IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx SEV 19.0050**	Page 1 of 6	Certificate history:
Status:	**Current**	Issue No: 2	Issue 1 (2020-05-26) Issue 0 (2019-11-15)
Date of Issue:	2021-06-17		
Applicant:	**WEKA AG** Schürlistrasse 8 8344 Bäretswil **Switzerland**		
Equipment:	**Cryogenic valves, Types: TzxV, WzxV, BV**		
Optional accessory:	---		
Type of Protection:	**h**		
Marking:	Ex h IIC T6 ...T3 Gb		

Approved for issue on behalf of the IECEx Certification Body:

Martin Plüss

Position:

Manager Product Certification

Signature:
(for printed version)

Date:

2021-06-17

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

Eurofins Electric & Electronic Product Testing AG
Luppmenstrasse 3
CH-8320 FEHRALTORF
Switzerland

eurofins | E&E

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Certificate No.: **IECEx SEV 19.0050**

Date of issue: 2021-06-17

Manufacturer: **WEKA AG**
Schürlistrasse 8
8344 Bäretswil
Switzerland

Additional manufacturing locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

ISO 80079-36:2016 Edition:1.0	Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres - Basic methods and requirements
ISO 80079-37:2016 Edition:1.0	Explosive atmospheres - Part 37: Non-electrical equipment for explosive atmospheres - Non electrical type of protection constructional safety "c", control of ignition source "b", liquid immersion "k"

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

CH/SEV/ExTR19.0052/02

Quality Assessment Report:

CH/SEV/QAR16.0005/02

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Cryogenic valves, Types: TzxV, WzxV, BV

General product information:

The above-mentioned valves are used as shut-off valves or control valves to regulate fluids (gases or liquified gases). The flow is usually controlled by an actuator (pneumatic, electric or manual) by moving the insert to open/close the valve. The actuator is not part of this certification. It is separate certified.

TzxV
The housing is usually integrated in a vessel and thermic insulated by vacuum. For the implementation in the piping of customers application there are several designs available to get an optimal connection.
The 'outer' part is placed on the 'warm' side of the valve (ambient temperature range).

WzxV and BV
These valves are usually not thermic insulated. The housing is implemented in the piping of customers application. There are several designs available to get an optimal connection. Valve and accessories are under environmental conditions.

For Ex applications there are two possible cases to be considered:

1. Explosion hazardous atmosphere inside the valve.
2. Explosion hazardous atmosphere outside the valve.

A typical application concerning Ex protection is the use of the valve for Hydrogen application. In normal operation the Hydrogen flow is controlled by the valve. The Hydrogen is pure and liquefied (-254°C). There is no explosive atmosphere inside or outside the valve.

While setting the system to work, for a shut-down or maintenance there could get Oxygen into the system and creates an explosive atmosphere. Also, a leakage could cause a mixture of Hydrogen and air and therefore an explosive atmosphere outside the valve.

These considerations result in a division concept of zone 2 or rarely in zone 1.

A further thinkable constellation is a valve for Helium (inert gas) in an LNG (Liquid Natural Gas) environment. In this case only the outer parts of the valve are influenced by the Ex protection (incl. actuator and accessories). There is no zone specified for the inner side of the valve but Zone 1 or 2 for the outer side of the valve.

SPECIFIC CONDITIONS OF USE: NO

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Equipment (continued):

Classification of installation and use:	stationary
Ingress protection:	More than IP66
Rated ambient temperature range (°C):	-40 °C to +150 °C
Liquid temperature range (°C):	-271.15 °C to +150 °C Depending of temperature class and type. See type description
Rated ambient temperature range (°C) for Ex Components	---

Dependence of the temperature class on the maximum liquid temperature

Temperature class	Maximum fluid temperature
T6	+75 °C
T4	+125 °C
T3	+150 °C

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
This CoC replaces IECEx SEV 19.0050 Issue No: 1 due to a type extension "z" for one more digit in the TYPE code

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Additional information:
See Annexe

Annex:

IECEx SEV 19.0050 Annexe Issue 2.pdf

Annexe to: **IECEx SEV 19.0050** **Issue No.: 2**

Applicant Name: **WEKA AG**

Equipment: **Cryogenic valves**

Type key

...	-	...	...	...	...	V	DN...	/	PN...	...	-	...	h=...
1.		2.	3.	4.	5.	6.	7.		8.	9.		10.	11.

1. Type of actuator
   could be pneumatic, electric or manual
   Is not part of this certificate and must be checked separately for each case (must be certified separately). See notes for type key below for more information.
2. Valve type (warm or cold)
   T: cryogenic valve, basic type of valve for deep temperature fluids (cold valve), typical below -196°C
   W: warm valve, basic type of valve for higher temperatures (warm valve)
   B: break valve (warm or cold valve with special kv characteristic)
3. Special parameter (guard connection, vacuum test connection, flanged)
   empty = no specialities (standard)
   b: valve design stainless steel (all outer parts in stainless steel 316/316L)
   c: valve design stainless steel with marine type approval code (all outer parts in stainless steel 316/316L, weld seams can be x-rayed, static seal with c-ring, no pressure bearing thread > 25mm)
   d: connection for integral vacuum test
   f: flanged connection between valve housing and pipe
   g: with a He guard sealing to outside i.e. full double seal
   h: Static, metallic sealing (Helicoflex)
   Remark: The digit can be omitted or it can be a simple parameter, but it can also be combined up to 4 digits. E.g. "omitted" aa-TEQV DN250/PN40 or E.g. combined up to 4 aa-TbdfhEQV DN250/PN40
4. Valve body pattern
   E: valve body in angle pattern
   D: valve body in globe pattern, welded
   G: valve body in globe pattern
   Y: valve body in Y-pattern, 45°
   Z: valve body with slanted in- and outlet nozzles
5. Stem sealing type
   Empty = bellow sealing with safety sealing
   Q: Quad ring sealing, without safety sealing
   F: spring-loaded Quad ring stem sealing (typical for high pressure valves)
6. **V:** for "valve", fixed
7. **DN..:** nominal size in "mm"
8. **PN..:** nominal pressure in "bar", specify also the max. allowable working pressure (T<=amb.)

9. Control type (control valve or shut-off valve)
   D: shut-off valve
   C: control valve

10. Actuator mode
    Is not part of this certificate and must be checked separately for each case (must be certified separately)
    For pneumatic actuators the mode is added
    Po: pneumatic valve, normally closed i.e. less of air supply valve closed
    Ps: pneumatic valve, normally open i.e. less of air supply valve open

11. **h=...:** cryogenic length, h in "mm
    empty: without cryogenic length i.e. warm-valve

Notes about type key:

Type of actuator
PM: valve with pneumatical diaphragm actuator
PK: valve with pneumatical piston actuator
PKS: valve with pneumatical piston actuator and springs (safety valve)
HL valve with manual drive, pillar design

HI: valve with manual drive, integral design
HIc valve with manual drive, integral design, compact
HIcp valve with manual drive, integral design, compact, precision with nonius
HIs valve with manual drive, integral design, switch controlled
HIsp valve with manual drive, integral design, switch controlled, precision with nonius

EG: valve with electrical actuator