



The manufacturer
may use the mark:



Revision 2.3 August 19, 2019
Surveillance Audit Due
September 1, 2021



ANSI Accredited Program
PRODUCT CERTIFICATION
#1004

Certificate / Certificat Zertifikat / 合格証

VEGA 1202050C P0011 C004

exida hereby confirms that the:

Radiation-based Transmitters PROTRAC 30 Series

**VEGA Grieshaber KG
Schiltach - 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 2 (SIL 2 Capable)

Random Capability: Type B Element

SIL 2 @ HFT = 0; Route 1_H

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

Safety Function:

The PROTRAC 30 Series Transmitter will measure the level of the process material 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

Certificate / Certificat / Zertifikat / 合格証

VEGA 1202050C P0011 C004

Systematic Capability: SC 2 (SIL 2 Capable)

Random Capability: Type B Element

SIL 2 @ HFT = 0; Route 1_H

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

PROTRAC 30 Series
Transmitter

Systematic Capability:

These Products have 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 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.

Versions:

Applications with continuous level measurement and level limit detection of liquids and bulk solids.
Hardware version 1.0.6 and Software version 2.1.0

Single or Master devices:

C1 – Point Level PT31, MT31, MT32 using relay output (MIN/MAX)

C2 – Point Level PT31, MT31, MT32 using 8/16mA current output (MIN/MAX)

C3 – Level MT31, MT32, FT31/32, ST31 (short) using 4..20mA current output (MIN/MAX/RANGE)

C4 – Level FT31/32, ST31 (long) using 4..20mA current output (MIN/MAX)

Slave devices:

C5 – Level FT31/32, ST31 (short scintillator) (MIN/MAX/RANGE)

C6 – Level FT31/32, ST31 (long scintillator) (MIN/MAX)

Configuration	λ_S	λ_{DD}	λ_{DU}	λ_H	λ_L	λ_{AD}	λ_{AU}
C1: MIN/MAX limit detection	458	1097	123	0	0	24	30
C2, C3, C4: MIN/MAX limit detection	123	1413	125	12	71	86	11
C3: Range measurement	0	1507	154	12	71	86	11
C5: Range measurement	0	1466	149	0	0	19	2
C5, C6: MIN/MAX limit detection	123	1372	120	0	0	19	2
C3 with 2 slaves, C5: RANGE measurement	0	4439	451	12	71	125	16
C4 with 2 slaves C6: MIN/MAX limit detection	368	4157	365	12	71	125	16

All failure rates are given in FIT (failures / 10⁹ hours)

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: VEGA 1202-050-C R008 V1R4

Safety Manual: PROTRAC 30 Series 49354



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T-013, V3R7