

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Quick Closing Valve / Quick Opening Valve**with type designation(s)
AW 33..., AW 34...

Issued to

Armaturen-Wolff Friedrich H. Wolff GmbH & Co. KG
Hamburg, Germany

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL class programme DNVGL-CP-0186 – Type approval – Valves**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Max design press.** 16bar, 40 bar.
Temperature range: Refer to certificate.
Sizes: DN15 up to DN250Issued at **Hamburg** on **2019-11-15**This Certificate is valid until **2024-11-14**.DNV GL local station: **Hamburg CMC**for **DNV GL**Approval Engineer: **Hagen Markus**

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.



Product description

Quick- Closing Valves of type AW 33...(FSV, FSV FABa with Bellow seal) and
Quick – Opening Valves of type AW 34... (FSÖV with Bellow seal). Both types spring loaded.

Type designation

Quick closing: AW 33 X Y Z (TS)

Quick opening: AW 34 X Y Z (TS)

X = Body material and valve body form

0	CuSn5Zn5Pb5-C [CC491K]	straight
1	CuSn5Zn5Pb5-C [CC491K]	angle
2	GP240GH [1.0619]	straight
3	GP240GH [1.0619]	angle
4	EN-GJS-400-18U-LT [EN-JS1049]	straight
5	EN-GJS-400-18U-LT [EN-JS1049]	angle
6	GX5CrNiMo19-11-2 [1.4408]	straight
7	GX5CrNiMo19-11-2 [1.4408]	angle

Y = Valve actuation

0	manual actuation
1	(universal) hydraulic/pneumatic
7	single solenoids
8	double solenoids

Z = Actuator design

4	compact design	Only for type AW33
6	(universal) hydraulic/pneumatic	Both types AW33, AW34
TS	solenoid with thermal link connector	Design acc. to drawing 33484000_12.7.4_TS

Technical data

Materials

Body	EN-GJS-400-18U-LT [EN-JS1049], GP240GH [1.0619], CuSn5Zn5Pb5-C [CC491K], GX5CrNiMo19-11-2 [1.4408]
Disc, stem, seat bush	X 20Cr 13 [1.4021]
Bellow seal	Stainless steel
Sealings stem (O-Rings)	FKM

Nominal pressure PN

CuSn5Zn5Pb5-C [CC491K], EN-GJS-400-18U-LT [EN-JS1049]	Up to PN16
GP240GH [1.0619], GX5CrNiMo19-11-2 [1.4408]	Up to PN40

Temperature range

EN-GJS-400-18U-LT [EN-JS1049] / GP240GH [1.0619]	- 10°C up to 300°C
CuSn5Zn5Pb5-C [CC491K]	- 55°C up to 225°C
GX5CrNiMo19-11-2 [1.4408]	- 55°C up to 300°C

Application/Limitation

Job Id: **262.1-030170-1**
Certificate No: **TAP00001Z7**

The quick closing/opening valves of type AW 33 and AW 34 are type approved for application on tanks and in piping systems.

For installation and operation of the valves the following "Armaturen Wolff" instructions are to be observed:

- AN 7.4-4 "Operation Manual FSV, FSÖV, SSVF"
- AN 7.4.13 "Operating Instruction Electric Quick-Closing valve systems"

Limitation

Quick closing valves with bellow shaft seals.

For installation in piping system with pressure pulsation, e.g. fuel supply lines of diesel engines, proof of endurance strength for the bellow is to be provided for each installation.

Type Approval documentation

Job Id: **262.1-030170-1**
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Tests carried out

Pressure test, Vibration test with acceleration of 0.7g, Dry heat test (55°C), IP55 test acc. to DIN EN 60529, Temperature release test on thermal link connector under ISO 15540/41 test conditions.

Marking of product

Scope	Example
Manufacturers name, short sign	
Type	AW33414
Ser.Nr.	123456
Nominal size / pressure	DN50 / PN16
Body material	JS1049
Heat no. body / lit	00571/U29
Foundry marking	
Flow direction	

Periodical assessment

For retention of the Type Approval, a DNV GL 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 the Class Programme DNVGL-CP-0338, Sec.4.

End of certificate