VIBRATION ANALYSIS HARDWARE

IECEx Intrinsically Safe Sensors
AC96X, LP85X/86X, LP95X/96X
Product Manual

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Introduction

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

Instrinsically Safe Sensor Overview: 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.

Compliance with the Essential Health & Safety Requirements

Assured by compliance with IEC 60079-0: 2000 Edition: 3.1, IEC 60079-11: 2006 Edition: 5.0, IEC 61241-1-1: 1999 Edition: 2.0

ATEX Related Nameplate Markings

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

Figure 1. Nameplate Markings

IECEx Labeling (LP85X/LP95X)

Ex ia IIC T3/T4
DIP A20 IP6X 150 °C (T-Code = T3) or T105 °C (T-Code = T4)
CONTROL DRAWINGS: INS10050
Vmax/Ui=28V Imax/Ii=100mA
Ci=70 nF Li=51uH Pi=1W
IECEx CSA 07.0001
(yr of mfr)

AC95X Series – Temperature Code: T3
Ambient Temperature range = -54 °C to +125 °C

LP85X and LP95X Series – Temperature Code: T4
Ambient Temperature range = -40 °C to +80 °C

Figure 2. Specific Nameplate Markings for IECEx Parameters

IECEx Labeling Low Capacitance (AC96X/LP86X/LP96X)

Ex ia IIC T3/T4
DIP A20 IP6X 150 °C (T-Code = T3) or T105 °C (T-Code = T4)
CONTROL DRAWING: INS10050
Vmax/Ui=28V Imax/Ii=100mA
Ci=0nF Li=0uH Pi=1W (for sensors without integral cable)
Ci= 80.4 nF Li= 137.6 uH Pi=1W (for sensors with max 500 meters of integral cable)
IECEx CSA 07.0001
(yr of mfr)

AC96X Series – Temperature Code: T3
Ambient Temperature range = -40 °C to +125 °C

AC96X, LP86X and LP96X Series – Temperature Code: T4
Ambient Temperature range = -40 °C to +80 °C

Figure 2a. Specific Nameplate Markings for Low Capacitance IECEx Parameters

Installation

Installation Procedure

The IECEx Control Drawing INS10050 (located in the Overview tab for the product listing at ctconline.com) 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.

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

Specific ambient conditions of use include:

1. -54 °C to 125 °C or -40 °C to 80 °C for all AC96X series sensors (T3 or T4).
2. -40 °C to 80 °C for all LP85X series sensors (T4).
3. -40 °C to 80 °C for all LP95X series sensors (T4).

Special Conditions for Safe Use

None

Maintenance

General

There are no customer replaceable parts. This product should provide trouble-free continuous service under normal operating conditions.

Warranty & Refund

Warranty
All CTC products are backed by our unconditional lifetime warranty. If any CTC product should ever fail, we will repair or replace it at no charge.

Refund
All stock products can be returned for a 25% restocking fee if returned in new condition within 90 days of shipment. Stock products qualify for free cancellation if your order is cancelled within 24 hours of purchase. Built-to-order products qualify for a 50% refund if returned in new condition within 90 days of shipment. Custom products are quoted and built specifically to the requirements of the customer, which may include completely custom product designs or private labeled versions of standard products for OEM customers. Custom products ordered are non-cancellable, non-returnable and non-refundable.