

Certificate



No.: 968/FSP 1064.03/18

Product tested	Quartz™ Valve Position Indicator/Sensor	Certificate holder	StoneL 26271 US Highway 59 Fergus Falls, MN 56537 USA
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Type designation	QN35, QN45, QX35, QX45
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Codes and standards	IEC 61508 Parts 1-7:2010
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Intended application	The Quartz™ Valve Position Indicator/Sensors fulfill the requirements of SIL 2 according to IEC 61508 and can be used in applications as such. The products were also reviewed in reference to the requirements of IEC 61511-1 applicable during a type examination and can be used in application as such up SIL 2.
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Specific requirements	The instructions of the associated Installation, Maintenance and Operating Instructions and Safety Manual shall be considered.
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Valid until 2023-07-31

The issue of this certificate is based upon an examination, whose results are documented in Report No. 968/FSP 1064.03/18 dated 2018-07-31.
This certificate is valid only for products which are identical with the product tested.

TÜV Rheinland Industrie Service GmbH
Bereich Automation
Funktionale Sicherheit
Am Grauen Stein, 51105 Köln

Köln, 2018-07-31

Certification Body Safety & Security for Automation & Grid

Dipl.-Ing. Stephan Häb

Safety function: Sense and indicate the position of actuator/valve assemblies.

Model Series	Type	λ / 1/h	λ_s / 1/h	λ_d / 1/h	SFF
QX35, QN35	A	2.24E-07	1.40E-07	8.40E-08	62,5%
QX45, QN45	A	3.55E-07	2.43E-07	1.11E-07	68,6%

λ = Total Failure Rate ($\lambda = \lambda_s + \lambda_d$)

λ_s = Safe Failure Rate

λ_d = Dangerous Failure Rate

Safe Failure Fraction SFF = λ_s / λ