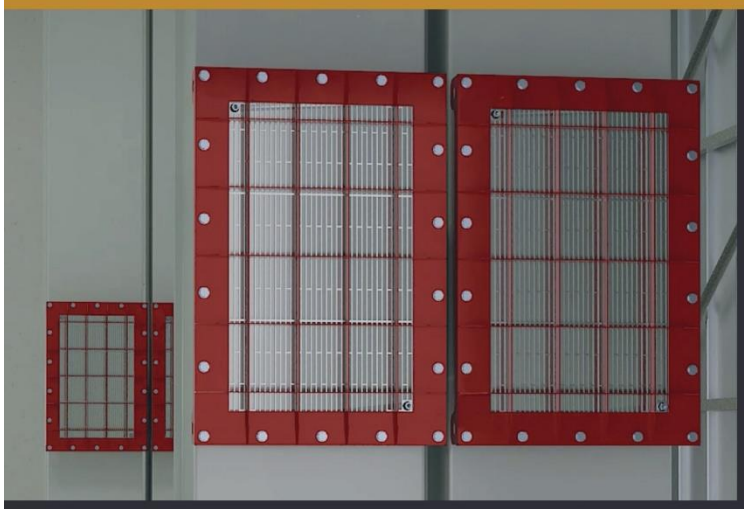
VIGILEX®

SAFETY PROTECTION By STIF

EXPLOSION PROTECTION

INSTALLATION AND USE INSTRUCTIONS

VIGIFLAM Vi®



FLAMELESS EXPLOSION VENTING DEVICES



afaq ISO 9001 Quality AFNOR CERTIFICATION

STIF components for your success

English

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1-SOMMAIRE

1 CONTENTS..... 2

2 OVERVIEW OF VIGIFLAM VI®..... 3

2.1 Description of the ATEX protection device 3

2.2 Applicable guidelines and standards..... 3

3 SAFETY INFORMATION AND REQUIREMENTS..... 4

3.1 Safety and operating recommendations..... 4

3.2 Safety limits and parameters..... 5

3.3 Special conditions of use..... 6

3.4 Calculation of explosion discharge volume..... 7

3.5 Safety distance..... 8

4 INSTALLATION..... 10

4.1 Pre-installation checks and recommendations..... 10

4.2 General dimensions..... 11

4.3 Assembly of the device..... 12

4.4 Explosion discharge panel opening sensors 16

5 IDENTIFICATION..... 19

5.1 VIGIFLAM Vi® nameplate..... 19

5.2 Explosion discharge panel nameplate..... 20

5.3 Safety warning sticker..... 20

6 MAINTENANCE AND INSPECTION..... 21

6.1 Inspection..... 21

6.2 Maintenance..... 21

6.3 Procedure in the event of activation..... 21

6.4 Disposal procedure..... 22

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2 - PRESENTATION OF THE VIGIFLAM VI® SYSTEM



Before starting to install the VIGIFLAM Vi® device, please read the instructions and recommendations described in this document carefully.



It is essential that all the instructions described in this document are fully understood and followed to ensure that the VIGIFLAM Vi® device functions optimally over time. If you have any questions about a situation not described in this document, please contact STIF France.

2.1 Description of the ATEX protection device

The VIGIFLAM Vi® flameless explosion vent device is commonly used to protect installations such as bucket lifts, storage silos, dust extraction systems, conveyors, etc.

The VIGIFLAM Vi® is a flameless explosion discharge device designed to protect enclosures against dust explosions (ATEX risk) while eliminating the risk of flame propagation in the direct environment in order to protect personnel, structures and property.

The VIGIFLAM Vi® flameless explosion vent device is marketed as a protection system for ATEX zones, certified in accordance with EN 16009:2011.

The VIGIFLAM Vi® flameless explosion vent device consists of three major components, a mechanically welded body, a flame extinguishing filter, and an explosion vent panel (type VFB) designed to open at a predetermined pressure (Pstat).

The VIGIFLAM Vi® device is designed to react as soon as an explosion occurs, thanks to its explosion discharge panel which opens under the effect of the pressure build-up to evacuate the flame, burnt and unburnt dust through the metal filter. The filtering system extinguishes the flame and blocks incandescent particles inside the device.

A filter protection cover is available as an option (see Chapter 4.3 - Step 7). This option is designed to protect the integrity of the metal filter if the VIGIFLAM Vi® device is installed in a polluting area (dusty, greasy atmosphere, etc.).

2.2 Applicable guidelines and standards

The VIGIFLAM Vi® protection device is certified as compliant with:

- 2014/34/EU ATEX — Directive of the European Parliament
- EN 16009 : 2011 — Flameless explosion venting devices
- EN 14797 : 2006 — Explosion venting devices
- DNV 25 ATEX 55887X — EU type-examination certificate no

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Production of the VIGIFLAM Vi® device is certified to comply with the following standards and certificates:

- INERIS 08ATEXQ406 (0080) Production quality assurance notification number
- EN ISO/IEC 80079-34: 2018 Explosive atmospheres Part 34, manufacture of Ex products
- ISO9001: 2015 Quality management systems

The discharge surface of VIGIFLAM Vi® must comply with standards and/or regulations:

- EN 14491: 2012 Dust explosion venting systems (Europe)
- NFPA 68: 2023 Standard on protection against explosion by deflagration discharge (USA)
- NFPA 61: 2020 Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities (USA)

3 - INFORMATION AND SAFETY REQUIREMENTS

3.1 Safety and operating recommendations



The operating limits for safe use of VIGIFLAM Vi® are described in sections 3.2 and 3.3. These limits must be respected to ensure the safety of people, equipment and installations. Compliance with and application of these limits remains the responsibility of the company operating it (1999/92/EC).



The VIGIFLAM Vi® device must only be installed and maintained by authorised personnel with knowledge of the risks and the work to be carried out in ATEX zones. This recommendation also applies to the electrical installation of explosion discharge panel opening detectors (comply with national installation regulations, e.g. EN 60079-14).



Flammable products must not be stored in the safety zone (see section 3.5).



The VIGIFLAM Vi® device must be installed in a clean area, with no risk of pollution of the external surface of the metal filter (dust, liquid, grease, ice, snow, etc.). Wherever possible, we recommend installing the device in a vertical position.



Mark out the safety zone, respecting the protective distance defined in section 3.5. Prohibit access to this zone when the system is in operation.



Please contact us in the event of a specific configuration for an installation and/or dust characteristics not defined in this document.

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3.2 Safety limits and parameters



To ensure safe use of the VIGIFLAM Vİ® device, please observe the following operating limits:

Dust characteristics authorised for the VIGIFLAM Vİ® device:

The dusts authorised for the VIGIFLAM Vİ® device are characterised within the meaning of standard EN 16009:2011 by the following designations:

- Coarse dust
- Fibrous dust

Examples of organic dusts covered by these two criteria: corn starch, wheat flour, wood dust, etc.

Metallic dusts are not included in the scope of the VIGIFLAM Vİ® device certificate (example: aluminium, etc.).

Security settings:

Characteristics and limits of use of the VIGIFLAM Vİ® protective device (see Table-1):

TABLE -1

ATEX marking	**II D** (protection system)
Product type:	VIGIFLAM Vİ
Kst, max:	≤ 200 bar.ms^{-1}
Pstat:	≤ 100 mbar ±20% @22°C
Pred, max:	1 bar
Pmax:	9,4 bar
MIE	≥ 19 mJ
MIT	≥ 430 °C



The VIGIFLAM Vİ® device can discharge the effects of an explosion in an ATEX zone provided that an ATEX-certified opening detector equivalent to or greater than the ATEX level declared for the explosion discharge zone (see Chapter 4.4) is used.

Maximum surface temperature: +260°C

Ambient temperature: ≤ +140°C*

*The ambient temperature of the VIGIFLAM Vİ® device is limited to that of the opening detector used on the VIGIFLAM Vİ® device (see chapter 4.4 to check that the temperature of the process to be protected is compatible with that of the opening detectors).

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Operating dimensions:

In accordance with §6.3.2 of standard EN 16009:2011, each dimension of the VIGIFLAM Vİ® device has the capacity to protect an effective volume called Vmax.FV.

Check in Table-2 that the volume of the enclosure to be protected is compatible with the Vmax,FV of the VIGIFLAM Vİ® device to be installed.

Example: if the volume of the enclosure to be protected is 12m^3, 4 VIGIFLAM Vİ® 490x590 devices should be installed, each with a Vmax.FV of 3.25m^3.

The VIGIFLAM Vİ® device must be sized using the calculation method specified in standard EN 14491:2012 (EU), CEN/TR 16829: 2020 (EU) or NFPA 61 and 68 (USA) with the discharge efficiency (E_f) of the VIGIFLAM Vİ® discharge device defined in Table-2.

TABLE -2

VIGIFLAM Vİ®						
Dimensions	**Surface**	**Vmax, FV**	**Efficiency E_f Coarse dust**		**Efficiency E_f Fibrous dust**	
mm x mm	**m²**	**m³**	**E_f %**	**E_f m²**	**E_f %**	**E_f m²**
180x420	0.0756	0.525	46.0	0.0347	41.5	0.0313
170x470	0.0799	0.580	46.1	0.0368	41.3	0.0329
270x458	0.1237	1.138	47.0	0.0581	39.2	0.0484
205x610	0.1251	1.156	47.0	0.0588	39.1	0.0489
305x610	0.1861	1.935	48.3	0.0898	36.2	0.0673
350x650	0.2275	2.464	49.2	0.1118	34.2	0.0778
490x590	0.2891	3.250	50.5	0.1459	31.3	0.0904

3.3 Special conditions of use:



Check that the volume and strength of the room/building intended to receive the explosion discharge are suitable for the expected effects of an explosion discharge (see section 3.4).



Connect the VIGIFLAM Vİ® device to earth (earth braid) to avoid the formation of static electricity, observing the installation instructions described in chapter 4.3.

The VIGIFLAM Vİ® device is fitted as standard with a detector designed to control the opening of the explosion discharge panel (type: VFB). A second optional detector can be added to increase the level of functional safety (see Chapter 4.4).

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3.4 Calculating the explosion discharge volume:

EN 16009:2011 stipulates that the volume immediately surrounding the flameless explosion venting device may be subject to an overpressure effect and, as such, it must be checked that the expected overpressure is limited so as not to create dangerous situations for personnel and the structure of the room/building.

Calculation method:

Determine the expected overpressure effect on your installation by calculating the value of the ratio k based on the volume of the room/building intended to receive the explosion discharge and the volume of the enclosure to be protected, then check in Table-3 that the ratio k obtained is compatible with the characteristics of your installation (resistance of the room/building "mbar" and Pred of the protected enclosure "bar").

If the result of the "k ratio" is lower than that defined in Table-3, you should consider modifying one or more features of your installation, such as reinforcing and/or increasing the volume of the explosion venting room/building, or reducing the Pred of the enclosure to be protected, so as to reduce the expected overpressure effect to that tolerated by man and the room/building.

STIF France's advisers are at your disposal to check that the characteristics of your installation are suitable for the safe use of the VIGIFLAM Vİ® flameless explosion venting device.

Formula for calculating the "k" ratio:

$$k = \frac{\text{Volume du local}}{\text{Volume de l'enceinte protégée}}$$

1 - Calculate the K ratio by applying the formula,

2 - Checked that the K ratio is compatible with the data in Table-3

TABLE-3

K ratio		* Pred = Pressure resistance of the protected enclosure (bar)																
		0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00
Maximum overpressure in the room	10 mbar	≥20	≥25	≥30	≥35	≥40	≥45	≥50	≥55	≥60	≥65	≥70	≥75	≥80	≥85	≥90	≥95	≥100
	20 mbar	≥10	≥12.5	≥15	≥17.5	≥20	≥22.5	≥25	≥27.5	≥30	≥32.5	≥35	≥37.5	≥40	≥42.5	≥45	≥47.5	≥50
	50 mbar	≥3	≥4	≥5	≥6	≥7	≥8	≥9	≥10	≥11	≥12	≥13	≥14	≥15	≥16	≥17	≥18	≥20

**Ensure that the calculated vent area is large enough to comply with the Pred.max of the VIGIFLAM Vİ® device (see Table-1).*

Application example:

If the Pred of the protected enclosure = 0.5 bar, and the maximum permissible overpressure of the room = 20 mbar, then the volume of the room must be ≥ 25 times the volume of the protected enclosure.

Information on the overpressure effects of explosion discharge:

- 20mbar → Resistance limit for glazing and lighting.
- 50mbar → Limit of risk of irreversible harm to humans.

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3.5 Safety distance:

The area in front of the VIGIFLAM Vİ® flameless explosion venting device is considered hazardous. You must create a safety zone adapted to the configuration of your installation, using the safety distances described in table 4 (see figure 1). Beyond the safety zone, it is still possible to be exposed for a short time to harmful effects due to the explosion discharge, but in proportions that are no longer dangerous (noise level, dust and/or smoke emissions).



Prohibit access to personnel in the danger zone when the ATEX risk is present in the protected enclosure (process in operation).

The distance between the VIGIFLAM Vİ® device and peripheral structures such as walls, protective screens and/or equipment, must be at least 0.5 m (see Table-4), so as to guarantee the proper evacuation of combustion gases (see Figure 1).

Personnel working and/or in transit near the safety zone are strongly advised to wear personal protective equipment (hearing protection, visual protection and filter masks).

STIF France's advisers will be happy to answer any questions you may have about protective distances and the effects of explosion discharge.

Observe the protective distances for the different installation configurations described in Table-4 and Figure-1:

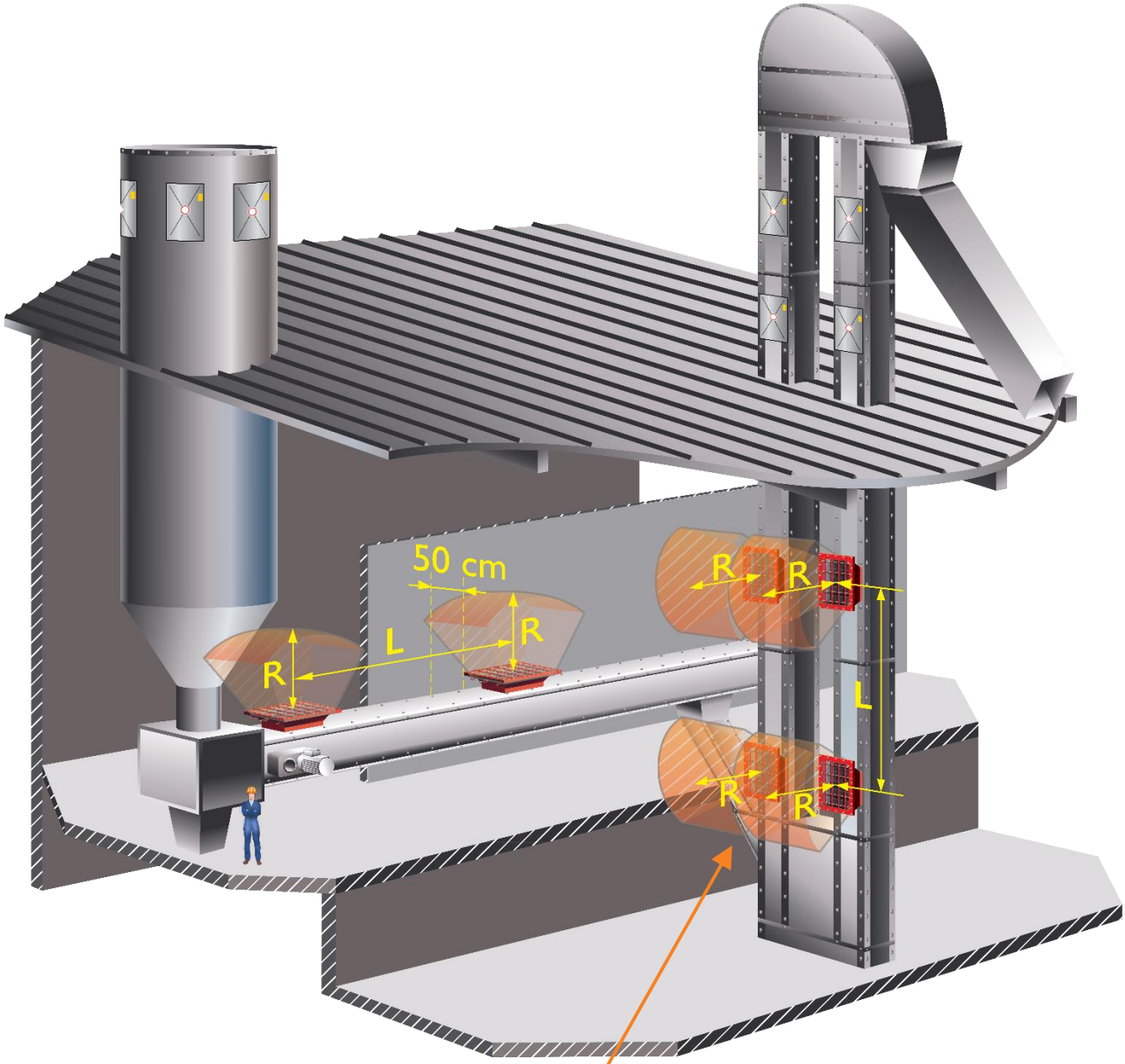
TABLE-4

<table>
<tr><th>Distance (Figure-1)</th><th colspan="2">Rules and requirements for protective distances</th></tr>
<tr><td>R ≥ 1m</td><td>If the volume Vmax, FV per device is ≤1m^3</td><td rowspan="3">Safety distance for personnel.
(R = Radius of the discharge of the combustion gases from the explosion).</td></tr>
<tr><td rowspan="2">R ≥ 2m</td><td>If the volume Vmax, FV per device is ≤3.25m^3</td></tr>
<tr><td>If using a protective cover</td></tr>
<tr><td>≥ 0.5 m</td><td colspan="2">Minimum distance between the VIGIFLAM Vİ® device and infrastructures</td></tr>
<tr><td>L ≤</td><td colspan="2">Maximum installation distance between two VIGIFLAM Vİ® devices (Bucket Elevator or Conveyor), according to the normative requirements applicable in the country of destination:
• NFPA 61: Maximum installation distance of 6 m.
• CEN/TR 16829: Maximum installation distance of 3 m, 6 m or 12 m, depending on the Kst of the product being transported.</td></tr>
</table>

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The safety distance **"R"** (see Table-4) must be measured from the top of the grille of the VIGIFLAM Vi® device

FIGURE-1



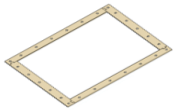
Inspection or maintenance work in the safety zone (see Chapter 6) is only permitted when the production process has stopped, to ensure that no ATEX risk can arise when operating personnel are in this zone.

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4 - INSTALLATION

The VIGIFLAM Vİ® device is supplied as a pre-assembled kit, consisting of the following components:

TABLE-5

Item	Figure	Name
A*		Body seal, consisting of 4 parts (seal with 1 adhesive side).
B		Body + Explosion vent panel, pre-assembled with 2 nuts
C		Metal filter + Grille + Gasket (pre-assembled) + Pack of M10x35 screws and washers for fixing the grille to the body.
D*		ATEX-certified inductive sensor. Refer to Chapters 4.3 and 4.4 to identify the electrical characteristics and special conditions of the model supplied with the kit. Qty: 1 - standard; Qty: 2 optional
E		Optional: Filter protection cover + Pack of M6x20 screws and washers

**In some cases, the rep. "A" can be pre-glued at the factory to the body of the VIGIFLAM Vİ® and the detector item "D" delivered unassembled (special packaging for large quantities).*

4.1 Pre-installation checks and recommendations:

Before installing the VIGIFLAM Vİ®, check that all the materials received are in good condition. Never use a damaged element.

Installation of the VIGIFLAM Vİ® device must only be carried out by qualified personnel with the knowledge and authorisations relating to the risks and conduct of work carried out in ATEX zones. This recommendation also applies to the electrical installation of explosion vent panel opening detectors (see Chapter 3 and the requirements of Directive 1999/92/EC).

Use personal protective equipment for installation operations (protective clothing, gloves, goggles and helmet).

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4.2 Overall dimensions :

Check that the dimensions of the rectangular opening and the fixing holes in your support correspond perfectly to those in the VIGIFLAM Vi® device (see Tables 6 and 7):

TABLE-6

VIGIFLAM Vi®	Dimensions VFB panels		Surface VFB panels		Weight	Number Screws**
	(mm)*	(inch)	m²	Sq ft	Kg	Qty
180x420	180x420	7x17	0.0756	0.795	28	16
170x470	170x470	7 x19	0.0799	0.845	29	16
270x458	270x458	11x18	0.1237	1.315	40	18
205x610	205x610	8x24	0.1251	1.320	38	20
305x610	305x610	12x24	0.1861	1.980	55	22
350x650	350x650	14x26	0.2275	2.420	67	22
490x590	490x590	19x23	0.2891	3.085	80	26

** Dimensions of the rectangular opening to be made in the support flange.*

*** Use M10 screws or studs*

FIGURE-2

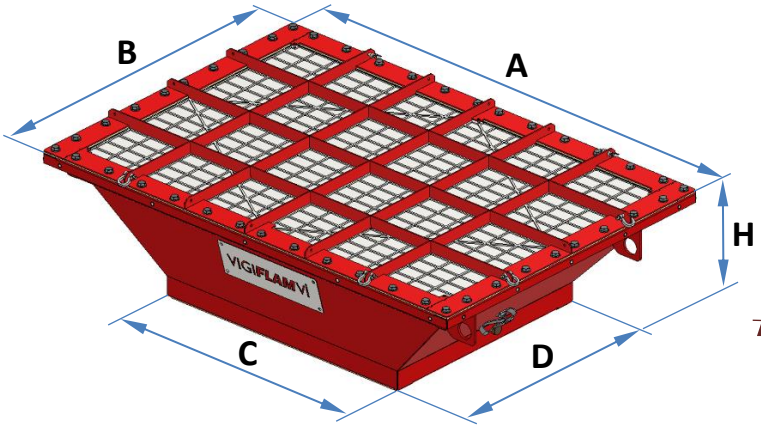


FIGURE-3

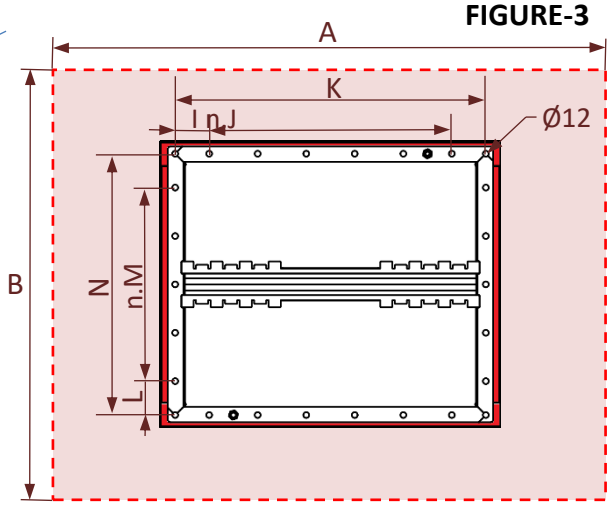


TABLE-7

VIGIFLAM Vi®	A	B	C	D	H	I	n.J	K	V	n.M	N
180x420	705	510	534	284	192	-	5x94	470	76.7	76.6	230
170x470	705	510	574	274	187	110	3x100	520	70	80	220
270x458	845	605	572	374	237	74	4x90	508	110	100	320
205x610	845	605	714	309	205	80	5x100	660	80	95	255
305x610	1010	705	724	409	260	76	5x101.6	660	76	2x102	356
350x650	1095	845	764	454	282	-	7x100	700	-	4x100	400
490x590	1230	845	704	594	357	70	5x100	640	70	4x100	540

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4.3 Device assembly :

After opening the packaging, start by removing the grille with the filter ref “C" (see Table-5) by cutting the four plastic retaining clips. Take care to place the filter surface on a clean surface before proceeding with the assembly in step 6.

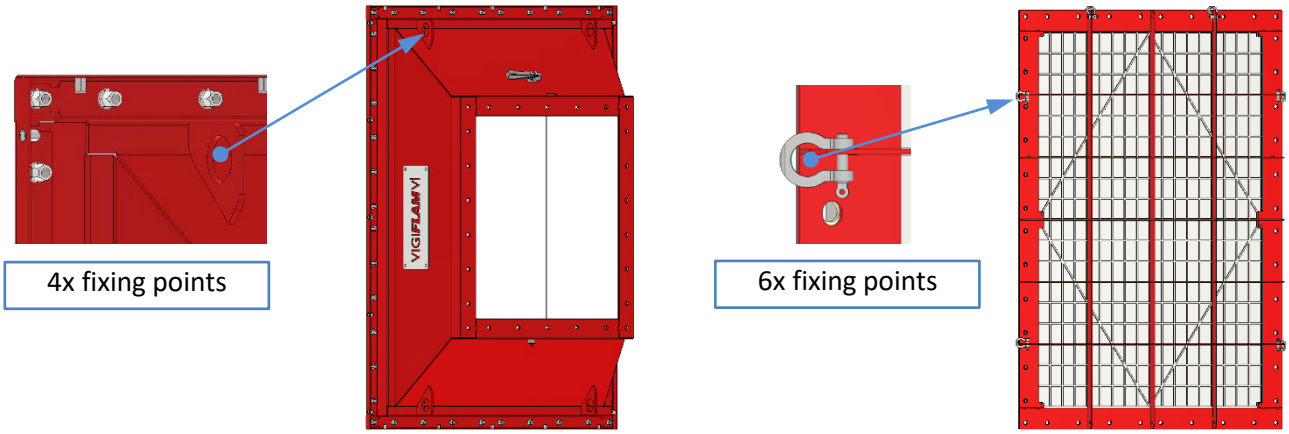
Check that your support flange is strong enough to withstand both the weight of the VIGIFLAM Vi® and the pressure effects of an explosion (see Pred,max Table-1).

The surface of your support flange must be perfectly flat and free of all dirt.

Step 1_Identification of lifting points:

Use only the attachment points on the body (see figure-4) and on the grille (see figure-5) for lifting and/or handling operations.

FIGURE-4_Body
FIGURE-5_Grid

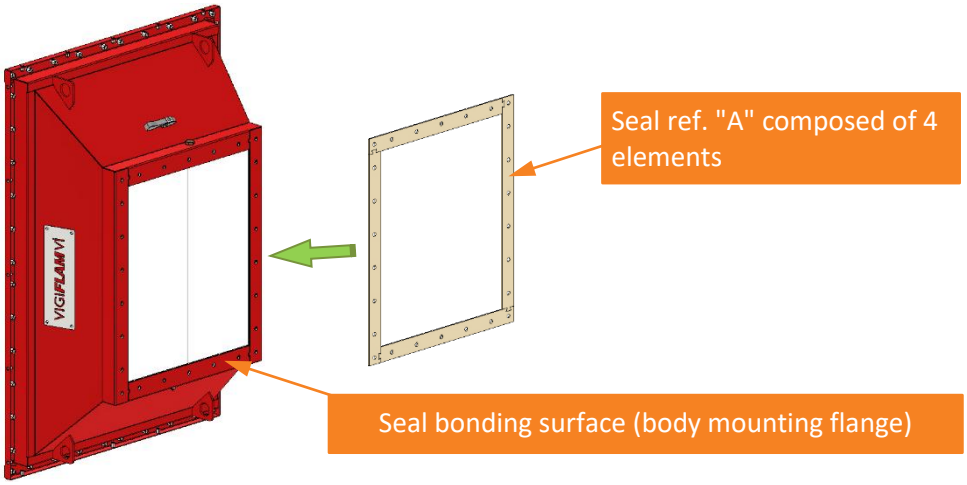


Step 2_Bonding the seal ref. "A" (Table-5):

Glue the four elements of the seal in place. "A" (see Table-5) on the surface of the body mounting flange. Take care to fit the joints in the corners perfectly to ensure a good seal between your support flange and the VIGIFLAM Vi® device.

Proceed directly to step 3, if the gasket has been pre-glued to the body at the factory (special delivery condition for large quantities).

FIGURE-6



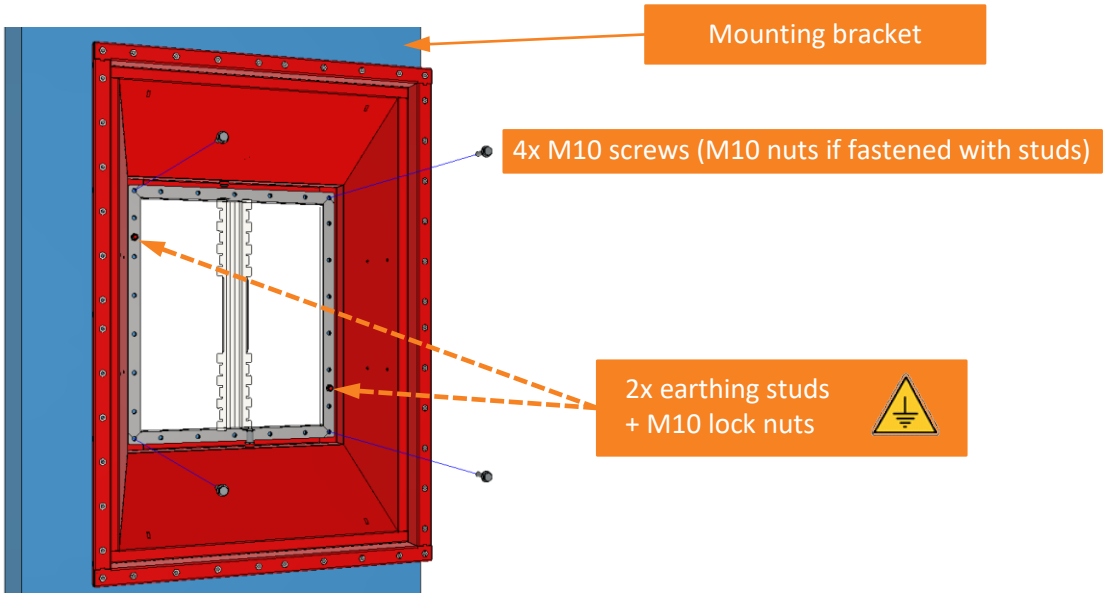
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Step 3_Installing the body and explosion vent panel ref. "B" (Table-5):

Prepare the number of M10 screws or studs required to secure the VIGIFLAM Vi® body and panel (see Table-6 to identify the number of screws). The components for fixing the body to the support flange are not supplied.

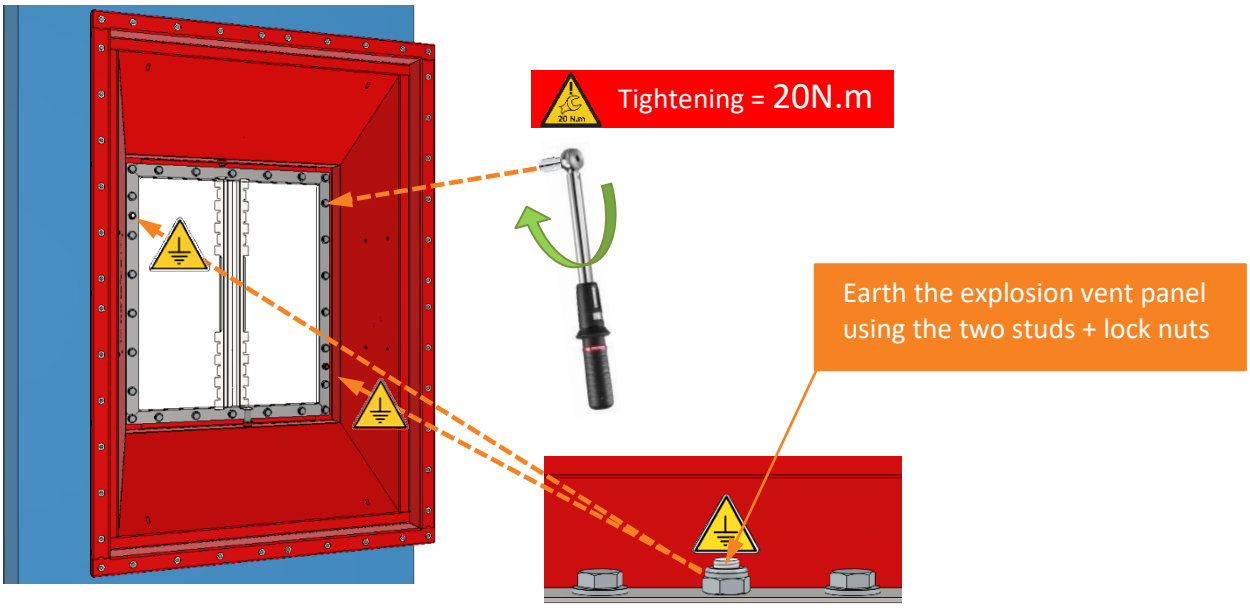
1) Start by attaching the body and the explosion vent panel rep. only tighten the "B" screws (see Table-5) in the corners of the support flange by hand, to hold and centre the device in the opening (see Figure-7).

FIGURE-7



2) Then insert the M10 screws (M10 nuts if studs) in each fixing hole, and tighten all the fixing bolts and the two earthing nuts on the explosion vent panel to 20N.m (use a torque wrench_see Figure-8).

FIGURE-8



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Step 4_Earthing the device:

Add an external earthing fixing point (M10) on your support flange to connect the earthing braid of the VIGIFLAM Vi® device (see Figure-9 and 10). This point must guarantee the earth continuity of the device to avoid any risk of static electricity forming. The earth braid must be connected to the support flange using a torque spanner and a torque of 20 Nm.

After fixing the earth braid, you must check that electrical continuity is functional between the explosion discharge panel and the metal parts of the equipment to be protected, so that the discharge resistance is $<10^6\ \Omega$.

FIGURE-9

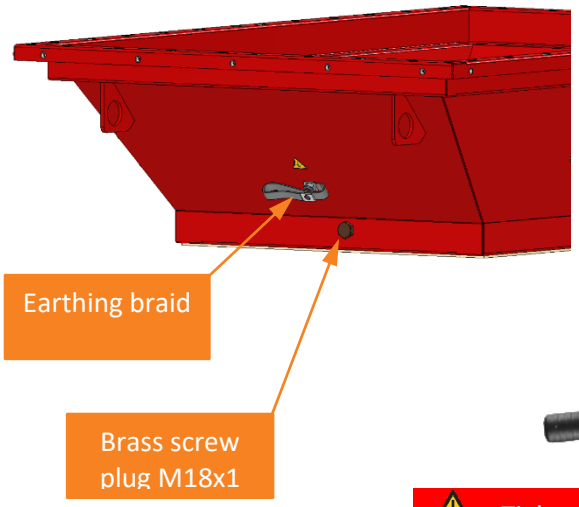
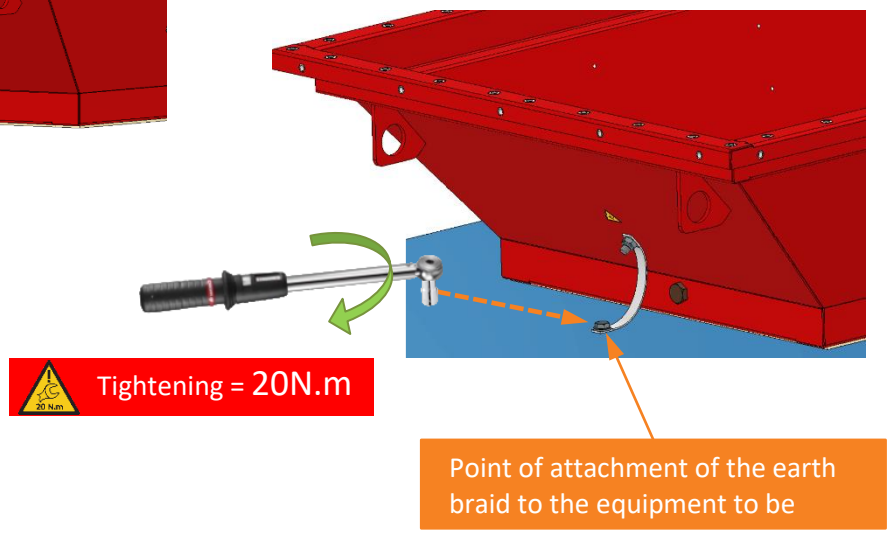


FIGURE-10



Step 5_Adjusting the opening detector:

The opening detector ref “D" (see Table-5) is factory installed and preset to detect the target of the explosion vent panel at a distance ≤ 2mm (see Figure-11).

Connect the detector to an automatic monitoring system (system shutdown alarm) or any other means of checking the state of the detector in the presence of the target before closing the VIGIFLAM Vi® device. Please observe the characteristics and special conditions of use of the detector described in chapter 4.4 according to the reference supplied with the VIGIFLAM Vi® device.

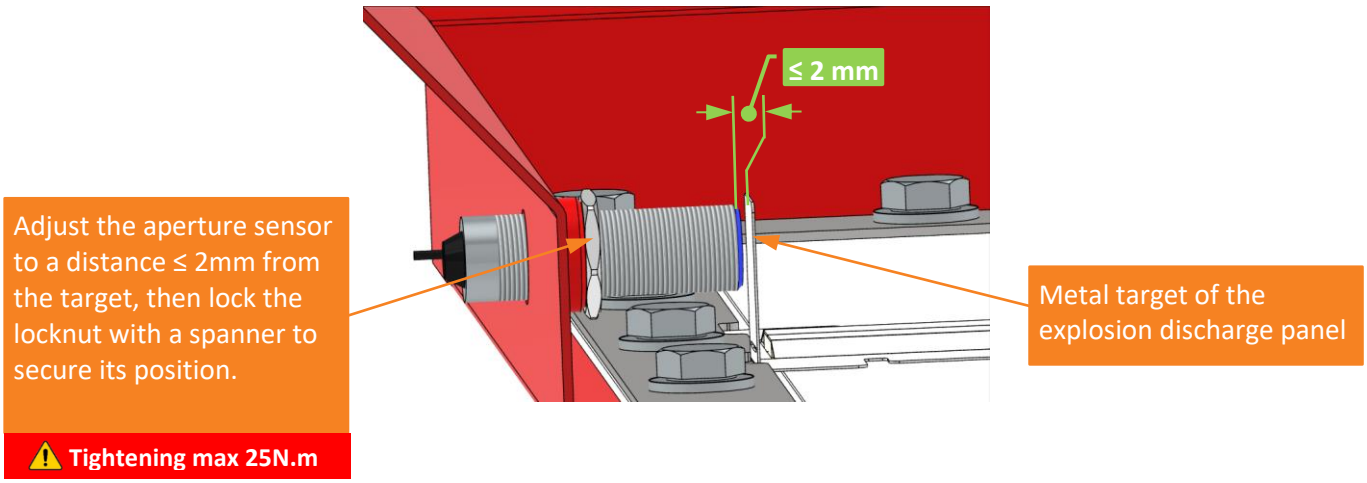
Option: the VIGIFLAM Vi® device can be equipped on request with two opening detectors to increase the functional safety level for monitoring the opening of the explosion discharge panel.

To install a second detector on the VIGIFLAM Vi® device, you must first remove the M18x1 brass screw plug (see Figure-9).

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In some cases, the opening detector is delivered unmounted on the body of the VIGIFLAM Vİ® device. This configuration is used for large deliveries to optimise packaging nesting. In this case, install the opening detector ref D" (see Table-5), taking into account the detection distance ≤ 2mm (see Figure-11) as well as the electrical characteristics and special operating conditions described in Chapter 4.4.

FIGURE-11

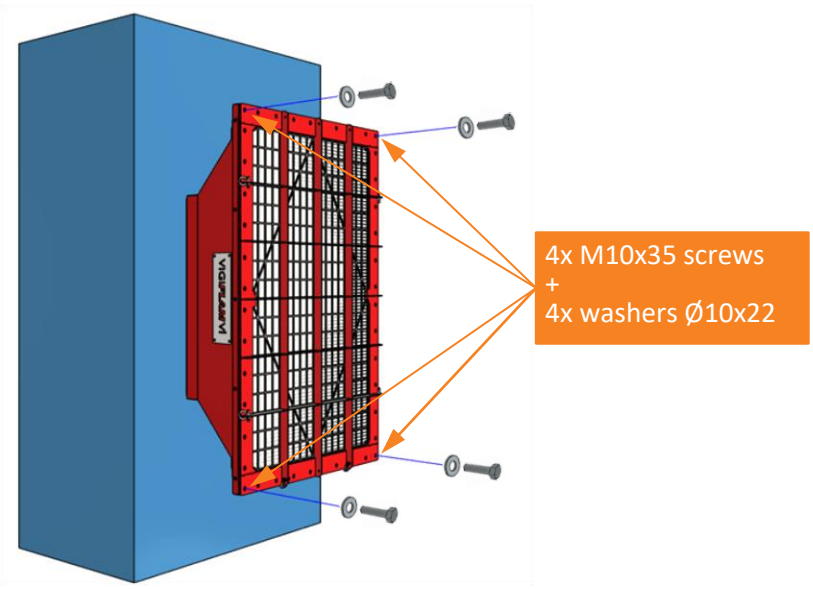


Step 6_Assembling the metal filter and grille:

Check that the pre-glued gasket on the outer frame of the grille is in perfect condition before closing the VIGIFLAM Vİ® device (please replace the grille gasket if it is damaged).

1) Install the metal filter with grille ref “C" (see Table-5) on the body of the device using the handling shackles (see step 1), then secure the assembly by adding 4 M10x35 screws and 4 washers (use the bag of screws supplied with the kit) in the corners of the grille, tightening them by hand (see Figure-12).

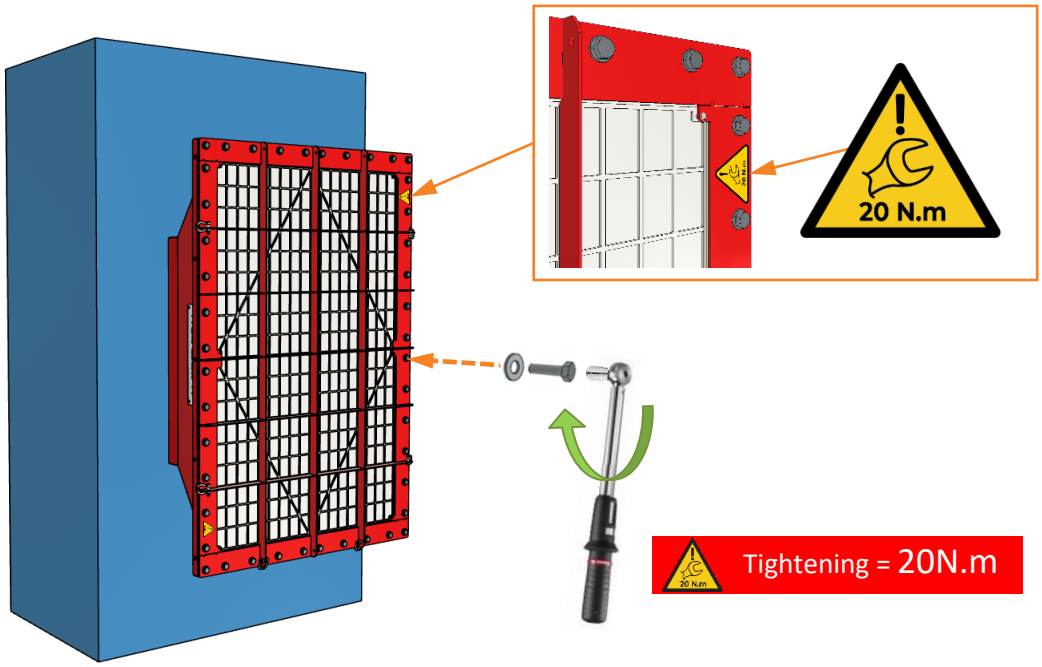
FIGURE-12



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2) Finish installing the VIGIFLAM Vİ® device by inserting the M10x35 screws and washers (use the bag of screws supplied with the kit) into each hole in the reinforcing grille, then tighten all the screws to 20 N.m (see Figure-13).

FIGURE-13



Step 7_ Fitting the filter protection cover (available as an option):

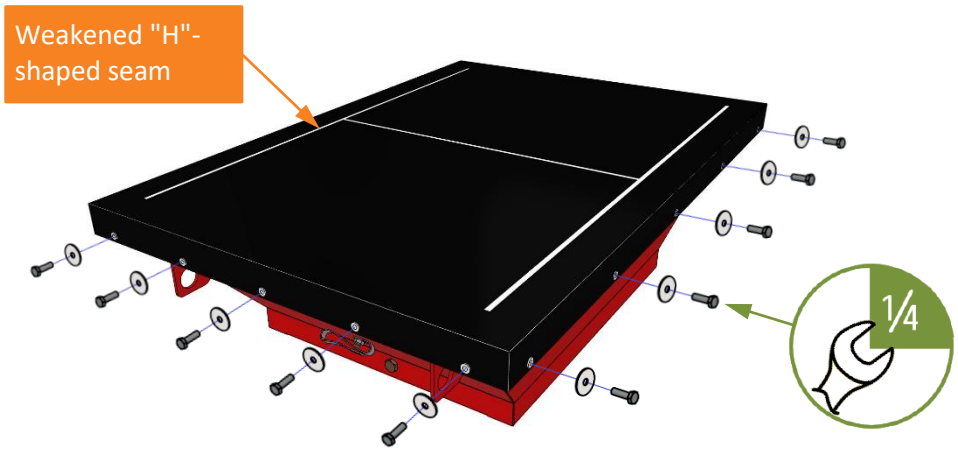
The protective cover ref. "E" (see Table-5) protects the integrity of the metal filter if the VIGIFLAM Vİ® device is installed in a polluting area (dusty, greasy atmosphere, etc.).

The protective cover is weakened into an "H" shape (see Figure-14) so that it breaks into two parts when the explosion gases build up pressure.

Assembly: use the bag of screws supplied with the cover (M6x20 screws + Ø6x24 washers)

Start by positioning the protective cover over the grille of the VIGIFLAM Vİ® device, taking care to index the eyelets of the cover onto the M6 fixing inserts located on the periphery of the body (black coloured fabric on the external side), then insert all the screws and washers. Finish by tightening the screws with a N°10 spanner (mm) by applying ¼ turn after having noted the locking point when screwing in by hand (take care not to deform the fabric around the eyelet by overtightening).

FIGURE-14



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4.4 Explosion discharge panel opening sensors:

The VIGIFLAM Vi® device is fitted as standard with an ATEX-certified detector designed to signal the opening of the explosion vent panel in the event of overpressure or negative pressure operation.

A second detector can be added as an option to increase the level of functional safety.

The range of opening detectors includes the following models:

4.4.1 Inductive sensor M18x1_ATEX II 1 D - 24 V DC (+140°C)

4.4.2 Inductive sensor M18x1_ATEX II 2 D - 12...48 V DC (+60°C)

4.4.3 Inductive sensor M18x1_ ATEX II 3 D - 12...48 V DC (+60°C)

The VIGIFLAM Vi® device can discharge the effects of an explosion in an ATEX zone provided that an ATEX-certified opening detector equivalent to or higher than the ATEX level declared for the explosion discharge zone is used.

Example of the checks to be carried out to authorise explosion discharge in an ATEX zone:

Authorised situation = Detector certified **ATEX 21 (II 2D)** → Explosion discharge zone declared **ATEX 22 (II 3D)**

Authorised situation = Detector certified **ATEX 21 (II 2D)** → Explosion discharge zone declared **ATEX 21 (II 2D)**

Situation NOT authorised = Certified detector **ATEX 22 (II 3D)** → Explosion discharge zone declared **ATEX 21 (II 2D)**

The maximum operating temperature of VIGIFLAM Vi® is limited by the ambient temperature of the opening detector used: ≤ +140°C.

Check that the ambient temperature indicated on the opening sensor used (see Chapter 4.4.1, 4.4.2 and 4.4.3) is higher than or equal to that of the production process.

The opening detector must be connected to a PLC or other monitoring system capable of stopping the production process and warning staff (audible or visual alarm).

If the VIGIFLAM Vi® is delivered without a detector, one must be installed in accordance with the recommendations described above.

It is possible to use another model of detector provided that it is equivalent to the recommendations described in Chapter 4.4.

Comply with national regulations (e.g. EN 60079-14) and observe the recommendations and installation requirements described in the manufacturer's manual and EU declaration of conformity supplied with the opening detector (keep these documents for 10 years).

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4.4.1 Inductive sensor M18x1 (≤ +140°C): ATEX Ⓔx II 1 D

Brand:	EGE-ELEKTRONIK
Detector reference:	IGEXHa 05
Connection with amplifier:	IKMb 122 Ex-24

IKMb 122 Ex amplifier:

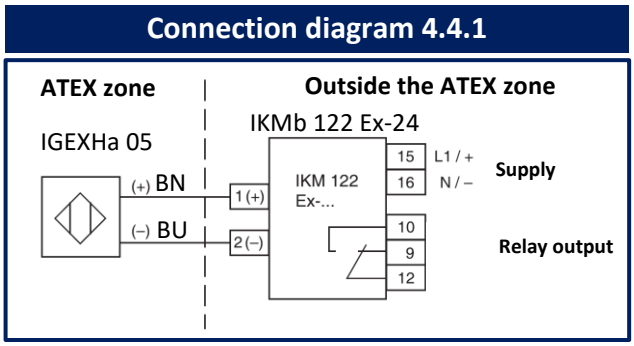
Supply voltage:	24V DC ±10
Ambient temperature:	-20°C<Ta<+60°C
Marking:	II (1) D [Ex ia Da] IIIC
Installation:	Outside the ATEX zone

M18x1 detector - IGEXHa 05:

Maximum values:	Ui = 9.6 V DC Ii = 10.1 mA Pi = 24.24 mW Ci = 66.2 nF Li = 1.2 mH
Detection distance:	Sn = 5mm
Dust/water resistance:	IP68 (3 bars)
Ambient temperature:	**-25°C ≤ Ta ≤ +140°C**
Cable:	2m FEP, blue, 2 x 0.34 mm² wires
ATEX marking:	**II 1 D Ex ia IIIC T_{200}145°C Da**
ATEX/IECEx certificate:	EPS 17ATEX1173X / EPS 17.0087X

Electrical connection diagram: +BN, -BU

Connection diagram 4.4.1



IKMb 122 Ex-24



IGEXHa 05



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4.4.2 Inductive sensor M18x1 (≤ +60°C): ATEX Ex II 2 D

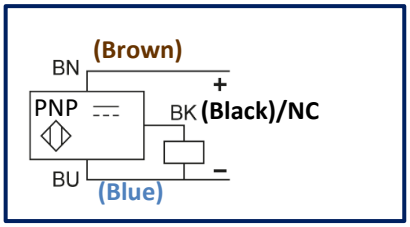
Brand:	Telemecanique
Detector reference:	XS618B1PAL10EX

Maximum values

Supply voltage:	Ue 12...48 V DC (with reverse polarity protection)
Maximum current:	Ie 200 mA (with overload and short-circuit protection)
Dust/water resistance:	IP67
Digital output:	NO
Digital output type:	PNP
Ambient temperature:	**-20°C ≤ Ta ≤ +60°C**
Cable:	10m - 3 x 0.34 mm² wires
ATEX marking:	**II 2 D_Ex tb IIIC T85°C Db IP67**
ATEX/IECEx certificate:	INERIS 04ATEX0022 / INE 17.0006

Electrical connection diagram: +BN, -BU, Load BK/BU

Connection diagram



The M18x1 box is earthed using the metal body of the VIGIFLAM Vi® device



4.4.3 Inductive sensor M18x1 (≤ +60°C): ATEX Ex II 3 D

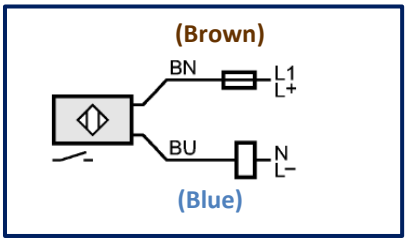
Brand:	IFM
Detector reference:	IG001A

Maximum values

Supply voltage:	Ue 20...250 V AC/DC
Protection class:	II
Output current (on hold)	AC: 150mA / DC: 100mA
Output current (inrush)	2.2 A (<20ms / <0.5 Hz)
Dust/water resistance:	IP67
Release:	NO
Switching frequency:	AC: 25Hz / DC: 50 Hz
Ambient temperature:	**-20°C ≤ Ta ≤ +60°C**
Cable:	2m - 2 x 0.50 mm² wires
Mandatory protection:	Miniature fuse to IEC60127-2 sheet 1; ≤ 2 A; fast; Position the fuse outside the explosive zone.
ATEX marking:	**II 3 D_Ex tc IIIC T80°C Dc X IP67**

Electrical connection diagram: +BN, -BU,

Connection diagram





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5 - IDENTIFICATION

The marking on the VIGIFLAM Vi® device complies with the requirements of Directive ATEX 2014/34/EU.

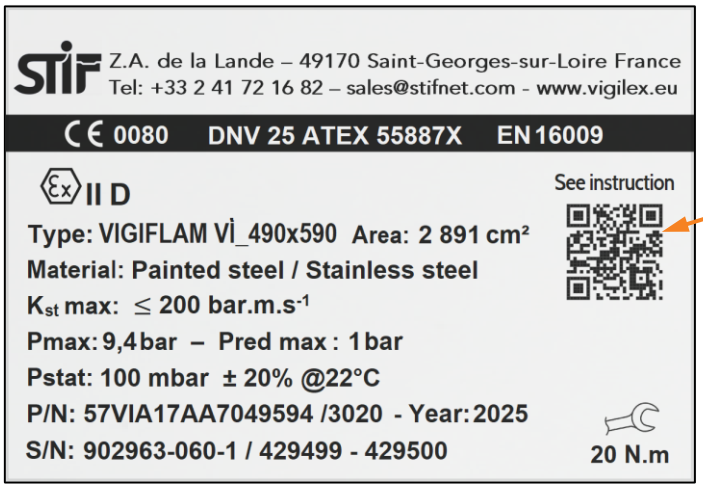
The limits of use, identification and traceability of the VIGIFLAM Vi® device are set out on two labels so as to indicate, on the one hand, compliance of the flameless explosion discharge device with EN 16009:2011 (label Figure-15, attached to the body of the device), and on the other hand, compliance of the explosion discharge device with EN 14797:2006 (label Figure-16, stuck to the explosion discharge panel).

5.1 Nameplate for VIGIFLAM Vi® NAMEPLATE (EN 16009):

ATEX marking **II MARKING D** marking on the nameplate (see Figure-15) indicates that this device is considered under Directive ATEX_2014/34/EU as a protection system for dust ATEX zones.

ATEX marking on the nameplate of the VIGIFLAM Vi® device (SPECIMEN)

FIGURE-15



1)	Type	Product type name + Size of flameless device
2)	Area	Surface area of the explosion vent panel in cm² (mm)
3)	Material	Body and filter raw material
4)	K_{st} max	Maximum dust explosion index in bar.m.s^{-1}
5)	Pmax	Maximum pressure reached during the explosion in bar
6)	Pred,max	Maximum reduced explosion pressure in the enclosure in bar
7)	Pstat	Static panel opening activation pressure in mbar
8)	P/N – Year	Item code + Year of manufacture
9)	S/N	Serial number (order-line-post-filter-body)
10)	20 N.m	Tightening torque for M10 nuts and bolts

5.2 Type VFB discharge device rating plate (EN 14797):

The ATEX Ⓔx **II D** marking on the nameplate (see Figure-16) indicates that this device is considered under Directive ATEX_2014/34/EU as a protection system for dust ATEX zones.

ATEX marking on the nameplate of the explosion vent panel type VFB (SPECIMEN)

FIGURE-16

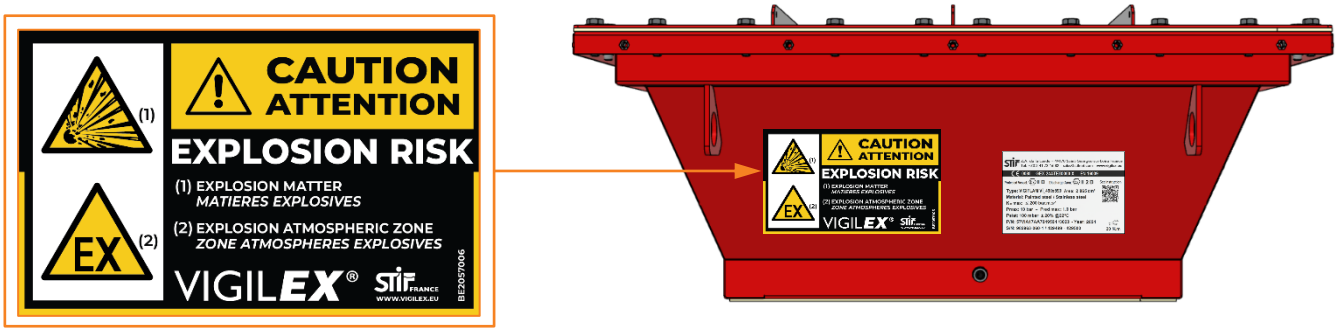


1)	Type	Product type name + Explosion discharge panel size
2)	Area	Surface area of the explosion vent panel in cm² (mm)
3)	Material	Raw material for explosion vent panel
4)	K_{st} max	Maximum dust explosion index in bar.m.s^{-1}
5)	Pmax	Maximum pressure reached during the explosion in bar
6)	Pred,max	Maximum reduced explosion pressure in the enclosure in bar
7)	Pstat	Static panel opening activation pressure in mbar
8)	Vacuum	Maximum operating pressure in mbar
9)	P/N – Year	Item code + Year of manufacture
10)	S/N	Serial number (OF panel - material batch)
11)	20 N.m	Tightening torque for M10 screws or nuts

5.3 Safety warning sticker:

The VIGIFLAM Vİ® device is fitted on the outside of the body (see Figure-17) with a safety warning sticker to signify the presence of an ATEX (explosion discharge) risk zone, in compliance with ISO 3864 and ISO 7010 regulations.

FIGURE-17



6 - MAINTENANCE AND INSPECTION

Only personnel trained and authorised in maintenance procedures for ATEX equipment are suitable for carrying out inspections on the VIGIFLAM Vİ device. The results of inspections and maintenance operations must be recorded in a register.



Before carrying out any inspection or maintenance on the VIGIFLAM Vİ® device, you must secure the area and ensure, if necessary, that the production process is stopped and that there is no risk of it being inadvertently put back into service.

6.1 Inspection:

Plan periodic inspections to ensure that the VIGIFLAM Vİ® device retains its explosion protection capability over time. These inspections must detect any anomalies due to corrosion, dust accumulation on the filter, faulty earthing, opening of the explosion vent panel, faulty opening detector, etc.).



To define the frequency of inspections, we advise you to carry out close checks in the first year of commissioning of the VIGIFLAM Vİ® in order to identify the necessary interval between two inspections. The interval between two inspections must not exceed one year.

6.2 Maintenance:

The VIGIFLAM Vİ® is a self-contained ATEX protection device with no wear and tear, so it requires no special maintenance apart from cleaning the filter if necessary (see instructions in section 6.1). The outside of the filter must be kept clean and free of dust. If dust accumulates, it should be removed with a soft brush and/or hoover after the system has been switched off.



The filter must be kept clean and dry; cleaning with water is not permitted.

6.3 Procedure in the event of activation:

If the VIGIFLAM Vİ® device is activated, the means of production and/or all electrical systems located in the immediate environment must be de-energised (information obtained using the opening detector, see chapter 4.4). A visual and/or acoustic alarm must warn staff to leave the building immediately. The person responsible for safety must be informed immediately.

After activating the VIGIFLAM Vİ® device, contact STIF France or your dealer for advice on restoring the installation. Before doing so, please obtain the serial number from the device nameplate (see Chapter 5).



After an explosion, the mechanical integrity of the VIGIFLAM Vİ® device is no longer guaranteed. It should therefore be replaced.

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6.4 Disposal procedure:

The user must ensure that the VIGIFLAM Vi® device is disposed of correctly, and hand over the components according to their nature (plastic, steel, rubber, etc.) to specialist collection centres.

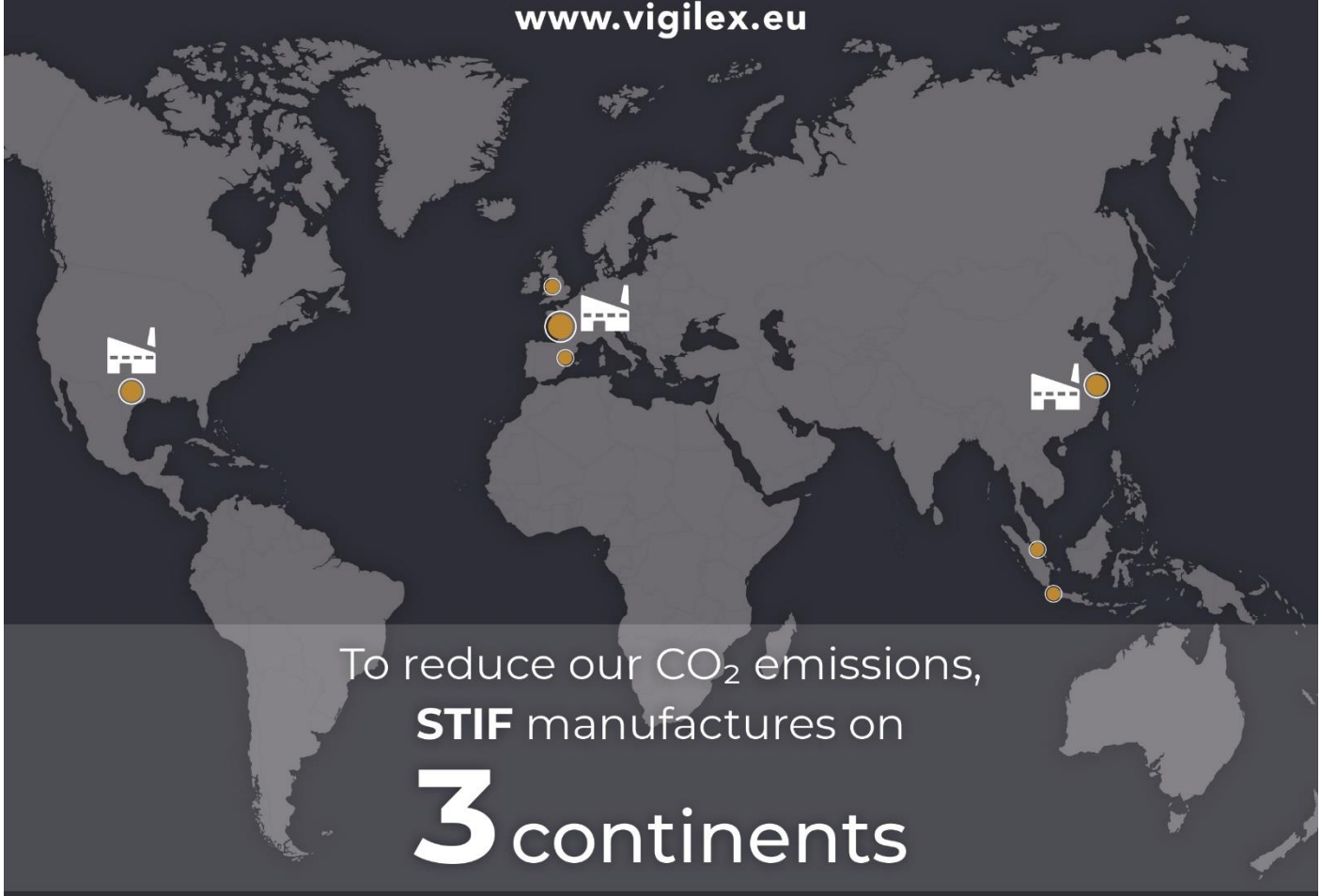
Failure to comply with all or part of the instructions described in this document will invalidate the warranty. In the event that the VIGIFLAM Vi® device is used in conditions contrary to the recommendations described in this manual, STIF France declines all responsibility for damage caused to humans, animals, the environment and material assets.

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STIF (Siège social)
Usine
Z.A. de la Lande
49170 Saint-Georges-sur-Loire
FRANCE
Tél.: +33 2 41 72 16 80
E mail: sales@stifnet.com
Web: www.stifnet.com

STIF IBERICA
Bureau commercial
Carrer Doctor Zamenhof, 22. Local
08800 Vilanova i La Geltrú
BARCELONA - ESPAÑA
Tel.: +34 938 950 262
E mail: ventas@stifiberica.es
Web: www.stifnet.com

STIF DEVELOPMENT LTD
Bureau commercial
10 Trinity House
Trinity Gardens
Frodsham
WA67GB – UNITED KINGDOM
E mail: info@macclancyandsons.co.uk
Web: www.vigilexuk.com

ASIE

STIF (SUZHOU)
Usine
Unit 7, N° 2318
East Taihu Lake Road
Wuzhong District, Suzhou City
Jiangsu Province, CHINA
Ph.: +86 512 6656 8968
E mail: sales@stif.cn
Web: www.stif.cn

STIF ASIA
Bureau commercial
2 Jurong East St 21
#04-28K IMM Building
SINGAPORE 609601
Ph.: +65 6563-2098
E mail: sales@stif.com.sg
Web: www.stifnet.com

PT. STIF INDONESIA
Bureau commercial
Jl. Ratna no. 1A
BEKASI – 17412
INDONESIA
Ph.: +62 21 8499 6745
E mail: indo@stif.com.sg
Web: www.stifnet.com

AMERIQUE

STIF USA LLC
Usine
6729 Guada Coma Dr.
Schertz, TX 78154 USA
Off # 210-664-4200
E mail: sales@stifusa.com
Web: www.stifnet.com

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