

Certificate



No.: 968/V 1243.00/21

Product tested Globe Valves **Certificate holder** AMPO POYAM Valves
Division Valvulas Poyam
Barrio Katea Auzoa S/N
20213 Idiazabal
(Guipuzcoa)
Spain

Type designation G.n.m" - Globe Valve
G.n.m".C - Cryogenic Globe Valve
G.n.m".PS - Pressure Seal Globe Valve
G.n.m".SC - Stop Check Globe Valve
G.n.m".PS.SC - Pressure Seal Stop Check Globe Valve
G.Y.n.m" - Y Globe Valve
G.Y.n.m".PS - Pressure Seal Y Globe Valve
G.Y.n.m".SC - Y Body Stop Check Globe Valve
G.Y.n.m".PS.SC - Pressure Seal Stop Check Y Type Globe Valve
(n: Pressure rating; m": Size)

Codes and standards IEC 61508 Parts 1-2 and 4-7:2010

Intended application Safety Function:
- Close on demand by external power supply and keep up external tightness
- Open on demand by external power supply and keep up external tightness

The valves are suitable for use in a safety instrumented system up to SIL 2 (low demand mode). Under consideration of the minimum required hardware fault tolerance HFT = 1 the valves may be used in a redundant architecture up to SIL 3.

Specific requirements The instructions of the associated Installation, Operating and Safety Manual shall be considered.

Summary of test results see back side of this certificate.


Valid until 2026-06-30

The issue of this certificate is based upon an evaluation in accordance with the Certification Program CERT FSP1 V1.0:2017 in its actual version, whose results are documented in Report No. 968/V 1243.00/21 dated 2021-06-23. This certificate is valid only for products, which are identical with the product tested.

TÜV Rheinland Industrie Service GmbH
Bereich Automation
Funktionale Sicherheit

Köln, 2021-06-30

Certification Body Safety & Security for Automation & Grid


Dipl.-Ing. (FH) Wolf Rückwart

Holder:

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Product tested:

Globe Valves of type:

G.n.m" Globe Valve Non Cryogenic	150-300-600-900-1500-2500 (lbs)	-46 °C to 650 °C	1/2"-30"
G.n.m".C Cryogenic Globe Valve	150-300-600-900-1500-2500 (lbs)	-196 °C to 650 °C	1/2"-30"
G.n.m".PS Pressure Seal Globe Valve	600-900-1500-2500 (lbs)	-46 °C to 650 °C	2"-26"
G.n.m".SC Stop Check Globe Valve	150-300-600-900-1500-2500 (lbs)	-46 °C to 650 °C	1"-26"
G.n.m".PS.SC Pressure Seal Stop Check Globe Valve	600-900-1500-2500 (lbs)	-46 °C to 650 °C	2"-26"
G.Y.n.m" Y Globe Valve	150-300 (lbs)	-46 °C to 650° C	1"-26"
G.Y.n.m".PS Pressure Seal Y Globe Valve	600-900-1500-2500 (lbs)	-46° C to 650 °C	2"-26"
G.Y.n.m".SC Y Body Stop Check Globe Valve	150-300-600-900-1500-2500 (lbs)	-46 °C to 650 °C	2"-26"
G.Y.n.m".PS.SC Pressure Seal Stop Check Y Type Valve	600-900-1500-2500 (lbs)	-46 °C to 650 °C	2"-26"

(n: Pressure rating; m": Size)

Results of Assessment

Route of Assessment		2 _H / 1 _S
Type of Sub-system		Type A
Mode of Operation		Low Demand Mode
Hardware Fault Tolerance	HFT	0
Systematic Capability		SC 3

Close on demand by external power supply and keep up external tightness

Dangerous Failure Rate	λ_D	2.89 E-07 / h	289 FIT
Average Probability of Failure on Demand 1oo1	$PFD_{avg}(T_1)$	1.29 E-03	
Average Probability of Failure on Demand 1oo2	$PFD_{avg}(T_1)$	1.30 E-04	

Open on demand by external power supply and keep up external tightness

Dangerous Failure Rate	λ_D	2.73 E-07 / h	273 FIT
Average Probability of Failure on Demand 1oo1	$PFD_{avg}(T_1)$	1.22 E-03	
Average Probability of Failure on Demand 1oo2	$PFD_{avg}(T_1)$	1.23 E-04	

Assumptions for the calculations above: DC = 0 %, T₁ = 1 year, MRT = 72 h, β_{1oo2} = 10 %

Origin of failure rates

The stated failure rates for low demand are the result of an FMEDA with tailored failure rates for the design and manufacturing process.

Furthermore the results have been verified by field-feedback data.

Failure rates include failures that occur at a random point in time and are due to degradation mechanisms such as ageing. The stated failure rates do not release the end-user from collecting and evaluating application-specific reliability data.

Periodic Tests and Maintenance

The given values require periodic tests and maintenance as described in the Safety Manual.

The operator is responsible for the consideration of specific external conditions (e.g. ensuring of required quality of media, max. temperature, time of impact), and adequate test cycles.