



VIBRATION ANALYSIS HARDWARE

Product Manual
MNX10022 / Rev B
MODEL AC95X



CTC IECEX
VIBRATION SENSORS

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Section I

Overview

Introduction

This document contains information on the installation, operation, and maintenance of the IECEx Intrinsically Safe Vibrations Sensor.

Intrinsic Safety (IS) is based on the principle that the electrical energy in hazardous-area circuits is deliberately restricted such that any electrical sparks or hot spots that may occur are too weak to cause ignition. This is achieved by inserting an energy limiting interface in the wiring between safe and hazardous areas. The interface passes signals in either direction as required but limits the voltage and current that can reach the hazardous area under fault conditions. It may be integral with the safe-area equipment or separate for greater flexibility.

Description

Accelerometers will produce a voltage output that is proportional to the vibration output (in g's) the sensor is experiencing. 4-20mA Vibration Sensors will create a 4-20mA output proportional to the specified full scale range of sensor (for 4-20mA acceleration model), or integrates accelerometer (g's) to velocity and then creates a 4-20 mA output proportional to the full scale range specified by the part ordered.

Compliance with the Essential Health & Safety Requirements:

Assured by compliance with:

North America:

CSA Standard C22.2 No. 213-M1987, CAN/CSA EN60079-15:02, CAN/CSA EN61241-1-1:02, UL 1604 Third Edition, UL 60079-15 First Edition.

Europe:

EN60079-0:2004 and EN60079-15:2005

IEC 60079-0: 2000

Edition: 3.1

Electrical apparatus for explosive gas atmospheres -
Part 0: General requirements

IEC 60079-11:1999

Edition: 4

Electrical apparatus for explosive gas atmospheres –
Part 11: Intrinsic safety 'i'

Nameplate Markings

The following is a complete recapitulation of nameplate markings so the customer has complete information for specific conditions of use:

IECE_x

Figure 1. ATEX Nameplate Markings

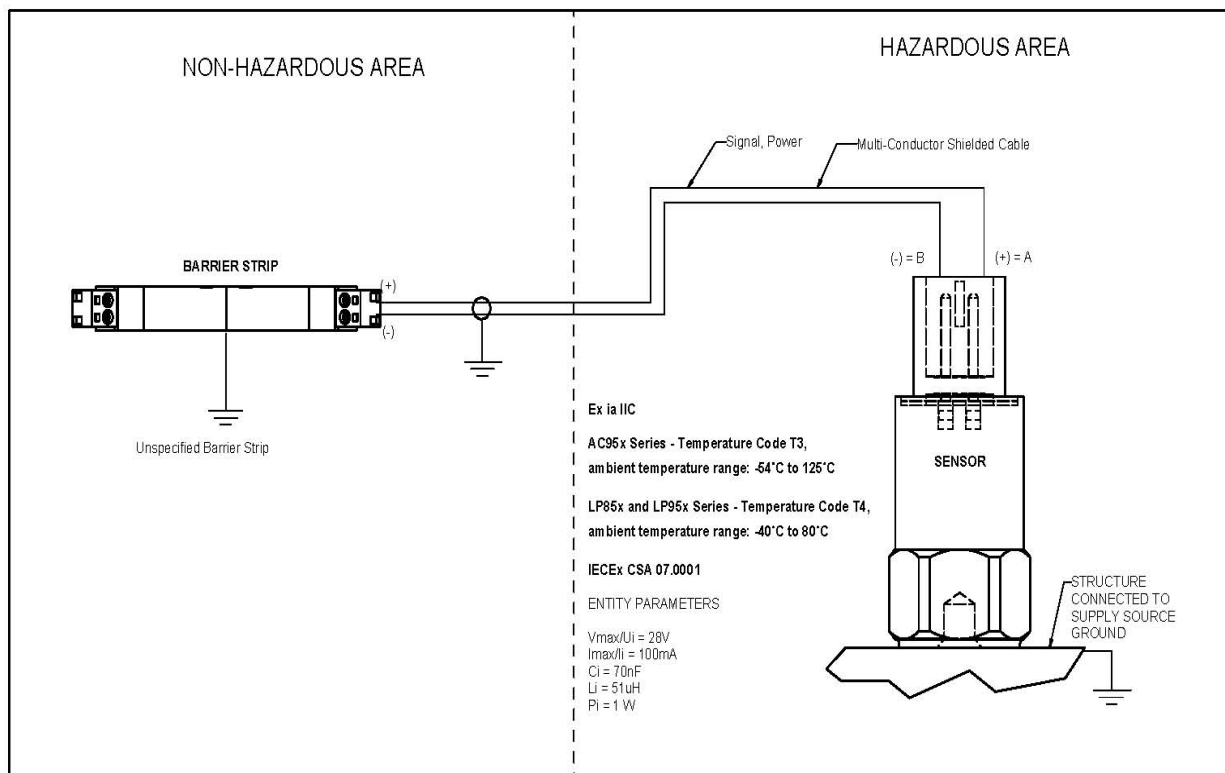
Ex ia IIC
OPERATING TEMPERATURE CODE: T3
AMBIENT TEMPERATURE RANGE: -54 C TO 125 C
OPERATING TEMPERATURE CODE: T4
AMBIENT TEMPERATURE RANGE: -40 C TO 80 C
CONTROL DRAWINGS: INS10050
V_{max}/U_i=28V I_{max}/I_i=100mA
C_i=70 nF L_i=51uH P_i=1W
IECE_x CSA 07.0001
(yr of mfr)

***Figure 2. Specific Nameplate Markings
For IECE_x Parameters***

Section II Installation

Installation Procedure:

The IECEx Control Drawing INS10050 shows the installation requirements for CTC IECEx Sensors. As shown, properly installed barriers are required to limit the energy the sensor can receive. Cabling brings the signal from the sensor to the Zener diode barrier or galvanic isolator, which is the energy-limiting interface. The signal is transferred through the barrier (which is located in a non-hazardous area) to measurement equipment, such as a data collector or junction box) for further processing.



NOTES
 - DO NOT PARALLEL ASSOCIATE APPARATUS UNLESS PERMITTED BY ASSOCIATED APPARATUS APPROVAL
 - CABLE CAPACITANCE & INDUCTANCE PLUS THE I.S. APPARATUS UNPROTECTED CAPACITANCE (Ci) AND INDUCTANCE (Li) MUST NOT EXCEED THE ALLOWED CAPACITANCE (Ca) AND INDUCTANCE (La) INDICATED ON THE ASSOCIATED APPARATUS
 [(Cable + Ci < Ca) & (Lcable + Li < La)]

Figure 3. Installation Control Drawing

Section III Operation

Standards

Each sensor that is approved for IS must meet or exceed the requirements for standards recognized by the countries that would use the sensors.

Specific Conditions of Use:

1. Specific Ambient Conditions of Use include:
 - a. AC95X Series uses Temperature Code, T3
 - b. LP85X & LP95X Series uses Temperature Code, T4

Special Conditions for safe use:

None

Section IV Maintenance

General

No maintenance is required on sensors. Certain applications may require periodic calibration of sensors.

Warranty

If any CTC vibration analysis hardware product should ever fail, we will repair or replace it at no charge.

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