SPXFLOW®

INSTRUCTION MANUAL

APV Control Unit IECEx CU ex ia

SAFETY AGAINST EXPLOSION - FOR SPECIFIC IECEx APPLICATIONS

FORM NO.: H337864 REVISION: GB-3

READ AND UNDERSTAND THIS MANUAL PRIOR TO OPERATING OR SERVICING THIS PRODUCT.

APV®

Content

IT IS ESSENTIAL TO READ THIS INSTRUCTION MANUAL BEFORE USE OF THE CONTROL UNIT!

1. Abbreviations and Definitions

A	**Exhaust Air**
AWG	**American Wire Gauge**
CU	**Control Unit**
DI	**Digital Input**
DO	**Digital Output**
EMC	**Electromagnetic Compatibility**
EU	**European Union**
GND	**Ground/Mass Potential**
IP	**International Protection**
LED	**Luminous Diode**
N	**Pneumatic Air Connection NOT element**
NEMA	**National Electrical Manufacturers Association**
P	**Supply Air Connection**
PWM	**Pulse-Width Modulation**
Y	**Pneumatic Air Connection**

2. Safety Instructions

2.1. Sentinels

Meaning:

DANGER! Direct danger which can lead to severe bodily harm or to death!

CAUTION! Dangerous situation which can lead to bodily harm and/or material damage.

ATTENTION! Risk as a result of electric current.

NOTE! Important technical information or recommendation.

These special safety instructions point directly to the respective handling instructions. They are accentuated by the corresponding symbol. Carefully read the instructions to which the sentinels refer. Continue handling the control unit only after having read these instructions.

2. Safety Instructions

IECEx CU ex ia
Ex II 2G
Ex ia IIC T4 Gb

2.2. Intended Use

The IECEx CU ex ia control unit is only intended for use as described in chapter 3.1. Any use exceeding the margins and specifications set forth, is considered to be not intended and SPX Flow Technology shall not be liable for damage resulting therefrom. The operator is solely responsible for the risk. Prerequisites for proper and safe operation of the control unit are proper transport and storage as well as professional assembly. Intended use also means compliance with the operating, service and maintenance conditions.

2.3. General Regulations for Careful Handling

Please observe the information of this instruction manual as well as the operating conditions and permissible data specified in the datasheets of the control unit for process valves to ensure proper functioning and long service life of the unit.

- The operator is committed to operating the control unit in faultless condition, only.
- Observe the general technical rules while using and operating the unit!
- Observe the relevant accident prevention regulations, the national rules of the user country as well as your company-internal operating and safety regulations during operation and maintenance of the unit!
- Switch off the electrical power supply before carrying out any work on the system!

- Note that piping or valves that are under pressure must not be removed from a system!
- Take suitable measures to prevent unintentional operation or impermissible impairment
- Following an interruption of the electrical or pneumatic supply, ensure a defined and controlled re-start of the process!
- If these instructions are not observed, we will not accept any liability. Warranties on units, devices and accessories will expire!

2. Safety Instructions

2.4. Welding instructions

It is generally recommended to avoid welding work in process installation in which control units are installed and connected.
If welding is nonetheless required, earthing of the electrical devices in the welding area is an absolute necessity.

2.5. Persons

- Installation and maintenance work may only be carried out by qualified personnel and by means of appropriate tools.
- Qualified personnel must get a special training with regard to possible risks and must know and observe the safety instructions indicated in the instruction manual.
- Work at the electrical installation may only be carried out by personnel specialised in electrics!

2.6. Warranty

This document does not contain any warranty acceptance.
We refer to our general terms of sale and delivery.
Prerequisite for a guarantee is the correct use of the unit in compliance with the specified conditions of application.

Attention!

This warranty only applies to the control unit.
Liability will not be accepted for consequential damage of any kind that could arise from the failure or malfunction of the device.

2. Safety Instructions

2.7. References for Use in Explosive Atmospheres

In explosive atmospheres, the IECEx CU ex ia control unit must be operated with closed cover, only. Intervention with open cover must not be undertaken in humid or aggressive atmosphere. Take appropriate measures to prevent unintentional damage to boards, screw terminals as well as cable insulation and intrinsically safe components. Limit the opening period of the cover to an absolute minimum.

Take suitable measures to prevent electrostatic charge of plastic cover parts.

The connection of components - the electrial data of which are outside of the range of the ascertained intrinsically safe operation and outside of the range of the technical data - to the in- and outputs of the boards is prohibited.

Observe the respective national regulations, i.e. German VDE 0165, for the installation and operation in explosive atmospheres.

Observe the data of the respective declaration of conformity for the electric connection of intrinsically safe components.

It is essential to observe the data indicated in the respective IECEx approval.

2.8. Conformity

The IECEx CU ex ia control unit complies with the Directives according to the Declaration of Conformity.

2.9. Standards

Through the following standards, the conformity with the Directives is fulfilled:
EN IEC 60079-0: 2018
EN IEC 60079-11: 2012

3. General Terms

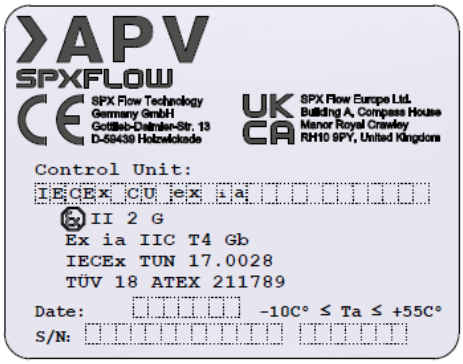
3.1. Purpose of use

The control unit IECEx CU ex ia is intended to control process valves in explosive atmospheres of the food and beverage industry, in chemical and pharmaceutical applications as well as in accompanying industrial fields.

The control unit serves as interface between process control and process valve and controls the electric and pneumatic signals. Intrinsically safe solenoid valves are connected to the PLC via isolation amplifiers, likewise signals from the intrinsically safe valve position indicators are transferred to the PLC via isolation amplifiers.

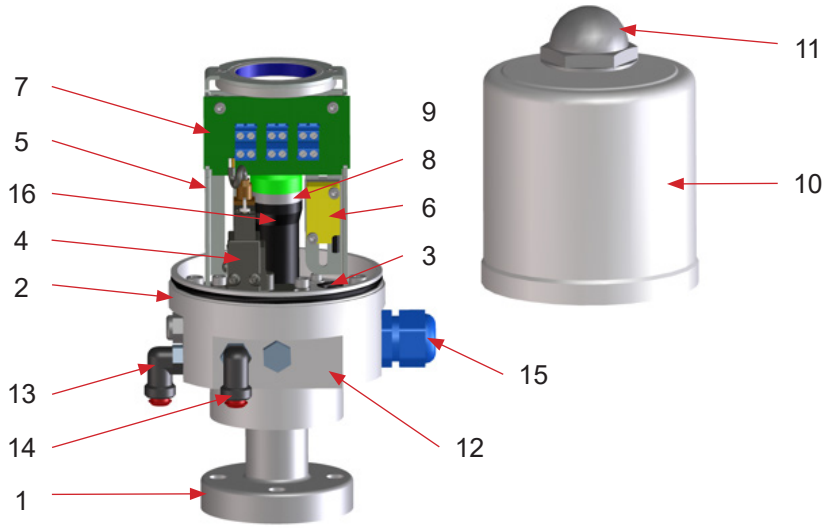
The pneumatic control of APV valves is carried out via the solenoid valves.
The control unit controls the valve positions **open** and **closed** via integrated or external sensors.

The intrinsically safe IECEx CU ex ia control unit is certified according to the current IEC 60079-0, IEC 60079-11 and, thus, admitted for use as Device of Category 2 (gas).



3. General Terms

3.2. Design of IECEx CU ex ia 1 S&T 24V control unit



The control unit consists of the following components:

Pos. 1 Adapter
Assembly of control unit on different valve types

Pos. 2 Control unit base with integrated air channels as well as electric and pneumatic connections.
Accomodation of solenoid valves with integrated pneumatic connecting channels. Provision of pneumatic and electric connections, accomodation of all other components

Pos. 3 Safety valve
Protection against excess pressure within the control unit.

Pos. 4 Solenoid valves
(illustrated: version with 1 solenoid valve)
Compressed air supply for pneumatic valve actuators

Pos. 5 Assembly bracket
Accomodation and adjustment of valve position indicator, fixing of CU cover by transparent central screw

Pos. 6 Proximity switches
(illustrated: internal proximity switches)
Recording of corresponding open and closed valve position

3. General Terms

Pos. 7 Connection - board(s)
Connection of solenoid valves and proximity switches to the intrinsically safe circuits

Pos. 8 Actuator screw
Control of internal proximity switches

Pos. 9 Signal rod
Optical indication of valve position (colour selection: green and red)

Pos. 10 Control unit cover
Closure of control unit, IP protection IP65

Pos. 11 Central union - sight glass
Fixing of CU cover and indication of the position of the signal elements

Pos. 12 Earthing screw
Integration of control unit in local potential equalization

Pos. 13 Air supply

Pos. 14 Pneumatic air to valve actuator
Exit of solenoid valve 1

Pos. 15 Cable union
Connection of electric lines for the intrinsically safe circuits

Pos. 16 Guide rod prolongation
Connection of valve guide rod with the actuator screw and the signal rod

3. General Terms

3.3. Control Unit Variants / Product key / Marking

IECEx CU ** Variants**

IECEx CU **** Type	Solenoid valve	Proximity switch
IECEx CU ex ia 1 S&T 24V SPX FLOW article number H337798	3/2 solenoid valve 10 mm 6510-C02,5-FM08-0000-Z0-EXI/01-AW JB18+JF80+PD98 ID No. 00184394 SPX FLOW article No. 37785 Number: 1	NI3-Q10S-Y1X 0,15M Internal sensor SPX FLOW article No. H332441 Number: 2
IECEx CU ex ia 2 S&T 24V SPX FLOW article number H337797	3/2 solenoid valve 10 mm 6510-C02,5-FM08-0000-Z0-EXI/01-AW JB18+JF80+PD98 ID No. 00184394 SPX FLOW article No. H337785 Number: 2	NI3-Q10S-Y1X 0,15M internal sensor SPX FLOW article No. H332441 Number: 2
IECEx CU ex ia 1 M 24V SPX FLOW article number H337796	3/2 solenoid valve 10 mm 6510-C02,5-FM08-0000-Z0-EXI/01-AW JB18+JF80+PD98 ID No. 00184394 SPX FLOW article No. 337785 Number: 1	Ni5-K11-Y1X external sensor SPX FLOW article No. H332442 Number: 2
IECEx CU ex ia 3 M 24V SPX FLOW article number H337795	3/2 solenoid valve 10 mm 6510-C02,5-FM08-0000-Z0-EXI/01-AW JB18+JF80+PD98 ID No. 00184394 SPX FLOW article No. H337785 Number: 3	Ni5-K11-Y1X external sensor SPX FLOW article No. H332442 Number: 2
IECEx CU ex ia 1 M D4 24V SPX FLOW article number H344227	3/2 solenoid valve 10 mm 6510-C02,5-FM08-0000-Z0-EXI/01-AW JB18+JF80+PD98 Ident Nr. 00184394 SPX FLOW article No. H337785 Number: 1	NI3-Q10S-Y1X 0,15M Internal sensor SPX FLOW article No. H332441 Number: 1 Ni5-K11-Y1X external sensor SPX FLOW article No. H332442 Number: 1
IECEx CU ex ia 3 M D4 24V SPX FLOW article number H344051	3/2 solenoid valve 10 mm 6510-C02,5-FM08-0000-Z0-EXI/01-AW JB18+JF80+PD98 Ident Nr. 00184394 SPX FLOW article No. H337785 Number: 3	NI3-Q10S-Y1X 0,15M Internal sensor SPX FLOW article No. H332441 Number: 1 Ni5-K11-Y1X external sensor SPX FLOW article No. H332442 Number: 1

3. General Terms

3.3. Control Unit Variants / Product key / Marking

IECEx CU * * * * Product key

IECEx CU	*	*	*	*

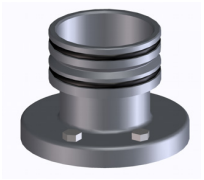
Nominal voltage	24V		
Proximity sensors	S&T	seat, butterfly valve	internal proximity switch
	M	mix proof valve	external proximity switch
	M D4	mix proof valve	internal and external prox. switch
Solenoid valves	1	1 solenoid	single seat, butterfly, mix proof valves without seat lifting
	2	2 solenoids	single seat SD valves with additi-onal closing pressure
	3	2 solenoids	mix proof valves with seat lifting
Ignition protection type	ex ia	intrinsic safety	

Marking:

II 2G
Ex ia IIC T4 Gb
Ambient temperature range: - 10 °C to + 55 °C

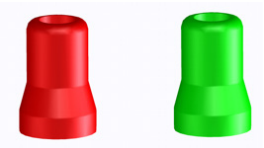
3. General Terms

3.4. Control unit adapter
incl. actuating and signal element

single seat valves	butterfly valves	double seat valves	D4 double seat valves
			

Signal rod

The optical position indication at the valve is realized via the signal rod which indicates the valve position through the sight glass.
For different valve types, normally closed and normally open, respectively one red and one green signal rod form part of the scope of supply.
The valve position of double seat valves is indicated via the LED at the proximity switches installed in the actuator.



3.5. Fitting position

Vertical installation is the preferred fitting position, protective type IP 65 is reached.
Please observe that for all other fitting positions the protective type IP 65 is not applicable.

4. Technical Data

4.1. General terms

Ambient temperature: - 10 °C to + 55 °C

Air hose: 6 mm / ¼“ OD

Pressure range: 6 to 8 bar

4.2. Materials

Materials	Designation
1.4305 stainless steel / AISI 303	CU base
1.4301 stainless steel / AISI 304	CU adapter
1.4301 stainless steel / AISI 304	CU cover
1.4301 stainless steel / AISI 304	assembly bracket
PA-T	sight glass
PVC/PEHD	signal rod
PA6	guide rod prolongation
1.4523 stainless steel	actuator screw

4.3. Compressed air quality

Quality class acc. to DIN/ISO 8573-1

- content of solid particles: quality class 3,
  max. size of solid particles per m³
  10000 of 0,5 µm < d ≤ 1,0 µm
  500 of 1,0 µm < d ≤ 5,0 µm

- content of water: quality class 3,
  max. dew point temperature - 20 °C
  For installations at lower temperatures or at higher altitudes, additional measures must be considered to reduce the pressure dew point accordingly.

- content of oil: quality class 1,
  max. 0,01 mg/m³

The oil applied must be compatible with Polyurethane elastomer materials.

4. Technical Data

4.4. Valve position indicator

Valve position indicator **(internal installation)**
Turck NI3-Q10S-Y1X 0,15m
admission KEMA 02 ATEX 1090X
II 2G Ex ia IIC T6 Gb
Ui=20V / Ii=60mA / Pi = 200mW

Valve position indicator **(external installation)**
Turck Ni5-K11-Y1X
admission KEMA 02 ATEX 1090X
II 2G Ex ia IIC T6 Gb
Ui=20V / Ii=60mA / Pi = 200mW

Manufacturer	Product and type	Certificate	Standards
Hans Turck GmbH & Co. KG	Internal proximity switch type NI3-Q10S-Y1X 0,15M External proximity switch type Ni5-K11-Y1X	KEMA 02 ATEX 1090 X	EN 60079-0:2012 + A11:2013* EN 60079-11:2012

*The technical changes of the Standards EN 60079-0:2012 +A11:2013 and EN IEC 60079-0:2018 were evaluated and turned out to the satisfaction of TÜV NORD CERT GmbH.

The operating conditions indicated in the Type Examination Certificate must be observed!

4.5. Solenoid valves

Bürkert solenoid 3/2 way 6510 with flipper valve type 6144 24 V
Ui = 25 V / Ii = 158 mA / Pi = 1000 mW
Ci = negligibly low; Li = negligibly low

Manufacturer	Product and type	Certificate	Standards
Bürkert Werke GmbH & Co. KG	Solenoid valve type 6144	PTB 07 ATEX 2048	EN 60079-0:2018 EN 60079-11:2012

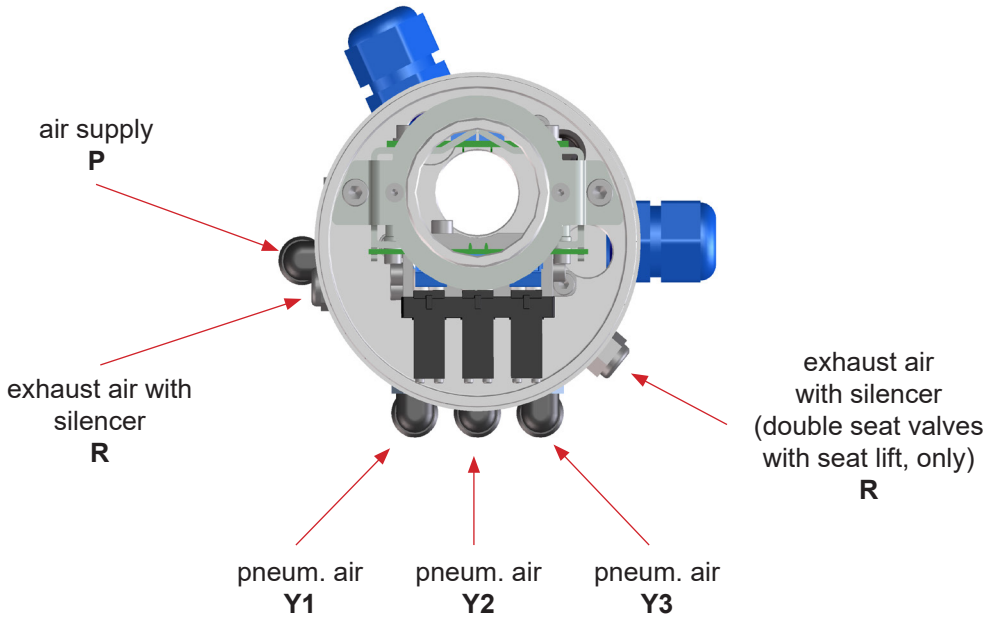
The operating conditions indicated in the Type Examination Certificate must be observed!

5. CU Assembly and Startup

- The adapter for the respective valve is mounted on the actuator by means of the supplied assembly screws.
- With S&T adapters, the next step is to assemble the actuator screw and the signal rod (green or red) on the guide rod prolongation. Recommended max. tightening torque of union is 2.1 Nm (securing with Loctite semi-solid is recommended).
- The corresponding control unit is placed on the adapter and tightened with the inner hexagon screws.
- Air hosing.
- Electric connection.

5. CU Assembly and Startup

5.1. Pneumatic air connection



Control unit with 1 solenoid valve

P air supply
Y 1 exit pneumatic air - solenoid valve 1
main actuator

Control unit with 1 solenoid valve and NOT-element

P air supply
Y 1 exit pneumatic air - solenoid valve 1
main actuator
Y 2 exit pneumatic air NOT-element
e.g. actuator spring side

Control unit with 3 solenoid valves

P air supply
Y 1 exit pneumatic air - solenoid valve 1
main actuatorDA3+
Y 2 exit pneumatic air - solenoid valve 2
seat lift cylinder - upper DA3+
Y 3 exit pneumatic air - solenoid valve 3
seat lift cylinder - lower DA3+

Caution! Shut off compressed air supply
before connection of the air hose!

See to a careful cutting to length of the air hose and use a hose cutter.

5. CU Assembly and Startup

Pneumatic air to valve actuator:
Connection of pneumatic air connection Y1 with valve actuator.
For double seat valves, the pneumatic air connections Y1, Y2, Y3 to the valve actuators must be connected.

With the IECEx CU ex ia 2 S&T 24 V the pneumatic air connection Y2 must be connected with the spring side of the actuator. Observe the assembly of the pressure reducing valve at the spring side of the actuator.

Exhaust air:
The standard exhaust air union is provided with a silencer. If required, the silencer can be removed and exhaust air can be hosed separately if, for example, it must be discharged to the outside.

5.2. Electrical connection

The intrinsically safe circuits for solenoid valves and valve position indicators (proximity switches) must be connected to the PLC only with appropriate isolation amplifiers.

Caution!
Electrical connections must only be carried out by qualified technical personal.

The selection of the corresponding connecting cable is undertaken on the basis of the control unit variant.
The regulation for the installation of intrinsically safe circuits according to ATEX and IEC Directives must be observed.

The cable is guided through the cable union and connected according the wiring diagram.
Use of wire end ferrules is preferred!

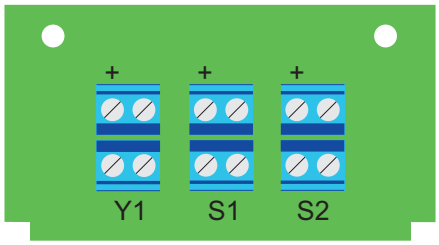
For the installation of the intric safe components (ex ia solenoids and ex ia proximity switches), the application of silicone hoses for every single wire is important!
Moreover, it is recommended to use wire end ferrules.

Make sure that the appropriate silicone hose (H337909) which is delivered together with IECEx CU ex ia control units is used!

Firmly tighten the cable union - by this means, only, the corresponding protective type can be provided.

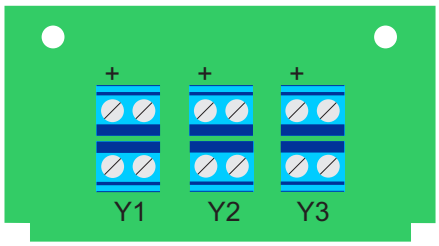
5. CU Assembly and Startup

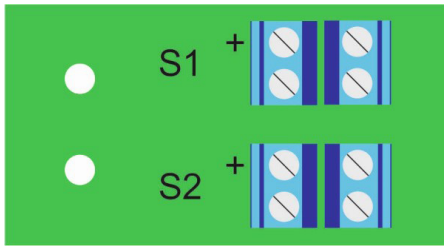
5.3. Wiring diagrams



IECEx CU ex ia 1 S&T 24V
1 solenoid valve 2 internal sensors

Y1 solenoid valve 1
S1 proximity switch
S2 proximity switch

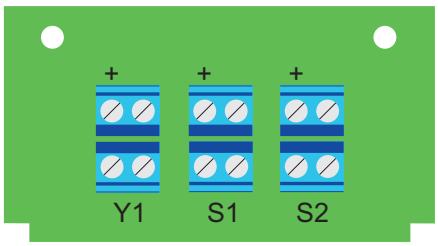




IECEx CU ex ia 2 S&T 24V
2 solenoid valves 2 internal sensors

Y1 solenoid valve 1
Y2 solenoid valve 2
Y3 not used
S1 proximity switch
S2 proximity switch

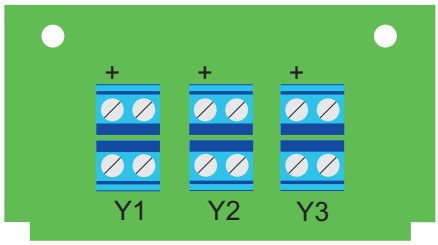
5. CU Assembly and Startup

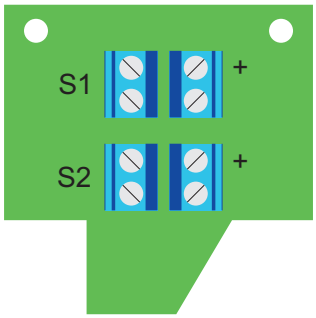


IECEx CU ex ia 1M 24V
1 solenoid valve

2 external sensors

Y1 solenoid valve 1
S1 proximity switch



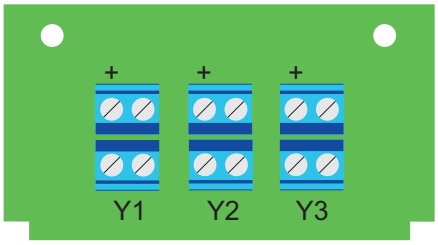


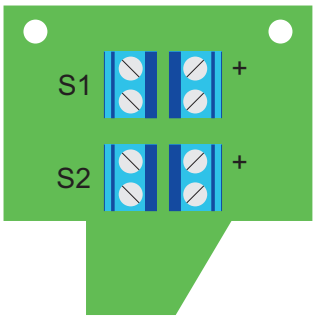
IECEx CU ex ia 3M 24V
3 solenoid valves

2 external sensors

Y1 solenoid valve 1
Y2 solenoid valve 2
Y2 solenoid valve 3
S1 proximity switch
S2 proximity switch

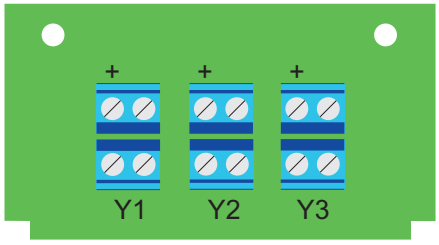
5. CU Assembly and Startup

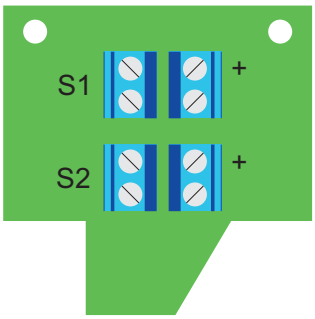




IECEx CU ex ia 1M D4 24V
1 solenoid valve, 1 internal sensor, 1 external sensor

Y1 solenoid valve 1
Y2 not used
Y3 not used
S1 proximity switch
S2 proximity switch





IECEx CU ex ia 3M D4 24V
3 solenoid valves, 1 internal sensor, 1 external sensor

Y1 solenoid valve 1
Y2 solenoid valve 2
Y2 solenoid valve 3
S1 proximity switch
S2 proximity switch

5. CU Assembly and Startup

5.3.1 Electric connection

a) Proximity switches

For the electrical installation of ex ia proximity switches, carefully read the instruction manual of the supplier. Please ensure the appropriately required wiring specification.

Look at the connecting terminal of the IECEx control unit to see the description where to connect the wires!

b) Solenoid valves

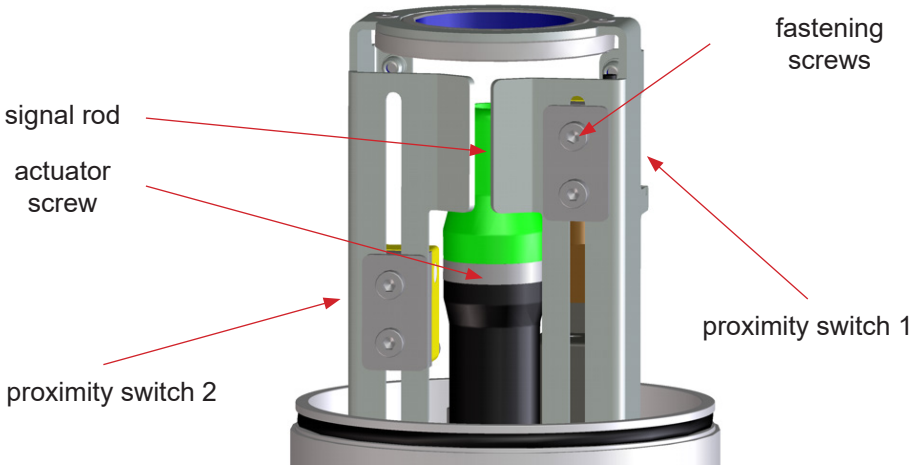
For the electrical installation of ex ia solenoid valves, carefully read the instruction manual of the supplier. Please ensure the appropriately required wiring specification.

Look at the connecting terminal of the IECEx control unit to see the description where to connect the wires!

5. CU Assembly and Startup

5.4. Adjustment of valve position indicator

Caution! Media/liquids must not be in the valve during valve control and adjustment of the valve position indicator.
Caution! Risk of injury through movable parts.



Butterfly valves / Single seat valves (internal position indicator)
Adjustment of the feedbacks for open and closed valve position must be carried out as described hereinafter.

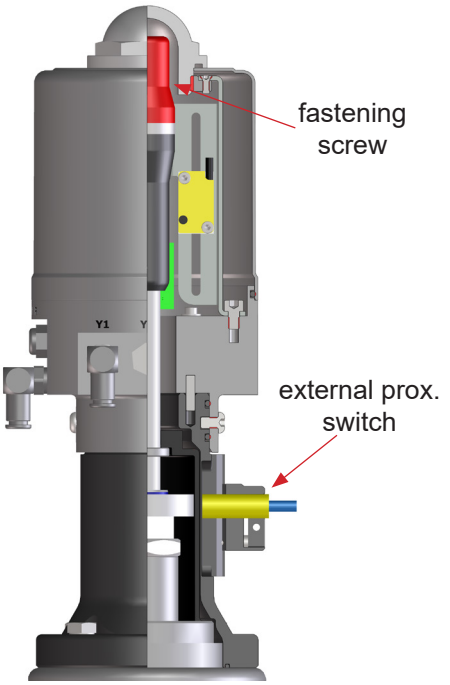
In order to adjust the positions of the proximity switches, release the fastening screws to such a degree that the corresponding sensor in the bar of the mounting bracket can be moved.
After adjustment and inspection, re-tighten the fastening screws.

Double seat valves DE3, DA3 are equipped with 2 external proximity switches which do not need to be adjusted

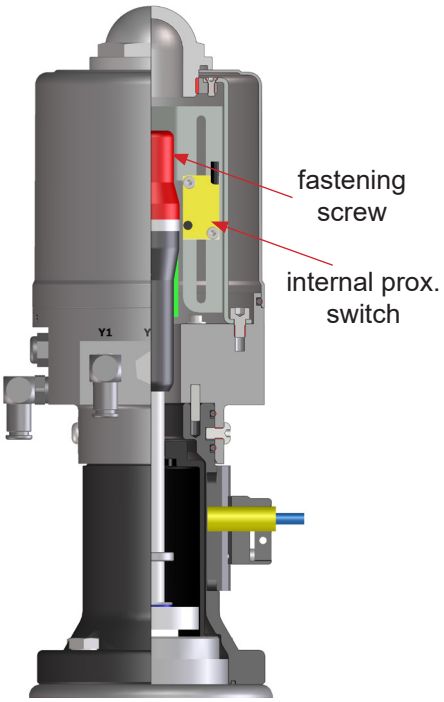
5. CU Assembly and Startup

Caution! Media/liquids must not be in the valve during valve control and adjustment of the valve position indicator.
Caution! Risk of injury through movable parts.

D4 double seat
mix proof valve
in closed position



D4 double seat
mix proof valve
in open position



Double seat mix proof valves of the D4 series are equipped with 1 internal and 1 external proximity switches which need to be adjusted.

Adjustment of external sensor / closed valve position:
For adjustment of the closed valve position, loosen the screws of the proximity switch holders. Insert the proximity switches until stop and tighten the holder with a small screw. Move the complete bracket up and down until the sensor signal appears. Fix the bracket in this position with the two screws.

Ajdustment of internal sensor / open valve position:
In order to adjust the positions of the proximity switch, release the fastening screws to such a degree that the corresponding sensor in the bar of the mounting bracket can be moved. Move the complete bracket up and down until the sensor signal appears.
Fix the bracket in this position with the two screws.

5. CU Assembly and Startup

For normally closed (normally open) single seat valves or butterfly valves, the following allocation is applied:

Closed valve position activated — proximity switch 1

For the adjustment, slide proximity switch 1 with non-activated (activated) solenoid valve 1 into the required position by moving the guide bar. The LED at the proximity switch lights up.

Open valve position activated — proximity switch 2

To adjust proximity switch 2, activate solenoid valve 1. This can be carried out either manually or electrically. The valve moves by one stroke and further into the corresponding final position.

The open valve position and the corresponding feedback can be adjusted. Move the sensor in the guide bar into the required position. The LED at the proximity switch lights up.

Observe the switching hysterisis of the proximity switches! Therefore, adjust the switch-point of the sensors with overlap in order to permit small variations and, thus, to prevent failures!

Double seat mix proof valves

DE3, DA3 valve series:
The assembly of the proximity switches is carried out at the actuator of the corresponding double seat valve. Observe the instruction manual for double seat valves for this purpose!

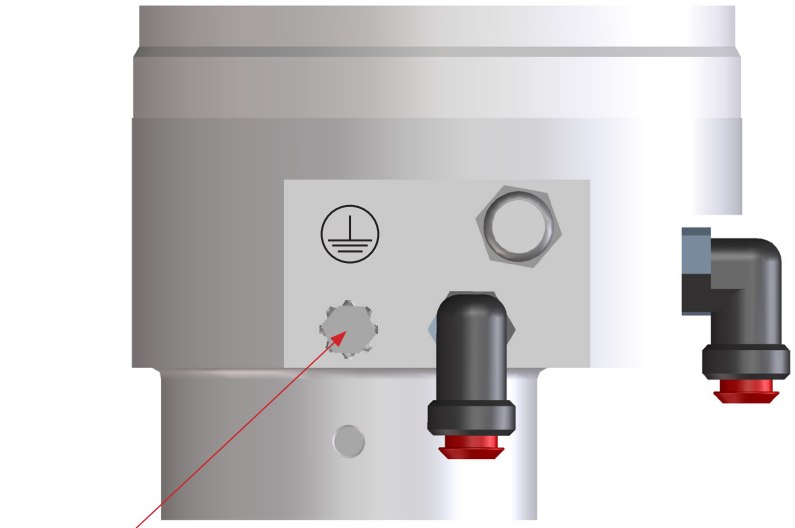
D4 valve series:
The internal sensor shows the open position and needs to be adjusted.
The external sensor shows the closed position and needs to be adjusted.

5. CU Assembly and Startup

5.5. Potential equalization

During the assembly of the IECEx CU ex ia control unit on valves with stainless steel actuator, usually a potential equalization from the control unit via the adapter to the process valve is made and, thus, to the earthed piping system as all mentioned components are made of conductive material (stainless steel).

IECEx CU ex ia control units on double seat valves must be integrated separately into the potential equalization as these valves are equipped with non-conductive plastic actuators on which the control unit is installed. For this purpose, the base of the control unit is provided with a M5 earthing screw by means of which the control unit must be integrated into the potential equalization.



earthing screw

6. Accessories and Tools / Tightening torques

Assembly/disassembly adapter on valve actuator:
- S-adapter / ring spanner 13 mm
- T and M adapter /
  hexagon socket wrench 4 mm
  ring spanner 13mm

Assembly/disassembly CU on adapter:
- hexagon socket wrench 4 mm

Assembly/disassembly feedback unit:
- hexagon socket wrench 4 mm

Assembly/disassembly proximity switches:
- hexagon socket wrench 2.5 mm
- hexagon socket wrench 3 mm

Assembly/disassembly solenoid valves:
- hexagon socket wrench 4 mm

Assembly/disassembly air connections:
- ring spanner 13 mm
- hexagon socket wrench 4 mm

Assembly/disassembly safety valve:
- hexagon socket wrench 2.5 mm

Assembly/disassembly control unit cover by screw plug
- ring spanner 42 mm
  recommended torque in Nm 12-15

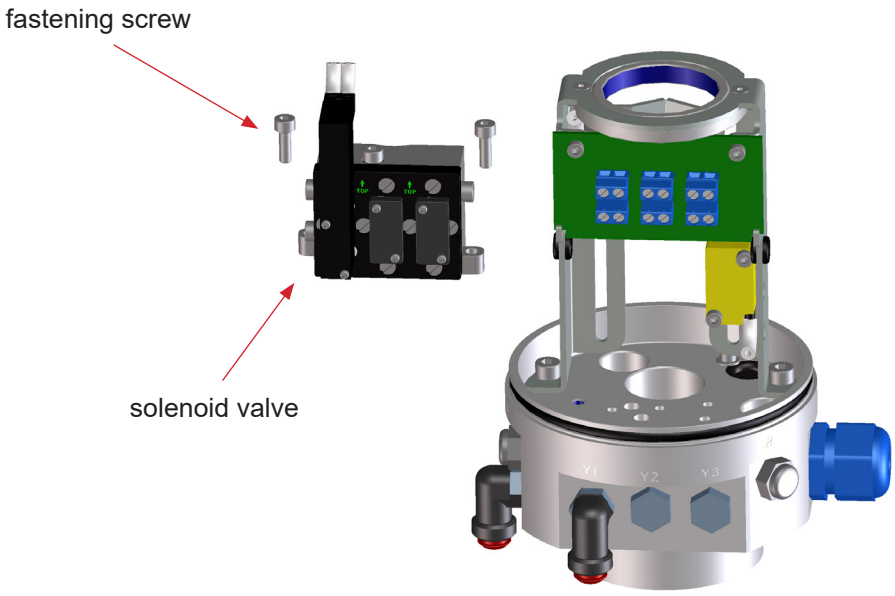
Loctite semi-solid

7. Disassembly

7.1 General terms

Ensure the following matters before the dismantling process:

- Valve must be in the safety position and must not be controlled!
- Shut off supply air!
- Switch off current at the control unit, i.e. interrupt supply voltage!

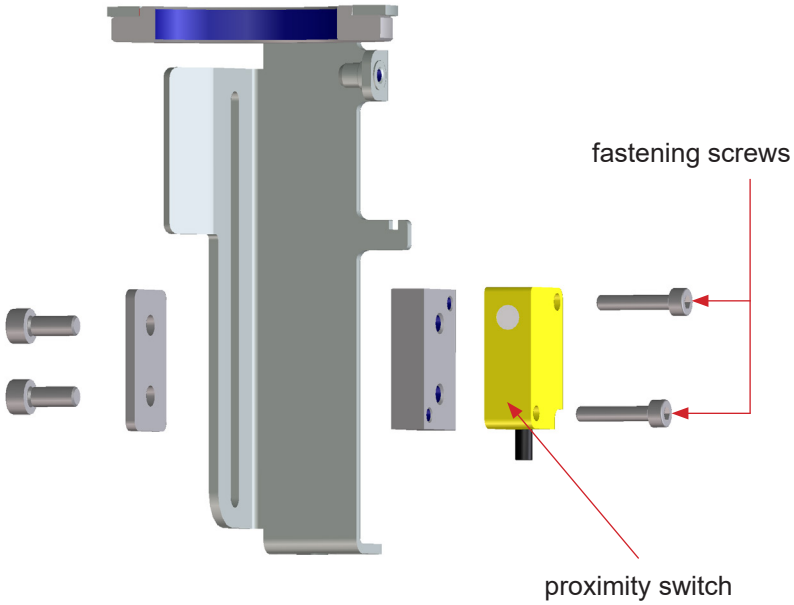


(Picture shows IECEx CU ex ia 1S&T 24V.)

7.2 Dismantling of solenoid valve

+ Open the control unit cover by turning the sight glass and lift off the cover.
+ Release the screw connection of the corresponding connecting cable at the connection board.
+ Release and remove the 2 screws.
+ Replace the solenoid valve.
+ Assembly in reverse order. See to an even fit of the flat seal!

7. Disassembly



7.3 Dismantling of proximity switches

+ Release the screw connection of the corresponding connecting cable at the connection board.
+ Remove the 2 fastening screws.
+ Replace the proximity switch.
+ Assembly in reverse order.
+ Check the right position of the proximity switches and their functionality as described in chapter 5.4 Adjustment of the valve position indicators.

8. IECEx Certificate of Conformity

Please see attachment.

9. Spare Parts Lists

The reference numbers of the spare parts for the different valve designs and sizes are included in the attached spare parts drawings with corresponding lists.

Please indicate the following data to place an order for spare parts:

- number of required parts
- reference number
- designation

Data are subject to change.

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 TUN 17.0028**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 1	Issue 0 (2018-10-26)
Date of Issue:	2021-07-12		
Applicant:	**SPX Flow Technology Germany GmbH** Gottlieb-Daimler-Str. 13 59439 Holzwickede **Germany**		
Equipment:	**Control unit**		
Optional accessory:	IECEx CU ex ia ***		
Type of Protection:	**Intrinsic Safety "ia"**		
Marking:	Ex ia IIC T4 Gb		

Approved for issue on behalf of the IECEx Certification Body: **Andreas Meyer**

Position: **Deputy Head of the IECEx Certification Body**

Signature: (for printed version)

Date: 2021-07-12

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:

TÜV NORD CERT GmbH
Hanover Office
Am TÜV 1, 30519 Hannover
Germany

IECEx Certificate of Conformity

Certificate No.: **IECEx TUN 17.0028**

Date of issue: 2021-07-12

Issue No: 1

Manufacturer: **SPX Flow Technology Poland Sp. z o.o.**
Stanisława Rolbieskiego 2
Bydgoszcz 85-862
Poland

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

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

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:

DE/TUN/ExTR18.0031/01

Quality Assessment Report:

DE/TUN/QAR18.0002/00

IECEx Certificate of Conformity

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

Subject and Type:

Control unit type IECEx CU ex ia***

Description:

The control unit type IECEx CU ex ia*** is provided for controlling process valves in hazardous areas, it used as an interface between the process control and the process valve and operates the electrical and pneumatic signals. The control unit monitors the valve positions, i.e. "opened" and "closed" by means of built-in or external sensors.

List of all used components:

Manufacturer	Product and type	Certificate	Standards
Bürkert Werke GmbH & Co.KG	Solenoid type 6144	IECEx PTB 07.0063X	IEC 60079-0:2017 IEC 60079-11:2011
Hans Turck GmbH &Co.KG	Internal proximity sensors type NI3-Q10S-Y1X 0,15M External proximity sensors type Ni5-K11-Y1X	IECEx KEM 06.0036X	IEC 60079-0:2017 IEC 60079-11:2011

Parameters:

See attachment to IECEx TUN 17.0028 issue No. 1

SPECIFIC CONDITIONS OF USE: NO

IECEx Certificate of Conformity

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Proof of conformity of the control unit type IECEx CU ex ia *** to the current versions of the standards IEC 60079-0:2017 and IEC 60079-11:2011.

The already certified control unit are extended to 2 new variants IECEX CU ex ia 1M D4 24V and IECEX CU ex ia 3M D4 24V

Annexes:

Attachment to IECEx TUN 17.0028 issue No 1.pdf
Attachment to IECEx TUN 17.0028_00.pdf

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Description:
The control unit type IECEx CU ex ia*** is provided for controlling process valves in hazardous areas, it used as an interface between the process control and the process valve and operates the electrical and pneumatic signals.
The control unit monitors the valve positions, i.e. "opened" and "closed" by means of built-in or external sensors.

List of all used components:

Manufacturer	Product and type	Certificate	Standards
Bürkert Werke GmbH & Co.KG	Solenoid type 6144	IECEx PTB 07.0063X	IEC 60079-0:2017 IEC 60079-11:2011
Hans Turck GmbH &Co.KG	Internal proximity sensors type NI3-Q10S-Y1X 0,15M External proximity sensors type Ni5-K11-Y1X	IECEx KEM 06.0036X	IEC 60079-0:2017 IEC 60079-11:2011

Type code:
IECEx CU ex ia * * *

Nominal voltage
24 V

Proximity sensors
S&T: 2 internal proximity sensors type NI3-Q10S-Y1X 0,15M
M: 2 external proximity sensors type Ni5-K11-Y1X
D4: 1 internal proximity sensor type NI3-Q10S-Y1X 0,15M and 1 external proximity sensor type Ni5-K11-Y1X

Solenoid valves
1: 1 solenoid valve type 6144
2: 2 solenoid valves type 6144
3: 3 solenoid valves type 6144

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Electrical data:

Control unit type IECEx CU ex ia 1 S&T 24V

Circuit of solenoid valve (Terminals Y1± or Y2± or Y3±)	In type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits. Maximum values:
	U_i = 25 V
	I_i = 158 mA
	P_i = 1 W
Effective internal capacitance	C_i = Negligibly small.
Effective internal inductance	L_i = Negligibly small.
Circuits of internal proximity sensors (Terminals S1± and S2±)	in type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits. Maximum values per circuit:
	U_i = 20 V
	I_i = 60 mA
	P_i = 200 mW
Effective internal capacitance	C_i = 150 nF
Effective internal inductance	L_i = 150 µH

Control unit type IECEx CU ex ia 2 S&T 24V

Circuits of solenoid valves (Terminals Y1± and Y2± or Y1± and Y3± or Y2± and Y3±)	In type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits. Maximum values per circuit:
	U_i = 25 V
	I_i = 158 mA
	P_i = 1 W
Effective internal capacitance	C_i = Negligibly small.
Effective internal inductance	L_i = Negligibly small.
Circuits of internal proximity sensors (Terminals S1± and S2±)	In type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits. Maximum values per circuit:
	U_i = 20 V
	I_i = 60 mA
	P_i = 200 mW
Effective internal capacitance	C_i = 150 nF
Effective internal inductance	L_i = 150 µH

Control unit type IECEx CU ex ia 1 M 24V

Circuit of solenoid valve (Terminals Y1± or Y2± or Y3±)	In type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits. Maximum values:
	U_i = 25 V
	I_i = 158 mA
	P_i = 1 W
Effective internal capacitance	C_i = Negligibly small.
Effective internal inductance	L_i = Negligibly small.

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Circuits of external proximity sensors (Terminals S1± and S2±)	In type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits. Maximum values per circuit:
	U_i = 20 V
	I_i = 60 mA
	P_i = 200 mW
Effective internal capacitance	C_i = 150 nF
Effective internal inductance	L_i = 150 µH

Control unit type IECEx CU ex ia 3 M 24V

Circuits of solenoid valves (Terminals Y1±;Y2± and Y3±)	In type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits. Maximum values per circuit:
	U_i = 25 V
	I_i = 158 mA
	P_i = 1 W
Effective internal capacitance	C_i = Negligibly small.
Effective internal inductance	L_i = Negligibly small.
Circuits of external proximity sensors (Terminals S1± and S2±)	In type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits. Maximum values per circuit:
	U_i = 20 V
	I_i = 60 mA
	P_i = 200 mW
Effective internal capacitance	C_i = 150 nF
Effective internal inductance	L_i = 150 µH

Control unit type IECEx CU ex ia 1 M D4 24V

Circuit of solenoid valve (Terminals Y1± ; Y2± and Y3±)	In type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits. Maximum values:
	U_i = 25 V
	I_i = 158 mA
	P_i = 1 W
Effective internal capacitance	C_i = Negligibly small.
Effective internal inductance	L_i = Negligibly small.
Circuits of external proximity sensors (Terminals S1± and S2±)	In type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits. Maximum values per circuit:
	U_i = 20 V
	I_i = 60 mA
	P_i = 200 mW
Effective internal capacitance	C_i = 150 nF
Effective internal inductance	L_i = 150 µH

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Circuit of internal proximity sensor (Terminals S1± and S2±)	In type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits. Maximum values:
	U_i = 20 V
	I_i = 60 mA
	P_i = 200 mW
Effective internal capacitance	C_i = 150 nF
Effective internal inductance	L_i = 150 µH

Control unit type IECEx CU ex ia 3 M D4 24V

Circuits of solenoid valves (Terminals Y1± ; Y2± and Y3±)	In type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits. Maximum values per circuit:
	U_i = 25 V
	I_i = 158 mA
	P_i = 1 W
Effective internal capacitance	C_i = Negligibly small.
Effective internal inductance	L_i = Negligibly small.
Circuits of external proximity sensors (Terminals S1± and S2±)	In type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits. Maximum values per circuit:
	U_i = 20 V
	I_i = 60 mA
	P_i = 200 mW
Effective internal capacitance	C_i = 150 nF
Effective internal inductance	L_i = 150 µH
Circuit of internal proximity sensor (Terminals S1± and S2±)	In type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits. Maximum values:
	U_i = 20 V
	I_i = 60 mA
	P_i = 200 mW
Effective internal capacitance	C_i = 150 nF
Effective internal inductance	L_i = 150 µH

Thermal data:
Permissible ambient temperature range: $-10\ °C \leq Ta \leq +55\ °C$

Details of change (applicable only when revising an existing ExTR package):
Proof of conformity of the control unit type IECEx CU ex ia *** to the current versions of the standards IEC 60079-0:2017 and IEC 60079-11:2011.
The already certified control unit are extended to 2 new variants IECEX CU ex ia 1M D4 24V and IECEX CU ex ia 3M D4 24V.

Specific Conditions of Use:
None.

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Product:

Control unit IECEx CU ex ia ***

IECEx CU ex ia * * *

- **Nominal voltage**
  - 24 V
- **Proximity sensors**
  - S&T: 2 internal proximity sensors type NI3-Q10S-Y1X 0,15M
  - M: 2 external proximity sensors type Ni5-K11-Y1X
- **Solenoid valves**
  - 1: 1 solenoid valve type 6144
  - 2: 2 solenoid valves type 6144
  - 3: 3 solenoid valves type 6144

Description:

The control unit type IECEx CU ex ia*** is provided for controlling process valves in hazardous areas, it used as an interface between the process control and the process valve and operates the electrical and pneumatic signals.
The control unit monitors the valve positions, i.e. "opened" and "closed" by means of built-in or external sensors.

Technical Data:

Electrical Data:

Control unit type IECEx CU ex ia 1 S&T 24V

Circuit of solenoid valve (Terminals Y1± or Y2± or Y3±)	in type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits with following maximum values: U_i = 25 V I_i = 158 mA P_i = 1 W The effective internal capacitance C_i is negligibly small The effective internal inductance L_i is negligibly small
Circuits of internal proximity sensors (Terminals S1± and S2±)	in type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits with following maximum values per circuit: U_i = 20 V I_i = 60 mA P_i = 200 mW The effective internal capacitance C_i is 150 nF The effective internal inductance L_i is 150 µH

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Control unit type IECEx CU ex ia 2 S&T 24V

Circuits of solenoid valves (Terminals Y1± and Y2±) or Y1± and Y3±) or Y2± and Y3±)	in type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits with following maximum values per circuit: U_i = 25 V I_i = 158 mA P_i = 1 W The effective internal capacitance C_i is negligibly small The effective internal inductance L_i is negligibly small
Circuits of internal proximity sensors (Terminals S1± and S2±)	in type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits with following maximum values per circuit: U_i = 20 V I_i = 60 mA P_i = 200 mW The effective internal capacitance C_i is 150 nF The effective internal inductance L_i is 150 µH

Control unit type IECEx CU ex ia 1 M 24V

Circuit of solenoid valve (Terminals Y1± or Y2± or Y3±) with	in type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits following maximum values: U_i = 25 V I_i = 158 mA P_i = 1 W The effective internal capacitance C_i is negligibly small The effective internal inductance L_i is negligibly small
Circuits of external proximity sensors (Terminals S1± and S2±)	in type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits with following maximum values per circuit: U_i = 20 V I_i = 60 mA P_i = 200 mW The effective internal capacitance C_i is 150 nF The effective internal inductance L_i is 150 µH

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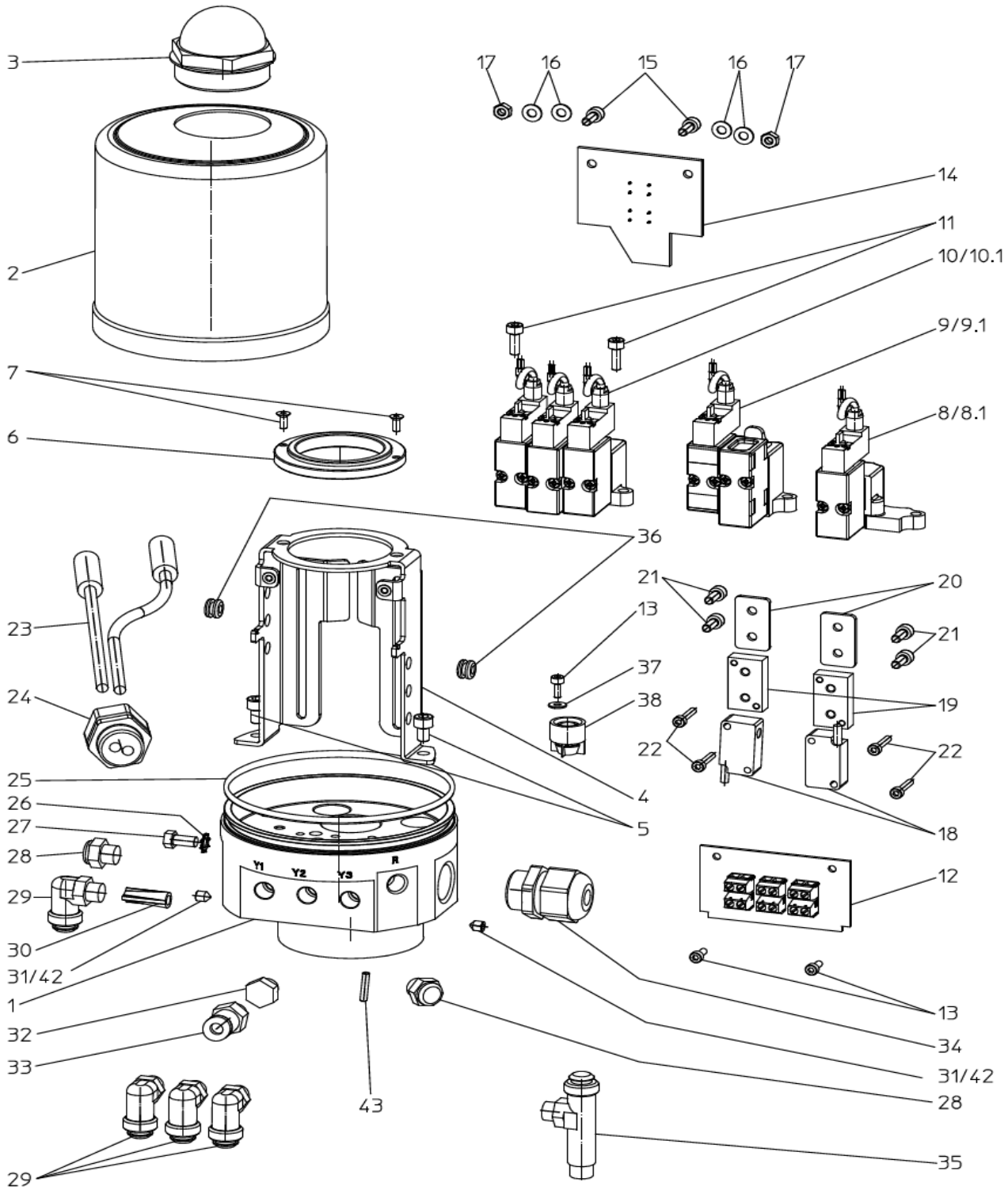
Control unit type IECEx CU ex ia 3 M 24V

Circuits of solenoid valves (Terminals Y1±;Y2± and Y3±)	in type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits with following maximum values per circuit: U_i = 25 V I_i = 158 mA P_i = 1 W The effective internal capacitance C_i is negligibly small The effective internal inductance L_i is negligibly small
Circuits of external proximity sensors (Terminals S1± and S2±)	in type of protection intrinsic safety Ex ia IIC only for connection to certified intrinsically safe circuits with following maximum values per circuit: U_i = 20 V I_i = 60 mA P_i = 200 mW The effective internal capacitance C_i is 150 nF The effective internal inductance L_i is 150 µH

Thermal Data:
The ambient temperature range is -10 °C...+55 °C

Special Conditions for Safe Use / Notes for Erection:

None



Datum:	17.10.17	28.11.17	18.06.21							
Name:	C.Keil	C.Keil	C.Keil							
Geprüft:										

Ersatzteilliste: spare parts list

IECEx CU ex ia

SPX FLOW
Germany

Blatt 1 von 4

RN IECEx 01.044.7

Ersatzteilliste: spare parts list

IECEx CU ex ia

Datum:	17.10.17	28.11.17	18.06.21	
Name:	C.Keil	C.Keil	C.Keil	
Geprüft:				

APV SPX FLOW Germany

Datum:				
Name:				
Geprüft:				

RN IECEx 01.044.7

pos. item	Menge quantity	Beschreibung description	Material material	IECEx CU ex ia 1 S&T 24V WS-Nr. ref.-no.	IECEx CU ex ia 2 S&T 24V WS-Nr. ref.-no.	IECEx CU ex ia 1M 24V WS-Nr. ref.-no.	IECEx CU ex ia 3M 24V WS-Nr. ref.-no.	IECEx CU ex ia 1M D4 24V WS-Nr. ref.-no.	IECEx CU ex ia 3M D4 24V WS-Nr. ref.-no.
		IECEx CU ex ia 24 V		08-45-530/17 H337798	08-45-531/17 H337797	08-45-540/17 H337796	08-45-541/17 H37795	08-45-509/17 H344227	08-45-507/17 H344051
1	1	ATEX CU 3-M Base	1.4305	08-46-638/17 H332415					
2	1	ATEX CU Haube ATEX CU cap	1.4301	08-46-641/12 H332127					
3	1	Schauglas - G 1 1/4" komplett sight glass - G1 1/4" complete	PA-T	08-46-980/93 H332416					
4	1	ATEX CU Montagebügel ATEX CU assembly bracket	1.4301	08-46-642/12 H332128					
5	2	Schraube M5x8 DIN EN ISO 4762 cap screw M5x8 DIN EN ISO 4762	A2-50	65-05-052/13 H332434					
6	1	ATEX CU - Gewindering G1 1/4" ATEX CU - thread ring G1 1/4"	1.4301	08-48-018/12 H332497					
7	2	Senkschraube M3x8 EN ISO 10642 countersunk screw M3x8 EN ISO 10642	A2-50	65-07-170/13 H332435					
8	1-2	IECex CU exia 1EMV interface block 24 V IECex CU exia 1EMV interface block 24 V	1.4305	08-46-832/17 H337792		08-46-832/17 H337792		08-46-832/17 H337792	
9	1	IECex CU exia 2EMV interface block 24 V IECex CU exia 2EMV interface block 24 V	1.4305		08-46-831/17 H337791				
10	1	IECex CU exia 3EMV interface block 24 V IECex CU exia 3EMV interface block 24 V	1.4305				08-46-830/17 H337790		08-46-830/17 H337790
11	2	Schraube M4x12 DIN EN ISO 4762 cap screw M4x12 DIN EN ISO 4762	A2-50	65-03-258/13 H127361					

Ersatzteilliste: spare parts list

IECEx CU ex ia

Datum:	17.10.17	28.11.17	18.06.21	
Name:	C.Keil	C.Keil	C.Keil	
Geprüft:				

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Datum:				
Name:				
Geprüft:				

RN IECEx 01.044.7

pos. item	Menge quantity	Beschreibung description	Material material	IECEx CU ex ia 1 S&T 24V WS-Nr. ref.-no.	IECEx CU ex ia 2 S&T 24V WS-Nr. ref.-no.	IECEx CU ex ia 1M 24V WS-Nr. ref.-no.	IECEx CU ex ia 3M 24V WS-Nr. ref.-no.	IECEx CU ex ia 1M D4 24V WS-Nr. ref.-no.	IECEx CU ex ia 3M D4 24V WS-Nr. ref.-no.
12	1	ATEX CU Platine ATEX CU PCB		08-46-651/99 H332438			08-46-652/99 H332841		
13	3	Schraube M3x8 DIN EN ISO 4762 cap screw M3x8 DIN EN ISO 4762	A2-50	65-03-205/15 H78977					
14	1	ATEX CU Sensorplatine ATEX CU sensor PCB			08-46-653/99 H337917		08-46-650/99 H332437	08-46-653/99 H337917	
15	2	Schraube M4x10 DIN EN ISO 4762 cap screw M4x10 DIN EN ISO 4762	A2-50				65-03-256/13 H78985		
16	4	Scheibe A 4,3 DIN 125 B washer A 4,3 DIN 125 B	A2				67-01-003/13 H79576		
17	2	Sechskantmutter M4 DIN EN 24032 hexagon nut M4 DIN EN 24032	A2				65-50-002/13 H79275		
18	2/1	Initiator Ni3-Q10S-Y1X prox switch Ni3-Q10S-Y1X		08-46-662/93 H332441				08-46-662/93 H332441	
19	2/1	ATEX CU Sensorunterlage ATEX CU sensor pad	PA6	08-46-666/93 H332443				08-46-666/93 H332443	
20	2/1	ATEX CU Halteblech ATEX CU retaining plate	1.4301	08-46-990/13 H332444				08-46-990/13 H332444	
21	4/2	Schraube M4x10 DIN EN ISO 4762 cap screw M4x10 DIN EN ISO 4762	A2-50	65-03-256/13 H78985				65-03-256/13 H78985	
22	4/2	Schraube M3x16 DIN EN ISO 4762 cap screw M3x16 DIN EN ISO 4762	A2-50	65-03-209/13 H78981				65-03-209/13 H78981	
23	2/1	Initiator Ni5 K11-Y1X proximity switch Ni5 K11-Y1X				08-46-663/93 H332442		08-46-663/93 H332442	
24	1	ATEX Kabelverschr. M20x1,5 Kabel 2x ø5mm ATEX cable union M20x1,5 cable 2x ø5mm	PA			08-46-656/93 H332440			
25	1	O-Ring 94,92 x 2,62	NBR	58-06-446/83 H332432					
26	1	Sechskantschraube M5x10 DIN EN 24017 hexagon screws M5x10 DIN EN 24017	A2-50	65-01-031/13 H78734					
27	1	Zahnscheibe A-5,3 DIN6797 toothed washer A-5,3 DIN6797	A2	67-09-770/13 H332787					

Ersatzteilliste: spare parts list

IECEx CU ex ia

Datum:	17.10.17	28.11.17	18.06.21	
Name:	C.Keil	C.Keil	C.Keil	
Geprüft:				

APV SPX FLOW Germany

Datum:				
Name:				
Geprüft:				

RN IECEx 01.044.7

pos. item	Menge quantity	Beschreibung description	Material material	IECEx CU ex ia 1 S&T 24V WS-Nr. ref.-no.	IECEx CU ex ia 2 S&T 24V WS-Nr. ref.-no.	IECEx CU ex ia 1M 24V WS-Nr. ref.-no.	IECEx CU ex ia 3M 24V WS-Nr. ref.-no.	IECEx CU ex ia 1M D4 24V WS-Nr. ref.-no.	IECEx CU ex ia 3M D4 24V WS-Nr. ref.-no.
28	1-2	Schalldämpfer sound reducer	Ms / vern.	08-60-751/93 H208826					
29	2-4	W-Verschraubung G1/8" 6x1 Elbow connector G1/8" 6x1	Ms / vern.	08-60-750/93 H208825					
30	1	CU4 Luftfilter CU4 air filter	PE-porös	08-10-005/93 H320223					
31	2	Gewindestift M5x6 ISO4027 hexagon socket set screws M5x6 ISO4027	A2-50	65-15-052/13 H332436					
32	1/2	Blindstopfen G1/8" plug G1/8"	Ms / vern.	08-60-051/99 H320482					
33	1	Blindstopfen M20x1,5 V-INOX ex. blind cap M20x1,5 V-INOX ex.	Edelstahl	08-60-054/17 H337788					
34	1/2	ATEX Kabelverschr. M20x1,5 Kabel ø6-12mm ATEX cable union M20x1,5 cable ø6-12mm	PA	08-46-655/93 H332439				08-46-655/93 H332439	
35	1-2	Gummitülle rubber grommet	PA	08-46-152/93 H332952				08-46-152/93 H332952	
36	1	Scheibe A 3,2 DIN9021 washer A 3,2 DIN9021	A2	67-01-001/12 H320404					
38	1	CU4 Überströmventil CU4 pressure relief valve	PPS	08-46-037/93 H320352					
39	1	Steckversch. GERADE selbstabs IQSK connection direct automatic lock	Ms / vern.		H320551 08-63-241/99				
40	1	Druckreduzierventil 5Bar pressure reduce valve 5 bar			H208841 08-60-766/93				
41	1	Silikonschlauch 2mm x 1,5mm silicon-hose 2mm x 1,5mm	Silicon	H337909 08-46-022/93					
42	1	Flach kopf schraube M5x8 Flat head screw M5x8	1.4301					65-01-110/15 H343896	
43	1	parallel pin 4x16 parallel pin 4x16	1.4301					08-49-074/12 H343581	

Ersatzteilliste: spare parts list

ATEX CU Adapter

Datum:	09/14	13.04.15	01.09.16	18.06.21	
Name:	Spliethoff	Trytko	Trytko	C.Keil	
Geprüft:					
Datum:					
Name:					
Geprüft:					

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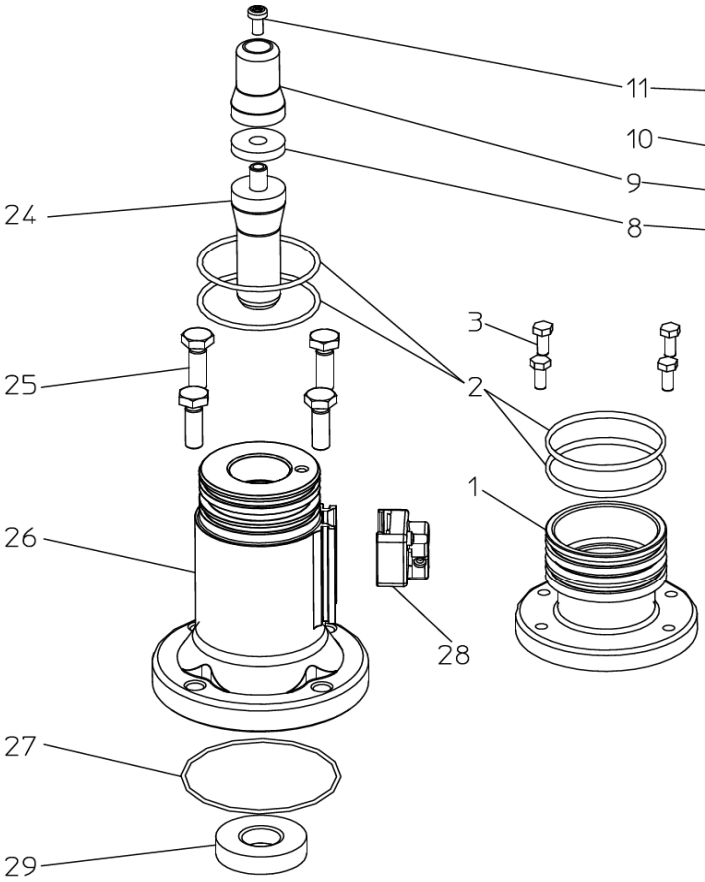
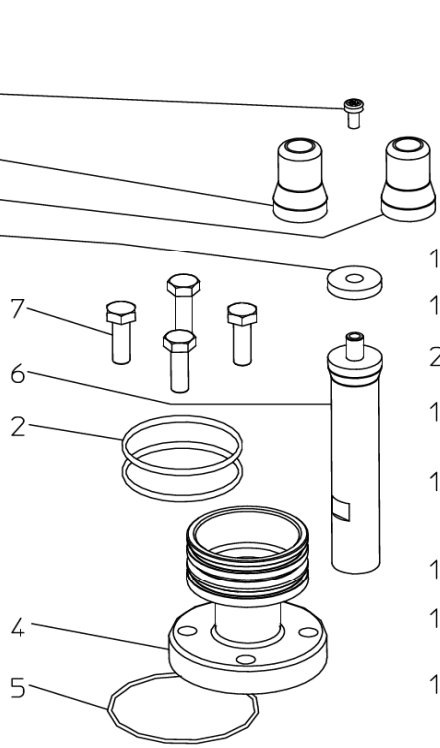
ATEX CU D4-Adapter

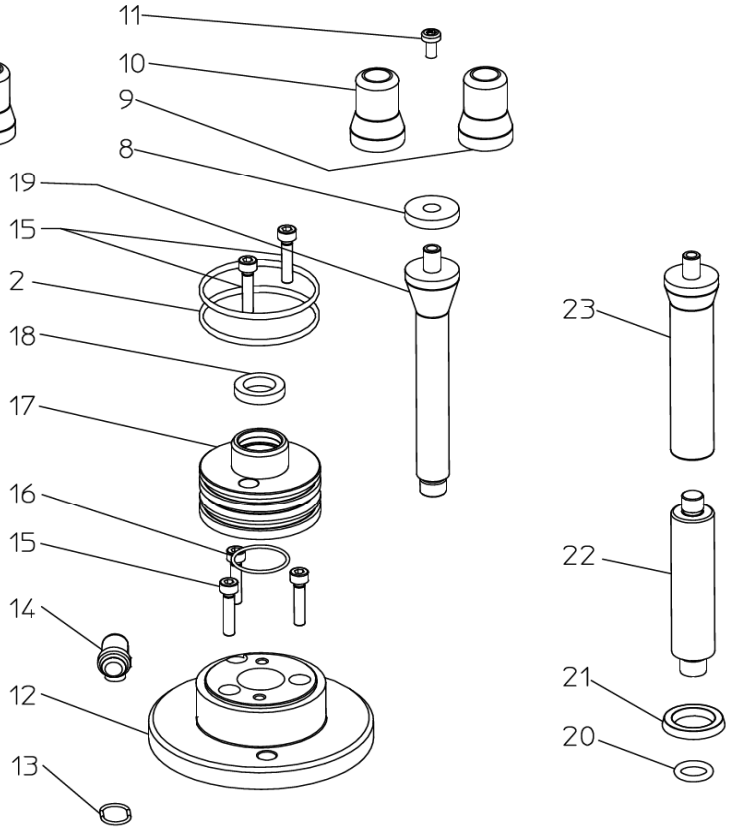


ATEX CU M-Adapter

ATEX CU S-Adapter



ATEX CU T-Adapter & ATEX CU Tmax Adapter



Ersatzteilliste: spare parts list

ATEX CU Adapter

Datum:	09/14	13.04.15	01.09.16	18.06.21
Name:	Spliethoff	Trytko	Trytko	C.Keil
Geprüft:				

Datum:				
Name:				
Geprüft:				

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RN ATEX 01.044.7

pos. item	Menge quantity	Beschreibung description	Material material	**ATEX CU M-Adapter** WS-Nr. ref.-no.	**ATEX CU S-Adapter** WS-Nr. ref.-no.	**ATEX CU T-Adapter** WS-Nr. ref.-no.	**ATEX CU Tmax-Adapter** WS-Nr. ref.-no.	**IECEx CU ex ia D4-Adapter** WS-Nr. ref.-no.	
				08-48-685/17 H332573	08-48-680/17 H332570	08-48-683/17 H332571	08-48-684/17 H332572	08-46-647/93 H343596	
1	1	ATEX CU M - Adapter	1.4301	08-46-752/12 H332446					
2	2	O-Ring 50,47 x 2,62	NBR	58-06-225/83 H332451					
3	4	Schraube M5x12 DIN EN ISO 4762 cap screw M5x12 DIN EN ISO 4762	A2-50	65-05-053/13 H78999					
4	1	ATEX CU S - Adapter	1.4301		08-46-750/12 H332445				
5	1	O-Ring 66 x 2	NBR		58-06-297/83 H173930				
6	1	ATEX CU S - Zugstangenverlängerung ATEX CU S - tie rod extension	PA6		08-46-770/93 H332453				
7	4	Schraube M8x25 DIN EN ISO 4014 screw M8x25 DIN EN ISO 4014	A2-50		65-01-089/15 H120284				
8	1	ATEX CU Schaltnocke ATEX CU operating cam	1,4523	08-46-765/99 H332452					
9	1	ATEX CU - S & T - Signalstab rot ATEX CU - S & T- signal rod red	PVC	08-46-775/93 H332455					
10	1	ATEX CU - S & T Signalstab grün ATEX CU - S & T- signal rod green	PE HD	08-46-776/93 H332578					
11	1	EJOT DELTA PT Schraube WN 5452 50x10 EJOT DELTA PT screw WN 5452 50x10	A2	65-17-14013 H320366					
12	1	ATEX CU T - Adapter Unterteil ATEX CU T - adapter lower part	1.4301			08-46-761/12 H332448			
13	1	O-Ring 14 x 1,78	NBR			58-06-002/83 H76891			
14	1	W-Verschraubung G1/8"/Ø6mm schwenkbar W-Union G1/8" /Ø6mm slewable	Ms/vern.			08-60-750/93 H208825			

Ersatzteilliste: spare parts list

ATEX CU Adapter

Datum:	09/14	13.04.15	01.09.16	18.06.21
Name:	Spliethoff	Trytko	Trytko	C.Keil
Geprüft:				

Datum:				
Name:				
Geprüft:				

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Blatt 3 von 3

RN ATEX 01.044.7

pos. item	Menge quantity	Beschreibung description	Material material	ATEX CU M-Adapter WS-Nr. ref.-no.	ATEX CU S-Adapter WS-Nr. ref.-no.	ATEX CU T-Adapter WS-Nr. ref.-no.	ATEX CU Tmax-Adapter WS-Nr. ref.-no.	IECEx CU ex ia D4-Adapter WS-Nr. ref.-no.	WS-Nr. ref.-no.
15	5	Schraube M5x25 DIN EN ISO 4762 cap screw M5x25 DIN EN ISO 4762	A2-50			63-03-313/13 H127369			
16	1	O-Ring 21,95 x 1,78	NBR			58-06-084/83 H332450			
17	1	ATEX CU T - Adapter Oberteil ATEX CU T - adapter upper part	1.4301			08-46-760/12 H332447	08-46-762/12 H336113		
18	1	Führungsband PTFE driving band	Turcite			08-39-095/93 H14906	08-39-077/93 H336118		
19	1	ATEX CU T - Kolbenstangenverlängerung ATEX CU T - piston rod extension	1.4301			08-46-771/93 H332454			
20	1	O-Ring 11 x 3	NBR				58-06-039/83 H208632		
21	1	V - Dichtung V - seal	NBR				58-32-010/83 H171060		
22	1	ATEX CU Tmax - Kolbenstangenverlängerung ATEX CU Tmax - piston rod extension	1.4301				08-46-904/13 H333109		
23	1	ATEX CU Tmax - Zugstangenverlängerung ATEX CU Tmax - tie rod extension	PA6				08-46-772/93 H333108		
24	1	D4 ATEX Zugstangen verlängerung D4 ATEX tie rod extension	PA6 Black					08-46-773/93 H343304	
25	4	Sechskantschraube M8x25 Hexagon Screw M8x25	1.4301					65-01-089/15 H120284	
26	1	ATEX CU D4 - Adapter ATEX CU D4 - adapter	PEHD 100 antistatic black					08-20-159/12 H343301	
27	1	O-ring 70x2 O-ring 70x2	NBR					58-06-301/83 H343306	
28	1	Prox switch holder SW4 11 DIA + M12x1 Prox switch holder SW4 11 DIA + M12x1	PA12 black					15-33-153/83 H208290	
29	1	Schaltnocke D4 oben cam D4 top	1.4523 / 444FR					08-60-460/99 H334387	

APV Control Unit

IECEx CU ex ia

FOR SPECIFIC IECEx APPLICATIONS

SPXFLOW®

SPX FLOW

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ISSUED 05/2023 - Original Manual