Certificate / Certificat
Zertifikat / 合格証

WES 1102068 C001

exida hereby confirms that the:

AccuTrak Position Monitor Series 2200, 2600, 3000, 3200, 3300, 3400, 3500, 8300, 8400 and 8500

Westlock Controls Ltd.
Tunbridge Wells, Kent - UK

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 A, Route 2_H Device

PFD_{AVG} and Architecture Constraints must be verified for each application

Safety Function:

The Position Monitor switch(es) will change it's output when the attached Valve moves to the configured position.

Application Restrictions:

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

The manufacturer may use the mark:

Valid until December 1, 2017
Revision 2.1 December 19, 2014

Evaluating Assessor

Certifying Assessor

ANSI Accredited Program
PRODUCT CERTIFICATION
#1004

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Systematic Capability: SC 2 (SIL 2 Capable)

Random Capability: Type A, Route 2_H Device

PFD_{AVG} and Architecture Constraints must be verified for each application

AccuTrak Position Monitor Series 2200, 2600, 3000, 3200, 3300, 3400, 3500, 8300, 8400 and 8500

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.

Versions:

Series	Switch Quantity and Type (Option Code)
AccuTrak 2200	1 to 6 SPDT Microswitches (5) 1 to 4 DPDT Microswitches (6) 1 to 6 P&F Inductive Sensor (7) 1 to 6 Magnum Switches (9)
AccuTrak 2600	
AccuTrak 3000	
AccuTrak 3200	
AccuTrak 3300	
AccuTrak 3400	
AccuTrak 3500	
AccuTrak 8300	
AccuTrak 8400	
AccuTrak 8500	

IEC 61508 Failure Rates[1] in FIT[2]

AccuTrak Series Switch Circuit Qty (Option Code)	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
1 Switch Circuit (5, 6, 7 or 9)	0	11	0	94
2 Switch Circuits (5, 6, 7 or 9)	0	23	0	119
3 Switch Circuits (5, 6, 7 or 9)	0	34	0	149
4 Switch Circuits (5, 6, 7 or 9)	0	45	0	174
6 Switch Circuits (5, 6, 7 or 9)	0	68	0	229
8 Switch Circuits (6)	0	80	0	239
1 Switch Circuit (5, 6, 7 or 9) w/PVST[3]	11	0	86	8
2 Switch Circuits (5, 6, 7 or 9) w/PVST	23	0	110	9
3 Switch Circuits (5, 6, 7 or 9) w/PVST	34	0	139	10
4 Switch Circuits (5, 6, 7 or 9) w/PVST	45	0	163	11
6 Switch Circuits (5, 6, 7 or 9) w/PVST	68	0	216	13
8 Switch Circuits (6) w/PVST	80	0	225	14

[1] Failure Rates listed are only applicable if the switch contacts current is limited to 60% of the switches rated capacity and the end user has added external transient protection if being used with non-resistive loads.

[2] FIT = 1 failure / 10^9 hours

[3] PVST = Partial Valve Stroke Test of a final element Device

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of 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: WES 11/02-068 R002 V1 R3

Safety Manual: TECHUK-78

exida®

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Sellersville, PA 18960

T-062, V1R5-2