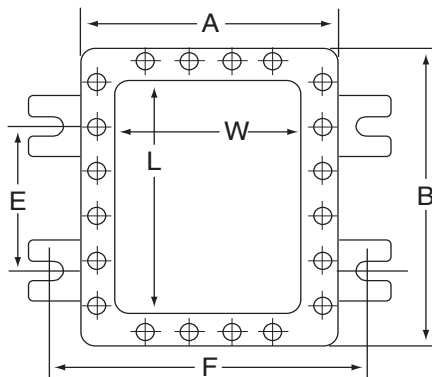
XJATS



WARNING: All conduit runs must be sealed within six inches of the enclosure.

DIMENSIONS

AXJ JUNCTION BOX DIMENSIONS in (cm)													
MODEL	MODEL with BACKPLATE	W	L	D	Dc	A	B	C	E	F	Lug bolt	Weight lb (kg)	
AXJ664-H1-C2-M2	AXJ664-H1-C2-M2-N1	6.0 (15.24)	6.0 (15.24)	4.0 (10.16)	1.0 (2.54)	9.75 (24.76)	9.75 (24.76)	6.25 (15.87)	5.12 (13.01)	9.12 (23.17)	3/8"	17 (7.71)	
AXJ886-H1-C2-M2	AXJ886-H1-C2-M2-N1	8.0 (20.32)	8.0 (20.32)	6.0 (15.24)	1.0 (2.54)	12.5 (31.75)	12.5 (31.75)	8.5625 (21.74)	4.5 (11.43)	10.75 (27.30)	3/8"	36 (16.32)	
AXJ12126-H1-C2-M2	AXJ12126-H1-C2-M2-N1	12.0 (30.48)	12.0 (30.48)	6.0 (15.24)	1.5 (3.81)	17.0 (43.18)	17.0 (43.18)	9.5 (24.13)	8.62 (21.90)	15.75 (40.00)	1/2"	77 (34.92)	
AXJ12186-H1-C2-M2	AXJ12186-H1-C2-M2-N1	12.0 (30.48)	18.0 (45.72)	6.0 (15.24)	1.5 (3.81)	17.0 (43.18)	23.0 (58.42)	9.5 (24.13)	14.12 (35.87)	15.75 (40.00)	1/2"	116 (52.61)	
AXJ18248-H1-C2-M2	AXJ18248-H1-C2-M2-N1	18.0 (45.72)	24.0 (60.96)	8.0 (20.32)	1.5 (3.81)	23.125 (58.73)	29.125 (73.97)	11.875 (30.16)	11.875 (46.67)	18.37 (55.24)	5/8"	210 (95.25)	



AXJ SERIES



HAZARDOUS LOCATIONS

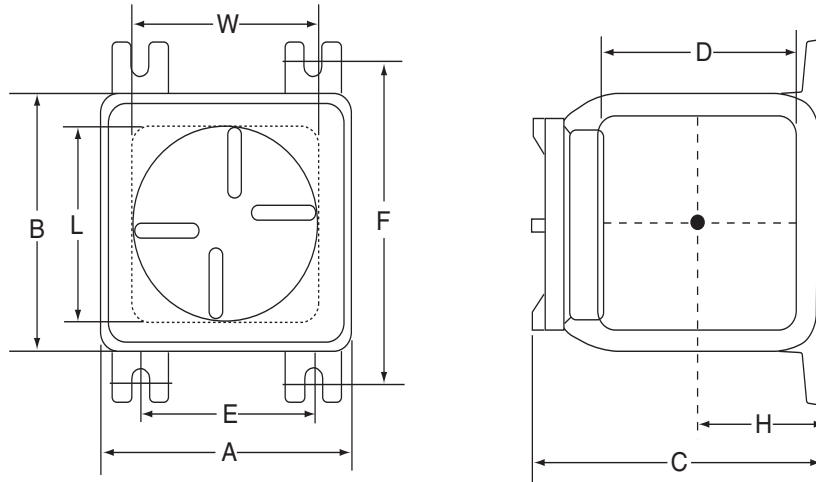
EXPLOSION PROOF ENCLOSURES AXJ, XJAT SERIES

DIMENSIONS (CONTINUED)

AXJ SERIES

XJATS JUNCTION BOX (SOLID COVER) DIMENSIONS in (cm)											
MODEL	MODEL with BACKPLATE	W	L	D	Throat Opening	A	B	C	E	F	Weight lb (kg)
*XJATS2-C2-M2	*XJATS2-C2-M2-N1	6.0 (15.24)	6.0 (15.24)	4.12 (10.47)	5.75 (14.60)	7.25 (18.41)	7.25 (18.41)	7.0 (17.78)	5.0 (12.7)	8.5 (21.59)	12.0 (5.44)
*XJATS14-C2-M2	*XJATS14-C2-M2-N1	7.0 (17.78)	9.0 (22.86)	4.15 (10.55)	7.12 (18.09)	10.5 (26.67)	8.37 (21.27)	7.37 (18.73)	8.5 (21.59)	9.75 (24.76)	33.0 (14.97)
XJATS11-C2-M2	XJATS11-C2-M2-N1	12.0 (30.48)	12.0 (30.48)	6.12 (15.55)	9.12 (23.17)	13.75 (34.92)	13.75 (34.92)	9.75 (24.76)	10.5 (26.67)	15.5 (39.37)	54.0 (24.49)

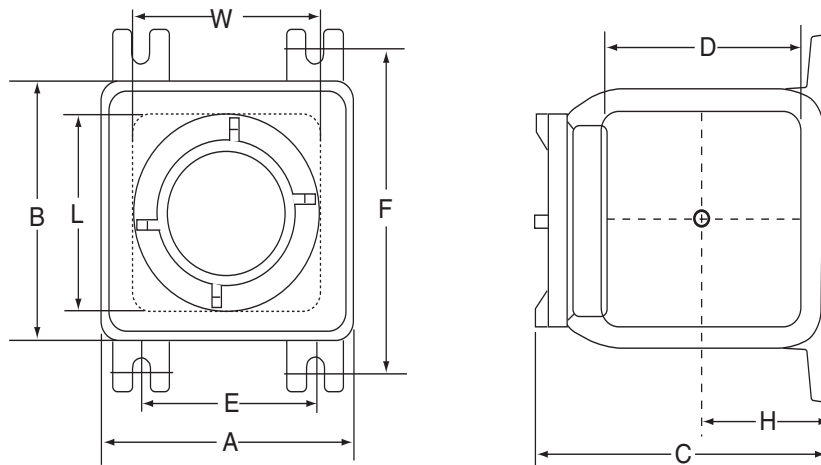
* Two diagonal mounting feet



XJATS SERIES

XJATG JUNCTION BOX (with WINDOW) DIMENSIONS in (cm)												
MODEL with WINDOW	MODEL with WINDOW and BACKPLATE	W	L	D	Throat Opening	A	B	C	E	F	Weight lb (kg)	Glass Viewing Area
*XJATG2-C2-M2	*XJATG2-C2-M2-N1	6.0 (15.24)	6.0 (15.24)	4.12 (10.47)	5.75 (14.60)	7.25 (18.41)	7.25 (18.41)	6.56 (16.67)	5.0 (12.7)	8.5 (21.59)	12.0 (5.44)	4.0 (10.16)
*XJATG14-C2-M2	*XJATG14-C2-M2-N1	7.0 (17.78)	9.0 (22.86)	4.15 (10.55)	7.12 (18.09)	10.5 (26.67)	8.37 (21.27)	7.37 (18.73)	8.5 (21.59)	9.75 (24.76)	33.0 (14.96)	5.25 (13.33)
XJATG11-C2-M2	XJATG11-C2-M2-N1	12.0 (30.48)	12.0 (30.48)	6.12 (15.55)	9.12 (23.17)	13.75 (34.92)	13.75 (34.92)	9.25 (23.50)	10.5 (26.67)	15.5 (39.37)	54.0 (24.49)	6.75 (17.14)

* Two diagonal mounting feet



XJATG SERIES

HAZARDOUS LOCATIONS



EXPLOSION PROOF ACTUATOR ENCLOSURE (FOR VALVES AND DAMPERS)

MA8, MC6/7, MP6/7 SERIES

DESCRIPTION

The **MA8, MC6/7, and MP6/7 Series** explosion proof actuator enclosures are designed for installation in a hazardous environment. Each of these actuators are factory assembled to order. The enclosure is a cast aluminum housing and bolted cover with explosion proof ratings for Class I, Division 1, Groups C, D and Class II, Division 1, Groups E, F, G. They are for use with any damper with appropriate linkage and with Invensys globe valve sizes 1/2" through 6", two- or three-way.

Schneider
Electric



FEATURES

- **Class I, Division 1, Groups C, D; Class II, Division 1, Groups E, F, G**
- **Full range of approved actuators**
- **Approved for valves or dampers**

SPECIFICATIONS

Conduit Opening	Two, 3/4" NPT	Dimensions	8.87" H x 8.5" W x 9.56" D (22.5 x 21.6 x 24.3 cm)
Assembly	Factory only	Drive Shaft	1/2" dia (1.27 cm), 0.93" L (2.38 cm)
Materials Of Construction	Cast aluminum, bolted cover enclosure	Approvals	UL (actuator only), CSA (assembly)
Area	Explosionproof Class I, Division 1, Groups C, D; Class II, Division 1, Groups E, F, G	Weight	20 lb (9 kg)
		Warranty	2 years

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HAZARDOUS LOCATIONS

RELATED PRODUCTS

		PAGE
AM-116	Splined crank arm for 1/2" (1.27cm) shaft (damper linkage required)	
AM-123	Ball joint connector (damper linkage required)	
CPX9301	6 to 9 VDC (fixed) actuator drive kit for hazardous locations	
CPX9301456	0 to 10 VDC (fixed) actuator drive kit for hazardous locations	
CPX9302	4 to 20 mA (fixed) actuator drive kit for hazardous locations	
PR-48	5/16" dia., 48" (1.2m) length push rod	37



HAZARDOUS LOCATIONS

EXPLOSION PROOF ACTUATOR ENCLOSURE (FOR VALVES AND DAMPERS)

MA8, MC6/7, MP6/7 SERIES

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HAZARDOUS LOCATIONS

ORDERING INFORMATION						
Valve Body	Actuator	Linkage	Size (NPT)	Power	Flow (Cv)	Close-off (psid)
2-POSITION, FLOATING, 2-WAY VALVES, NON-SPRING RETURN						
VB-7213-0-4-02	MP6-381	AV-293	1/2"	24 VAC, 60 VA	1.3	250
VB-7213-0-4-04			1/2"		4.4	250
VB-7213-0-4-06			3/4"		7.5	250
VB-7213-0-4-08			1"		14	150
VB-7213-0-4-09			1-1/4"		20	90
VB-7213-0-4-10			1-1/2"		28	60
VB-7213-0-4-11			2"		40	35
PROPORTIONAL 2-WAY VALVES, NON-SPRING RETURN – Requires separate CPX explosionproof actuator drive kit						
VB-7213-0-4-02	MP6-381	AV-293	1/2"	24 VAC, 60 VA	1.3	250
VB-7213-0-4-04			1/2"		4.4	250
VB-7213-0-4-06			3/4"		7.5	250
VB-7213-0-4-08			1"		14	150
VB-7213-0-4-09			1-1/4"		20	90
VB-7213-0-4-10			1-1/2"		28	60
VB-7213-0-4-11			2"		40	35
2-POSITION, 2-WAY VALVES, SPRING RETURN – Can be linked spring return open or spring return closed - specify at time of order.						
VB-7213-0-4-02	MA8-318	AV-291	1/2"	24 VAC, 92 VA	1.3	250
VB-7213-0-4-04			1/2"		4.4	250
VB-7213-0-4-06			3/4"		7.5	250
VB-7213-0-4-08			1"		14	150
VB-7213-0-4-09			1-1/4"		20	90
VB-7213-0-4-10			1-1/2"		28	60
VB-7213-0-4-11			2"		40	35
FLOATING 2-WAY VALVES, SPRING RETURN – Can be linked spring return open or spring return closed - specify at time of order.						
VB-7213-0-4-02	MP6-361	AV-291	1/2"	24 VAC, 60 VA	1.3	250
VB-7213-0-4-04			1/2"		4.4	250
VB-7213-0-4-06			3/4"		7.5	250
VB-7213-0-4-08			1"		14	150
VB-7213-0-4-09			1-1/4"		20	90
VB-7213-0-4-10			1-1/2"		28	60
VB-7213-0-4-11			2"		40	35
PROPORTIONAL 2-WAY VALVES, SPRING RETURN – Can be linked spring return open or spring return closed - specify at time of order. Requires separate CPX explosionproof actuator drive kit						
VB-7213-0-4-02	MP6-361 + CPX Drive Kit	AV-291	1/2"	24 VAC, 60 VA	1.3	250
VB-7213-0-4-04			1/2"		4.4	250
VB-7213-0-4-06			3/4"		7.5	250
VB-7213-0-4-08			1"		14	150
VB-7213-0-4-09			1-1/4"		20	90
VB-7213-0-4-10			1-1/2"		28	60
VB-7213-0-4-11			2"		40	35
2-POSITION / FLOATING 3-WAY VALVES, NON-SPRING RETURN						
VB-7313-0-4-02	MP6-381	AV-293	1/2"	24 VAC, 60 VA	1.3	250
VB-7313-0-4-04			1/2"		4.4	250
VB-7313-0-4-06			3/4"		7.5	200
VB-7313-0-4-08			1"		14	150
VB-7313-0-4-09			1-1/4"		20	90
VB-7313-0-4-10			1-1/2"		28	60
VB-7313-0-4-11			2"		40	35

HAZARDOUS LOCATIONS



EXPLOSION PROOF ACTUATOR ENCLOSURE (FOR VALVES AND DAMPERS)

MA8, MC6/7, MP6/7 SERIES

ORDERING INFORMATION						
Valve Body	Actuator	Linkage	Size (NPT)	Power	Flow (Cv)	Close-off (psid)
PROPORTIONAL 3-WAY VALVES, NON-SPRING RETURN – Requires separate CPX explosionproof actuator drive kit						
VB-7313-0-4-02	MP6-381 + CPX Drive Kit	AV-293	1/2"	24 VAC, 60 VA	1.3	250
VB-7313-0-4-04			1/2"		4.4	250
VB-7313-0-4-06			3/4"		7.5	250
VB-7313-0-4-08			1"		14	150
VB-7313-0-4-09			1-1/4"		20	90
VB-7313-0-4-10			1-1/2"		28	60
VB-7313-0-4-11			2"		40	35
2-POSITION 3-WAY VALVES, SPRING RETURN – Can be linked spring return open or spring return closed - specify at time of order.						
VB-7313-0-4-02	MA8-318	AV-291	1/2"	24 VAC, 92 VA	1.3	250
VB-7313-0-4-04			1/2"		4.4	250
VB-7313-0-4-06			3/4"		7.5	250
VB-7313-0-4-08			1"		14	150
VB-7313-0-4-09			1-1/4"		20	90
VB-7313-0-4-10			1-1/2"		28	60
VB-7313-0-4-11			2"		40	35
FLOATING 3-WAY VALVES, SPRING RETURN – Can be linked spring return open or spring return closed - specify at time of order.						
VB-7313-0-4-02	MP6-361	AV-291	1/2"	24 VAC, 60 VA	1.3	250
VB-7313-0-4-04			1/2"		4.4	250
VB-7313-0-4-06			3/4"		7.5	250
VB-7313-0-4-08			1"		14	150
VB-7313-0-4-09			1-1/4"		20	90
VB-7313-0-4-10			1-1/2"		28	60
VB-7313-0-4-11			2"		40	35
PROPORTIONAL 3-WAY VALVES, SPRING RETURN – Can be linked spring return open or spring return closed - specify at time of order. Requires separate CPX explosionproof actuator drive kit						
VB-7313-0-4-02	MP6-361 + CPX Drive Kit	AV-291	1/2"	24 VAC, 60 VA	1.3	250
VB-7313-0-4-04			1/2"		4.4	250
VB-7313-0-4-06			3/4"		7.5	250
VB-7313-0-4-08			1"		14	150
VB-7313-0-4-09			1-1/4"		20	90
VB-7313-0-4-10			1-1/2"		28	60
VB-7313-0-4-11			2"		40	35
DAMPER ACTUATORS						
Model Number	Description	Timing (no load, seconds)	Power	Torque in-lb (N-m)		
MA8-318	Explosionproof 2-wire, 2-position, spring return CCW	20	24 VAC, 92 VA	60 (6.8)		
MA8-318-500	Explosionproof 2-wire, 2-position, spring return CCW, end switch	20	24 VAC, 92 VA	60 (6.8)		
MA8-418	Explosionproof 2-wire, 2-position, spring return CCW	20	120 VAC, 108 VA	60 (6.8)		
MA8-418-500	Explosionproof 2-wire, 2-position, spring return CCW, end switch	20	120 VAC, 108 VA	60 (6.8)		
MC6-351	Explosionproof 3 wire 2-position, non-spring return	70	24 VAC, 53 VA	220 (25)		
MC6-421	Explosionproof 3 wire 2-position, non-spring return	20	120 VAC, 96 VA	175 (19)		
MC6-431	Explosionproof 3 wire 2-position, non-spring return	30	120 VAC, 96 VA	220 (25)		
MC7-4311	Explosionproof 3 wire 2-position, non-spring return	30	240 VAC, 96 VA	220 (25)		
MP6-381	Explosionproof proportional / floating, non-spring return	130	24 VAC, 60 VA	220 (25)		
MP6-361	Explosionproof proportional / floating, spring return CW	90	24 VAC, 60 VA	50 (5.6)		
MP6-371	Explosionproof proportional / floating, spring return CCW	90	24 VAC, 60 VA	50 (5.6)		
MP6-421	Explosionproof proportional / floating, non-spring return	25	120 VAC, 78 VA	60 (6.8)		
MP6-485	Explosionproof proportional / floating, non-spring return	130	120 VAC, 60 VA	220 (25)		
MP6-465	Explosionproof proportional / floating, spring return CW	90	120 VAC, 60 VA	50 (5.6)		
MP6-475	Explosionproof proportional / floating, spring return CCW	90	120 VAC, 60 VA	90 (10)		
MP7-4651	Explosionproof proportional / floating, spring return CW	108	240 VAC, 60 VA	50 (5.6)		
MP7-4751	Explosionproof proportional / floating, spring return CCW	108	240 VAC, 60 VA	50 (5.6)		
MP6-367	Explosionproof sequencing, non-spring return	90	24 VAC, 60 VA	50 (5.6)		
MP6-377	Explosionproof sequencing, spring return CCW	90	24 VAC, 60 VA	50 (5.6)		
MP6-379	Explosionproof 5-position, spring return CCW	90	24 VAC, 60 VA	50 (5.6)		
MP6-470	Explosionproof 5-position, spring return CCW	90	120 VAC, 60 VA	50 (5.6)		



HAZARDOUS LOCATIONS

EXPLOSION-PROOF DIRECT COUPLED ACTUATOR ENCLOSURE (FOR DAMPERS) ZS-260

DESCRIPTION

The **Model ZS-260** explosion proof direct coupled actuator enclosure is designed for Belimo Models AM, GM, AF, LF, and NF direct-mount style actuators installed in a hazardous environment. The **ZS-260 Series** has NEMA 7 and NEMA 9 construction for field-mounted actuators with a drive shaft in front or rear depending on application. The enclosure is a cast aluminum housing with explosion proof ratings for Class I, Division 1, Groups C, D and Class II, Division 1, Groups E, F, G. They are for use with any damper with appropriate linkage.



FEATURES

- *Class I, Division 1, Groups C, D; Class II, Division 1, Groups E, F, G*
- *Full range of approved actuators*

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HAZARDOUS LOCATIONS

SPECIFICATIONS

Conduit Opening	Two, 3/4" FNPT	Compatible Actuators	AFB, AFX, AF, NFB, NFX, GMB, GMX, AMB, AMX (see actuator specification for torque and control details)
Materials Of Construction	Cast aluminum, bolted cover	Approvals	UL listed File #E171998, CSA
Drive Shaft	SS, 1/2" dia (1.27 cm), 1.5" L (3.8 cm)	Weight	31 lb (14.1 kg)
Dimensions	15.75" H x 8.25" W x 9.5" D (40.0 x 20.9 x 24.1 cm)	Warranty	1 year
Area	Class I, Division 1, Groups C, D; Class II, Division 1, Groups E, F, G		
Enclosure Rating	NEMA 7CD, NEMA 9EG		

CAUTION: Conduit seal **MUST** be installed within code-required distance from enclosure to maintain explosionproof rating.

WARNING: This device is not listed for use in areas classified as Group A (acetylene) or Group B (hydrogen).

ORDERING INFORMATION

MODEL	DESCRIPTION
ZS-260 (Order linkage and actuator separately)	Damper actuator enclosure with front or rear drive shaft

	RELATED PRODUCTS	PAGE
KG8-K	Ball joint, 90° angle, use with 5/16" diameter pushrod	36
KH8-K	Crank arm for 3/4" shaft, 3-1/2" length, use with KG8-K ball joint	36
PR-48	5/16" dia., 48" (1.2m) length push rod	37
ZG-109	10-ga galvanized right angle mounting plate, 13"H x 10"W x 6"D (25.4 x 33 x 15.2 cm)	



CONDUIT OUTLET BOX GRT SERIES EXPLOSION PROOF OUTLET BOX

These explosionproof, dust-ignition proof, cast-aluminum **conduit outlet boxes** are used with threaded metal conduit and are furnished with a cover and internal ground screw. They are suitable for Class I, Div 1 and 2, Groups B,C,D; Class II, Div 1 and 2, Groups E,F,G; and Class III, Div 1 and 2. In Class I, Group B atmospheres, all conduit runs must have a sealing fitting field installed adjacent to the enclosure.



ORDERING INFORMATION

MODEL	CONDUIT SIZE	COVER OPENING	CONSTRUCTION	WEIGHT lb (kg)
GRT50-A	1/2"	3.38"	Cast Aluminum	1.4 (0.6)
GRT75-A	3/4"	3.38"	Cast Aluminum	1.4 (0.6)



CONDUIT SEALING FITTING EYM SERIES

DESCRIPTION

These explosionproof, dust-ignition proof, malleable iron **conduit sealing fittings** are used with threaded metal conduit in horizontal or vertical applications. Fittings have female connections with one removable male nipple. They are suitable for Class I, Div 1 and 2, Groups A,B,C,D; Class II, Div 1 and 2, Groups E,F,G; Class III, Div 1 and 2.



ORDERING INFORMATION

MODEL	SIZE	TURNING RADIUS	KWIKO® CEMENT REQUIRED	CONSTRUCTION	WEIGHT lb (kg)
EYM-50	1/2"	1.06"	1 oz	Malleable Iron	0.8 (0.4)
EYM-75	3/4"	1.19"	2 oz	Malleable Iron	1.0 (0.5)
EYM-100	1"	1.38"	4 oz	Malleable Iron	1.7 (0.8)



CLOSE-UP PLUGS PLG50 SERIES

These explosion-proof, dust-ignition proof, steel **close-up plugs** are used with threaded metal conduit. They are suitable for Class I, Div 1 and 2, Groups A,B,C,D; Class II, Div 1 and 2, Groups E,F,G; and Class III, Div 1 and 2.



ORDERING INFORMATION

MODEL	SIZE	CONSTRUCTION	WEIGHT lb (kg)
PLG50R	1/2"	Steel, Recessed Head	0.1 (0.05)
PLG75R	3/4"	Steel, Recessed Head	0.1 (0.05)
PLG100R	1"	Steel, Recessed Head	0.2 (0.1)



HAZARDOUS LOCATIONS

EXPLOSIONPROOF CONDUIT ACCESSORIES

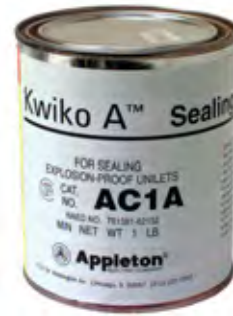
MODEL AC1A, ACK6F, F01, AC1F01A

KWIKO® SEALING CEMENT MODEL AC1A

When mixed with water, according to label directions, **Kwiko Sealing Cement** forms a pourable cement for conduit sealing fittings.

ORDERING INFORMATION

MODEL	DESCRIPTION
AC1A	16 oz (453.6g), 23 cu in (377.0 cu cm) volume when set



KWIKO® TWINPAK SEALING CEMENT MODEL ACK6F

Each plastic pouch in the **Kwiko® Twinpak** contains premeasured Kwiko® cement and premeasured water (in an inner bag). Squeeze the pouch to break the inner water bag, knead the mixture thoroughly and pour. The **Kwiko® Twinpak** includes an adequate amount of fiber filler packed separately.

ORDERING INFORMATION

MODEL	DESCRIPTION
ACK6F	Cement: 30 oz * (850g) Fiber: 5 oz (142g), 25 cu in (410 cu cm) volume when set * Consists of five 6 oz (187g) cement pouches



Fiber Filler is used to prevent cement from leaking while it is in the fluid state.

ORDERING INFORMATION

MODEL	DESCRIPTION
F01	Quantity: 1 oz (28.4g)



KWIKO® SEALING CEMENT AND FIBER FILLER KITS MODEL AC1F01A

The **Model AC1F01A** combines Model AC1A cement and Model F01 filler in a handy kit.

ORDERING INFORMATION

MODEL	DESCRIPTION
AC1F01A	Cement: 16 oz (453.6g) Fiber: 1 oz (28.4g), 23 cu in (377.0 cu cm) volume when set



HAZARDOUS LOCATIONS

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