

The manufacturer  
may use the mark:



#### Reports:

WES 11/02-068 R002 V1 R1  
Assessment Report

WES 10/02-068 R001 V1 R1  
FMEDA Report

#### Validity:

This assessment is valid for  
Accutrak Series and Switch  
types listed on the back.

This assessment is valid  
until July 1, 2014.

Revision 1.0 June 9, 2011



# Certificate / Certificat Zertifikat / 合格証

WES 1102068 C001

*exida* hereby confirms that the:

**Accutrak Position Monitor Series  
2200, 2600, 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 Integrity: SIL 2 Capable**

**Random Integrity: Type A Element**

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

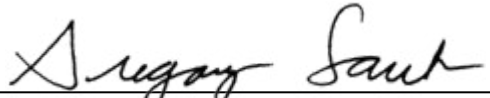
Safety Function:

The Position Monitor switch 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.



  
Evaluating Assessor

  
Certifying Assessor

WES 1102068 C001

**Systematic Integrity: SIL 2 Capable****Random Integrity: Type A Element**

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

**SIL 2 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 without "prior use" justification by end user or diverse technology redundancy in the design.

**Table 1 Version Overview**

Series	Switch Quantity and Type (Option Code)
Accutrak 2200	1 to 4 SPDT Microswitches (5) 1 to 4 Magnum Switches (9)
Accutrak 2600	
Accutrak 3300	
Accutrak 3400	
Accutrak 3500	
Accutrak 8300	
Accutrak 8300	
Accutrak 8500	

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

Accutrak Series 2200, 2600, 3300, 3400, 3500, 8300, 8400 and 8500 Switch Qty (Option Code)	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$
1 Switch (5 or 9)	0	11	0	94
2 Switches (5 or 9)	0	22	0	119
3 Switches (5 or 9)	0	34	0	149
4 Switches (5 or 9)	0	45	0	174
1 Switch (5 or 9) w/PVST <sup>†</sup>	11	0	86	8
1 Switches (5 or 9) w/PVST <sup>†</sup>	22	0	110	9
3 Switches (5 or 9) w/PVST <sup>†</sup>	34	0	139	10
4 Switches (5 or 9) w/PVST <sup>†</sup>	45	0	163	11

**SIL Verification:**

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of 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 subsystem must be checked to assure compliance with minimum hardware fault tolerance (HFT) requirements.

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

<sup>†</sup>PVST = Partial Valve Stroke Test of a final element Valve



Form	Version	Date
C61508	2.7-2	Mar 2011