Italia

COMPLIANCE

with IEC EN 61508

Certificate No.: TUV IT 25 SIL 0526 Rev.1

CERTIFICATE OWNER:	**WireMatic Trutorq AB** **Krossgatan 22B** **SE-162 50 Vällingby (Stockholm) - Sweden**
MANUFACTURER:	**Trutorq Italia S.r.l.** **Via Stelvio 20/22/24** **25038 Rovato (BS) - Italy**

WE HEREWITH CONFIRM THAT

PNEUMATIC ROTARY ACTUATORS

RACK & PINION DOUBLE ACTING & SPRING RETURN

(WM WIREMATIC S-TYPE, C-TYPE, E-TYPE)

MEET THE SIL REQUIREMENTS DETAILED IN THE ANNEXED TABLES

FOR THE SAFETY FUNCTION:

"Correct switching on demand (open to closed and closed to open) in low demand mode of operation"

Examination result:	**The above reported Pneumatic Rotary were found to meet the standard defined requirements of the safety levels detailed in the following table according to IEC EN 61508, under fulfillment of the conditions listed in the Report R TUV IT 25 SIL 0491 in its currently valid version, on which this Certificate is based**
Examination parameters:	**Construction/Functional characteristics and reliability and availability parameters of the above Pneumatic Rotary Actuators**
Official Report No.:	**R TUV IT 25 SIL 0491**
Expiry Date	**January, 21st 2028**

IT IS TO BE INTENDED THAT THE ABOVE OFFICIAL REPORT AND ITS ANNEXES ARE AN INTEGRAL PART OFTHIS DOCUMENT
THE PRESENT DOCUMENT SUBSITUTES AND REPEALS THE DOCUMENT C-IS-722258685-03

Reference Standard **IEC EN 61508:2010 Part 2, 4, 6, 7**

Milan, February, 04th 2025

TÜV ITALIA Srl

TÜV Italia Srl Industrie Service TÜV SÜD Italia

TÜV ITALIA Srl
Industrie Service Division
Managing Director

Alberto Carelli

Italia

SUMMARY TABLE

E/EE/EP safety-related system (final element)	**Pneumatic Rotary Actuators Rack & Pinion WM S-Type, WM C-Type, WM E-Type produced by Trutorq Italia S.r.l.**		
Type	**WM S-Type**	**WM C-Type**	**WM E-Type**
System type	Type A		
Systematic Capability	*SC3*		
Safety Function Definition	*Correct switching on demand (open to closed and closed to open), in low demand mode of operation*		
Max SIL(1)	**SIL3**		
λ_{TOT}	1,052E-09	6,550E-09	1,471E-08
λ_{NE}	0,000E+00	0,000E+00	0,000E+00
λ_{SD}	0,000E+00	0,000E+00	0,000E+00
λ_{SU}	6,789E-10	4,225E-09	9,487E-09
$\lambda_{DD,PST}$(2)	2,309E-10	1,437E-09	3,227E-09
$\lambda_{DU,FPT}$	1,426E-10	8,874E-10	1,993E-09
β and β_D factor	10%	10%	10%
MRT	8 h	8 h	8 h
Hardware Safety Integrity	Route 2_H		
Systematic Safety Integrity	Route 2_S		

Remarks

(1) The Safety Integrity Level (SIL) of the entire Safety Instrumented Function (SIF) must be verified via a calculation of PFD_{AVG} considering the redundant architectures, proof test interval, proof test effectiveness, any automatic diagnostics, average repair time and the specific failure rates of all products included in the SIF. Each subsystem must be checked to assure compliance with the minimum hardware fault tolerance (HFT) requirements.

(2) Considering an automatic Partial Stroke Test.

SIL classification according to Standards IEC EN 61508 (Chapters: 2, 4, 6, 7) for Pneumatic Rotary Actuators Rack & Pinion WM S-Type, WM C-Type, WM E-Type produced by Trutorq Italia S.r.l.

NOTE: The present table is integral part of the Document: TUV IT 25 SIL 0526 Rev.1
Date: February, 04th 2025