

SIL-Declaration of Conformity

Functional Safety according to IEC 61508 / 61511

Supplement 1 / NE130 Form B.1 and IGR 49-02-15 Datasheet 1

Endress+Hauser GmbH+Co. KG, Hauptstraße 1, 79689 Maulburg

declares as manufacturer, that the following type of the

**Liquiphant M FTL50H-FTC2AD8G5B
+ Electronic insert FEL58 + Nivotester FTL325N**

(Serial number KA019301028)

is suitable for the use in safety-instrumented systems according to IEC61508, if the safety instructions and following parameters are observed.

This declaration of conformity is only valid for the customer listed in the cover letter of the responsible Endress+Hauser sales center and for the listed products in delivery status.

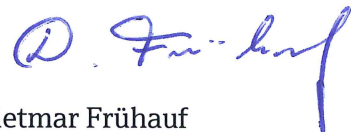
Maulburg, 5-November-2015
Endress+Hauser GmbH+Co. KG

i. V.



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General			
Device designation and permissible types	FTL50H - FTC2AD8G5B + FEL58 + Nivotester FTL325N		
	For details see Functional Safety Manual SD00161F		
Safety-related output signal	Relay		
Fault current	-		
Process variable/function	Level switch for liquids		
Safety function(s)	Overfill protection or maximum detection of liquids (MAX)		
Device type acc. to IEC 61508-2	<input type="checkbox"/> Typ A	<input checked="" type="checkbox"/> Typ B	
Operating mode	<input checked="" type="checkbox"/> Low Demand Mode	<input type="checkbox"/> High Demand or Continuous Mode	
Valid Hardware-Version	for FTL51 and for FTL 325N as of V01.00		
Valid Software-Version	for FTL51 as of V01.00.01 (no SW for FTL 325)		
Safety manual	SD00161F		
Type of evaluation (check only <u>one</u> box)	<input type="checkbox"/>	Complete HW/SW evaluation parallel to development incl. FMEDA and change request acc. to IEC 61508-2, 3	
	<input checked="" type="checkbox"/>	Evaluation of "Proven-in-use" performance for HW/SW incl. FMEDA and change request acc. to IEC 61508-2, 3	
	<input type="checkbox"/>	Evaluation of HW/SW field data to verify „prior use" acc. to IEC 61511	
	<input type="checkbox"/>	Evaluation by FMEDA acc. to IEC61508-2 for devices w/o software	
Evaluation through - report no.	exida.com Report No.: E+H 02/6-16 R003		
Test documents	Development documents	Test reports	Data sheets
SIL - Integrity			
Systematic safety integrity		<input checked="" type="checkbox"/> SIL 2 capable	<input type="checkbox"/> SIL 3 capable
Hardware safety integrity	Single channel use (HFT = 0)	<input checked="" type="checkbox"/> SIL 2 capable	<input type="checkbox"/> SIL 3 capable
	Multi channel use (HFT ≥1)	<input checked="" type="checkbox"/> SIL 2 capable	<input type="checkbox"/> SIL 3 capable
FMEDA			
	FEL58 ³	FEL58 + FTL325N ⁴	
Safety function	MAX	MAX	
λ_{DU} ^{*1)}	59 FIT	70,5 FIT	
λ_{DD} ^{*1)}	6 FIT	6 FIT	
λ_{SU} ^{*1)}	189 FIT	531 FIT	
λ_{SD} ^{*1)}	84 FIT	84 FIT	
SFF - Safe Failure Fraction	82 %	89 %	
PTC ^{*2)}	- %	- %	
λ_{total} ^{*1)}	338 FIT	691,5 FIT	
Diagnostic test interval	-	-	
Fault reaction time	-	-	
Comments			
³ This information is based on the configuration [CONF1] in the exida test report.			
⁴ This information is based on the configuration [CONF2] in the exida test report.			
Declaration			
<input checked="" type="checkbox"/>	Our internal company quality management system ensures information on safety-related systematic faults which become evident in the future		

*1) FIT = Failure In Time, Number of failures per 10⁹ h

*2) PTC = Proof Test Coverage (Diagnostic coverage for proof test)