

FUNCTIONAL SAFETY ASSESSMENT

This certifies, that the company

IMI Critical Engineering Korea Co., Ltd.
14 Dangdong 2-ro, Munsan-eup, Paju-si,
Gyeonggi-do Korea 10816

Manufacturing plant:

IMI Critical Engineering Korea Co., Ltd.
14 Dangdong 2-ro, Munsan-eup, Paju-si,
Gyeonggi-do – Korea 10816

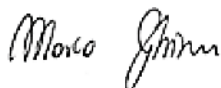
Description of product:
(Details see Annex 1)

840G/GC/H, 860G/H, 900D, 940H Valve Series

Tested in accordance with:

EN 61508:2010 Parts 1, 2, 4, 5, 6, 7

Registration No. 17 16805 rev. 2
Test Report No. PS-23239-22-M-01 Rev.0
File reference 23239-22



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Validity
from 2022-12-31
until 2027-12-31

Cerro Maggiore, 2023-02-17
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Please also pay attention to the information stated overleaf

ANNEX

Annex 1, page 1 of 1

to Functional Safety Assessment Registration No. 17 16805 rev. 2

E/EE/EP safety-related system (final element)	840G/GC/H, 860G/H, 900D, 940H Valve Series produced by IMI Critical Engineering Korea Co., Ltd.			
Type (Class)	840G/GC/H, 860G/H	840G/GC/H, 860G/H	900D, 940H	900D, 940H
Environment / Application ⁽¹⁾	According to the safety manual	According to the safety manual	According to the safety manual	According to the safety manual
Safety Function Definition	FO (Fail to open)	FC (Fail to close)	FO (Fail to open)	FC (Fail to close)
Max SIL (with HFT = 1)	SIL3	SIL3	SIL3	SIL3
Max SIL (with HFT = 0)	SIL2	SIL2	SIL2	SIL2
SC	SIL3	SIL3	SIL3	SIL3
λ_{TOT}	5.797E-08	1.662E-07	3.280E-06	9.405E-06
λ_{SD}	1.811E-08	6.753E-08	1.025E-06	3.821E-06
λ_{SU}	0.000E+00	0.000E+00	0.000E+00	0.000E+00
λ_{DD}	0.000E+00	0.000E+00	0.000E+00	0.000E+00
λ_{DU}	3.985E-08	9.870E-08	2.255E-06	5.584E-06
$\lambda_{DU,FPT}$	6.159E-09	2.026E-08	3.485E-07	1.146E-06
$\lambda_{DU,PST}$	3.369E-08	7.844E-08	1.906E-06	4.438E-06
PFD ⁽²⁾	2.29E-04	6.10E-04	3.61E-03	5.39E-03
PST interval	≥ 12 months	≥ 12 months	≥ 3 months	≥ 1 months
FPT interval	≥ 36 months	≥ 36 months	≥ 36 months	≥ 9 months
β and β_D factor	10 %	10 %	10 %	10 %
MTTR	8 h	8 h	8 h	8 h
Hardware Safety Integrity	Route 2 _H	Route 2 _H	Route 2 _H	Route 2 _H
Systematic Safety Integrity	Route 2 _S	Route 2 _S	Route 2 _S	Route 2 _S

(1) Category identified according to specific environment and application. Refer to the product safety manual for the detailed information on the categories.

(2) PFD of reference calculated on the basis of a Full Functional Proof Test and Partial Proof Test with time intervals reported for HFT = 0 configuration only. This time intervals are considered by TÜV as reasonably consistent with the implementation of the equipment for safety related-applications, with reference to the overall range of results shown in the report, where other possible combination of time intervals adequate for a classification up to the SIL reported.