Asco

Safety Integrity Level (SIL) Self-certification

Authority as per IEC 61508-1 Table-5

Certificate

551493-C01

EIC-P hereby confirms that

ALUMINIUM Filter Regulator Series (with/without drain)

ASCO Numatics India Co.,Ltd.

Assessed according to IEC 61508:2010 Part 1-7 and Meets requirements providing

Systematic Integrity : SIL 2 Capable

Random Integrity : SIL2 @ HFT=0

Type A device, on-off valve with PVST

For a valve used in a final element assembly:
SIL must be verified for the specific application

For details refer to FMEDA report. 551493-R01

EICP, 14Dec2021

Evaluating Assessor
Rajesh Salikeri

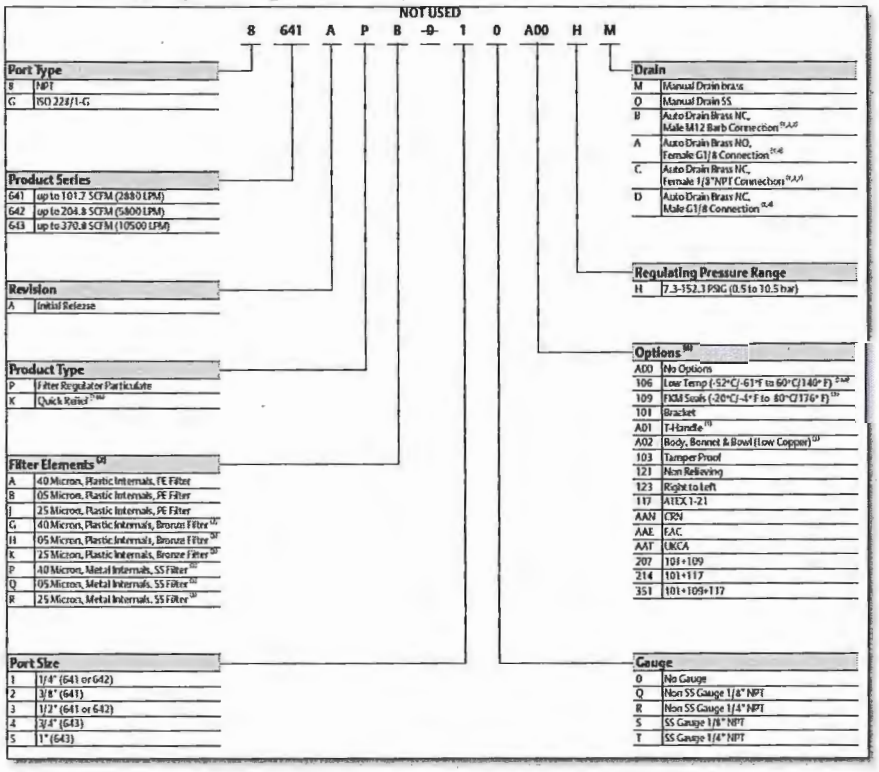
Certifying Assessor
Ashokkumar Senthil

Revision	Issue Date	Evaluating Assessor	Certifying Assessor	ECN No.
-	24-May-2021	Rajesh Salikeri	Ashokkumar Senthil	320206

Declaration of conformity

Manufacturer: ASCO Numatics India, No.57, Kundrathur Main Rd,
Moorthy Nagar, Gerugambakkam, Tamil Nadu 600128, India

Versions (Catalog Numbers): Series 641/642/643



Notes:
(1) Quick relief & low temp combination not available.
Auto drain & low temp combination not available.
FKM seals & low temp combination not available.
T-Handle & tamper proof combination not available.
(2) Filter (Default PE, option available with bronze or SS for 641 only).
(3) Available only for 641.
(4) Available only for 642 & 643.
(5) Available only for 641 & 642.

Note: Above valve is suitable for the use in a safety-related application under the condition of the intended usage and the consideration of the enclosed safety instructions manual.
Safety function: Valve will move to the designed safe position when de-energized within specified safety time.

Operation Mode	Low Demand Mode
Type of sub-system	A

Failure rates according to IEC 61508 for Aluminium Filter Regulator Series 641/642/643	FIT				PFDavg
	λsd	λsu	λdd	λdu	
Aluminium Filter Regulator Series – Without drain With Diagnosis.	15	2	120	49	7.68E-04
Aluminium Filter Regulator Series – With drain With Diagnosis.	18	2	149	53	7.40E-03
Aluminium Filter Regulator Series – Without drain Without Diagnosis	-	17	-	169	7.75E-04
Aluminium Filter Regulator Series – With drain Without Diagnosis	-	21	-	202	8.85E-03

FIT= 1failure/10^9 hours Note: Above values are generated using EXIDA software FMEDAx 2021 tool

1. PFDavg calculation is performed for single (1oo1) architecture, with mission time of 10 years, Proof test interval of 1 year and MTTR (mean time to repair) of 24 hours.
2. PVST DU and DD numbers are used to generate the proof test coverage (PTC) as a conservative approach.
3. The Filter Regulator is an individual component. It is part of a final element system.
4. For SIL 2 applications, the PFD AVG value needs to be ≥ 10^{-3} and <10^{-2}.
5. It is the responsibility of the Safety Instrumented Function designer to do calculation for entire SIF.
6. MTBF calculations=((1/total FIT) / 8760) hrs per year