

C E R T I F I C A T E

This certifies, that the company

Intervolve Poonawalla Ltd.

**Unit II, S.NO.114, Plot NO.32B and 29, Hadapsar Industrial Estate, Hadapsar, Haveli,
Pune Maharashtra-411013
India**

Is authorized to provide the product mentioned below

Description of product: **Actuators**
 1. Y Series
 2. M Series

In accordance with: **EN 61508:2010 Parts 1, 2, 4**

Registration No 23 24418 02 rev 1
Test Report No PS-24418-23-M rev 1
File reference 24418-02



TÜV NORD Italia S.r.l. (TÜV NORD Group)
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Validity
from 2023-08-25
until 2026-08-25

Cerro Maggiore, 2023-08-25
prodotto@tuev-nord.it

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E/EE/EP safety-related system (final element)		IVY Series Rack & Pinion Pneumatic Actuator	
Class		G5	G6
Series		IVYS (Single Acting)	IVYD (Double Acting)
Environment / Application ⁽¹⁾	Series Type	IVYS-50, IVYS-120, IVYS-220, IVYS-400, IVYS-550, IVYS-850, IVYS-2000, IVYS-3000	IVYD-50, IVYD-120, IVYD-220, IVYD-400, IVYD-550, IVYD-850, IVYD-2000, IVYD-3000
	Pressure Rating	Upto 8 bar	Upto 8 bar
	Temperature Range	-50 °C to +120°C	-50 °C to +120 °C
Safety Function Definition		Correct switching (Open to Close / Close to open) on demand , in low demand mode of operation	Correct switching (Open to Close / Close to open) on demand , in low demand mode of operation
Max SIL (with HFT = 0)		SIL2	SIL2
Max SIL (with HFT = 1)		SIL3	SIL3
SC		3	3
λ_{TOT}		2,61E-08	2,63E-08
λ_S		4,36E-10	4,13E-10
λ_{DU}		2,57E-08	2,58E-08
PFD _{avg} ⁽²⁾ (FPT 12 months)		3,43E-04	3,91E-04
FPT interval		12 months	12 months
β and β_D factor		10%	10%
MRT		8 h	8 h
Hardware Safety Integrity		Route 2 _H	Route 2 _H
Systematic Safety Integrity		Route 2 _S	Route 2 _S

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E/EE/EP safety-related system (final element)		IVM Series Rack & Pinion Pneumatic Actuator	
Class		G7	G8
Series		IVMS (Single Acting)	IVMD (Double Acting)
Environment / Application ⁽¹⁾	Series Type	IVMS-10, IVMS-20, IVMS-35, IVMS-90, IVMS-180, IVMS-300, IVMS-450, IVMS-700, IVMS-1200	IVMD-10, IVMD-20, IVMD-35, IVMD-90, IVMD-180, IVMD-300, IVMD-450, IVMD-700, IVMD-1200
	Pressure Rating	Upto 8 bar	Upto 8 bar
	Temperature Range	-50 °C to +120°C	-50 °C to +120°C
Safety Function Definition		Correct switching (Open to Close / Close to open) on demand , in low demand mode of operation	Correct switching (Open to Close / Close to open) on demand , in low demand mode of operation
Max SIL (with HFT = 0)		SIL2	SIL2
Max SIL (with HFT = 1)		SIL3	SIL3
SC		3	3
λ_{TOT}		1,08E-08	2,14E-09
λ_S		1,80E-10	3,37E-11
λ_{DU}		1,06E-08	2,11E-09
PFD _{avg} ⁽²⁾ (FPT 12 months)		1,42E-04	3,19E-05
FPT interval		12 months	12 months
β and β_D factor		10%	10%
MRT		8 h	8 h
Hardware Safety Integrity		Route 2 _H	Route 2 _H
Systematic Safety Integrity		Route 2 _S	Route 2 _S

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Remarks

(1) Category identified according to specific environment and application, in particular for valve design for the specific fluid type and temperature range. 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 with time intervals reported for HFT = 0 configuration only. This time interval is 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. Note that, concerning Full Proof Tests and the Partial Stroke Test, time intervals respectively higher than 36 months and 12 months are considered by TÜV as not adequate and consistent for equipment for safety related applications.