Certificate No:
TAP00002EK

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pneumatic Actuator

with type designation(s)
AD-001 up to AD-1200, AS-002 up to AS-1200

Issued to
bar pneumatische Steuerungssysteme GmbH
Dattenberg, Rheinland-Pfalz, **Germany**

is found to comply with
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Type	Dsgn. press./Torque
AD-001 up to AD-1200	see certificate
AS-002 up to AS-1200	see certificate

Issued at **Hamburg** on **2021-09-30**
This Certificate is valid until **2026-09-29**.
DNV local station: **Essen**

for **DNV**

Approval Engineer: **Ana Cristina Do Carmo Insfran**

Olaf Drews
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

The pneumatic actuator – actubar ® is actuated exclusively with compressed air or other suitable control media via control valves like butterfly-, ball- and cook valve.

Type: AD = double-acting
AS = single-acting (with spring)
Size: 001 to Size 1200

Technical data:

Air supply pressure: max. 8 [bar]; Size: 1200 max. [7 bar]

Operating temperature: -40°C to + 160°C [depending on actuator material]

Operating medium: Filtered compressed air, dry or lubricated acc. to ISO 8573

Swivel angle: 0° to 90° ± 5°

Valve interface: EN ISO 5211; VDI/VDE 3845 (NAMUR)

Torques: Depending on actuator size and operating pressure,
see manufacturer's technical data sheet

Materials:

Actuator Parts	**Materials**
Actuator housing	Aluminium alloy, Cast aluminium (Size 1200)
End cap	Cast aluminium
Piston	
Drive shaft	Steel, Stainless steel

Application/Limitation

Approved for application on remote operating control valves.

The selection of a suitable actuator for a specific valve type including operation and service conditions shall be carried out according to the technical instructions of the manufacturer.

Type Approval documentation

Tests carried out

- Pressure test. Test pressure in amount of 1,5 times the design pressure
- Functional test

Marking of product

For traceability to this type approval the products are to be marked with:

Legend for type decal	**Example type decal for Double Acting**	**Example type decal for Single Acting**
Manufacture name or trademark	bar	bar
bar article number	60001351	60003041
Article/order designation (see data sheet)	AD-011/090-V17-F	AS-008/090-10-V14-F
Torque per 1 bar of control pressure	Md=11,0Nm/bar	-
Number of safety springs for single-acting actuators	-	10
Permissible maximal control pressure for the pneumatic rotary actuator	Pmax. = 8bar	Pmax. = 8bar
ATEX marking	EX II 2 G Ex h IIC T6.T3 Gb EX II 2 D Ex h IIIC T180°C Db	EX II 2 G Ex h IIC T6.T3 Gb EX II 2 D Ex h IIIC T180°C Db
Date of manufacture (year of production)	31.07.2018	31.07.2018

Note: In addition, the forthgoing serial number is marked into the material on every actuator casing in order to ensure traceability

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the Type Approval are complied with. Refer to DNVGL-CP-0338, Sec.4.

- The certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in https://approvalfinder.dnv.com

END OF CERTIFICATE