

ROOTS® ICEX Series 3 Counter with Electronic Transmitter



Application and Operation

The ROOTS® ICEX, Counter with Electronic Transmitter, is a single channel, transistor output device that provides a non-compensated, high frequency pulse output (four pulses per impeller shaft revolution) for applications requiring gas flow rate and totalization information.

A two-wire output from the ICEX is used to provide uncorrected flow rate or totalization data to accessory instruments or other totalizer devices. Loop power for the ICEX is supplied by the totalizer instrument. An optional cable for connecting to the MSC circular connector is available.

Specifications

Applicable Sizes:	8C through 56M Series B ROOTS® meters
Loop Voltage:	3 - 30 VDC (Typ.)
Supply Current:	10 mA (max.)
Pulse width:	2 milli-seconds (Typ.)
Duty Cycle:	Flow rate dependent
Rise/Fall Time:	20 μ s (Typ.)
Connection Styles:	MS-Style Circular connector, 1/2 inch liquid tight type conduit fitting, or cable gland with 4-ft. cable.

Hazardous Locations:

Designed to meet intrinsically safe ratings for Class I, Division 1, Groups A, B, C & D when used with approved barriers.

Features

- Provides a non-compensated, high frequency pulse output
- Mounts on all Series B meter bodies
- Available factory installed or as a field installable conversion kit
- Ensures maximum reliability by using Solid State components to eliminate mechanical switches
- Minimizes maintenance
- Available in three connections styles: MS-style circular connector, 1/2 inch liquid tight type conduit fitting, or cable gland with 4-ft. cable.

Ordering Information

When ordering a Series B3 CTR (counter) meter, a 'transmitter ready' option can be specified for future installation of the Electronic Transmitter (conversion kit #399*). Existing Series B2 meters can be easily converted to the ICEX option using a complete accessory unit, Assembly #400, which includes a non-compensated counter and the transmitter for a specific meter size.

With Meter Specify:

Meter Model with ICEX
example: 3M175 ICEX

As Complete Accessory Unit Specify:

Repair Assembly #400
Counter w/ Electronic Xmtr
(ICEX) & meter model

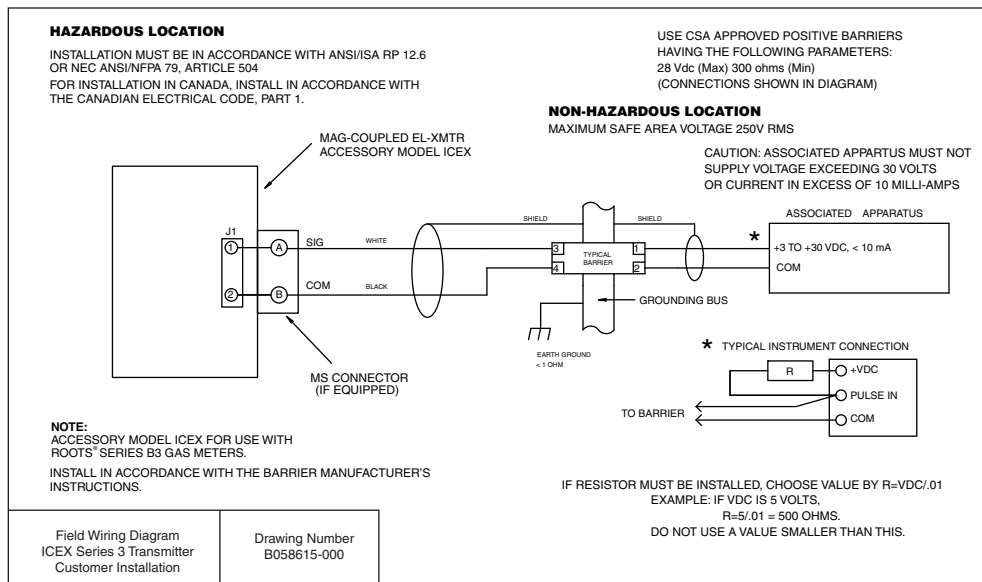
As Conversion Kit* Specify:

Repair Assembly #399

CTR to ICEX & meter model
* Conversion Kit #399 may be used only on Series 3 Counters. Series B2 (TQM) Meters require a complete Accessory Unit Assembly #400.

Meter Type	Freq. (Hz)	Volume per Pulse		Pulses per Volume*		Flow Rate (ACFH)
		(CF)	(m ³)	(CF)	(m ³)	
8C175	120.00	0.00185185	0.0000524386	540	19070	800
11C175	146.67	0.00208333	0.0000589934	480	16951	1,100
15C175	166.67	0.00250000	0.0000707921	400	14126	1,500
2M175	111.11	0.00500000	0.0001415843	200	7063	2,000
3M175	133.33	0.00625000	0.0001769803	160	5650	3,000
5M175	150.00	0.00925926	0.0002621931	108	3814	5,000
7M175	124.45	0.01562500	0.0004424508	64	2260	7,000
11M175	122.22	0.02500000	0.0007079213	40	1413	11,000
16M175	120.00	0.03703704	0.0010487722	27	953	16,000
23M232	127.78	0.05000000	0.0014158425	20	706	23,000
23M175	69.00	0.09259259	0.0026219306	11	381	23,000
38M175	76.00	0.13888889	0.0039328958	7	254	38,000
56M175	89.60	0.17361111	0.0049161198	6	203	56,000
1M300	55.55	0.00500000	0.0001415843	200	7063	1,000
3M300	133.33	0.00625000	0.0001769803	160	5650	3,000
1M740	75.00	0.00370370	0.0001048772	270	9535	1,000
1M1480	75.00	0.00370370	0.0001048772	270	9535	1,000
3M740	166.67	0.00500000	0.0001415843	200	7063	3,000
3M1480	166.67	0.00500000	0.0001415843	200	7063	3,000
5M1480	100.00	0.01388889	0.0003932896	72	2543	5,000
7M1480	124.45	0.01562500	0.0004424508	64	2260	7,000

*Pulses per volume rounded to nearest whole number. For calculation purposes, use Volume per Pulse.



Reference Data:

Dimensional Drawings w/ICEX:

8/11/15C B3	D056899-000	23/38/56M B3	D057701-000	23M232 4"	D057745-000
2/3/5M B3	D056900-000	1M/3M 300	D058612-000	5M/7M 1480	D057442-000
7/11/16M B3	D056901-000	1M/3M 740/1480	D057373-000	8/11/15C NPLD	D057415-000

Field Wiring Diagram for Intrinsically Safe Installations: B058615-000 (above)

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