

FUNCTIONAL SAFETY CERTIFICATE

CERTIFICATO – ZERTIFIKAT – CERTIFICADO – CERTIFICAT

The products:

PAS – Single Act Scotch-Yoke Pneumatic Actuator
PAD – Double Act Scotch-Yoke Pneumatic Actuator

Manufactured by:

Andishe Gostar Mobin
(Mobin Automation)
NO.110, Vaezi St, Shariati St
Tehran, Iran

suitable for the following safety function(s):

Single Act Actuator: Perform a full stroke by spring thrust effect
Double Act Actuator: Performing a full stroke by the effect of the fluid
working pressure

has been assessed per the relevant requirements of

IEC 61508:2010 Parts 1 to 7

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 2

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 1_H.

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).

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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:


Rosati Francesco

CERTIFICATE No:
MOBI-SYPSD-ENS-E01

Revision: A

Issued:
15/11/2021

Valid until:
14/11/2024

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 ✓

ID.N° 143221E01N



#8914
ISO/IEC 17065
Product Certification Body

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 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.

Safety Functions failure rates

Model	λ_s	λ_{DU}	λ_{DD}
PAS	206	412	0
PAS – with Partial stroke Test	206	151	261
PAD	0	510	0
PAD – With Partial Stroke Test	0	190	321

Notes:

- All failure rates are in FIT (Failure In Time 1 FIT = 1 failure / 10⁹ hours).
- No internal diagnostic is included in the device. The considered diagnostics are external.
- Mode of Operation: Low Demand Mode.
- All considerations are provided considering HFT=0.
- Considering the Architectural Constraints, the products can be used in the following applications:
 - o Up to SIL 1 without external diagnostic.
 - o Up to SIL 2 with external diagnostic.

The prescriptions contained in the safety manual IQA-0300 shall be followed.

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The Functional Safety
Assessment report no.

21-MOB-SYPSD-FSA-01

dated:
15/11/2021

is an integral part of this
certificate



Mod_12_CB Rev03

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