



Certificate / Certificat Zertifikat / 合格証

MTS 1208014 C001

exida hereby confirms that the:

**T-Series Model TH
Position Sensor**

**MTS Systems Corporation
Sensors Division
Cary, NC - USA**

The manufacturer
may use the mark:



Has been assessed per the relevant requirements of:

IEC 61508 : 2010 Parts 1-7

and meets requirements providing a level of integrity to:

Systematic Capability: SC 2 (SIL 2 Capable)

Random Capability: Type B Element

SIL 2 @ HFT = 0; Route 1_H

SIL 2 @ HFT = 0; Route 2_H

**PFH/PFD_{avg} and Architecture Constraints
must be verified for each application**

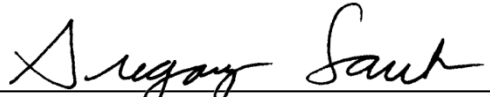
Safety Function:

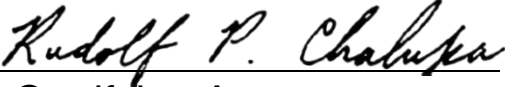
The T-Series Model TH will output a position signal proportional to the magnet position within the stated safety accuracy.

Application Restrictions:

The unit must be properly designed into a Safety Instrumented Function per the Safety Manual requirements.




Evaluating Assessor


Certifying Assessor



ANSI Accredited Program
ISO/IEC 17065
PRODUCT CERTIFICATION BODY
#1004

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Systematic Capability: SC 2 (SIL 2 Capable)

Random Capability: Type B Element

SIL 2 @ HFT = 0; Route 1_H

SIL 2 @ HFT = 0; Route 2_H

**PFH/PFD_{avg} and Architecture Constraints
must be verified for each application**

Model TH
(with SIL 2 option)

Systematic Capability:

The Product has met manufacturer design process requirements of Safety Integrity Level (SIL) 2. These are intended to achieve sufficient integrity against systematic errors of design by the manufacturer.

A Safety Instrumented Function (SIF) designed with this product must not be used at a SIL level higher than stated.

Random Capability:

The SIL limit imposed by the Architectural Constraints must be met for each element. This Device meets *exida* criteria for Route 2_H.

IEC 61508 Failure Rates in FIT¹

T Series Model TH	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}	SFF
1% Safety Accuracy, 60°C	0	100	890	61	94.2%
1% Safety Accuracy, 80°C	0	284	2517	172	94.2%
1% Safety Accuracy, 85°C	0	401	3559	243	94.2%

¹ FIT = 1 failure / 10⁹ hours

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFH/PFD_{avg} considering redundant architectures, proof test interval, proof test effectiveness, any automatic diagnostics, average repair time and the specific failure rates of all products included in the SIF. Each element must be checked to assure compliance with minimum hardware fault tolerance (HFT) requirements.

The following documents are a mandatory part of certification:

Assessment Report: MTS 12/08-014 R003 V2R1 (or later)

Safety Manual: 551504 Revision A (or later)



80 N Main St
Sellersville, PA 18960