Endress+Hauser
People for Process Automation

Manufacturer Declaration
Functional Safety (IEC 61508:2010)

Supplement 1 / NE130 From B.1

Endress+Hauser Wetzer GmbH+Co. KG Obere Wank 1, 87484 Nesselwang

declares as manufacturer, that the following surge protective device

HAW568

is suitable for use in safety relevant applications up to SIL3 (HFT=0) according to IEC 61508:2010

In safety relevant applications according to IEC 61508, the instructions of the Safety Manual must be followed.

Nesselwang, 24.04.2025
Endress+Hauser Wetzer GmbH+Co. KG

ppa. Harald Müller
Director Technology

i.V. Eva Rizzo
Head of Department Technology Safety

Endress+Hauser
People for Process Automation

General			
Device designation and permissible types	HAW568-*A (Order code for "Additional approval": Option LA "SIL")		
Safety-related output signal	n/a		
Fault current	n/a		
Process variable/function	Provide surge protection for field equipment		
Safety function(s)	The safety function of Surge Protective Devices is to behave like a piece of copper wire, passing through the process signal without being altered.		
Device type acc. to IEC 61508-2	☑ Type A	☐ Type B	
Operating mode	☑ Low Demand Mode	☑ High Demand	☐ Continuous Mode
Valid Hardware-Version	n/a		
Valid Software-Version	n/a		
Safety manual	FY01111K/09		
Type of evaluation (check only one box)	☐	Complete HW/SW evaluation parallel to development incl. FMEDA and change request acc. to IEC 61508-2, 3	
	☐	Evaluation of "Proven-in-use" performance for HW/SW incl. FMEDA and change request acc. to IEC 61508-2, 3	
	☐	Evaluation of HW/SW field data to verify „prior use" acc. to IEC 61511	
	☑	Evaluation by FMEA acc. to IEC61508-2 for devices in respect of hardware safety integrity	
Evaluation through / certificate no.	internal assessment		
Test documents	development documents, test reports, data sheets		

SIL - Integrity			
Systematic safety integrity		☐ SIL 2 capable	☑ SIL 3 capable
Hardware safety integrity	2-wire use (HFT = 0)	☐ SIL 2 capable	☑ SIL 3 capable
	3-wire use (HFT = 0)	☐ SIL 2 capable	☑ SIL 3 capable
	4-wire use (HFT = 0)	☐ SIL 2 capable	☑ SIL 3 capable

FMEA	HAW568-*A
Safety function	The safety function of a Surge Protective Devices is to behave like a piece of copper wire, passing through the process signal without being altered.
λ_{DU} [1) 2)]	2.59E-10 (2-wire), 3.89E-10 (3-wire), 5.18-10 (4-wire)
λ_{DD} [1) 2)]	1.05E-08 (2-wire), 1.99E-08 (3-wire), 2.09E-08 (4-wire)
λ_{SD} [1) 2)]	0.00E+00
λ_{SU} [1) 2)]	4.77E-09 (2-wire), 9.42E-09 (3-wire), 9.55E-09 (4-wire)
SFF - Safe Failure Fraction	98.33 % (2-wire), 98.69 % (3-wire), 98.33 % (4-wire)
PFD_{avg} T_1 = 5 year [2)]	5.76E-06 (2-wire), 8.67E-06 (3-wire), 1.15E-05 (4-wire)
PFH	n/a
PTC [3)]	n/a
Fault reaction time [4)]	n/a
Diagnostic test interval [5)]	n/a
Process safety time [6)]	n/a
MTTF [7)]	n/a

Declaration	
☑	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 10^9 h
2) Valid for average ambient temperature up to +80 °C (+176 °F)
For continuous operation at ambient temperature close to +80 °C (+176 °F), a factor of 2 should be applied
3) PTC = Proof Test Coverage
4) Maximum time between error recognition and error response
5) All online diagnostic functions are performed at least once within the Diagnostic test interval (32 min incl. memory test)
6) The Process safety time is: Diagnostic test interval x 100 (calculated acc. to IEC 61508)
7) MTTF (Mean Time To Failure) is the predicted elapsed time between inherent failures of a system during operation in accordance to Siemens SN29500

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General			
Device designation and permissible types	HAW568-*B (Order code for "Additional approval ": Option LA "SIL")		
Safety-related output signal	n/a		
Fault current	n/a		
Process variable/function	Provide surge protection for field equipment		
Safety function(s)	The safety function of Surge Protective Devices is to behave like a piece of copper wire, passing through the process signal without being altered.		
Device type acc. to IEC 61508-2	☑ Type A	☐ Type B	
Operating mode	☑ Low Demand Mode	☑ High Demand	☐ Continuous Mode
Valid Hardware-Version	n/a		
Valid Software-Version	n/a		
Safety manual	FY01111K/09		
Type of evaluation (check only one box)	☐ Complete HW/SW evaluation parallel to development incl. FMEDA and change request acc. to IEC 61508-2, 3		
	☐ Evaluation of "Proven-in-use" performance for HW/SW incl. FMEDA and change request acc. to IEC 61508-2, 3		
	☐ Evaluation of HW/SW field data to verify „prior use" acc. to IEC 61511		
	☑ Evaluation by FMEA acc. to IEC61508-2 for devices in respect of hardware safety integrity		
Evaluation through / certificate no.	internal assessment		
Test documents	development documents, test reports, data sheets		

SIL - Integrity			
Systematic safety integrity		☐ SIL 2 capable	☑ SIL 3 capable
Hardware safety integrity	2-wire use (HFT = 0)	☐ SIL 2 capable	☑ SIL 3 capable
	3-wire use (HFT = 0)	☐ SIL 2 capable	☑ SIL 3 capable
	4-wire use (HFT = 0)	☐ SIL 2 capable	☑ SIL 3 capable

FMEA	HAW568-*B
Safety function	The safety function of a Surge Protective Devices is to behave like a piece of copper wire, passing through the process signal without being altered.
λ_{DU} [1) 2)]	0.00E+00
λ_{DD} [1) 2)]	8.39E-09 (2-wire),1.68E-08 (3-wire),1.68E-08 (4-wire)
λ_{SD} [1) 2)]	0.00E+00
λ_{SU} [1) 2)]	4.52E-09 (2-wire),9.03E-09 (3-wire),9.03E-09 (4-wire)
SFF - Safe Failure Fraction	100%
PFD_{avg} T_1 = 5 year [2)]	6.71E-08 (2-wire), 1.34E-07(3-wire), 1.34E-07 (4-wire)
PFH	n/a
PTC [3)]	n/a
Fault reaction time [4)]	n/a
Diagnostic test interval [5)]	n/a
Process safety time [6)]	n/a
MTTF [7)]	n/a

Declaration	
☑	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 10^9 h
2) Valid for average ambient temperature up to +80 °C (+176 °F)
For continuous operation at ambient temperature close to +80 °C (+176 °F), a factor of 2 should be applied
3) PTC = Proof Test Coverage
4) Maximum time between error recognition and error response
5) All online diagnostic functions are performed at least once within the Diagnostic test interval (32 min incl. memory test)
6) The Process safety time is: Diagnostic test interval x 100 (calculated acc. to IEC 61508)
7) MTTF (Mean Time To Failure) is the predicted elapsed time between inherent failures of a system during operation in accordance to Siemens SN29500