

C E R T I F I C A T E

This certifies, that the company

Susin I-Tork India (P) Ltd.
No. 43A9, Vadakku thottom pakuthi Idikarai,
Coimbatore-641022 Tamilnadu,
India

Is authorized to provide the product mentioned below

Description of product: **1. IS/IC Series Heavy Duty Scotch Yoke Pneumatic Actuators**
 2. PDS Series Scotch Yoke Pneumatic Actuator

In accordance with: **EN 61508:2010 Parts 1, 2, 3, 4, 5, 6, 7**



Registration No 23 24517 01
Test Report No PS-24517-23-M
File reference 24517-01

Validity
from 2023-08-28
until 2026-08-28



TÜV NORD Italia S.r.l. (TÜV NORD Group)
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Cerro Maggiore, 2023-08-28
prodotto@tuev-nord.it

Please also pay attention to the information stated overleaf

TNI-QF(IND-SIL-01)-14-Rev00_01_03_2020-Certificate_Type A

ANNEX

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E/EE/EP safety-related system (final element)		IS/IC Series Heavy Duty Scotch Yoke Pneumatic Actuators	
Class		G1	G2
Series		ISR/ICR (Single Acting)	ISD/ICD (Double Acting)
Environment / Application ⁽¹⁾	Series Type	ISR/ICR 02-20, 02-25, 02-30, 02-35, 03-35, 03-38, 03-43, 04-43, 04-48, 04-53, 05-53, 05-58, 05-63, 06-63, 06-68, 06-73	ISD/ICD 02-20, 02-25, 02-30, 02-35, 03-35, 03-38, 03-43, 04-43, 04-48, 04-53, 05-53, 05-58, 05-63, 06-63, 06-68, 06-73
	Pressure Rating	Up to 8 bar	Up to 8 bar
	Temperature Range	-20 °C to +80 °C	-20 °C to +80 °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}		2,59E-06	3,15E-06
λ_S		4,08E-08	4,95E-08
λ_{DU}		2,55E-06	3,10E-06
PFD_{avg}⁽²⁾		8,39E-03	6,78E-03
FPT interval		9 months	6 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)		PDS Series Scotch Yoke Pneumatic Actuator	
Class		G3	G4
Series		PS (Single Acting)	PD (Double Acting)
Environment / Application ⁽¹⁾	Series Type	PS45, PS50, PS55, PS70, PS75, PS85, PS100, PS125, PS160, PS200	PD45, PD50, PD55, PD70, PD75, PD85, PD100, PD125, PD160, PD200
	Pressure Rating	Up to 8 bar	Up to 8 bar
	Temperature Range	-20 °C to +80°C	-20 °C to +80 °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}		1,55E-07	7,11E-08
λ_S		2,43E-09	1,12E-09
λ_{DU}		1,52E-07	7,00E-08
PFD _{avg} ⁽²⁾		6,66E-04	3,07E-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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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.
- (3) The values have been calculated assuming that during the FPT all failures are detected