EXPLOSION VENTING DEVICEVENT PRO S

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

2023

ATEX CENTER
tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

CONTENTS

1. General information 6
1.1. Warranty conditions 6
1.2. Nomenclature 7
1.3. Classification of Vent PRO S 8
1.4. Storage 8
2. General safety instructions 9
3. Product description 10
3.1. Principle of function 10
4. Technical parameters of Vent PRO S 11
4.1. Construction of Vent PRO S 11
4.2. Basic dimensions of Vent PRO S 12
4.3. Labelling the Vent PRO S 14
4.4. Optional accessories for Vent PRO S 15
5. Installation of Vent PRo S on protected equipment 18
5.1. Inspecting Vent PRO S prior to installation 18
5.2. Installation of Vent PRO S on the protected equipment 18
5.3. Grounding Vent PRO S 23
6. Installation of opening indicators 24
6.1. Installing the type G1 indicator 24
6.2. Installing the G2 indicator 26
6.3. Installing the G3 indicator 28
6.4. Electrically connecting the opening indicator 30
7. Operation, maintenance and training 32
8. Servicing 33

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

PICTURE LIST

Fig. 1 - Diagram of how the explosion venting device works..... 10
Fig. 2 - Diagram of Vent PRO S – top side 11
Fig. 3 - Integrated seal of Vent PRO S – bottom side..... 11
Fig. 4 - Dimensional diagram of the Vent PRO S..... 13
Fig. 5 - Nameplate with technical parameters..... 14
Fig. 6 - Information warning label 14
Fig. 7 - G1 opening indicator..... 15
Fig. 8 - G2 opening indicator..... 15
Fig. 9 - G3 opening indicator..... 15
Fig. 10 - Mounting kit for G1, G2 and G3 indicators..... 16
Fig. 11 - Vent PRO S with thermal insulation..... 17
Fig. 12 - Installing Vent PRO S on the protected equipment 19
Fig. 13 - Installing Vent PRO S with bolts 20
Fig. 14 - Installing Vent PRO S with welded screws..... 20
Fig. 15 - Dimensional diagram for Vent PRO S 22
Fig. 16 - Grounding Vent PRO S..... 23
Fig. 17 - Opening indicator – type G1 24
Fig. 18 - Installing the opening indicator – type G1..... 24
Fig. 19 - Installing the G1 indicator cable in the bushing in the holder 25
Fig. 20 - Installing the opening indicator – type G2..... 26
Fig. 21 - Installing the opening indicator – type G2..... 26
Fig. 22 - Installing the G2 indicator sensor in the holder..... 27
Fig. 23 - Opening indicator – type G3 28
Fig. 24 - Correct position of the G3 opening indicator in relation to the opening side of the Vent PRO S . 28
Fig. 25 - Installing the opening indicator – type G3..... 29
Fig. 26 - Connecting the opening indicator to the power supply of the intrinsically safe relay 30

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

Fig. 27 - Connecting several opening indicators 30
Fig. 28 - Connecting the G1 opening indicator 31
Fig. 29 - Connecting the G2 opening indicator 31
Fig. 30 - Connecting the G3 opening indicator 31

TABLE LIST

Tab. 1 - Vent PRO S classification 8
Tab. 2 - Basic product line of Vent PRO S 12
Tab. 3 - Connecting dimensions of Vent PRO S 21

ATEX CENTER

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

1. GENERAL INFORMATION

This user manual (hereinafter referred to as UM) has been prepared for an explosion venting device Vent PRO S (hereinafter Vent PRO S). The original user manual for operation and maintenance is available in the Czech language, other language versions are a translation of the original. In case of any ambiguity, the original Czech version shall prevail. If the UM is lost, it can be re-ordered from the manufacturer.

This user manual shall be kept for the duration of using the Vent PRO S and shall be readily available to all operator personnel who may come into contact with the Vent PRO S in their work. If it becomes lost, it can be ordered again from the manufacturer or supplier. The user manual is integral part of the product. It is essential that the user studies this documentation and all other documents in detail and familiarizes persons with appropriate qualifications (electrical, mechanical, technology, safety techniques, etc.) with them. Passages from the chapters on operation and maintenance should be incorporated by the user into their operating regulations, maintenance plans, etc.

The following documents are supplied with Vent PRO S at the same time as this manual:

- delivery note
- EU Declaration of Conformity according to 2014/34/EU
- inspection certificate

In addition, the following can be provided upon request:

- **Vent PRO S indicator connection diagram (if included)**
- opening indicator data sheet (if included)
- intrinsically safe relay data sheet (if included)
- Vent PRO S diagram
- Vent PRO S checklist
- operational log

1.1 WARRANTY CONDITIONS

State-of-the-art, high-quality materials were used in the production. A thorough inspection is performed by the factory before sending it to the customer. If a defect arises in the Vent PRO S during the warranty period for which the manufacturer is liable, and the customer intends to complain about this defect, he is must do so without undue delay. The manufacturer will replace damaged or missing parts of the Vent PRO S as soon as possible.

The manufacturer grants a warranty on the product for a period of two years. This begins at the moment the product is handed over to the operator and, in the absence of such handover, the moment the product was made ready for handover but the transfer did not take place for reasons on the part of the operator.

The warranty cannot be applied in the following cases:

- The operator did not become adequately familiar with this UM.
- The product was not used in accordance with this UM.
- Insufficient or improper maintenance was performed.
- Inappropriate spare parts have been used despite the manufacturer pointing out that only original spare parts can be used.
- Inappropriate accessories have been used despite the manufacturer pointing out that only original accessories can be used.

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

- Immediately after delivery, the presence of the supplied accessories and the integrity of the original packaging were not checked despite the manufacturer pointing out that, in the event of a breach of this obligation by the operator, late complaints would not be considered.
- Damage has been caused by poor or improper handling.
- Vent PRO S was damaged by flowing material in technology.

A complaint about a defect during the warranty period is correctly made by sending the damaged part of the product to the manufacturer, including a written specification of the defect and mention of the product serial number. A complaint which follows this procedure will then be assessed by the manufacturer, and the manufacturer will use this assessment to decide whether the complaint is justified or unjustified.

If any part of this manual is not clearly understood by the operator's employee who comes into contact with the Vent PRO S during his work, the operator is obliged to contact the manufacturer or the authorized person with appropriate questions. The manufacturer is not liable for any damage or injury caused by a lack of understanding of the contents of this manual.

Increased customer attention should be especially paid to studying chapter 5, concerning proper installation. Vent PRO S is a device that can be life-threatening if installed, operated or maintained incorrectly. It is necessary to observe a safe distance according to the EN 14491 standard.

1.2. NOMENCLATURE

Explosion venting device Vent PRO S is a device that vents off an explosion caused by overpressure or other operating overpressures and underpressures. When the value for the burst pressure is reached, the pressure from the inner space of the protected equipment is released into the surrounding atmosphere.

Vent PRO S – convex single-layer construction with an integrated flange and the possibility of integrated sealing.

Manufacturer	RSBP spol. s r.o.
Operator	the natural or legal person who operates the Vent PRO S.
Supplier	the natural or legal person who supplied the Vent PRO S.
Authorized representative	a natural or legal person who has been authorized in writing by the manufacturer to act on his behalf in the performance of specific tasks.
Trained person	a person who is thoroughly familiar with this manual.
Explosion	a physical phenomenon in which there is a sudden, very sharp release of energy, and a sharp local increase in temperature and pressure.
Vent area	the geometric venting area of the explosion venting device.
Reduced explosion pressure (pred)	overpressure arising from the explosion of an explosive atmosphere in a container, protected by venting or suppression of the explosion.
Static opening pressure (pstat)	the overpressure at which Vent PRO S opens. It is identified as pstat. From an operational safety point of view, the following inequality must be met: pstat > poperating. As standard, Vent PRO S are manufactured with a tolerance of pstat ± 15%.

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

Operating pressure (poperating)	the pressure in the equipment during operation.
Operating vacuum	the maximum recommended vacuum in the equipment that the Vent PRO S device can be subjected to. This value ranges from 60 to 80% of the maximum vacuum.
Maximum vacuum	the value of vacuum in the equipment, related to the atmospheric pressure, which will cause the destruction of Vent PRO S. This value is determined by tests on a rigid device with planar flanges at a given test time. The increase in vacuum is approximately linear, and the test must last from 5 to 120 sec. These values are given in the data sheets of individual Vent PRO S. As standard, Vent PRO S are manufactured with a maximum vacuum tolerance of ± 15%.
Operational log	a document supplied on demand by RSBP for its products or another suitable document of the operator. If a document is used other than that which is supplied by RSBP, that document must contain the following information about each action taken with the device: date and time of the action what caused the action (regular service, failure…) how the action was handled name and signature of the employee who performed the action
Opening indicator	used to indicate the status of Vent PRO S (open/closed). If Vent PRO S opens, the contact and electrical circuit is interrupted.

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

1.3. CLASSIFICATION OF VENT PRO S

Vent PRO S are designed in accordance with European Directive 2014/34/EU and EN 14797:

Equipment group	II
Explosive atmosphere	D
Equipment category, indoor/outdoor	1D/2GD

Tab. 1 - Vent PRO S classification

Electrical components (opening indicator and intrinsically safe relay) installed on the outside of Vent PRO S must be certified for the corresponding zone and category.

1.4. STORAGE

Prior to installation on the protected equipment, the product must be stored in a clean, dry place and must not be exposed to weather. Store the product in its original packaging. Store Vent PRO S at temperatures from -10°C to 40°C.

The user manual must be retained throughout the life of the product and must be easily accessible to all employees and persons who come into contact with Vent PRO S.

If the product is taken out of service or sold, it must be handed over to the new user together with this user manual.

2. GENERAL SAFETY INSTRUCTIONS

The user must ensure that the product is used and operated only in technically flawless condition. It is necessary to adhere to the recommended deadlines for inspection and maintenance and for an authorized person to provide the necessary service or repair. Servicing must be carried out at least once a year by the manufacturer or an authorized representative.

All activities performed on the product must be recorded in the operating log or other appropriate document so that the history of these works can be checked at any time.

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

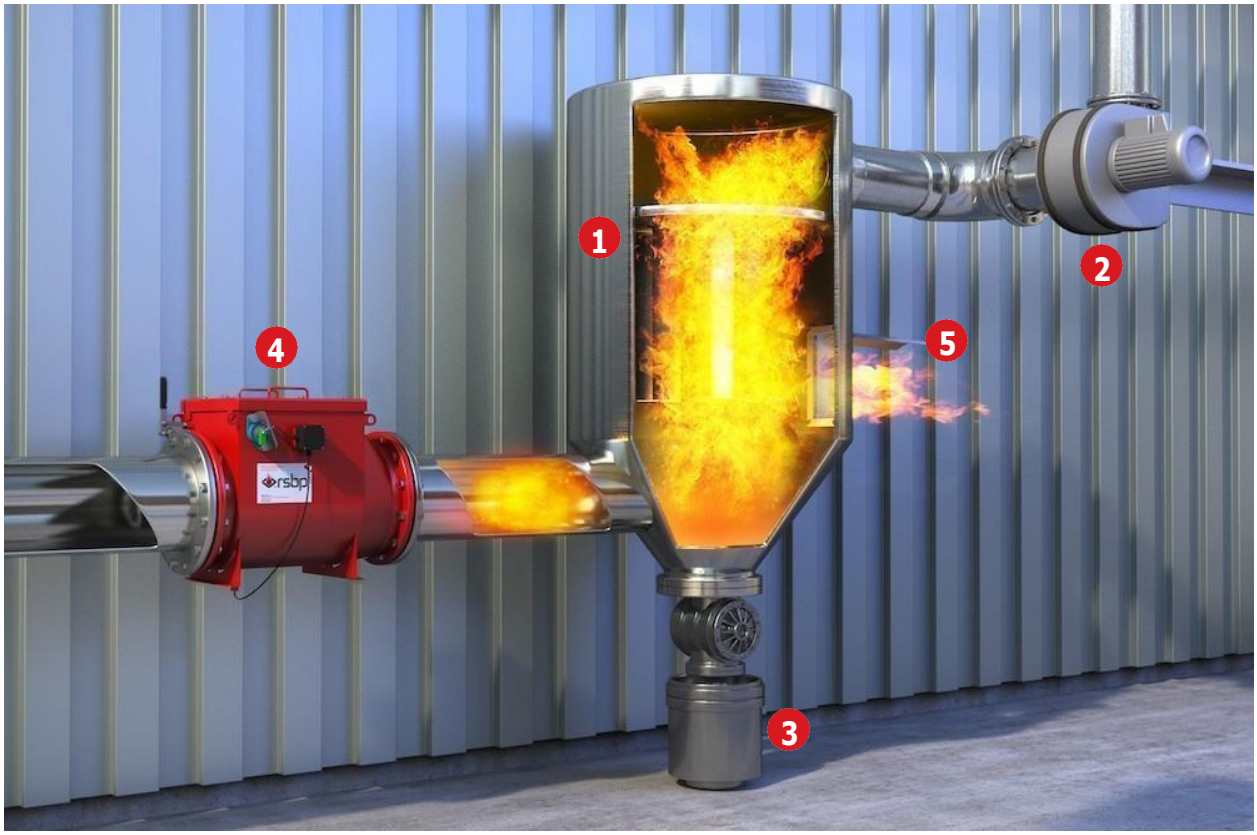
3. PRODUCT DESCRIPTION

It is a safety device designed to relieve pressure in the event of an explosion. It is designed to relieve and release an explosion that might occur inside the protected equipment, where there is an environment with a risk of explosion.

3.1. PRINCIPLE OF FUNCTION

Under normal operating conditions, the relief area on the protected equipment is covered by Vent PRO S. If the pstat is exceeded during an explosion inside the equipment, Vent PRO S will open, thus releasing the pressure from the jeopardized area. The equipment will be exposed to a pressure lower than its pressure resistance and therefore not be destroyed (fig. 1).

The circumference of the Vent PRO S venting device has been burned with several points unburned according to the dimensions of Vent PRO S. As the pressure rises, these unburned areas will rupture and Vent PRO S will open.



1. filter
2. fan
3. rotary valve
4. explosion isolation Flap B-FLAP I
5. explosion venting device Vent PRO S

Fig. 1 - Diagram of how the explosion venting device works

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

4. TECHNICAL PARAMETERS OF VENT PRO S

4.1. CONSTRUCTION OF VENT PRO S

Vent PRO S is constructed with an integrated flange and possibly an integrated seal (fig. 2). The Vent PRO S material is stainless steel (standard AISI 304). An integrated flat flange gasket, e.g. EPDM or SILICONE, is glued to the underside of Vent PRO S if required by the customer (fig. 3). Vent PRO S is good for use with medium cyclic vacuum loads. Vent PRO S has an integrated upper frame, i.e. it is installed without any additional upper frame. Vent PRO S is attached to the equipment with screws and washers (see chapter 5.2).

Fig. 2 - Diagram of Vent PRO S – top side

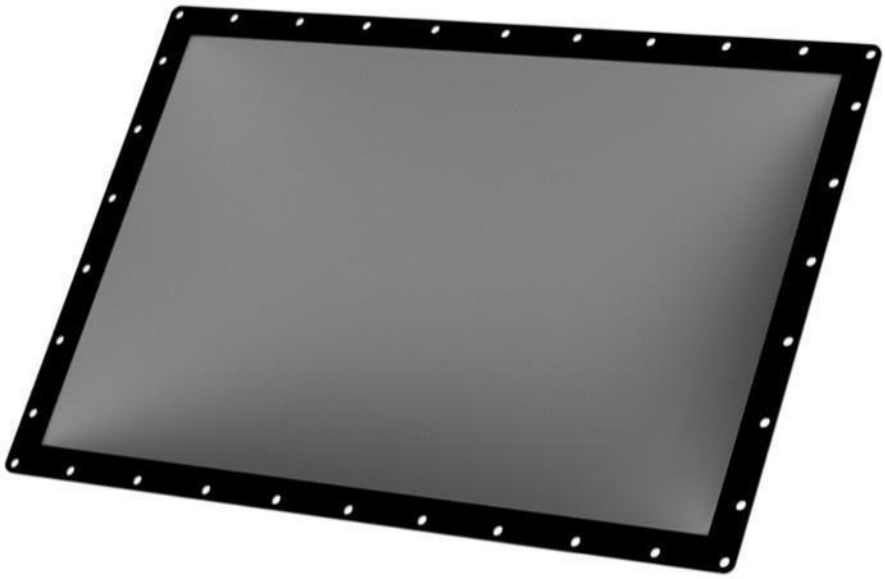


Fig. 3 - Integrated seal of Vent PRO S – bottom side

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

4.2. BASIC DIMENSIONS OF VENT PRO S

Vent PRO S is manufactured in sizes 229x229mm to 1130x1130mm. Alternatively, the size can be made to order according to customer specifications. The standard operating temperature of these Vent PROs is -40°C to 230°C without an integrated flange seal.

A flat gasket or a suitable sealant must be used under Vent PRO S.

In the case of Vent PRO S with an integrated flange seal, the operating temperature depends on the material of the seal used. For EPDM the temperature is -40°C to 100°C and for SILICONE the temperature is -40°C to 230°C.

Dimension	Vent area [m2]	I Outer diameter [mm]	J Outer diameter [mm]	K [pcs]	ØL [mm]	Screw type ISO 4017	Nut type ISO 7040	Washer type ISO 7090-8	Tightening torque [Nm]
229 x 229	0,05	309	309	12	13	M10x35	M10	10	21
260 x 260	0,07	340	340	12					
170 x 470[1)]	0,08	250	550	16					
150 x 600[1)]	0,09	220	670	20					
220 x 540	0,12	300	620	18					
270 x 458[1)]	0,12	350	538	16					
305 x 457	0,14	390	542	18					
300 x 500[1)]	0,15	382	589	20					
340 x 440	0,15	400	500	16					
410 x 410[1)]	0,17	490	490	12					
610 x 290	0,17	365	685	18					
241 x 762[1)]	0,18	331	852	20					
630 x 310	0,19	385	705	18					
490 x 590	0,28	565	665	26					
600 x 600[1)]	0,36	680	680	16					
450 x 800	0,36	530	880	22					
610 x 610[1)]	0,37	690	690	24					
457 x 890[1)]	0,40	537	970	28					
578 x 851	0,47	658	931	30					
586x920	0,53	661	995	34					
588x908[1)]	0,53	680	1000	22					
800x800[1)]	0,64	880	880	20					
685x1100[1)]	0,75	765	1178	34					
870 x 910[1)]	0,79	960	1000	36					
920 x 920	0,84	995	995	40					
851 x 1162	0,98	931	1242	42					
1020 x 1020	1,01	1095	1095	40					
915 x 1118	1,01	990	1193	42					
1130 x 1130	1,28	1220	1220	48					

[1)] Contact the manufacturer for this dimension.

Tab. 2 - Basic product line of Vent PRO S

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

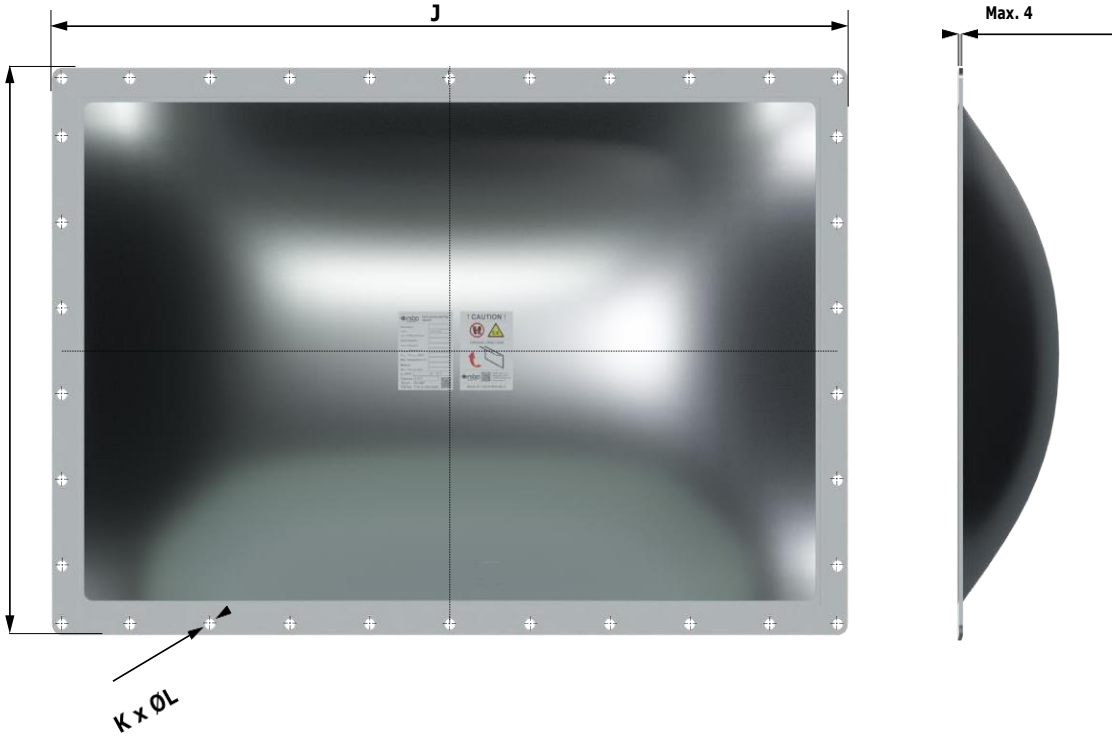


Fig. 4 - Dimensional diagram of the Vent PRO S

4.3. LABELLING THE VENT PRO S

Vent PRO S is marked with two types of labels (fig. 5, 6). The first label (fig. 5) contains the technical parameters of Vent PRO S and the second label (fig. 6) contains the name of the manufacturer, the risk of explosion, a warning not to step on it, and the direction Vent PRO S opens in.

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

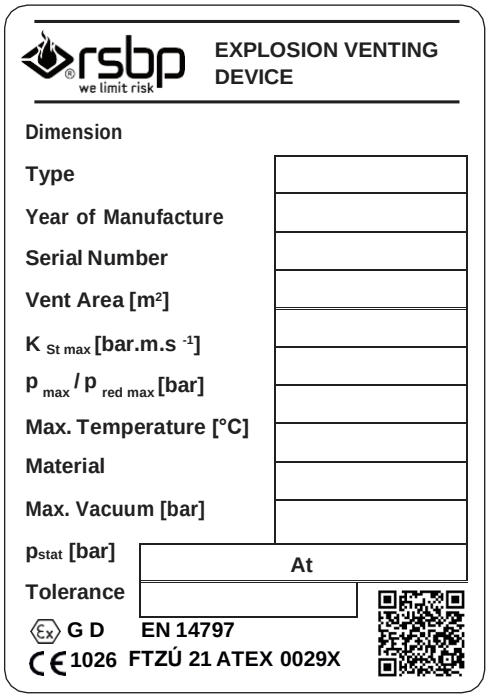


Fig. 5 - Nameplate with technical parameters

Fig. 6 - Information warning label

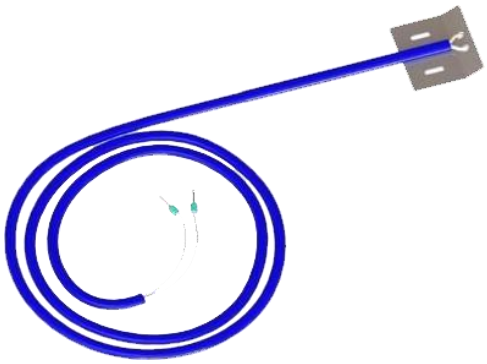
tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

4.4. OPTIONAL ACCESSORIES FOR VENT PRO S

A) Opening indicator

It is an alert component which, in the event that Vent PRO S opens, indicates a change of state. If Vent PRO S opens, the contact and electrical circuit is interrupted. At that moment, the signalling unit will report that the closed circuit is open. This event can initiate other processes (equipment shutdown, sound or light alarm, etc.).There are three variants of the opening indicator. See chapter 6 for a detailed description, including installation.

Type 1 –G1 opening indicator (cable)



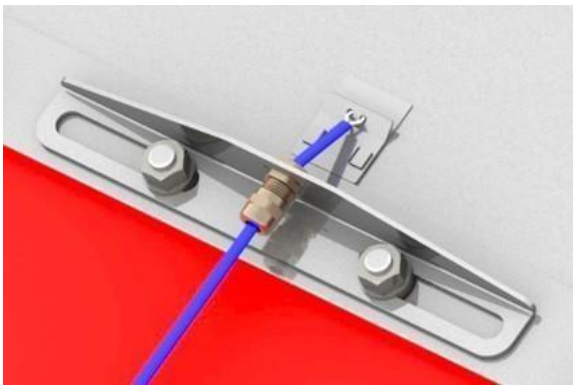
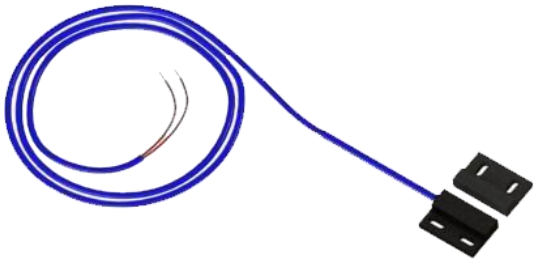


Fig. 7 - G1 opening indicator

Type 2 – G2 opening indicator (magnetic)



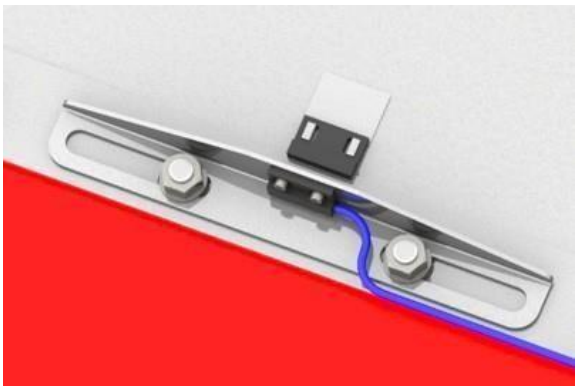


Fig. 8 - G2 opening indicator

Type 3 – G3 opening indicator (optional)

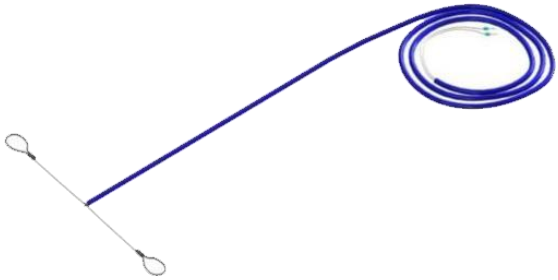


Fig. 9 - G3 opening indicator

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

Classification	Type G1	Type G2	Type G3
Operating temperature	-55°C to 150°C	-40°C to 150°C	-55°C to 150°C
Input voltage [max.]		10.6 V DC	
Input current [max.]		24 mA	

B) Mounting kit for attaching G1, G2 and G3 opening indicators

If required by the customer, installation accessories for Vent PRO indicators can be supplied. This is a set that consists of a Vent PRO indicator holder (pos. 1) for all types of indicators, cable bushings with locknuts (pos. 2) for type G1, G3 and 2 M3 x 6 (ISO 4762) galvanized screws (pos. 3) for indicator type G2.

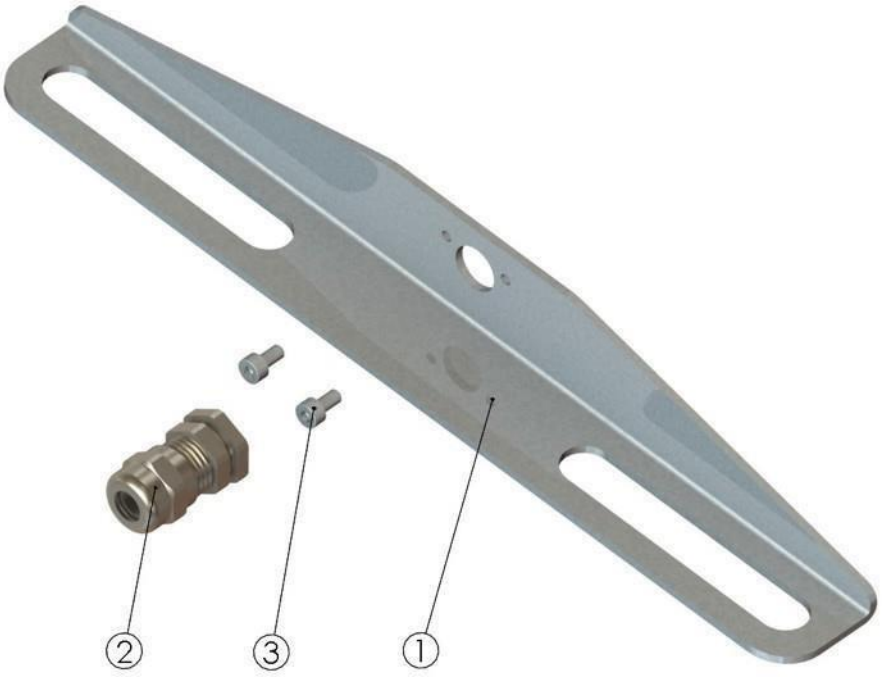


Fig. 10 - Mounting kit for G1, G2 and G3 indicators

C) Intrinsically safe relay

As an evaluation device for the interruption of the opening indicator, an intrinsically safe circuit must be used. The intrinsically safe relay is used to create an interface between the safe and dangerous zone (Zone 20). The intrinsically safe relay is available in two versions, with a power supply of 230 V AC or 24 V DC. The maximum output voltage is 10.6 V or the maximum current is 24 mA. The intrinsically safe relay contains a changeover contact, where the operational state of Vent PRO S (closed/open) is signalled.

The power supply and connection of control cabling to the intrinsically safe relay is not part of the delivery and is provided by the customer (unless contracted otherwise).

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

D) Flange gasket

The space between Vent PRO S and the equipment must always be sealed (flange gasket or sealant). If Vent PRO S is not equipped with an integrated seal, a flange gasket can be ordered. The standard flange gasket is made of EPDM material, but it is possible to order a gasket made of SILICON or SILICON FDA.

E) Thermal insulation

If requested by the customer, Vent PRO S can be supplied with thermal insulation. It is a highly flexible insulating material with a closed cell structure based on synthetic rubber and done in black. This insulation is resistant to UV radiation. The closed cell structure and low thermal conductivity prevents the penetration of water vapor and reduces energy losses, and it protects and optimizes the efficiency and life of the equipment. The insulation does not require additional treatment with a protective coating, does not degrade in the sun and is resistant to accidental contact with oils. The insulation is glued to Vent PRO S. More detailed technical parameters for this insulation are in the data sheet.

Fig. 11 - Vent PRO S with thermal insulation

ATEX CENTER

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

5. INSTALLATION OF VENT PRO S ON PROTECTED EQUIPMENT

Vent PRO S always comes with an integrated frame. Vent PRO S can be equipped with an integrated flange gasket at the customer's request.

5.1. INSPECTING VENT PRO S PRIOR TO INSTALLATION

Immediately after delivery and then before starting the installation of Vent PRO S, it is necessary to perform the following basic inspection:

Check:

- the integrity of the original Vent PRO S packaging
- the integrity and consistency of the Vent PRO S surface
- integrity of the gasket
- for missing fasteners (if included)
- the integrity of the indicator (if included)

After a successful inspection, Vent PRO S is ready to install. In the event of defects or deficiencies, contact the manufacturer or dealer immediately.

5.2. INSTALLATION OF VENT PRO S ON THE PROTECTED EQUIPMENT

When specifying the number of Vent PRO S locations on the protected equipment, it is necessary to respect the latest knowledge in the field of explosion protection and to have the design assessed for a professional workplace. Details that enable a clear decision as to whether the device (Vent PRO S) can be safely used under the expected operating conditions in the space under consideration should be evaluated by an expert company. This can be done by the experts at RSBP.

Vent PRO S is installed on the protected equipment according to the manufacturer's documentation. The installation procedure is directed by an authorized person. All installation work must be carried out in compliance with all the safety regulations of the plant where the installation is carried out.

The flange of the protected equipment for the installation of Vent PRO S must meet the limit deviations of longitudinal dimensions, the tolerances of straightness, flatness and parallelism according to EN ISO 13920-BE and it must be sufficiently rigid. The tolerances stipulated by EN ISO 13920 -BE must be met before and after the installation of Vent PRO S, taking into account all influences such as grinding, welding, assembly, surface treatment, etc., and they must also meet all anticipated operating conditions. If these requirements are not met, the manufacturer does not guarantee the correct functionality and tightness of Vent PRO S.

The installation of each Vent PRO S must be recorded in writing by the delegated person in the relevant document (e.g. operating log or other suitable document), including the date, name and signature.

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

Vent PRO S is mounted centrically on the protected equipment (fig. 12). It is fastened with the given screws, washers and nuts (see chapter 4.2). The screws for connecting Vent PRO S to the protected equipment must be provided with fan washers for grounding, or a copper cable must be used (see chapter 5.3). The individual nuts are tightened according to the respective tightening torque (see chapter 4.2).

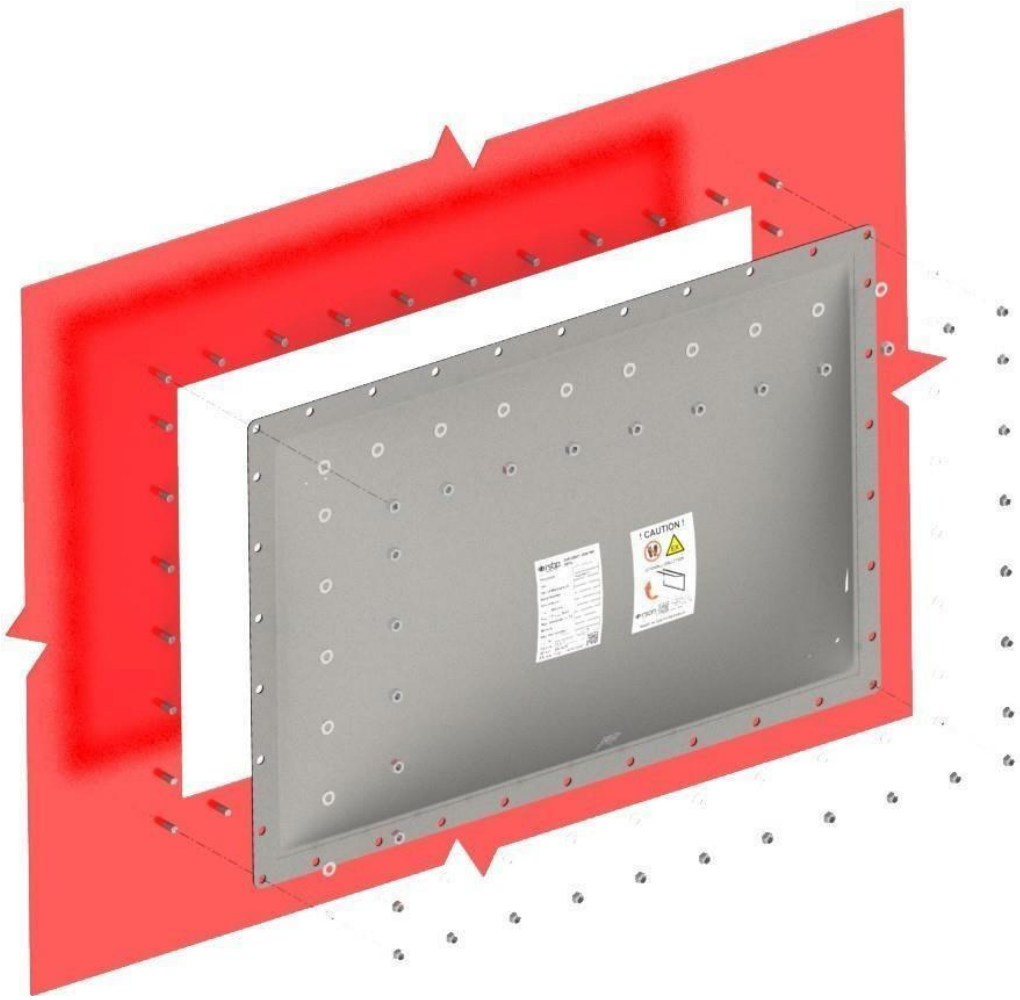


Fig. 12 - Installing Vent PRO S on the protected equipment

The installation of each Vent PRO S must be recorded in writing by the delegated person in the relevant document (e.g. operating log), including the date, name and signature.

Care must be taken during all handling to avoid damaging Vent PRO S or other parts.

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

Installation variants of Vent PRO S

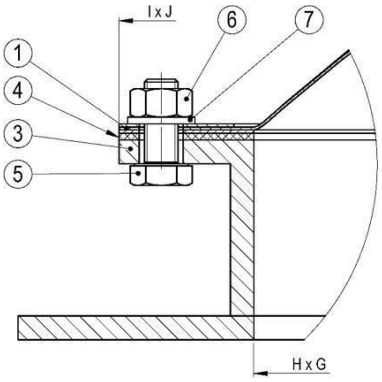


Fig. 13 - Installing Vent PRO S with bolts

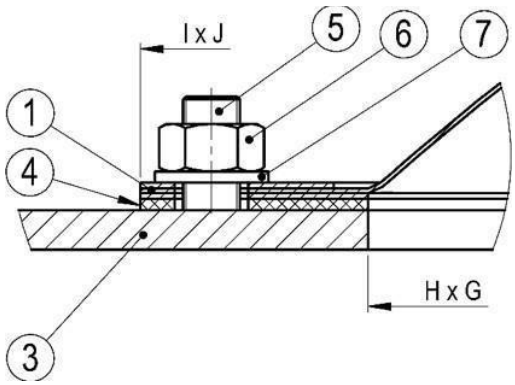


Fig. 14 - Installing Vent PRO S with welded screws

1) For the installation of Vent PRO S, the flange of the protected equipment must meet the requirements of standard EN ISO 13920-BE and must be sufficiently rigid. In case of mounting on insufficiently rigid equipment, it is necessary to provide the flange with additional reinforcement.

2) Fasteners galvanized (strength 8.8) or stainless steel (strength A2-70).

3) Number according to the table no. 2 in chapter 4.2.

Installation Note:

If Vent PRO S is not equipped with an integrated flange gasket, it is necessary to use another suitable flange gasket or sealant to seal the space between Vent PRO S and the flange of the equipment.

Position	Components	Pcs
1	Vent PRO S	1
2	Universal opening indicatorholder	1
3	Protected equipment [1)]	1
4	Flange gasket (can beintegrated) (see Installation Note)	
5	Screw [2)]	see [3)]
6	Nut [2)]	see [3)]
7	Washer [2)]	see [3)]

ATEX CENTER

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

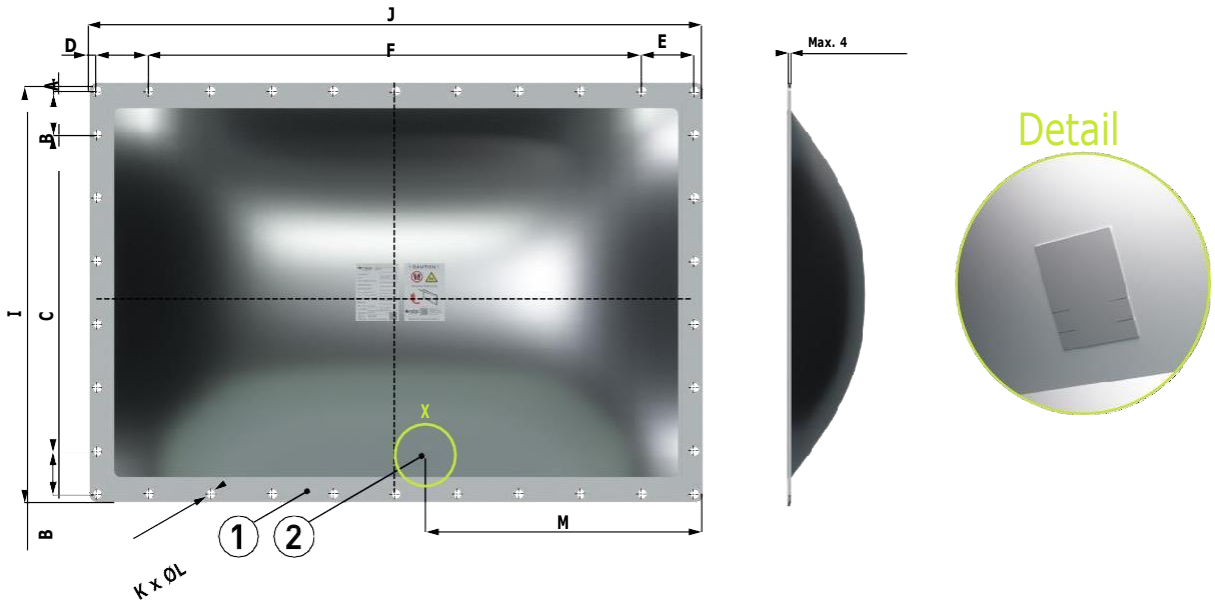
Dimension	Hole dimension in equipment H x G [mm]	A [mm]	B [mm]	C [mm]		D [mm]	E [mm]	F [mm]		screws / holes		M [mm]
				number of holes	Spacing			number of holes	spacing	K	ØL [mm]	
229 x 229	229 x 229	14,5	93	2	94	14,5	93	2	94	12		154,5
260 x 260	260 x 260	16	103	2	102	16	103	2	102	12		170
170 x 470[1)]	170 x 470	15	70	2	80	15	110	4	100	16		275
150 x 600[1)]	150 x 600	12,5	65	2	65	12,5	92	6	92	20		335
220 x 540	220 x 540	16	90	2	88	16	98	5	98	18		261
270 x 458[1)]	270 x 458	20	100	2	100	20	99	4	100	16		269
305 x 457	300 x 452	10	76	3	102	10	102	4	101	18		270,5
300 x 500[1)]	300 x 500	16	75	3	100	19,4	75	5	100	20		244
340 x 440	340 x 440	13	93,5	3	93,5	13	118,5	3	118,5	16		190,8
410 x 410[1)]	410 x 410	20	150	2	150	20	150	2	150	12		245
610 x 290	605 x 285	11,5	114	2	114	12,5	114	2	114	18		397,5
241 x 762[1)]	241 x 762	20	90	2	111	20	116	6	116	20		426
630 x 310	625 x 305	16	118	2	117	16,5	112	5	112	18		408,5
490 x 590	485 x 585	17,5	90	5	[1)]	17,5	90	6	90	26		332,5
600 x 600[1)]	590 x 590	15	180	2	180	15	18	2	180	16	13	328
450 x 800	450 x 800	15	125	3	125	15	110	6	126	22		440
610 x 610[1)]	610 x 610	15	110	5	110	15	110	5	110	24		290
457 x 890[1)]	457 x 890	15	102	4	101	15	114	[1)]	[1)]	28		485
578 x 851	560 x 845	16,1	102,3	5	102	16,1	99,4	8	100	30		465,5
586 x 920	581 x 915	12,5	68	6	100	12,5	85	9	100	34		447,5
588 x 908[1)]	588 x 908	17	161,5	3	161,5	17	138	6	138	22		500
800 x 800[1)]	800 x 800	56,5	185	3	185	56,5	185	3	185	20		334
685 x 1100[1)]	685 x 1100	15	105	6	105	15	114	9	115	34		531,5
870 x 910[1)]	870 x 910	18	77	8	110	18	97	8	110	36		500
920 x 920	915 x 915	12,5	85	9	100	12,5	85	9	100	40		447,5
851 x 1162	845 x 1162	12,95	99,4	8	100	12,95	100	11	[1)]	42		672
1020 x 1020	1015 x 1015	12,5	107	9	107	12,5	107	9	107	40		494
915 x 1118	910 x 1113	12,5	82,5	9	100	12,5	111,5	10	105	42		596,5
1130 x 1130	1130 x 1130	20	90	11	100	20	90	11	100	48		560

1) Contact the manufacturer for more information.

Use screws M10, flat washers M10 (ISO 7090) and nuts M10 (ISO 7040) to secure the Vent PRO S and comply with a tightening torque of 21Nm.

Tab. 3 - Connecting dimensions of Vent PRO S

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center



1 Vent PRO S

2 universal opening indicator holder for Vent

Fig. 15 - Dimensional diagram for Vent PRO S

5.3. GROUNDING VENT PRO S

Grounding must be carried out according to the legislation in force at the place of installation. The screws for connecting Vent PRO S to the protected equipment must be provided with fan washers for grounding. Alternatively, a grounding cable can be used for connecting the upper flange and protected equipment (fig. 16).

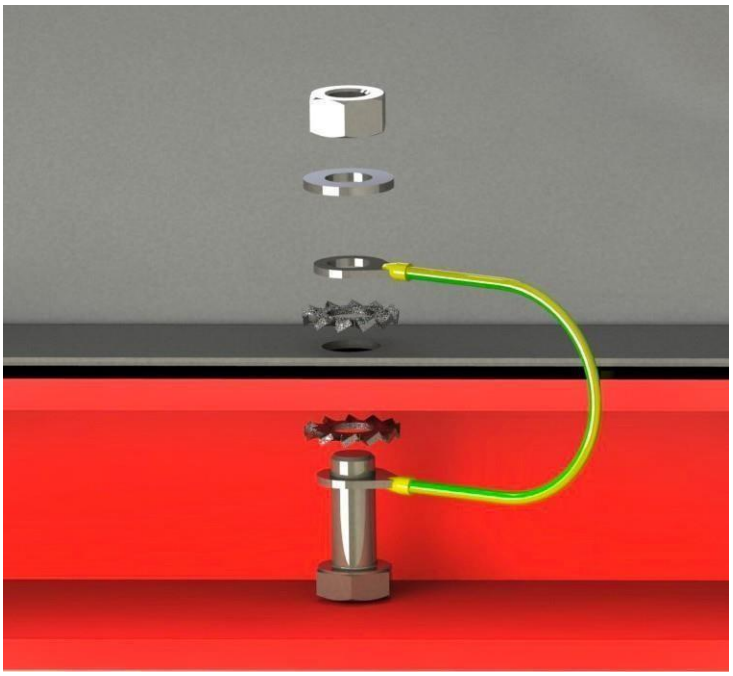


Fig. 16 - Grounding Vent PRO S

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

6. INSTALLATION OF OPENING INDICATORS

6.1. INSTALLING THE TYPE G1 INDICATOR

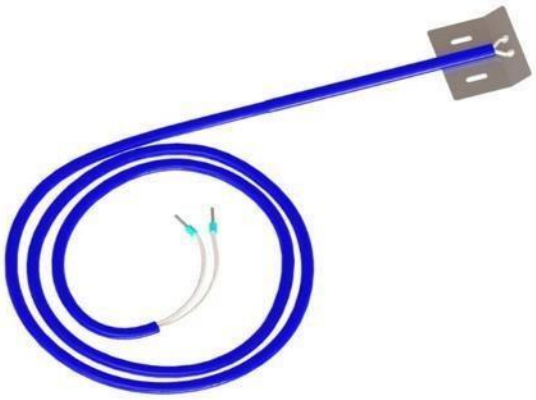


Fig. 17 - Opening indicator – type G1

It is a stainless steel plate through which the cable is threaded (fig. 17). This stainless steel plate firmly snaps into the universal indicator holder, which is non-detachable from Vent PRO S. The indicator cable is pulled tight through a bushing in the indicator holder. If Vent PRO S opens in the event of an explosion, this cable will be disrupted and signal the customer.

An intrinsically safe circuit must be used as the evaluation device for the opening indicator interruption. This means that the power supply to the opening indicator must not exceed 10.6 V DC or 24 mA. An intrinsically safe relay is used for this by creating an interface between the safe and dangerous zone (see chapter 6.5). Opening indicators G1 type can be connected in series.

Installing the G1 opening indicator on Vent PRO S:

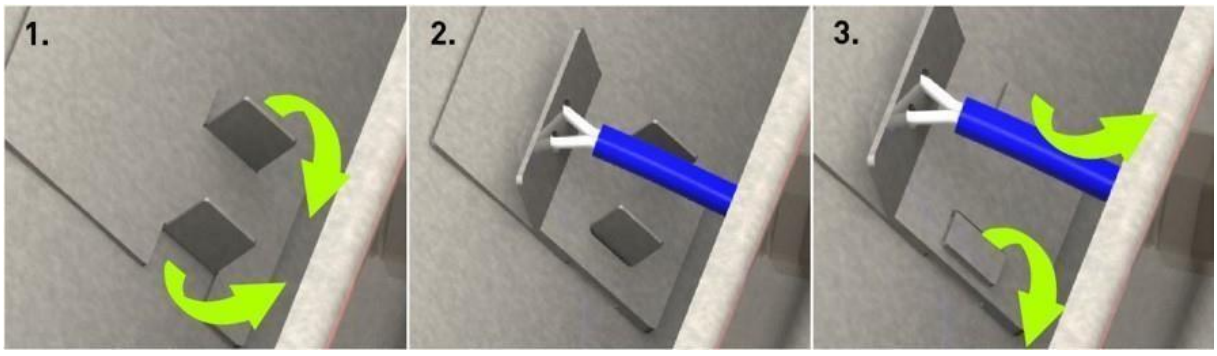


Fig. 18 - Installing the opening indicator – type G1

1. Use a suitable tool (flat screwdriver, pliers) to bend the flaps of the universal indicator holder.
2. Place the cable indicator in the universal indicator holder with the threaded cable in the direction shown.
3. Bend the universal indicator holder flaps back with a suitable tool.

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

Procedure for installing the G1 indicator cable in the bushing:

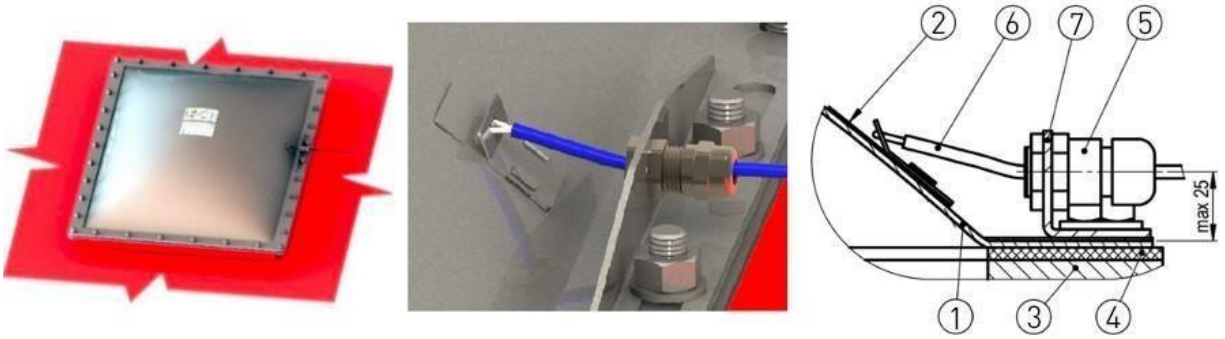


Fig. 19 - Installing the G1 indicator cable in the bushing in the holder

After installing the indicator for Vent PRO S, it is necessary to mount the cable bushing (pos. 5) into the prepared M12x1.5 thread into the cable bushing holder (pos. 7). The bushing must be secured with a locknut. The indicator cable must be threaded through the bushing, tensioned and tightened with a tightening torque of Mu = 30 Nm. The bushing must be suitable for a cable thickness of 3 mm. The cable can also be connected to a suitable device (system) for signalling the opening of Vent PRO S.

Position	Components
1	Vent PRO S
2	universal opening indicator holder
3	protected equipment
4	flange gasket
5	M12x1.5 cable bushing (cable thickness 3 mm)
6	G1 opening indicator
7	cable bushing holder

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

6.2. INSTALLING THE G2 INDICATOR

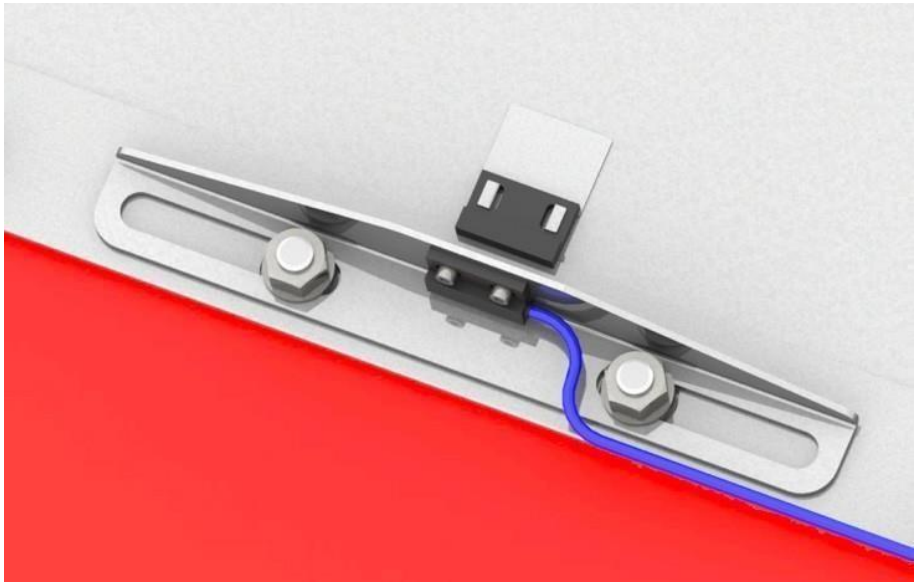


Fig. 20 - Installing the opening indicator – type G2

The magnetic indicator consists of two parts: the magnetic sensor and magnet (fig. 20). The magnet is attached to Vent PRO S using the universal opening indicator holder (see below) and the sensor is attached to the Vent PRO S frame or holder with two M3x6 screws. The magnetic sensor detects the position of the magnet through the stainless steel material, and so it can be located outside the stainless steel frame or stainless steel holder. If Vent PRO S opens in the event of an explosion, the magnetic sensor and magnet move away from each other, thus breaking their contact and alerting the customer. An intrinsically safe circuit must be used as the evaluation device for the indicator position disruption. This means that the power supply to the opening indicator must not exceed 10.6 V DC or 24 mA. An intrinsically safe relay is used for this by creating an interface between the safe and dangerous zone. Opening indicators G2 type can be connected in series.

Installing the G2 opening indicator on Vent PRO S:

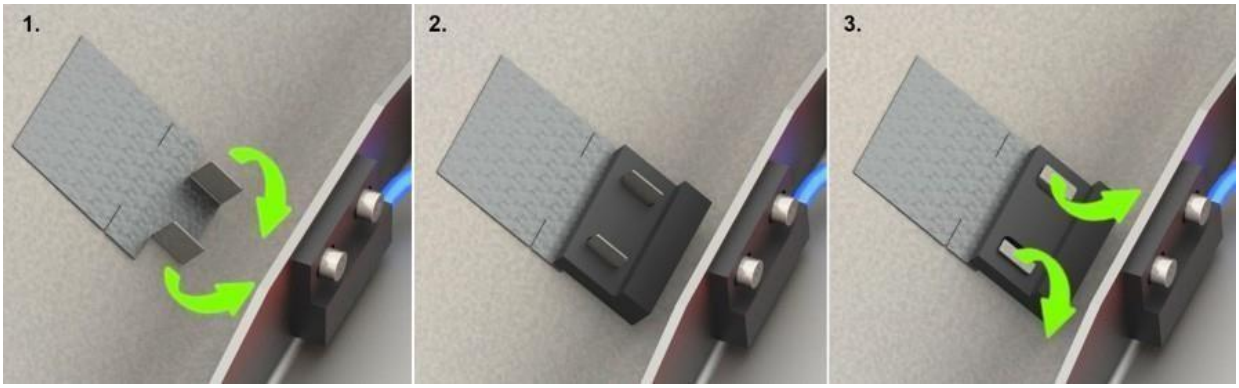
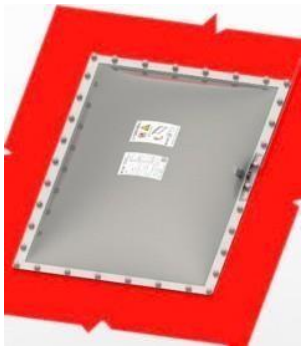


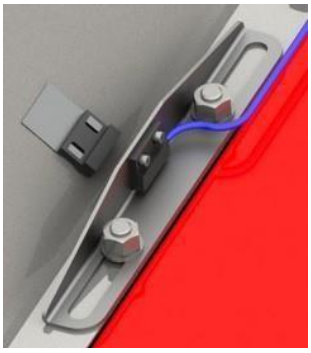
Fig. 21 - Installing the opening indicator – type G2

1. Use a suitable tool (flat screwdriver, pliers) to bend the flaps of the universal opening indicator holder.
2. Place the magnet on the universal opening indicator holder in the direction shown.
3. Bend the universal indicator holder flaps back with a suitable tool.

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

Installing the G2 opening indicator on Vent PRO S





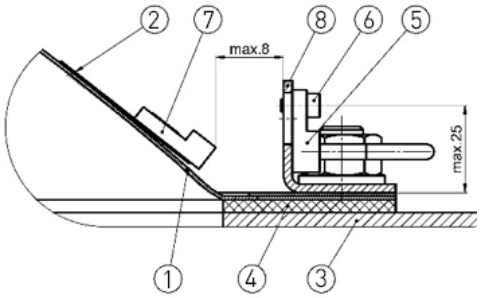


Fig. 22 - Installing the G2 indicator sensor in the holder

Position	Components
1	Vent PRO S
2	universal opening indicator holder
3	protected equipment
4	flange gasket
5	magnetic sensor
6	screw M3x6 (ISO 4762) (2 pcs)
7	magnet
8	magnetic sensor holder

1. After installing the magnet on Vent PRO S, it is necessary to mount the sensor (pos. 8) using two screws (pos. 6).

2. Installing both parts (magnet and sensor) of the indicator requires making an operational check using a measuring instrument.

3. The cable must also be connected to a suitable device (system) for signalling the opening of Vent PRO S.

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

6.3 INSTALLING THE G3 INDICATOR

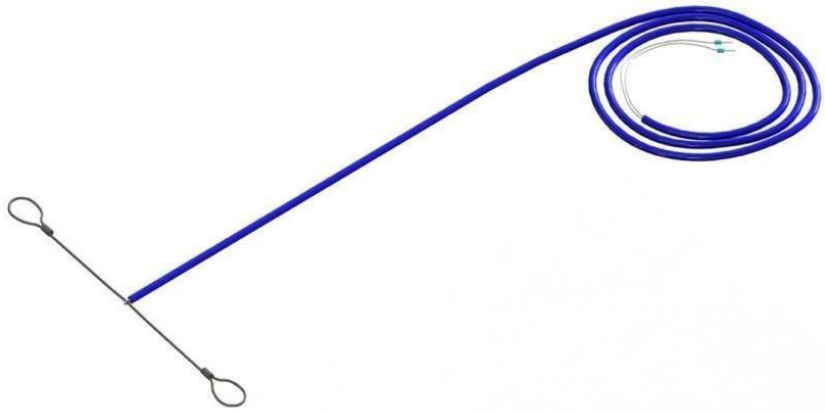


Fig. 23 - Opening indicator – type G3

The G3 opening indicator can be retrofitted to Vent PRO S. This indicator consists of an insulated cable attached to a stainless steel line by means of a shrink tube. This cable is stretched through the Vent PRO S bulge (fig. 23) and tightened through the bushing on the other side of Vent PRO S. The stainless steel line with the cable must be on the side where Vent PRO S opens (fig. 24). If Vent PRO S opens during an explosion, the cable will be disrupted and the customer alerted. An intrinsically safe circuit must be used as the evaluation device for the opening indicator interruption. This means that the power supply to the opening indicator must not exceed 10.6 V DC or 24 mA. An intrinsically safe relay is used for this by creating an interface between the safe and dangerous zone. Opening indicators G3 type can be connected in series.

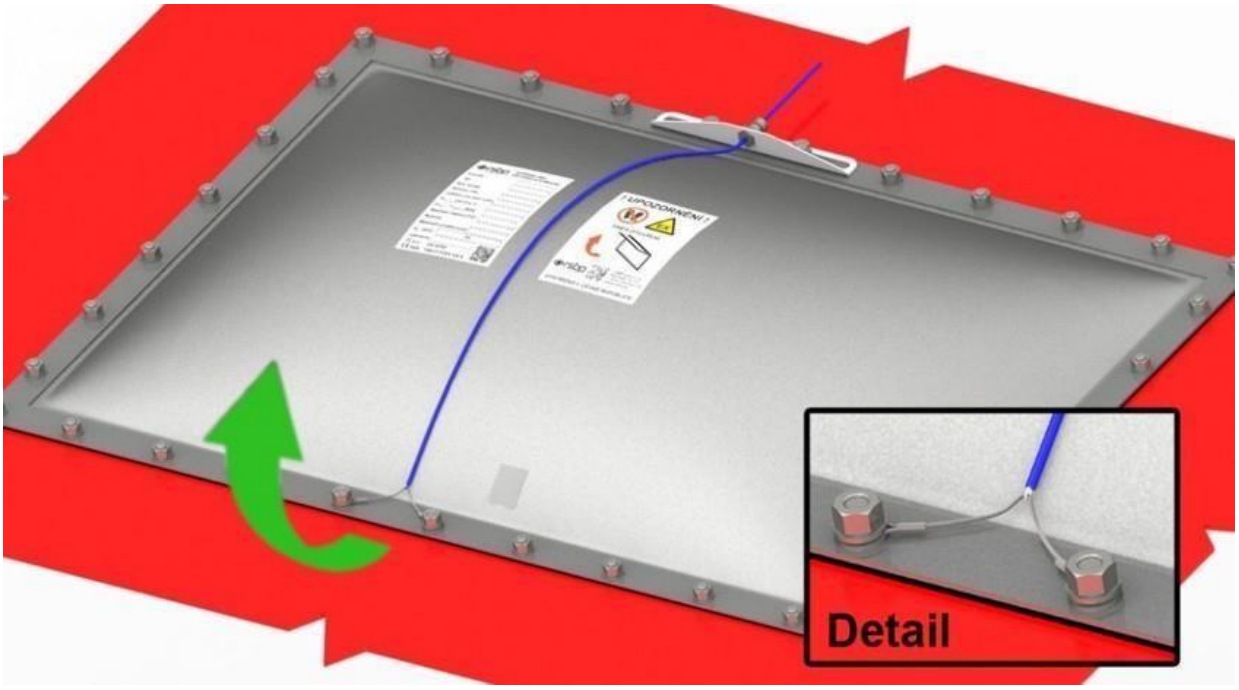


Fig. 24 - Correct position of the G3 opening indicator in relation to the opening side of the Vent PRO S

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

Installing the G3 indicator on Vent PRO S:

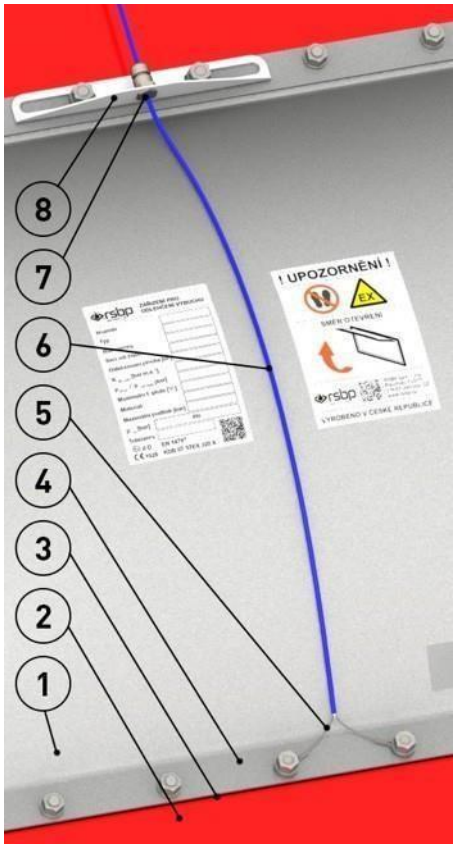


Fig. 25 - Installing the opening indicator – type G3

Position	Components
1	Vent PRO S
2	protected equipment
3	flange gasket
4	upper integrated frame
5	stainless steel line
6	indicator cable
7	M12x1.5 cable bushing (cable thickness 3 mm)
8	cable bushing holder

1. The cable with stainless steel line (pos. 5) is attached to the frame or holder with two screws (fig. 25).
2. The cable is then passed through the bushing, tensioned and tightened with a tightening torque of Mu = 30 Nm. The bushing must be suitable for a cable thickness of 3 mm and secured with locknuts.
3. The cable must also be connected to a suitable device (system) for signalling the opening of Vent PRO S. For the electrical connection, see the following chapter 6.4. Electrical connecting the opening indicator.

All operations described in this chapter in the installation of the indicator should only be performed by a properly trained person.

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

6.4. ELECTRICALLY CONNECTING THE OPENING INDICATOR

The opening indicator is a mechanical-electrical component supplied by RSBP. It can be supplied with the Vent PRO S as a whole, but it also does not have to be (depending on the customer's request). If Vent PRO S includes an opening indicator, then it is necessary to connect it to the power supply of an intrinsically safe relay. Each type of indicator (G1, G2 or G3) has a cable that needs to be connected to the intrinsically safe relay (fig. 26).

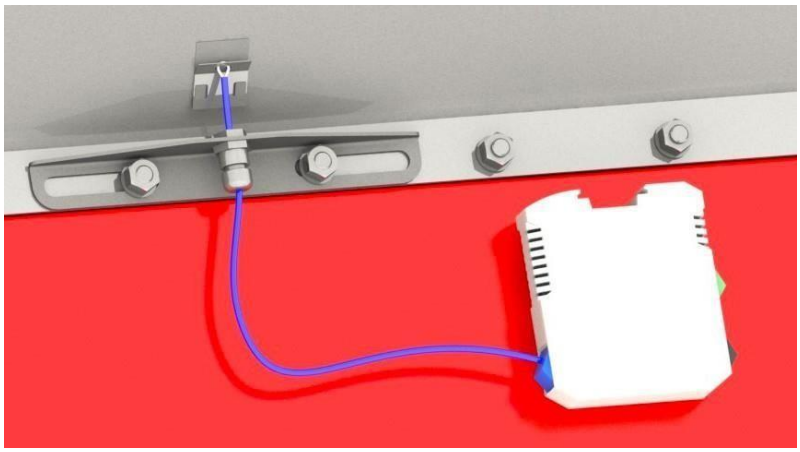


Fig. 26 - Connecting the opening indicator to the power supply of the intrinsically safe relay

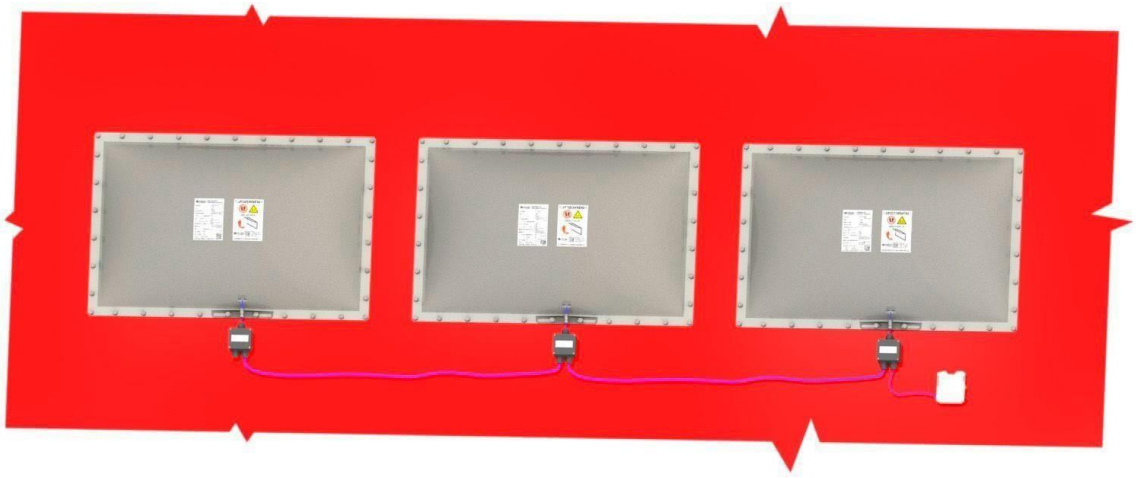


Fig. 27 - Connecting several opening indicators

In the event of connecting several variants of opening indicators (fig. 27) to one intrinsically safe relay (series connection), it is necessary to follow the principles for the design and planning of intrinsically safe circuits. At the same time, it is necessary to respect the relevant valid legislation in the respective country (e.g. approval by an authorized legal entity).

Opening indicator is connected to an isolating intrinsically safe relay, which creates an interface between the safe and dangerous zone (zone 20). The intrinsically safe relay is available in two versions, with a power supply of 230 V AC or 24 V DC. The maximum output voltage is 10.6 V or the maximum current is 24 mA. The intrinsically safe relay contains a changeover contact, where the Vent PRO S (closed/open) position is signalled. The power supply and connection of control cabling to the intrinsically safe relay is not part of the delivery and is provided by the customer (unless contracted otherwise).

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

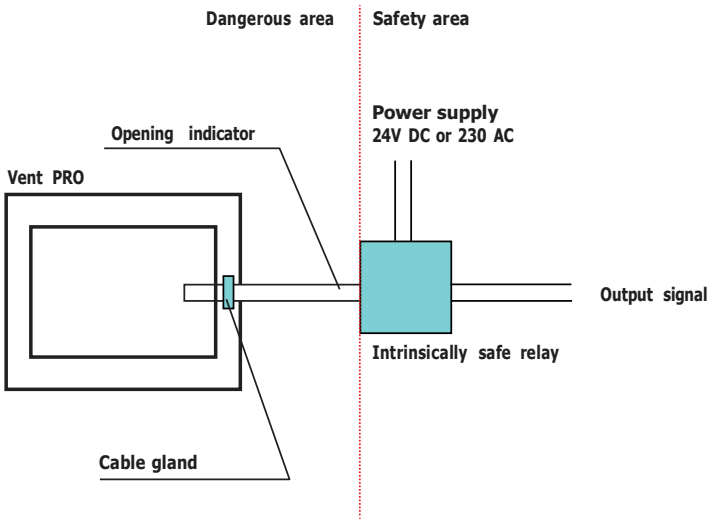


Fig. 28 - Connecting the G1 opening indicator

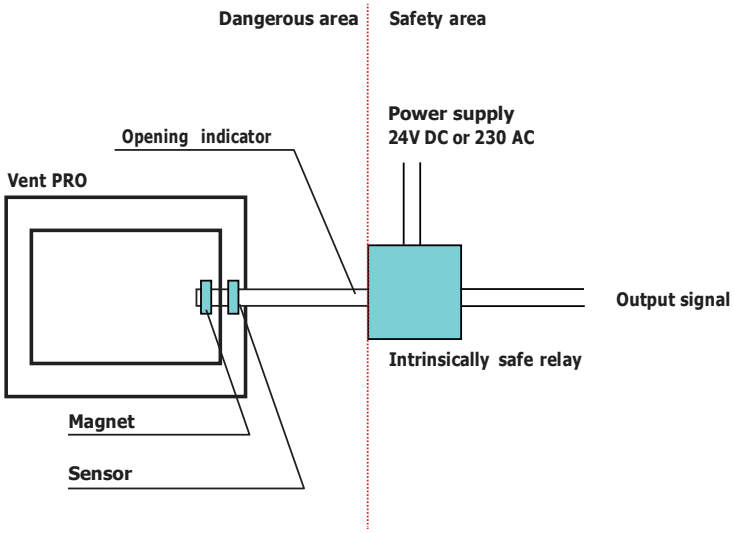


Fig. 29 - Connecting the G2 opening indicator

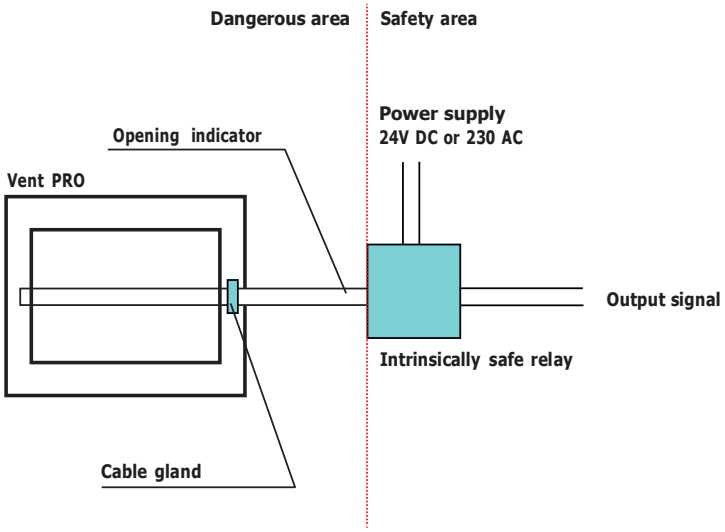


Fig. 30 - Connecting the G3 opening indicator

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

7. OPERATION, MAINTENANCE AND TRAINING

Vent PRO S does not need any operator for its function, it works automatically – once. It is functionally dependent on the increase in pressure in the protected space.

Maintenance instructions, Vent PRO S requires:

a) maintenance on shutdown equipment

b) the performance of regular shift checks

c) the equipment to be kept clean at all times

d) regular occupational safety training for workers coming into these areas

e) consistent compliance with the provisions concerning the prohibition of entry into the Vent PRO S area and safety during full operation

Shutdown maintenance means maintenance during which it is necessary to check the external condition of Vent PRO S in the immediate vicinity. The device must not show signs of damage or deterioration. The entire device must be cleaned of any dust deposits. The screw connections must be tightened and the threads of the screw ends treated to last. In the event that Vent PRO S shows signs of damage (possibly changes in dimensions, thickness), it is necessary to contact the manufacturer immediately. This type of maintenance must be performed at a suitable time after the test run (approximately one week after start-up), after one month and after six months (subsequently every other 6 months). The maintenance dates are for guidance only and the operator may choose their own periodic dates according to their actual operating conditions. For example, if there is intense soiling of the Vent PRO S, or there is the possibility of the screws becoming loose due to vibration, it is necessary to choose maintenance dates more frequent than once every 6 months. In any case, once every 6 months is the longest permissible interval between two maintenance operations. Annual service (see chapter 8) performed by RSBP or an authorized representative can also be considered maintenance.

Regular shift inspection means at least once per shift to visually check, from a safe distance, the outer surface of the device for cleanliness, dust deposits, deposits of snow and ice in the winter months, or whether the device has been mechanically or otherwise damaged. It is not permissible to start operation or operate Vent PRO S with snow or ice deposits on it. Any deposits must be removed from Vent PRO S during shutdown.

The consistent maintenance of cleanliness means preventing the formation of dust deposits, especially flammable ones, both on the surface of Vent PRO S and in the safety zone.

The regular training of workers means warning them of the danger of random or prescribed movement in the area around Vent PRO S and instructing them against this danger (about protection). Training must be done at least once a year, including new employees.

Movement or lingering in the area of the device, except for prescribed controls, is prohibited. The safety zone of Vent PRO S is stipulated by EN 14491.

When inspecting and maintaining from close proximity, make sure that the equipment is switched off and there is no risk of explosion.

Vent PRO S are devices that can be life-threatening if these safety instructions are not followed. In addition to equipment damage and defects, Vent PRO S can cause injuries with permanent consequences or death. There is a danger especially in the event of an explosion and the subsequent release of the explosion into the space in front of Vent PRO S. This danger must be eliminated.

The user is obliged to incorporate these instructions provided in this chapter into their operational safety rules.

tel.: +3728807552
e-mail: eu@atex.center
web: atex.center

8. SERVICING

Servicing Vent PRO S on protected equipment may only be performed by RSBP or a person certified by the manufacturer for this activity (authorized person). All activities must be performed during equipment shutdown.

The regular servicing of Vent PRO S means inspecting Vent PRO S. This means that this service is performed by RSBP or an authorized person every year. In case Vent PRO S shows signs of damage or changes (dimensions, thickness, corrosion), Vent PRO S must be replaced with a new one.

The scope of service activities:

- checking for mechanical damage to Vent PRO S
- checking the Vent PRO S seal
- checking the attachment of Vent PRO S
- thorough cleaning of the outer and, if possible, inner Vent PRO S surface

All activities performed on the product must be recorded in the operating log (or other appropriate document) so that the history of these works can be checked at any time.

In the event of an explosion or damage to Vent PRO S, the device Vent PRO S must be replaced with a new one! The same applies to the opening indicator.

The discarded Vent PRO S must be disposed of in an environmentally friendly manner as per applicable regulations of the country of installation.

ATEX CENTER

tel.: +7 (495) 134 03 17
e-mail: eu@atex.center
web: atexcenter.ru

Notes: