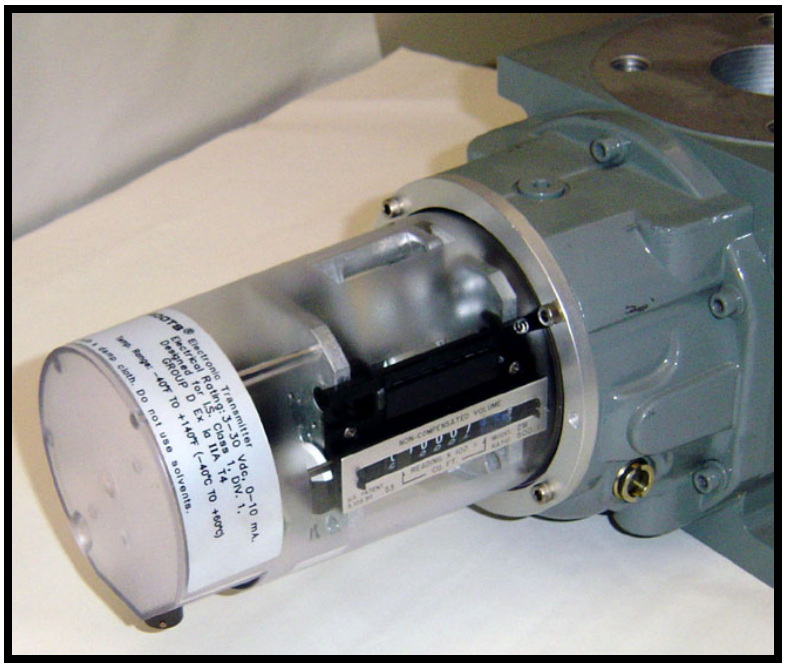
Dresser™ Meters and Instruments
Field Installation:
Repair Assembly #399: Counter Convert to ICEX S3



REVISIONS					
REV	ECO	DATE	REV	ECO	DATE
A	Added View	31MAR06			
B	Added 23M 4"	06JUN08			
C	9203	31JUL09			
D	9940	16DEC14			

Drawn	Date	Checked	Designed	Approved	Released
ATT	July 14, 2005	FG	ATT	DJD	05DEC05

D

WARNING!!
EXPLOSION HAZARD!!

Electrostatic Discharge. Clean ONLY with damp cloth.

LES DÉCHARGES ÉLECTROSTATIQUES. NETTOYEZ-LES UNIQUEMENT AVEC VÊTEMENTS HUMIDES.

FOR SAFE USE ONLY USE THIS PRODUCT AS INTENDED ANS AS STATED IN THIS AND ACCOMPANYING DOCUMENTATION.

Pour une utilisation sûre seulement utiliser ce produit comme prévu et comme indiqué dans la documentation d'accompagnement et ce.

This product complies with the following standards:
UL 61010-1: 2012 and CSA C22.2 No. 61010-1: 2012
UL 60079-0: 2013 and CSA C22.2 No. 60079-0: 2011
UL 60079-11: 2013 and CSA C22.2 No. 60079-11: 2014
ISA 60079-26

INSTRUCTIONS

C

Verify that the conversion kit part number is correct for the intended meter size. Each conversion kit is adaptable to more than one meter size, so multiple meter-size labels are included with the kit. Table 4 also provides you with Volume Data information.

RPR ASM #399 C-ICEX S3

Table 1

METER SIZE	CIRCULAR STD	CONDUIT STD	CBL GLND STD	CIRCULAR MTC	CONDUIT MTC	CBL GLND MTC
8/11/15C	058572-100	058573-100	058574-100	058575-100	058576-100	058577-100
2/3/5M	058572-200	058573-200	058574-200	058575-200	058576-200	058577-200
7/11/16M	058572-300	058573-300	058574-300	058575-300	058576-300	058577-300
23/38/56M	058572-400	058573-400	058574-400	058575-400	058576-400	058577-400
1M/3M300	058572-500	058573-500	058574-500	058575-500	058576-500	058577-500
1M/3M740 1M/3M1480	058572-600	058573-600	058574-600	058575-600	058576-600	058577-600
5M/7M1480	058572-700	058573-700	058574-700	058575-700	058576-700	058577-700
23M232	058572-800	058573-800	058574-800	058575-800	058576-800	058577-800

C **D**

CIRCULAR connector is Amphenol connector (see view D).

CBL GLND is a 3/8" NPT Cable Gland connector (see view E).

CONDUIT is a ½" NPT style connector for flexible (hose-type) conduit (see view F).

Tools Needed:
5/32" Allen® wrench
9/64" Allen® wrench
Torque wrench capable of 20-in·lb
Torque wrench capable of 55-in·lb
4" extension for torque wrench

1. Using a 5/32" Allen® wrench, remove the four #10-24 screws holding the slip flange on. Discard the 4 screws.
2. Slide the slip flange off of the accessory housing. KEEP the slip flange for reuse later.
3. GENTLY pull the counter/housing assembly off of the meter.
4. Using a 9/64" Allen® wrench, loosen the #8-32 screw inside the accessory housing and back it out until the screw's threads are no longer engaged. Do not remove the screw at this time.
5. Slide the counter assembly out of the housing. Discard the #8-32 screw.
6. Remove any existing Pulser-shaft magnets and spacers to ensure proper transmitter operation.
7. Refer to View A: Install spacers (item 3), retainer ring (item 1), and magnet (item 2) onto high-speed shaft. The magnet is held in place by magnetic attraction to the retaining ring and shaft.
8. Install the "ICEX XMTR READY" decal (item 4) in the position shown on View A.
9. Line up the counter assembly with the new accessory housing by lining up the odometer with the odometer window. Slide the counter assembly into the housing while holding the #8-32 screw in its perspective hole with the 9/64" Allen® wrench (use the tool access hole). Tighten the #8-32 screw to 20-in·lb. See View B.

10. Line up the counter/housing assembly with the meter's accessory unit mounting surface (the assembly can only go on one way). GENTLY slide the assembly into the meter all the way until it contacts the mounting surface. See View C.
11. Slide the counter slip flange over the housing with the alignment identification mark lined up with the odometers. Slide one of the #10-24 screws through one of the slip flange holes and into the meter's screw holes. Some minor rotation of the slip flange may be required to line up its holes with the mounting surface screw holes.
12. Insert remaining #10-24 screws. Tighten the screws in a star-like fashion and torque to 47-53 in-lb.

C

13. If the kit is a Conduit or Cable gland version, the 4-ft. piece of cable is supplied (see Views E & F). Wire the cable to the customers' equipment as indicated in the wiring diagram (058615-000) shown at the end of this document. The white wire is POSitive and the black wire is COMmon.

NOTE: The ICEX output is a 'dry contact' transistor output. Applied voltage must be of the correct polarity and between 3 and 30 volts D.C. The current must be limited to 10 mA or less.

C

14. Install the appropriate decal (056070-xxx) onto the housing surface at a position above and near the output connectors. Ensure that the decal meter size reference is the same as the counter meter size.
15. If the kit is a Circular connector version (see view D), connect a cable between the ICEX connector and the user equipment. An optional cable with mating Circular connector (consult factory) is P/N 056922-xxx and is available in lengths from 2-ft to 20-ft. If using this cable, the brown wire is positive and the green wire is common. The other wires are unused.

Table 2

056074-200 Magnet Kit

Item	Qty	Part Number	Description
1	1	011813-001	Ring, Retaining
2	1	012663-001	Magnet, Male D-Flat
3	2	055365-000	Spacer, Outboard
4	1	056075-100	Decal, ICEX Xmtr Ready

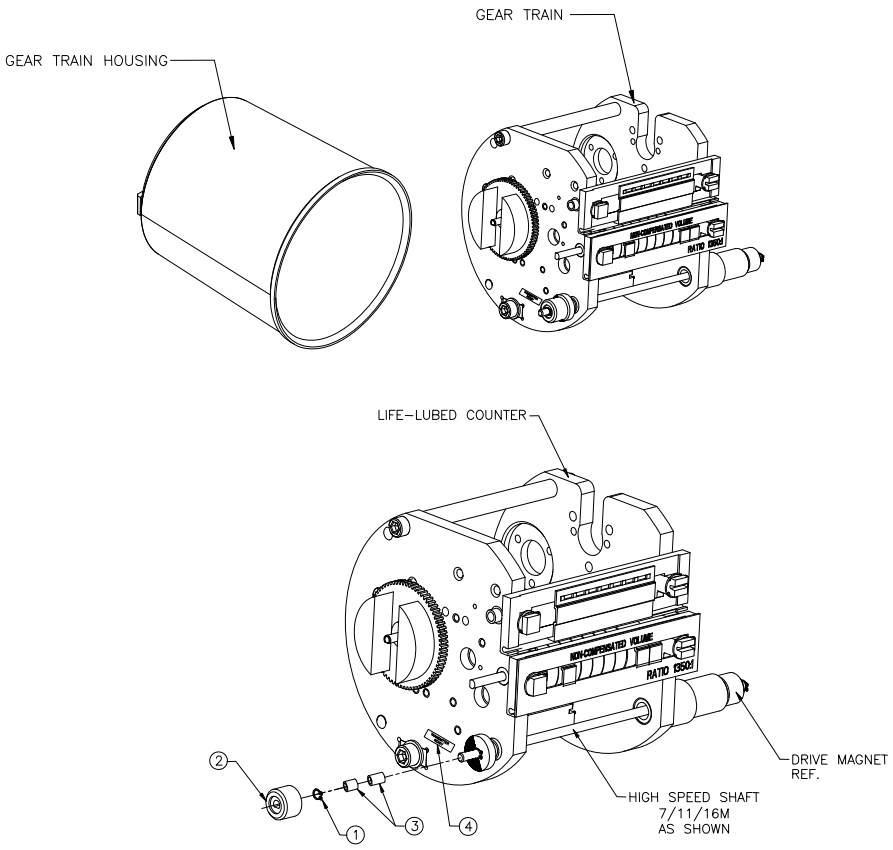
Table 3

053858-500 Hardware Kit

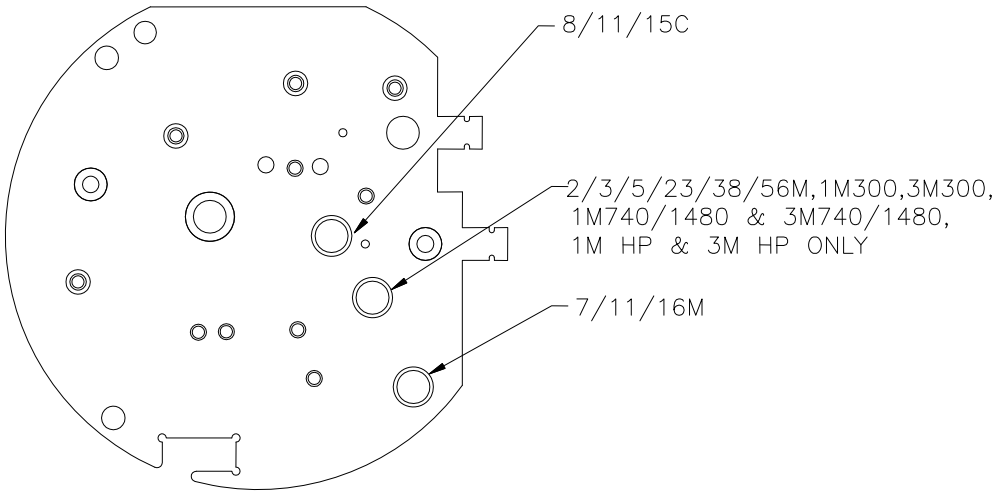
Item	Qty	Part Number	Description
1	1	000141-250	Screw, #8-32
2	3	000141-267	Screw, #10-24 x 5/8
3	1	011951-004	Screw, Drilled Head #10-24 x 5/8

Install the HUMIDISORB packet (013236-000) as per drawing 054793-000 included.

VIEW A-1 (Old Style Counter)

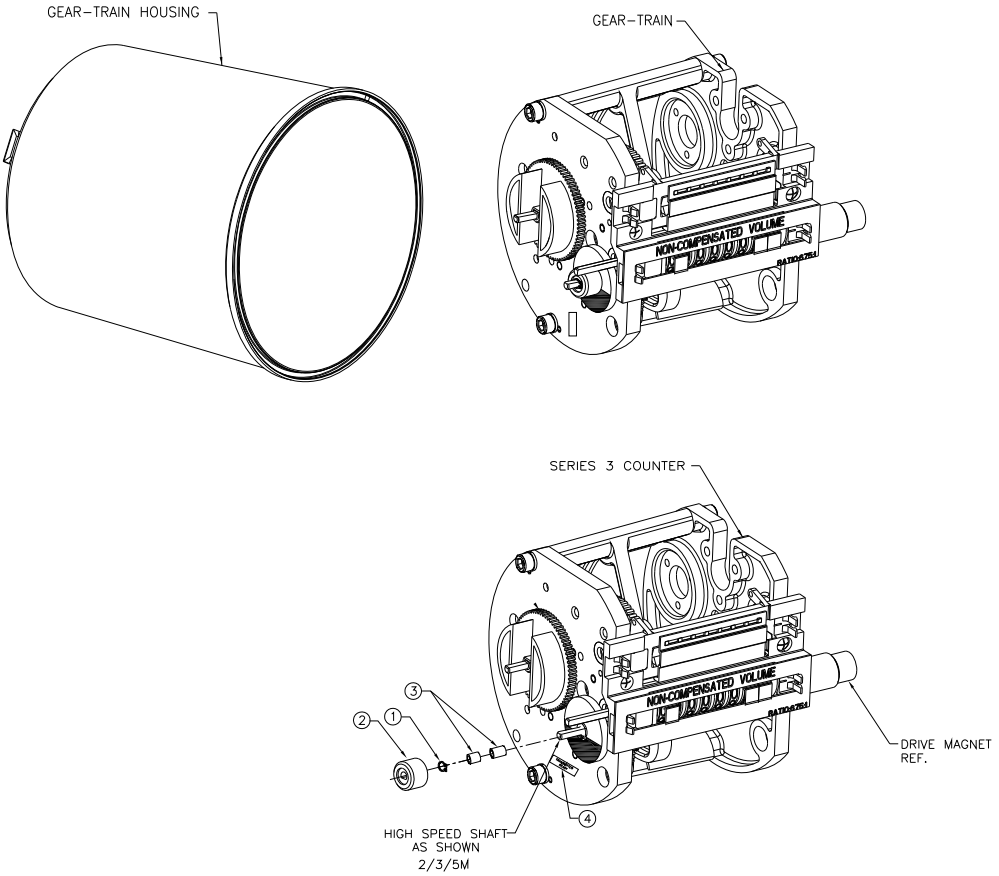


HIGH SPEED SHAFT LOCATION

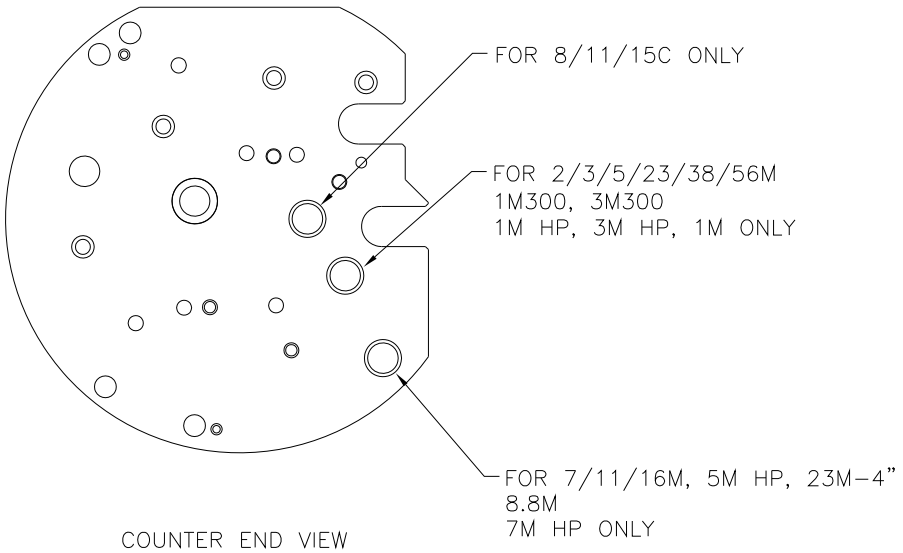


COUNTER END VIEW

VIEW A-2 (New Style Counter)

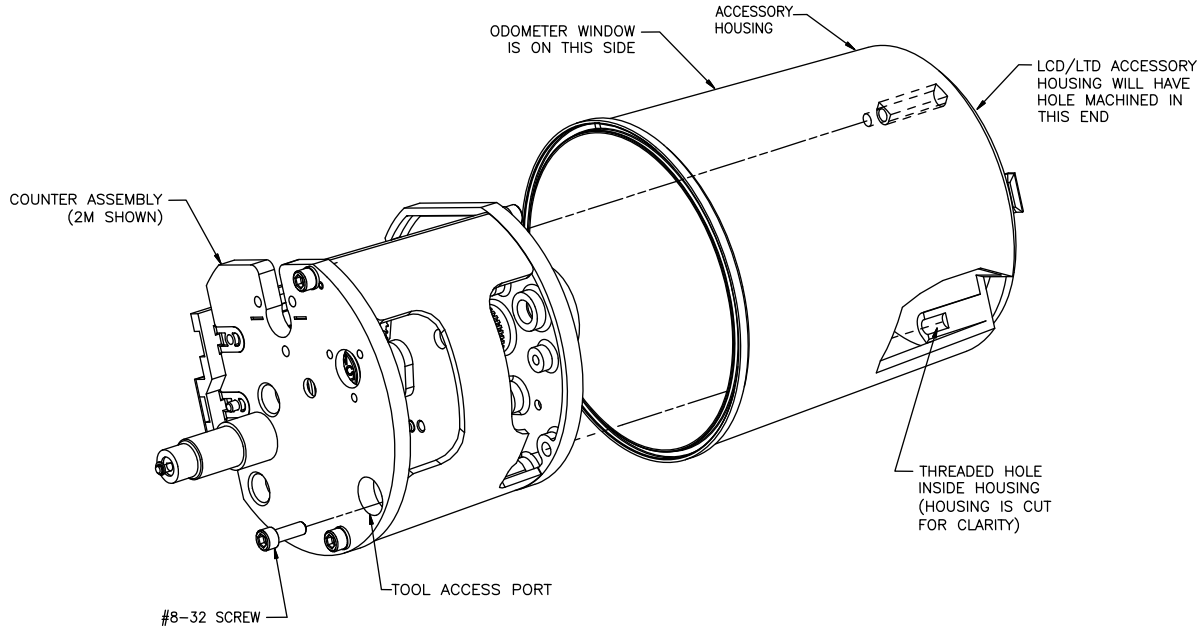


HIGH SPEED SHAFT LOCATION

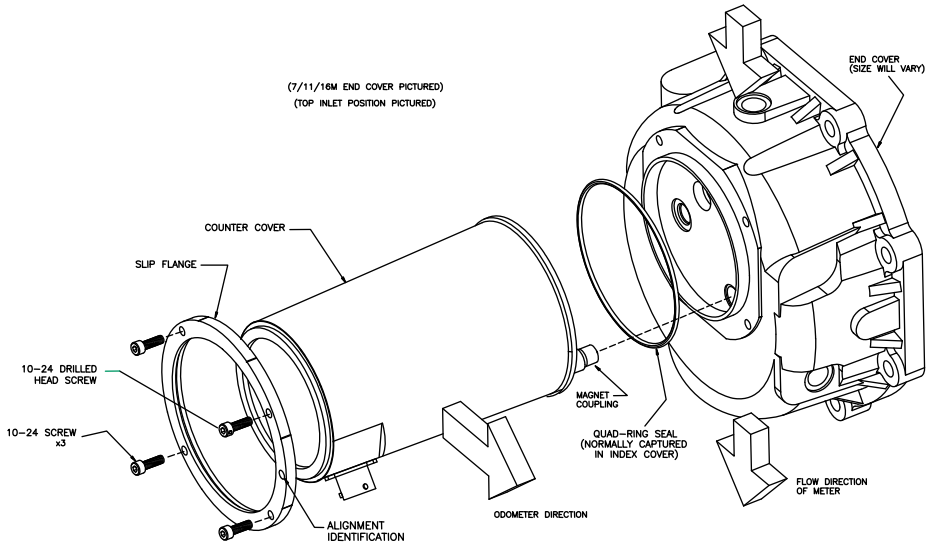


COUNTER END VIEW

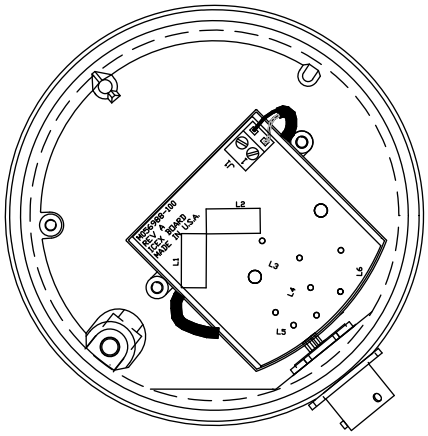
VIEW B


ACCESSORY HOUSING
ODOMETER WINDOW IS ON THIS SIDE
LCD/LTD ACCESSORY HOUSING WILL HAVE HOLE MACHINED IN THIS END
COUNTER ASSEMBLY (2M SHOWN)
THREADED HOLE INSIDE HOUSING (HOUSING IS CUT FOR CLARITY)
TOOL ACCESS PORT
#8-32 SCREW

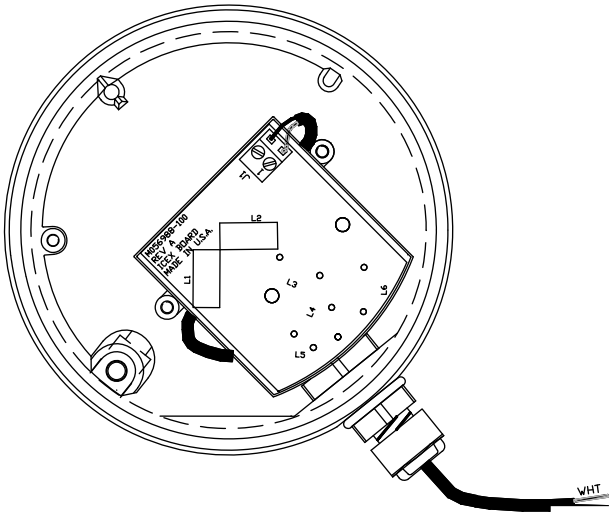
VIEW C


(7/11/16M END COVER PICTURED)
(TOP INLET POSITION PICTURED)
END COVER (SIZE WILL VARY)
COUNTER COVER
SLIP FLANGE
10-24 DRILLED HEAD SCREW
10-24 SCREW x3
MAGNET COUPLING
QUAD-RING SEAL (NORMALLY CAPTURED IN INDEX COVER)
FLOW DIRECTION OF METER
ODOMETER DIRECTION
ALIGNMENT IDENTIFICATION

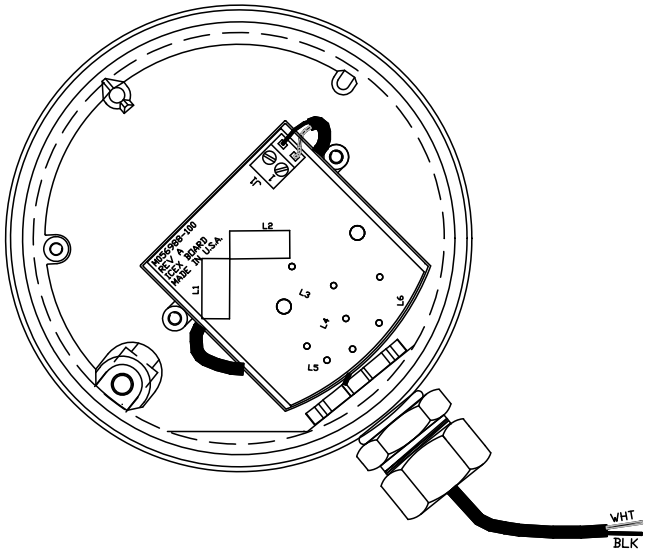
VIEW D – Connection types



VIEW D
Circular Connector



VIEW E
Cable Gland Connector



VIEW F
Conduit Connector

Volume Data Chart

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Table 4

Meter Type	Freq (Hz)	Volume per Pulse (CF)	Volume per Pulse (m^3)	Pulses per Volume (CF)	Pulses per Volume (m^3)	Flow Rate (ACFH)
8C175	120	.00185175	.00005243572	540	19071	800
11C175	146.67	.0020825	.000058969832	480	16958	1,100
15C175	166.67	.0025000	.000070792116	400	14126	1,500
2M175	111.13	.00500	.00014158423	200	7063	2,000
3M175	133.33	.006250	.0001769802	160	5650	3,000
5M175	150	.0092600	.00026221399	108	3814	5,000
7M175	124.46	.015625	.0004424507	64	2260	7,000
11M175	122.2	.02500	.00070792116	40	1413	11,000
16M175	120	.0370375	.001048785	27	953	16,000
23M175	69	.0925925	.002621927	11	381	23,000
38M175	76	.13889	.00393292679	7	254	38,000
56M175	89.6	.17361	.0049160877	6	203	56,000
23M232	127.78	.050000	.001415843	20	706	23,000
1M300	55.55	.0050000	.00014158	200	7063	1,000
3M300	133.33	.0062500	.00017698	160	5650	3,000
1M740	75	.0037037	.000104888	270	9534	1,000
3M740	166.67	.0050000	.00014158	200	7063	3,000
1M1480	75	.0037037	.000104888	270	9534	1,000
3M1480	166.67	.0050000	.00014158	200	7063	3,000
5M1480	100	.013889	.0003932927	72	2542	5,000
7M1480	124.46	.015625	.0004424507	64	2260	7,000
11M1480	97.78	.03125	.000884902	32	1130	11,000

D

D C

HAZARDOUS LOCATION
INSTALLATION MUST BE IN ACCORDANCE WITH ANSI/ISA RP 12.6 OR NEC ANSI/NFPA 79, ARTICLE 504.
FOR INSTALLATION IN CANADA, INSTALL IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE, PART 1.
POUR L'INSTALLATION AU CANADA, INSTALLEZ CONFORMÉMENT AU CODE CANADIEN DE L'ÉLECTRICITÉ, PARTIE 1

INPUT ENTITY PARAMETERS
NOMINAL INPUT: 3-28Vdc, 0-10mA
INTRINSICALLY SAFE INPUT ENTITY PARAMETERS: Ui: 28V, Ii: 20mA, Pi: 140mW, Ci: 1.1nF, Li: 30mH

ENTITÉ D'ENTRÉE PARAMÈTRES
ENTRÉE NOMINALE: 3-28Vdc, 0-10mA
ENTRÉE À SÉCURITÉ INTRINSÈQUE ENTITÉ PARAMÈTRES: Ui: 28V, Ii: 20mA, Pi: 140mW, Ci: 1.1nF, Li: 15mH

ELECTRICAL RATING: 3-28 Vdc, 0-10 mA.
CLASS I, ZONE 0, AEx ia IIC T4 Ga
CLASS I, ZONE 0, Ex ia IIC T4 Ga
TEMP RANGE: -40°C ≤ TAMB ≤ +80°C

Field Wiring Diagram
ICEX Electronic
TRANSMITTER

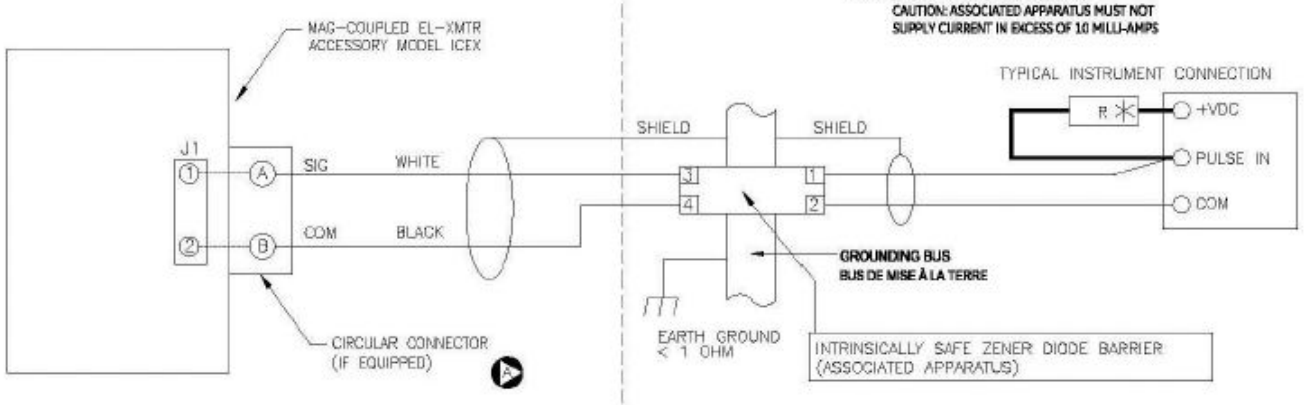
Drawing Number
A058615-000

USE CSA APPROVED LINEAR ZENER BARRIERS
FOR EXAMPLE: 9001/01-280-020-101
(CONNECTIONS SHOWN IN DIAGRAM)

UTILISATION HOMOLOGUÉ CSA UNÉAIRE BARRIÈRES ZENER
PAR EXEMPLE: 9001/01-280-020-101
(CONNEXIONS INDIQUÉES SUR LE SCHÉMA)

NON-HAZARDOUS LOCATION/NON EMPLACEMENT DANGEREUX

MAXIMUM SAFE AREA VOLTAGE 250V RMS
CAUTION: ASSOCIATED APPARATUS MUST NOT
SUPPLY CURRENT IN EXCESS OF 10 MILLI-AMPS



NOTE:
ACCESSORY MODEL SSP FOR USE WITH ROOTS® SERIES B3 GAS METERS. INSTALL IN ACCORDANCE WITH THE BARRIER MANUFACTURER'S INSTRUCTIONS.

IN THE CASE WHERE THE ENCLOSURE INCLUDES THE AMPHENOL CONNECTOR WHICH IS MADE OF ALUMINUM, IF IT IS MOUNTED IN AN AREA WHERE THE CATEGORY 1 Go IS REQUIRED, IT MUST BE INSTALLED SUCH, THAT, EVEN IN THE EVENT OF RARE INCIDENTS, IGNITION SOURCES DUE TO IMPACT AND FRICTION SPARKS ARE EXCLUDED.
DANS LE CAS OÙ LE BOÎTIER INCLUT LE CONNECTEUR AMPHENOL QUI EST EN ALUMINIUM, S'il est monté dans une zone où la catégorie 1 Go EST REQUIS, IL DOIT ÊTRE INSTALLÉ DE TELLE SORTE QUE, MÊME EN CAS D'INCIDENTS rares sources d'ignition DUES À L'IMPACT ET DE FROTTEMENT DES ÉTINCELLES SONT EXCLUS

METAL CABLE GLAND: THE CONFIGURATIONS WITH ACCESSIBLE METAL CONNECTORS CONFORM WITH THE REQUIREMENTS OF CLAUSE 6.3.13 OF UL 60079-11: 2013.
PRESSE-ÉTOUPE MÉTAL: LES CONFIGURATIONS ACCESSIBLES AVEC CONNECTEURS MÉTALLIQUES CONFORMES AUX EXIGENCES DE LA CLAUSE DE 6.3.13 UL/CSA 60079-11: 2013

ACCESSIBLE METAL PARTS: THE MEASURED MAXIMUM CAPACITANCE OF ACCESSIBLE METAL PARTS IS 6pF ON UNITS WITH THE METALLIC CABLE GLAND AND FOR CIRCULAR SINGLE CONNECTOR IS 3.3pF. PER CLAUSE 7.5 AND CLAUSE 26.14 OF UL 60079-0: 2013. LA MESURE DE CAPACITANCE PARTIES MÉTALLIQUES ACCESSIBLES: MAXIMALE DES PARTIES MÉTALLIQUES ACCESSIBLES EST DE 6pF SUR LES UNITÉS AVEC LE CÂBLE MÉTALLIQUE GLAND, 3.3pF POUR CIRCULAIRE CONNECTEURS (AMPHENOL) SIMPLES PAR CLAUSE 26.14 UL/CSA 60079-0: 2013

* RESISTOR MUST BE INSTALLED, CHOOSE VALUE BY R = VDC/.01
EXAMPLE: IF VDC IS 5 VOLTS,
R = 5 / .01 = 500 OHMS.
DO NOT USE A VALUE SMALLER THAN THIS.

RÉSISTANCE DOIT ÊTRE INSTALLÉ, CHOISISSEZ VALEUR UTILISANT R = VDC/.01
PAR EXEMPLE: IF VDC IS 5 VOLTS,/
R = 5 / .01 = 500 OHMS.
NE PAS UTILISER UNE VALEUR PLUS PETITE QUE CE

PRELIMINARY INFORMATION. APPROVALS NOT YET GRANTED