

OSI INTRINSICALLY-SAFE DC CURRENT TRANSDUCER MODEL ISC-

DESCRIPTION

The ISC current transducer provides a Hall-Effect sensor with an integrated signal conditioner. All units are packaged in a split-core configuration for ease of installation. Application flexibility is provided by a wide variety of input current ranges and output signal types.

Units meet the requirements of ATEX Directive 2014/34/EU and UL/CUL Intrinsically Safe regulations (see standards listing). These standards are specifically related to the requirements for hazardous location installations in North America and the European Union (EU) but are widely accepted throughout the world. When used with appropriate safety barriers these units are recommended for installation in hazardous locations such as offshore platforms and petrochemical plants.



FEATURES

- Hall-Effect Current Sensor with Output Amplifier
- Split Core
- UL/CUL Intrinsically Safe Certification.
- Meets Requirements of ATEX Directive 2014/34/EU

APPLICATIONS

- Current Sensing
- Torque Measurements
- Hazardous Locations Such as Offshore Platforms and Petrochemical Plants

Intrinsically Safe Current Transducer meets the following standards:



Ex ia IIC T4 Ga
DNV-2006-OSL-ATEX-0411X

5 YEAR WARRANTY



UL/CUL CLI, Div1, Gr A, B, C, D

SPECIFICATIONS

INPUT

Current.....LinearSee Table
Over-currentWithout Damage..... 10X Rating
Frequency Range(±1dB).....dc to 1kHz

DIELECTRIC TEST

Bus through Window to Output.....5kVac

INSTRUMENT POWER

Nominal..... 24Vdc
Range 14-30Vdc
Max Current Draw..... 36mA

OUTPUT

Signal..... (See Table)
Loading..... Voltage Models ≥100kΩ
Current Models ≤250Ω
Response Time (to 90% F.S.)..... <1ms
Offset ≤1% F.S.

ACCURACY & LINEARITY ±2% F.S.

TEMPERATURE

Operating Range..... -10 to 60°C
Effect..... (-10°C ≤ Tamb ≤ 60°C)..... ±1% F.S.

PHYSICAL

Weight..... 2 lbs.
Enclosure..... Noryl SE1X, Black

MODEL SELECTION

ORDERING INFORMATION

Example: 0-1000Adc Input, 0-2.9Vdc Output and an attached 8ft. cable
ISC-102

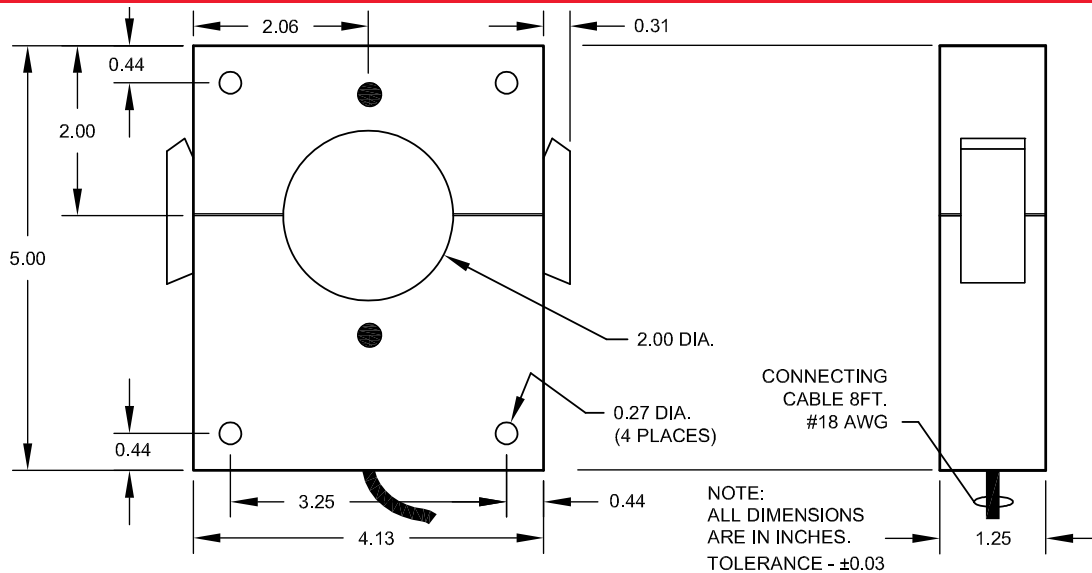
INPUT DC AMPS	STANDARD OUTPUTS MODEL ISC-			
	0-2.9Vdc	0-5Vdc	0-10Vdc	4-20mAdc
*0-100	101	101X5	101D	101E
0-200	201	201X5	201D	201E
0-300	301	301X5	301D	301E
0-400	401	401X5	401D	401E
0-500	501	501X5	501D	501E
0-600	601	601X5	601D	601E
0-800	801	801X5	801D	801E
0-1000	102	102X5	102D	102E
0-1500	152	152X5	152D	152E
0-2000	202	202X5	202D	202E
0-2500	252	252X5	252D	252E

* Requires two turns through window.

OHIO SEMITRONICS, INC.

4242 REYNOLDS DRIVE * HILLIARD, OHIO * 43026-1264
PHONE: (614) 777-1005 * FAX: (614) 777-4511
WWW.OHIOSEMITRONICS.COM * 1-800-537-6732

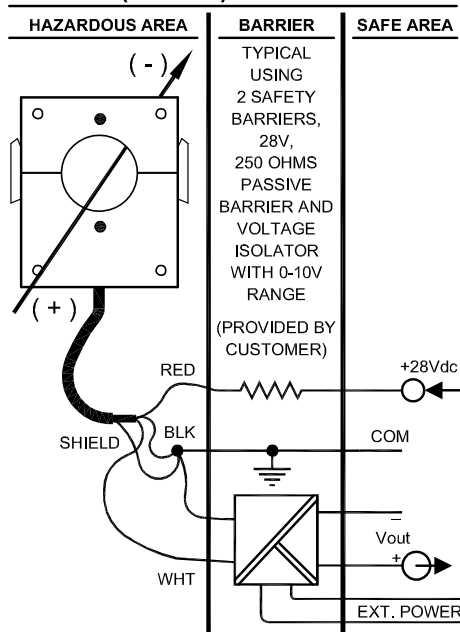
DIMENSIONS



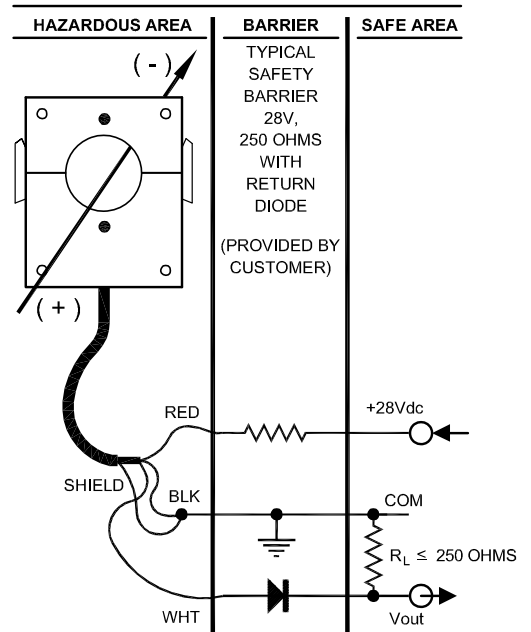
Dwg# 0902-00823-B Rev A

CONNECTION DIAGRAMS

TYPICAL CONNECTION WITH 0 - (2.9/5/10) VOLT OUTPUT



TYPICAL CONNECTION WITH 4-20mA OUTPUT



Entity Parameters			
Supply: Red(+), Black(-)		Signal: White(+), Black(-)	
Ui, Vmax	30Vdc	Ui, Vmax	10Vdc
Ii, Imax	110mA	Ii, Imax	29mA
Pi, Pmax	1.1W	Pi, Pmax	0.21W
Ci	0µF	Ci	60nF
Li	0mH	Li	0mH

- WARNING:**
1. Do Not use in environments where ethers are present.
 2. Clean only with a damp cloth to prevent the possibility of electric discharge.

Reference also Control Drawing 0901-00226-B Rev C

NOTE:

- ENTITY PARAMETERS FOR SUPPLY:**

$U_i, V_{max} = 30 \text{ Vdc}$
 $I_i, I_{max} = 110 \text{ mA}$
 $P_i, P_{max} = 1.1 \text{ W}$
 $C_i = 0 \text{ uF}$
 $L_i = 0 \text{ mH}$

ENTITY PARAMETERS FOR SIGNAL:

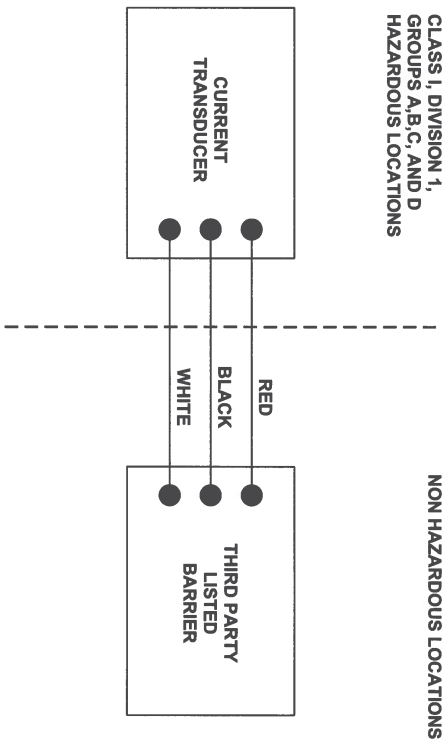
$U_i, V_{max} = 10 \text{ Vdc}$
 $I_i, I_{max} = 29 \text{ mA}$
 $P_i, P_{max} = 0.21 \text{ W}$
 $C_i = 60 \text{ nF}$
 $L_i = 0 \text{ mH}$
- SELECTED BARRIERS MUST BE THIRD PARTY APPROVED AS INTRINSICALLY SAFE FOR THE APPLICATION AND HAVE V_{oc} NOT EXCEEDING V_{max} . SEE NOTE 5.
- CABLE CAPACITANCE (C_c) PLUS INTRINSICALLY SAFE EQUIPMENT CAPACITANCE (C_i) MUST BE LESS THAN THE MARKED CAPACITANCE (C_a). CABLE INDUCTANCE (L_c) PLUS INTRINSICALLY SAFE EQUIPMENT INDUCTANCE (L_i) MUST BE LESS THAN THE MARKED INDUCTANCE (L_a) SHOWN ON THE BARRIER. SEE NOTE 5.
- IF THE ELECTRICAL PARAMETERS OF THE CABLE ARE UNKNOWN, THE FOLLOWING VALUES MAY BE USED:

CAPACITANCE (C_c) 60 pF/FT
 INDUCTANCE (L_c) 0.20 uH/FT
- INTRINSICALLY SAFE EQUIPMENT:**

$V_{max} \geq V_{oc}$
 $I_{max} \leq I_{sc}$
 $C_i + C_c \leq C_a$
 $L_i + L_c \leq L_a$
- WHERE MULTIPLE CIRCUITS EXTEND FROM THE SAME PIECE OF INTRINSICALLY SAFE EQUIPMENT TO ASSOCIATED APPARATUS, THEY MUST BE INSTALLED IN SEPARATE CABLES OR IN ONE CABLE WHICH HAS SUITABLE INSULATION.
- BARRIERS MUST BE INSTALLED IN ACCORDANCE WITH BARRIER MANUFACTURER'S CONTROL DRAWING AND ARTICLE 504 OF THE NATIONAL ELECTRIC CODE (ANSI/NFPA 70).
- THE MAXIMUM NONHAZARDOUS LOCATION VOLTAGE MUST BE NO GREATER THAN 250V RMS.

LTR	DESCRIPTION	DATE	APPROVED
A	CHANGE NOTE 1, ADD "UR", "I", AND "P" SPEC	09/03/04	BAF/LJM
B	EON 091957 - CHANGE I_{max} FROM 38mA	10/10/11	ASB/LJM
C	EON 091951 - CHANGE DRAWING SIZE IN TITLE BLOCK	11/07/11	BAF

CLASS 1, DIVISION 1,
GROUPS A, B, C, AND D
HAZARDOUS LOCATIONS



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS IN DECIMALS TOLERANCES 1/32		CONTRACT NO.	
MATERIAL:		APPROVAL	DATE
FINISH:		DRAWN BY: BAF	08/30/04
DO NOT SCALE		CHECKED BY: -	-
		APPROVED BY: LJM	09/02/04
		PART NUMBER:	
SCALE 1=1		SIZE B	CODE 0901-00226-B
		SHEET 1 of 1	DRAWING NO. 0901-00226-B

OHIO SEMITRONICS, INC.
14125 REYNOLDS DRIVE
HILLIARD, OHIO 43026



ISO 9001 : 2015 CERTIFIED

DECLARATION OF CONFORMITY

DATE: April 17, 2018

MANUFACTURER: Ohio Semitronics, Inc.
4242 Reynolds Dr.
Hilliard, OH 43026

EQUIPMENT: Intrinsically Safe Current Transducers

MODEL(s): ISC-xxx (D, E, X5) (Y03, Y04, Y23)

The above referenced equipment complies with the European Directive for operation in potentially explosive atmospheres. This is proven through compliance with all relevant sections of the specified Standards.

A Technical Construction File is available for review by designated bodies. An EC-Type Examination Certificate DNV-2006-OSL-ATEX-0411X, registration number 0575, has been issued by Det Norske Veritas (DNV), Veritasveien 1, 1363 Høvik, Norway.

DIRECTIVE: 2014/34/EU, Equipment and protective systems intended for use in potentially explosive atmospheres (ATEX)

STANDARDS: EN 60079-0 : 2012, Explosive atmospheres, Equipment - general requirements
EN 60079-11 : 2012, Explosive atmospheres, Equipment - protection by intrinsic safety ("i")

MARKING: CE 2460 Ex II 1 G Ex ia IIC T4 Ga

I hereby authorize the above defined marking to be applied to the referenced equipment.

SIGNATURE: *Lewis J Miller* 04/17/2018
Lewis J Miller, Vice-President of Engineering Date

A-7003-108-ISC
Rev-B

www.ohiosemitronics.com
4242 Reynolds Drive, Hilliard, Ohio 43026-1264
(614) 777-1005 • Toll Free 800-537-6732 • Fax (614) 777-4511 • Email: info@ohiosemitronics.com