



Physical-Technical Testing Institute
Ostrava - Radvanice

Type Certificate

about verification of non-electrical apparatus for potentially explosive atmospheres
according to scheme 1b) of EN ISO/IEC 17067:2013

Type Certificate number:

FTZÚ 19 Ex 0014

Product: **Shutoff butterfly valves type series 2E-5 RSV**

Manufacturer: **ABO valve, s.r.o., Dalimilova 285/54, 783 35 Olomouc, Czech Republic**

Applicant: **ABO valve, s.r.o., Dalimilova 285/54, 783 35 Olomouc, Czech Republic**

This product and any acceptable variation thereto are specified in the documents listed in this certificate.

Physical-Technical Testing Institute, Certification Body No. 3051 accredited by ČIA o.p.s. Prague according to ČSN EN ISO / IEC 17065: 2013 confirms that the above mentioned product is in conformity with the requirements of the following standards:

EN ISO 80079-36:2016, EN IEC 60079-0:2018

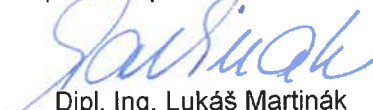
Manufacturer (or applicant) listed in the certificate is responsible for product conformity assurance in accordance with its specification (documentation) listed in this certificate and for successful performance of all specified routine tests and verification.

Product marking: see table on page 2 of this document

This certificate relates only to verification of non-electrical apparatus for potentially explosive atmospheres. Further requirements can be applied to the manufacturing process and supply of this product. These are not covered by this certificate.

This certificate is valid till: **31.10.2024**

Responsible person:


Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 02.10.2019

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**Physical-Technical Testing Institute
Ostrava – Radvanice**

Type Certificate No. FTZÚ 19 Ex 0014

Product description:

Shut-off butterfly valves type 2E-5 RSV (hereinafter only valves) are direct valves without actuator, sizes DN50 to DN600, designed to shut-off and regulating the flow of liquid and gaseous media in areas with explosion hazard of flammable gases, vapours and of gaseous coal mines.

The main components of the valves are body, flange, shut-off disc, seat, lantern, shaft and pivot.

The valve body is in material variants: low carbon steel; stainless steel. The shaft, pivot and shut-off disc are stainless steel. Shaft packing is graphite. The lantern is made of carbon or low carbon steel. The disc seat is fitted with a metal seal or with PTFE-based material. The valves body may be coated with epoxy paint with a maximum thickness of 60 µm applied according to the manufacturer's instructions IMS-851-28. The conductive connection of the metal parts of the valves is according to API 609. The valve body is fitted with a terminal for attaching the ground wire.

Basic design and materials of the valves are determined in their code designation. Detailed materials specifications of the valve components are given in the manufacturer's documentation supplied with the product.

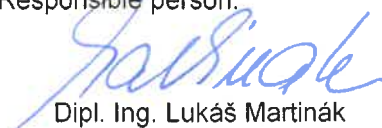
The temperature operating range of the valves is given by their material design, the maximum is from - 100 ° C to + 450 ° C.

Table of valves size assignment to protection level:

Valve size	Protection level*) – product marking
DN50 to DN250	II 1G IIC T6 ... T1 Ga II 1D IIIC T40°C ... T450°C Da I M1 I Ma
DN300 to DN500	II 1G IIB T6 ... T1 Ga II 2G IIC T6 ... T1 Gb II 1D IIIC T40°C ... T450°C Da I M1 I Ma
DN600	II 1G IIA T6 ... T1 Ga II 2G IIB T6 ... T1 Gb II 1D IIIC T40°C ... T450°C Da I M1 I Ma

*) The actual maximum temperature does not depend on the product itself, but on its operating conditions, in particular the media operating temperature and ambient temperature

Responsible person:


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Head of Certification Body



Date of issue: 02.10.2019

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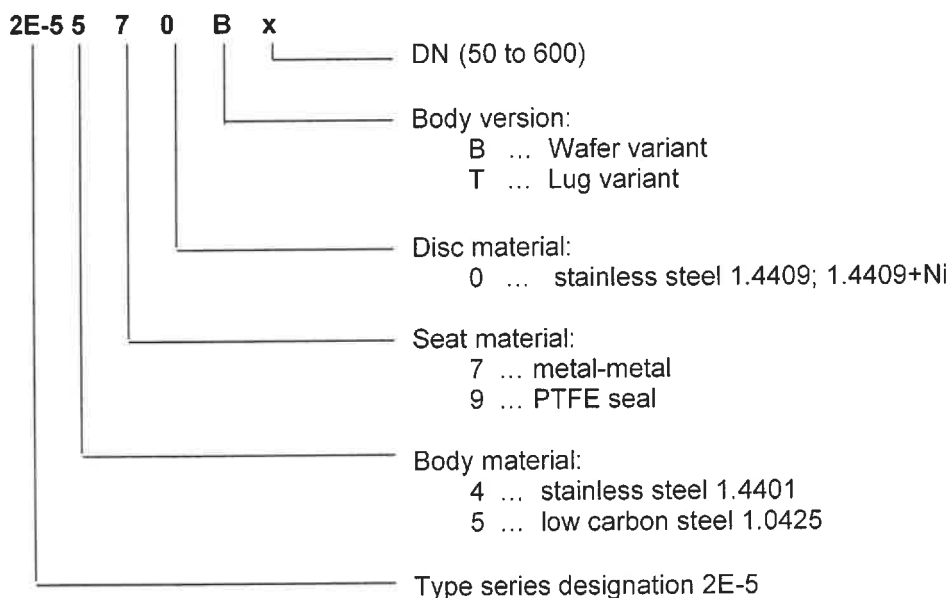
Type Certificate No. FTZÚ 19 Ex 0014

The following conditions apply to the indicated surface temperature of product T in relation to its operating temperature T_{op} :

$T_{op} < 40^{\circ}\text{C}$: $T=40^{\circ}\text{C}$

$T_{op} \geq 40^{\circ}\text{C}$: $T=T_{op}$

Example for marking and approved constructive variants of butterfly valves:



Test report No.: 19/0014

Specific Conditions of Use: none

Essential conditions for use in hazardous areas: unchanged

1. The valve maximum temperature does not depend on the product itself, but on its operating conditions, in particular the operating medium temperature and ambient temperature. The valve maximum surface temperature in relation to the ignition temperature of explosive atmosphere will by comply with the general requirements of EN 1127-1, cl. 6.4.2 or of EN 1127-2, cl.6.4.2 eventually.
2. The valve will be grounded through its earthing clamp. Grounding will meet the requirements of CLC/TR 60079-32-1, cl. 13.
3. Other essential safety requirements are covered by the standards listed on the title page of this document.

Responsible person:

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Date of issue: 02.10.2019

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Type Certificate No. FTZÚ 19 Ex 0014

List of documentation:

Number	Version	Sheets	Date	Description
--	--	7	30.09.2019	Instructions for use
--	--	5	09.08.2019	Operating instructions
IMS-851-28	rev.8	6	01.01.2019	Specific requirements for coating systems
2E5 RSV DN050-125	--	1	02.07.2019	Drawing „UZAVÍRACÍ KLAPKA (ATEX)“
2E5 RSV DN150-600	--	1	02.07.2019	Drawing „UZAVÍRACÍ KLAPKA (ATEX)“
14075A8	--	1	03.07.2019	Drawing „PRUŽINA ATEX“
14074A8	--	1	03.07.2019	Drawing „PRUŽINA ATEX“
21837A3	--	1	03.07.2019	Drawing „ŠTÍTEK-API“
14081Ax	--	1	03.07.2019	Drawing „HRÍDEL-ATEX“
14081Bx	--	1	03.07.2019	Drawing „HRÍDEL-ATEX“
14081Cx	--	1	03.07.2019	Drawing „HRÍDEL-ATEX“
5590B05000RSV	--	1	03.07.2019	Drawing „UZAVÍRACÍ KLAPKA“
5590B06500RSV	--	1	03.07.2019	Drawing „UZAVÍRACÍ KLAPKA“
5590B08000RSV API	--	1	03.07.2019	Drawing „UZAVÍRACÍ KLAPKA“
5590B10000RSV	--	1	03.07.2019	Drawing „UZAVÍRACÍ KLAPKA“
5590B12500RSV	--	1	03.07.2019	Drawing „UZAVÍRACÍ KLAPKA“
5590B15000RSV	--	1	04.07.2019	Drawing „UZAVÍRACÍ KLAPKA“
5590B20000RSV	--	1	04.07.2019	Drawing „UZAVÍRACÍ KLAPKA“
5590B25000RSV	--	1	04.07.2019	Drawing „UZAVÍRACÍ KLAPKA“
5590B30000RSV	--	1	04.07.2019	Drawing „UZAVÍRACÍ KLAPKA“
5590B35000RSV	--	1	08.07.2019	Drawing „UZAVÍRACÍ KLAPKA“
5590B40000RSV	--	1	08.07.2019	Drawing „UZAVÍRACÍ KLAPKA“
5590B45000RSV	--	1	23.07.2019	Drawing „UZAVÍRACÍ KLAPKA“
5590B50000RSV	--	1	09.07.2019	Drawing „UZAVÍRACÍ KLAPKA“
5590B60000RSV	--	1	09.07.2019	Drawing „UZAVÍRACÍ KLAPKA“

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 02.10.2019

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Physical-Technical Testing Institute
Ostrava - Radvanice

Supplementary Type Examination Certificate No. 1

about verification of non-electrical apparatus for potentially explosive atmospheres
according to the scheme Annex VIII of the Directive 2014/34/EU

Type Examination Certificate number:

FTZÚ 19 Ex 0014

Product: **Shutoff butterfly valves type series 2E-5**

Manufacturer: **ABO valve, s.r.o.**

Address: **Dalimilova 285/54, 783 35 Olomouc, Czech Republic**

This supplementary certificate extends Certificate No. FTZÚ 19 Ex 0014 to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

Physical-Technical Testing Institute, Certification Body No. 3051 accredited by ČIA o.p.s. Prague according to ČSN EN ISO / IEC 17065: 2013 confirms that the above mentioned product is in conformity with the requirements of the following standards:

EN ISO 80079-36:2016, EN IEC 60079-0:2018

Manufacturer (or applicant) listed in the certificate is responsible for product conformity assurance in accordance with its specification (documentation) listed in this certificate and for successful performance of all specified routine tests and verification.

This supplementary certificate relates only to verification of non-electrical apparatus for potentially explosive atmospheres. Further requirements can be applied to the manufacturing process and supply of this product. These are not covered by this certificate.

This certificate is valid till: **31.10.2024**

Responsible person:

v z. Jan

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 21.12.2021

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**Physical-Technical Testing Institute
Ostrava – Radvanice**

**Supplementary Type Examination Certificate No. 1
to FTZÚ 19 Ex 0014**

**about verification of non-electrical apparatus for potentially explosive atmospheres
according to the scheme Annex VIII of the Directive 2014/34/EU**

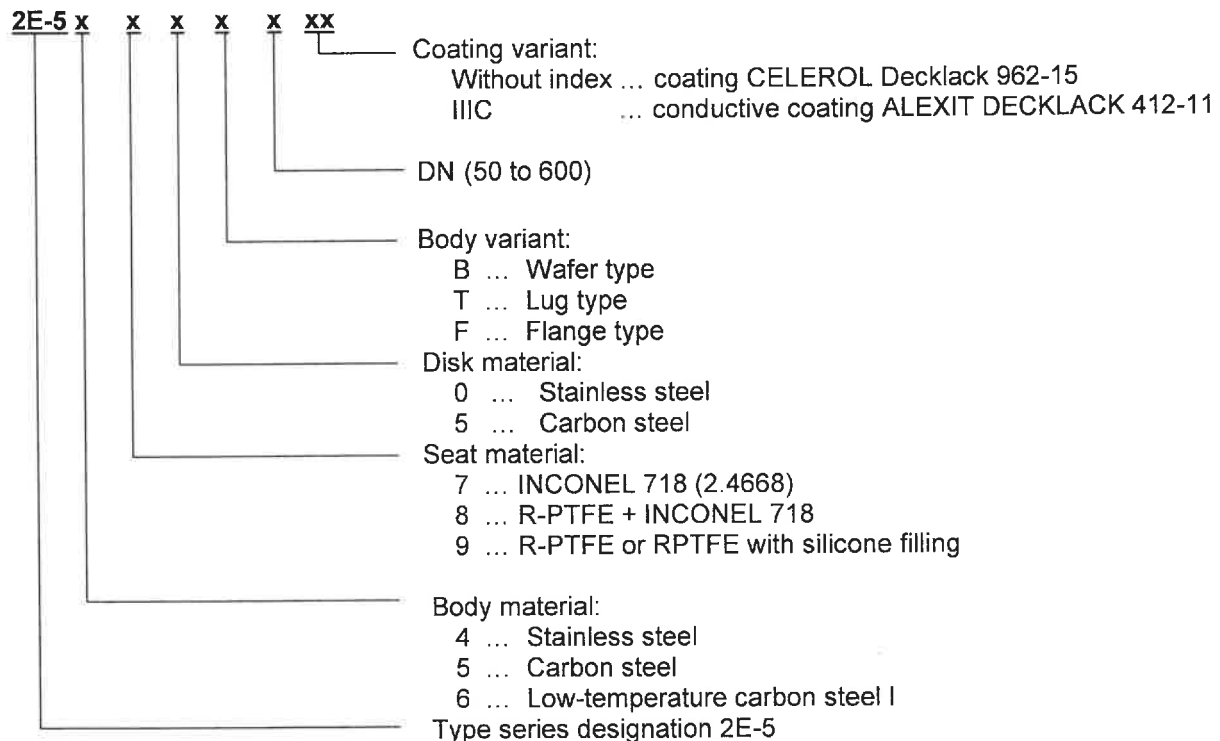
Description of product changes:

The subject of this supplementary certificate is:

- extension of the certified product series.

The originally certified product line is supplemented by valves with a flanged body and valves with a new material variant of the sealing seat (R-PTFE + INCONEL 718) and body (low-temperature carbon steel). Other construction and material design of the product is unchanged. Alternatively the surface of valves body can be provided with a conductive painting Alexit Decklack 412-11. The explosion protection levels are newly specified for valve variants with a conductive coating and for valve variants with a non-conductive coating.

Code marking and general overview of verified variants of shutoff valves:



Responsible person:

V z. Jhon

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 21.12.2021

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**Physical-Technical Testing Institute
Ostrava – Radvanice**

**Supplementary Type Examination Certificate No. 1
to FTZÚ 19 Ex 0014**

**about verification of non-electrical apparatus for potentially explosive atmospheres
according to the scheme Annex VIII of the Directive 2014/34/EU**

Table of valves size assignment to protection level:

a) Product variant 2E-5xxxxxIIIC (variant with conductive valve body coating):

Valve size	Protection level*) – product marking
DN50 to DN250	II 1G IIC T6 ... T1 Ga II 1D IIIC T40°C ... T450°C Da I M1 I Ma
DN300 to DN500	II 1G IIB T6 ... T1 Ga II 2G IIC T6 ... T1 Gb II 1D IIIC T40°C ... T450°C Da I M1 I Ma
DN600	II 1G IIA T6 ... T1 Ga II 2G IIB T6 ... T1 Gb II 1D IIIC T40°C ... T450°C Da I M1 I Ma

b) Product variant 2E-5xxxxx:

Valve size	Protection level*) – product marking
DN50 to DN250	II 1G IIC T6 ... T1 Ga II 1D IIIB T40°C ... T450°C Da I M1 I Ma
DN300 to DN500	II 1G IIB T6 ... T1 Ga II 2G IIC T6 ... T1 Gb II 1D IIIB T40°C ... T450°C Da I M1 I Ma
DN600	II 1G IIA T6 ... T1 Ga II 2G IIB T6 ... T1 Gb II 1D IIIB T40°C ... T450°C Da I M1 I Ma

*) The actual maximum temperature does not depend on the product itself but on its operating conditions, in particular the operating medium temperature.

To determine the surface temperature of the product T in relation to its service temperature $T_{service}$, the following applies:

$$T_{service} \leq +40^{\circ}\text{C}: T = 40^{\circ}\text{C}$$

$$T_{service} > +40^{\circ}\text{C}: T = T_{service}$$

Assignment of the temperature class in relation to the temperature T:

T6 ... $T \leq +85^{\circ}\text{C}$	T3 ... $T \leq +200^{\circ}\text{C}$
T5 ... $T \leq +100^{\circ}\text{C}$	T2 ... $T \leq +300^{\circ}\text{C}$
T4 ... $T \leq +135^{\circ}\text{C}$	T1 ... $T \leq +450^{\circ}\text{C}$

Test report No.: 19/0014/1

Responsible person:

v z. gjon

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Head of Certification Body



Date of issue: 21.12.2021

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**Physical-Technical Testing Institute
Ostrava – Radvanice**

**Supplementary Type Examination Certificate No. 1
to FTZÚ 19 Ex 0014**

**about verification of non-electrical apparatus for potentially explosive atmospheres
according to the scheme Annex VIII of the Directive 2014/34/EU**

Specific Conditions of Use:
None.

Essential conditions for use in hazardous areas:
Unchanged - identical to the conditions specified in the basic certificate.

List of documentation (only updated or new documentation is listed):

Number	Version	Sheets	Date	Description
IMS-851-28	-	9+14	29.11.2021	Guideline „Specifické požadavky na nátěrové systémy“
5X70 DN050-125 ATEX	-	1	06.09.2021	Drawing „UZAVÍRACÍ KLAPKA (ATEX)“
5X80 DN050-125 ATEX	-	1	06.09.2021	Drawing „UZAVÍRACÍ KLAPKA (ATEX)“
5X90 DN150-600 ATEX	-	1	06.09.2021	Drawing „UZAVÍRACÍ KLAPKA (ATEX)“
5X90RS DN50-125 ATEX	-	1	06.09.2021	Drawing „UZAVÍRACÍ KLAPKA (ATEX)“
5X90RS DN150-600 ATEX	-	1	06.09.2021	Drawing „UZAVÍRACÍ KLAPKA (ATEX)“

Responsible person:

Dipl. Ing. Lukáš Martinák
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Date of issue: 21.12.2021

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Physical-Technical Testing Institute
Ostrava - Radvanice

Supplementary Type Examination Certificate No. 2

about verification of the non-electrical apparatus
used for explosive atmospheres
according to the Certification Scheme A

Type Examination Certificate number:

FTZÚ 19 Ex 0014

Product: **Butterfly valves type series 2E-5 x x x x x xx**

Manufacturer: **ABO valve, s.r.o.**

Address: **Dalimilova 285/54, 783 35 Olomouc, Czech Republic**

This supplementary certificate extends Certificate No. FTZÚ 19 Ex 0014 to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

Physical-Technical Testing Institute, Certification Body No. 3051 accredited by ČIA o.p.s. Prague according to EN ISO / IEC 17065:2012 confirms that the above mentioned product is in conformity with the requirements of the following standards:

EN ISO 80079-36:2016, EN IEC 60079-0:2018

Manufacturer (or applicant) listed in the certificate is responsible for product conformity assurance in accordance with its specification (documentation) listed in this certificate and for successful performance of all specified routine tests and verification.

This supplementary certificate relates only to verification of non-electrical apparatus used for explosive atmospheres. Further requirements can be applied to the manufacturing process and supply of this product. These are not covered by this certificate.

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 06.12.2024

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Physical-Technical Testing Institute
Ostrava – Radvanice

Schedule

Supplementary Type Examination Certificate No. 2 to FTZÚ 19 Ex 0014

Description of product changes:

The subject of this supplementary certificate is:

- Change of the product marking by the manufacture:

Product variant 2E-5 x x x x x IIC (with conductive coating ALEXIT DECKLACK 412-11):

Valve size	Product marking
DN50 to DN250	II 1G Ex h IIC T6 ... T1 Ga II 1D Ex h IIC T40 °C ... T450 °C Da I M1 Ex h I Ma
DN300 to DN500	II 1G Ex h IIB T6 ... T1 Ga II 2G Ex h IIC T6 ... T1 Gb II 1D Ex h IIC T40 °C ... T450 °C Da I M1 Ex h I Ma
DN600	II 1G Ex h IIA T6 ... T1 Ga II 2G Ex h IIB T6 ... T1 Gb II 1D Ex h IIC T40 °C ... T450 °C Da I M1 Ex h I Ma

Product variant 2E-5 x x x x x (with coating CELEROL Decklack 962-15):

Valve size	Product marking
DN50 to DN250	II 1G Ex h IIC T6 ... T1 Ga II 1D Ex h IIB T40 °C ... T450 °C Da I M1 Ex h I Ma
DN300 to DN500	II 1G Ex h IIB T6 ... T1 Ga II 2G Ex h IIC T6 ... T1 Gb II 1D Ex h IIB T40 °C ... T450 °C Da I M1 Ex h I Ma
DN600	II 1G Ex h IIA T6 ... T1 Ga II 2G Ex h IIB T6 ... T1 Gb II 1D Ex h IIB T40 °C ... T450 °C Da I M1 Ex h I Ma

- Update of technical documentation.
- Extension of the certificate validity:

This supplementary Certificate extends the validity of the original Certificate and Supplement No. 1 for unlimited period. Parameters, used materials and construction of shutoff and regulation butterfly valves type series 2E-5 x x x x x xx remain unchanged and are listed in the original Certificate and in Supplementary No. 1.

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 06.12.2024

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Physical-Technical Testing Institute
Ostrava – Radvanice

Schedule

Supplementary Type Examination Certificate No. 2 to FTZÚ 19 Ex 0014

Conditions of use for hazardous areas:

1. Because the actual maximum temperature doesn't depend on the butterfly valve itself but on its operating conditions, in particular the operating temperature of the medium, the specific maximum surface temperature or the specific temperature class with the respect of the operating temperature of the medium given on the production label shall not exceed:

a) For Group I equipment:

- 150 °C on any surface where coal dust can form a layer,
- 450 °C where coal dust is not expected to form a layer and assuming that the actual maximum surface temperature is marked on the equipment,

b) For Group II equipment (EPL Ga or EPL Gb):

Operating temperature of the medium		Temperature class
EPL Ga	EPL Gb	
≤ 68 °C	≤ 80 °C	T6
≤ 80 °C	≤ 95 °C	T5
≤ 108 °C	≤ 130 °C	T4
≤ 160 °C	≤ 195 °C	T3
≤ 240 °C	≤ 290 °C	T2
≤ 360 °C	≤ 440 °C	T1

c) For Group III equipment (EPL Da):

Operating temperature of the medium	Max. surface temperature
≤ 85 °C	85 °C
≤ 100 °C	100 °C
≤ 135 °C	135 °C
≤ 200 °C	200 °C
≤ 300 °C	300 °C
≤ 450 °C	450 °C

2. The butterfly valve shall be conductively connected to the grounded part of associated equipment. Grounding must meet the requirements of CLC/TR 60079-32-1:2018, cl. 13.
3. Ambient temperature range: $-40\text{ °C} \leq T_a \leq 60\text{ °C}$

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Physical-Technical Testing Institute

Ostrava – Radvanice

Schedule

Supplementary Type Examination Certificate No. 2 to FTZÚ 19 Ex 0014

Test report No.: 19Ex/0014/2

List of documentation: mentioned only updated documents:

Document No.:	Pages:	Date:	Description:
--	7	06.12.2024	Operating regulation for butterfly valve type series 2E-5
--	1	06.12.2024	Risk assessment 2E-5
IMS-852-04a	1	28.11.2023	Name plate for series 2E, 3E_PN
IMS-852-04b	1	28.11.2023	Name plate for series 2E, 3E_class
IMS-852-21	2	06.12.2024	Additional label for butterfly valve ABO s. 2E5_ATEX

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