FUNCTIONAL SAFETY

CERTIFICATE

CERTIFICATO – ZERTIFIKAT – CERTIFICADO – CERTIFICAT

The product:

Emergency Stop Pushbuttons

Manufactured by:

ASEM S.r.l.
Via Buia, 4
33011 Artegna, Udine
Italy

suitable for the following safety function(s):

Open the normally closed emergency contacts allowing the downstream emergency devices to block the machine/unit

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 1_S.	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 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).	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:

Rosati Francesco

CERTIFICATE No:
ASEM-EPUSH-ENS-B01

Issued:
February 28th, 2025

Valid until:
February 27th, 2028

The owner of a valid certificate for an assessed product is authorized to affix the following mark to all recognized devices which are identical to the product assessed

BYHON SIL

ANAB
ANSI National Accreditation Board
ACCREDITED
ISO/IEC 17065
PRODUCT CERTIFICATION BODY
#8914

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.

Failure rate for Emergency Stop Pushbuttons

CONFIGURATION	CODE	λ_S	λ_{DU}	λ_{DD}
1	26149501	42	4	0
17	26149517			
18	26149518			
5	26149505			
6	26149506			
7	26149507			
11	26149511			
12	26149512			
13	26149513			
21	26149601			
25	26149605			
26	26149606			
27	26149607			
31	26149611			
32	26149612			
33	26149613			
36	26149617			
37	26149618			
42	26149622			
43	26149623			
2	26149502	44	2	7
3	26149503			
8	26149508			
9	26149509			
10	26149510			
22	26149602			
23	26149603			
28	26149608			
29	26149609			
30	26149610			
41	26149621			
4	26149504	45	2	7
24	26149604			
14	26149514	29	2	0
15	26149515			
34	26149614			
35	26149615			
16	26149516	24	2	0
20	26149520	18	2	0

Notes:

- All failure fates are in FIT (Failure In Time 1 FIT = 1 failure / 10^9 hours).
- Each configuration can be used up to SIL 3 application.

The prescriptions contained in the safety manual E071304 shall be followed.

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The Functional Safety Assessment report no.

25-ASE-EPUSH-FSA-01

dated:
February 28th, 2025

is an integral part of this certificate

Mod_12_CB Rev09

BYHON
Via Lepanto 23, 59100
Prato (PO)
ITALY