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 UL/CUL, ATEX and IECEx Intrinsically Safe regulations. These standards are specifically related to the requirements for hazardous location installations in North America, the European Union (EU) and throughout the world. When used with appropriate safety barriers, these units are recommended for installation in hazardous locations such as offshore platforms, petrochemical plants and grain mills.

FEATURES

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

APPLICATIONS

- Current Sensing
- Torque Measurements
- Hazardous Locations such as Offshore Platforms and Petrochemical Plants for gas.
- · Hazardous Locations such as Grain Mills for dust.

Intrinsically Safe Current Transducer meets the following standards:





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



Ex ia IIC T4 Ga Ex ia IIIC T135°C Da **IECEx PRE 18.0022X** Presafe 18 ATEX 12263X



SPECIFICATIONS

INPUT

Current	Linear	See Table
Over-current	Without Damage	e10X Rating
Frequency Range	(±1dB)	dc to 1kHz

DIELECTRIC TEST

Bus through V	Nindow to	Output	5kVac

INSTRUMENT POWER

Nominal	24Vdc
Range	14-28Vdc
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 (Star	ndard)	3 lbs.
Enclosure Noryl SE1X, Black	Enclosure		Noryl SE1X, Black

MODEL SELECTION

ORDERING INFORMATION

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

INPUT	STANDARD OUTPUTS MODEL ISC-			
DC AMPS	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.

DO NOT MARK IN THIS DOCUMENT RELATED DRAWING

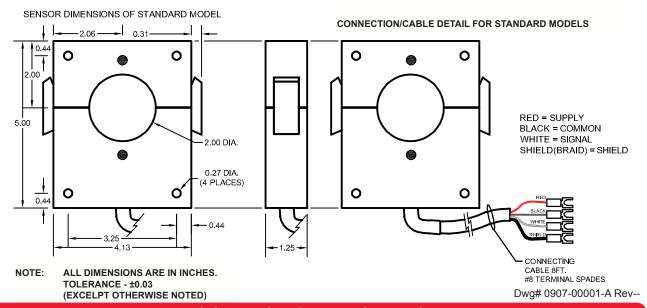
TO SCHEDULE DRAWING(S): 0907-00001-A

INITIAL APPROVAL AND ALL REVISIONS MUST BE REVIEWED AND APPROVED BY THE Ex AUTHORIZED PERSON. ONLY CHANGES THAT DO NOT AFFECT THE EX SAFETY OF THIS EQUIPMENT CAN BE MADE AFTER CONSIDERATION OF THE SCHEDULE DRAWING(S) TO WHICH THIS DRAWING IS RELATED.

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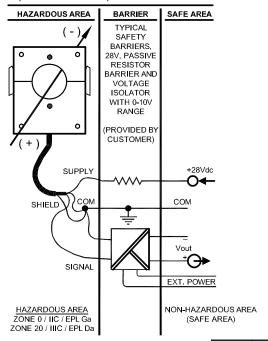
WWW.OHIOSEMITRONICS.COM * 1-800-537-6732

DIMENSIONS

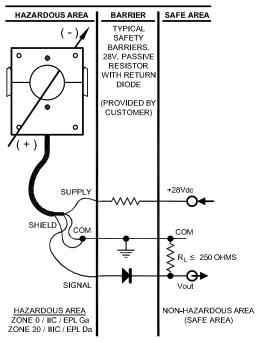


CONNECTION DIAGRAMS

TYPICAL CONNECTION WITH 0 - (2.9V/5.0V/10.0V) VOLTAGE OUTPUT



TYPICAL CONNECTION WITH 4 - 20mA CURRENT OUTPUT



SUPPLY SIGNAL COMMON SHIELD
RED WHITE BLACK SHIELD

Dwg# 0907-00001-A Rev--

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.
- 3. Potential electrostatic charging hazard. See certificate IECEx/ATEX CoC.

Reference UL/CUL Control Drawing 0901-00226-B Rev-C. Reference IECEx/ATEX notes on next page.

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ISC- STANDARD MODELS - IECEX/ATEX

CONNECTION INFORMATION

NOTE: Presafe 18 ATEX 12263X / IECEx PRE 18.0022X

Ex ia IIC T4 Ga / Ex ia IIIC T135°C Da / -10°C < Ta < +60°C

1. ENTITY PARAMETERS FOR SUPPLY(SUPPLY/COM): ENTITY PARAMETERS FOR SIGNAL(SIGNAL/COM):

- SELECTED BARRIERS MUST BE THIRD PARTY APPROVED AS INTRINSICALLY SAFE FOR THE APPLICATION AND HAVE Uo NOT EXCEEDING Ui. SEE NOTE 4.
- 3. IF THE ELECTRICAL PARAMETERS OF THE CABLE ARE UNKNOWN, THE FOLLOWING VALUES MAY BE USED:

CAPACITANCE (Cc) 200 pF/m INDUCTANCE (Lc) 1.0 uH/m

4. INTRINSICALLY SAFE EQUIPMENT:

Ui >= Uo Ii >= Io Ci + Cc <= Co Li + Lc <= Lo

- BARRIERS MUST BE INSTALLED IN ACCORDANCE WITH BARRIER MANUFACTURE'S CONTROL DRAWING AND THE APPLICABLE REQUIREMENTS OF EN/IEC 60079-14.
- 6. THE MAXIMUM NONHAZARDOUS LOCATION VOLTAGE MUST BE NO GREATER THAN 250V RMS.

SPECIFIC CONDITIONS OF USE (X)

- The non-metallic enclosure material has a surface resistance >10GΩ. Care shall be taken to avoid the generation of a
 potentially dangerous electrostatic charge. Clean only with a water damp cloth.
- <u>Units supplied with an integral cable:</u> The integral capacitance / inductance of the cable shall be considered during installation. The maximum cable length is 4 meters, as defined by the manufacturer.

Dwg# 0907-00001-A Rev--

ISC- STANDARD MODELS - UL/CUL

NOTE: 7. BARRIERS MUST BE INSTALLED IN ACCORDANCE WITH BARRIER MANUFACTURE'S CONTROL DRAWING AND ARTICLE 504 OF THE NATIONAL ELECTRIC CODE 6. 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. 4. IF THE ELECTRICAL PARAMETERS OF THE CABLE ARE UNKNOWN, THE FOLLOWING THE MAXIMUM NONHAZARDOUS LOCATION VOLTAGE MUST BE NO GREATER INTRINSICALLY SAFE EQUIPMENT: CABLE CAPACITANCE (Cc) PLUS INTRINSICALLY SAFE EQUIPMENT CAPACITANCE (Ci) MUST BE LESS THAN THE MARKED CAPACITANCE (Ca). CABLE INDUCTANCE (Lc) PLUS INTRINSICALLY SAFE EQUIPMENT INDUCTANCE (Ll) MUST BE LESS THAN THE MARKED INDUCTANCE (La) SHOWN ON THE BARRIER. SEE NOTE 5. UI, Vmax = 30 Vdc II, Imax = 110mA PI, Pmax = 1.1 W CI = 0 uF LI = 0 mH SELECTED BARRIERS MUST BE THIRD PARTY APPROVED AS INTRINSICALLY SAFE FOR THE APPLICATION AND HAVE Voc NOT EXCEEDING V $_{ m max}$. SEE NOTE 5. VALUES MAY BE USED: THAN 250V RMS. lmax Ci + Cc Li + Lc **ENTITY PARAMETERS FOR SUPPLY:** CAPACITANCE (Cc) INDUCTANCE (Lc) **^ ^** Voc Ca La 60 pF/FT 0.20 uH/FT **ENTITY PARAMETERS FOR SIGNAL:** Ui, Vmax = 10 Vdc Ii, Imax = 29 mA Pi, Pmax = 0.21 W Ci = 60 nF Li = 0 mH UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMAL TO A STATE OF THE STATE OF DO NOT SCALE CLASS I, DIVISION 1, GROUPS A,B,C, AND D HAZARDOUS LOCATIONS CURRENT TRANSDUCER APPROVED BY: APPROVAI LITRI DESCRIPTION A CHANGE NOTE 1, ADD "UI", "II", AND "Ps" SPEC B ECH 001537 - CHANGE Inax FROM 36mA C ECH 001551 - CHANGE DRAWING SIZE IN TITLE BLOCK EM WHITE BLACK RED (SE SCALE 1=1 **8** CODE IDENT NO. OHIO SEMITRONICS, INC. NON HAZARDOUS LOCATIONS THIRD PARTY LISTED BARRIER 0901-00226-B

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EU DECLARATION OF CONFORMITY

DATE:

March 19, 2019

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 EU-Type Examination Certificate Presafe 18 ATEX 12263X, registration number 2460, has been issued by DNV GL Presafe AS (Presafe), 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/A11:2013, Explosive atmospheres, Equipment

general requirements

EN 60079-11: 2012, Explosive atmospheres, Equipment -

protection by intrinsic safety ("i")

MARKING:

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II 1 G Ex ia IIC T4 Ga

II 1 D Ex ia IIIC T135°C Da

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

SIGNATURE:

A-7003-108-ISC Rev-C

www.ohiosemitronics.com

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