

FUNCTIONAL SAFETY CERTIFICATE

CERTIFICATO – ZERTIFIKAT – CERTIFICADO – CERTIFICAT

The product:

HS-420I, HS-420d
Intrinsically Safe Accelerometers

Manufactured by:

Hansford Sensors Ltd.
Artisan, Hillbottom Road, Sands Industrial Estate,
High Wycombe HP12 4HJ 8824
UK

suitable for the following safety function(s):

Overall vibration protection input device

has been assessed per the relevant requirements of

IEC 61508:2010 Parts 1 to 2

and meets the requirements providing the following:

Systematic Capability:

The compliance with the requirements for the avoidance of systematic faults and the requirements for the control of systematic faults have been achieved following the compliance route 1s.

SC 3

Hardware Safety Integrity:

The constraints on hardware safety integrity have been verified in order to achieve a sufficiently robust architecture taking into account the level of element and subsystem complexity following the compliance Route indicate the next page.

Type
A

Random Safety Integrity:

The estimated safety integrity, for each safety function, due to random hardware safe and dangerous failures rates (excluding "no part" and "no effect" contribution).

See
page
2

The architectural constraints and the effects of random failures (PFH/PFD_{AVG}) must be verified for each specific application and safety function implemented by the E/E/PE safety-related system.

Certified by:

BYHON

BYHON Certification Director:

Franco Rosati

Rosati Francesco

CERTIFICATE No:
HANS-420VB-ENS-B02

Issued:
August 05th, 2025

Valid until:
November 18th, 2027

The owner of a valid certificate for an assessed product is authorized to affix the following mark and relative ID number, to all recognized devices which are identical to the product assessed.

BYHON
SIL ✓



ANSI National Accreditation Board
ACCREDITED

ISO/IEC 17065
PRODUCT CERTIFICATION
BODY
#8914

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The design of each Safety Instrumented Function (SIF) shall meet the requirements listed in the reference standards that shall be selected by taking into account the specific application. Specific activities necessary to investigate and reach a judgment on the adequacy of the functional safety achieved by the E/E/PE safety-related system or compliant items (elements/subsystems) has been conducted by an independent assessor.

The following failure rates data shall be used to the PFH/PFD_{AVG} estimation, taking into consideration all parameters such as redundancy, architectural constraints, diagnostic capability, also introduced by the whole system, including the considerations about the proof test and its effectiveness, mean time of restoration, up to the maintenance capability and its minimum characteristics.

Model	Route	λ_s	λ_{DU}	λ_{DD}
HS-420I, HS-420IT, HS-420M	1 _H , 2 _H	37	127	184
HS-420d	1 _H			

Notes:

- The diagnostic part of failure rates is present in case of out-of-range diagnostic by Logic Solver..
- All failure rates are in FIT (Failure In Time 1 FIT = 1 failure / 10⁹ hours).
- The prescriptions contained in the safety manual QM34 issue 3 (or later) shall be followed
- The device can be used in SIL2 application with HFT=0, and in SIL 3 application with HFT=1.

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The Functional Safety
Assessment report no.

21-HAN-420VB-FSA-03

dated:
August 04th, 2025

is an integral part of this
certificate



Mod_12_CB Rev08

BYHON
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Prato (PO)
ITALY

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