



# Certificate / Certificat Zertifikat / 合格証

EC 1805099 P0038 C002

*exida* hereby confirms that the:

**Pressure switch  
series M, B, A, D, PC and PX**

**Temperature switch series T**

**WIKA Alexander Wiegand SE & Co. KG  
Klingenberg, Germany**

Have 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 3 (SIL 3 Capable)**

**Random Capability: Type A Element**

**SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 2<sub>H</sub>**

**PFH/PFD<sub>avg</sub> and Architecture Constraints  
must be verified for each application**

### Safety Function:

The micro switch will de-energize when the input pressure, or temperature, rises above, or falls below, the set-point 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

The manufacturer  
may use the mark:



Revision 1.0 April 4 2019  
Surveillance Audit Due  
May 1, 2022



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**Systematic Capability: SC 3 (SIL 3 Capable)****Random Capability: Type A Element****SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 2<sub>H</sub>****PFH/PFD<sub>avg</sub> and Architecture Constraints  
must be verified for each application**

Pressure switch series  
M, B, A, D, PC and PX

Temperature switch  
series T

**Systematic Capability:**

The products have met manufacturer design process requirements of Safety Integrity Level (SIL) 3. These are intended to achieve sufficient integrity against systematic errors of design by the manufacturer.

A Safety Instrumented Function (SIF) designed with these products 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<sub>H</sub>.

**IEC 61508 Failure Rates in FIT\***

Device series	$\lambda_{\text{Safe}}$	$\lambda_{\text{DD}}$	$\lambda_{\text{DU}}$
Pressure switch M*	133	0	86
Pressure switch B*	138	0	63
Pressure switch BAX**	134	0	98
Pressure switch PC*	133	0	78
Pressure switch PX*	125	0	82
Absolute pressure switch A*	128	0	203
Differential pressure switch DA*/DW*	158	0	242
Differential pressure switch DW0*	154	0	72
Differential pressure switch DE* / DC*	156	0	176
Temperature switch T*G*	292	0	98
Temperature switch TC*	127	0	96
Temperature switch TX*	127	0	100

\* FIT = 1 failure / 10<sup>9</sup> hours

**SIL Verification:**

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFH/PFD<sub>avg</sub> 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:** EC 18/05-085-C R006 V1 R0 (or later)

**Safety Manuals:**

Safety manual Relative pressure switches NI-725WE Rev0

Safety manual Temperature switches NI-726WE Rev0

Safety manual Differential and Absolute pressure switches NI-727WE Rev0



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