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Frequently Asked Questions

ATEX Solenoid Valves

Parker

ENGINEERING YOUR SUCCESS.

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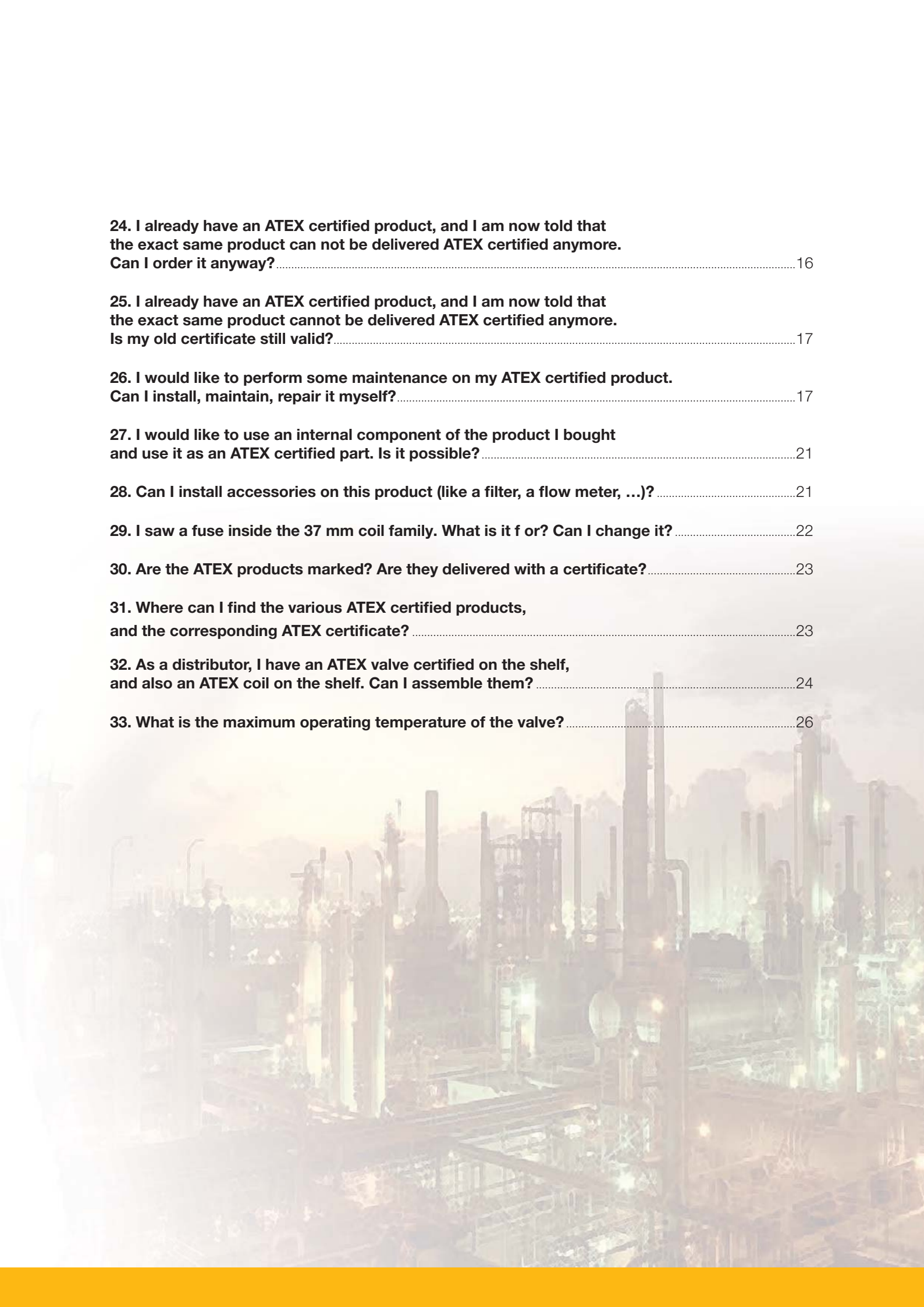


ATEX Frequently Asked Questions

DEFINITIONS

Explosive environments

Mixture with air, under atmospheric conditions, of flammable substances in the form of gases, vapors, mists or dusts in which, after combustion has occurred, combustion spreads to the entire unburned mixture.

Hazardous areas

A hazardous area is an area in which an explosive gas environment is present, or may be expected to be present, in quantities such as to require special precautions for construction, installation and use of electrical apparatus.

Ingredients for an explosion

- When combustible materials are mixed with air, an explosive mixture is produced. Danger of explosion therefore exists wherever these hazardous materials are handled: such a condition is to be found on the biggest chemical plant as well as at the smallest filling station.
- Nowadays with the use of electronic and electrical instrumentation in process control, the risk of combustion by electrical energy has increased sharply.
- To protect personnel and expensive equipment special precautions should be taken to prevent combustion of those dangerous substances. Conditions likely to ignite explosive mixtures are as follows.

FREQUENTLY ASKED QUESTIONS

1. What is ATEX?

The ATEX directive consists of two EU directives describing which equipment and working environment is allowed in an environment with an explosive atmosphere. **ATEX** derives its name from the French title of the 94/9/EC directive: "Appareils destinés à être utilisés en **AT**mosphères **EX**plosives".

2. Why ATEX?

As of July 2003, organizations in EU must follow the directives to protect employees from explosion risk in areas with an explosive atmosphere.

Employers must classify areas where hazardous explosive atmospheres may occur into zones. The classification given to a particular zone, and its size and location, depends on the likelihood of an explosive atmosphere occurring and its persistence if it does.

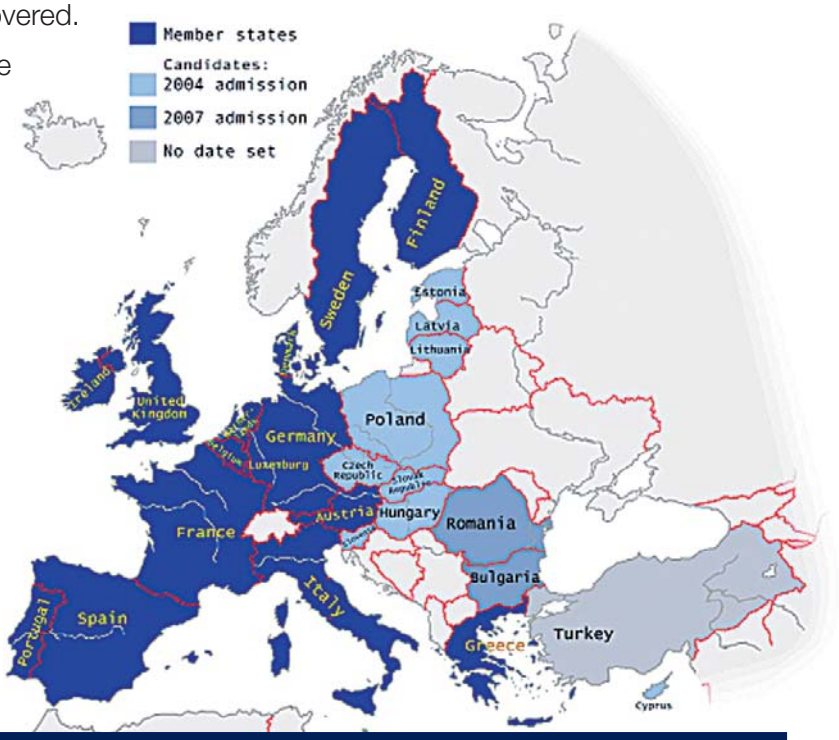
3. Who is ATEX for?

The regulations apply to all equipment intended for use in explosive atmospheres, whether electrical or mechanical, including protective systems.
There are two categories of equipment for mining and three for surface industries.

Manufacturers who apply its provisions and affix the CE marking and the Ex marking are able to sell their equipment anywhere within the European union without any further requirements being applied with respect to the risks covered.

Please note that it is only applicable within European market.

European member countries



4. Is ATEX mandatory?

If you are in an explosive area, then the answer is yes.

Each manufacturer decides whether or not they want to have it. If your product is not ATEX approved, then it's not legal to use it in an explosive area.

Manufacturers/suppliers (or importers, if the manufacturers are outside the EU) must ensure that their products meet essential health and safety requirements and undergo appropriate conformity procedures.

This usually involves testing and certification by a 'third-party' certification body.

5. What does ATEX provide?

The aim of directive 94/9/EC is to allow the free trade of 'ATEX' equipment and protective systems within the EU by removing the need for separate testing and documentation for each member state.

The directive also covers components essential for the safe use and safety devices directly contributing to the safe use of the equipment in scope. These latter devices may be outside the potentially explosive environment.

6. What is a Zone? What are the different zones?

The hazardous areas are classified in zones based on the frequency of the occurrence and the duration of an explosive gas or dust environment as follows:

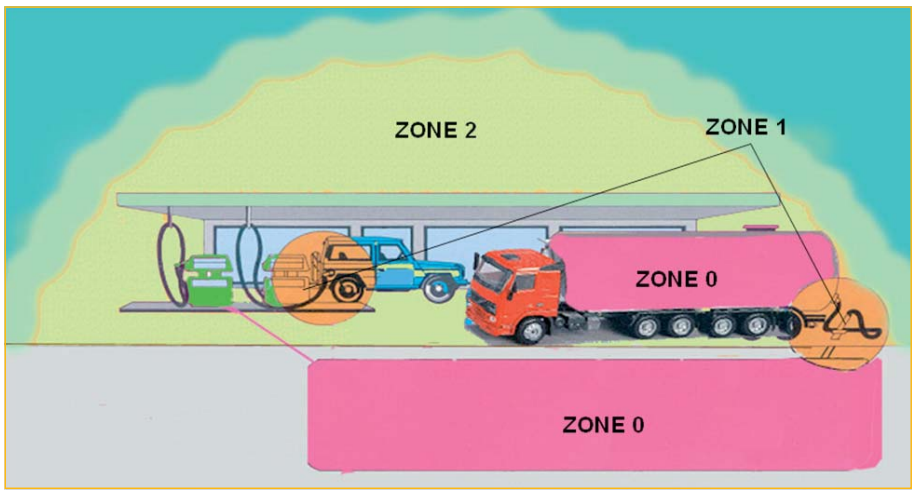
Zone 0 (20)	**Zone 1** (21)	**Zone 2** (22)
An area in wich an explosive **gas (dust)** atmosphere is present CONTINUOUSLY or is present for LONG PERIODS (~1000 h/y).	An area in wich an explosive **gas (dust)** atmosphere is present LIKELY TO OCCUR in normal operation (~10 to 999 h/y).	An area in wich an explosive **gas (dust)** atmosphere is not LIKELY TO OCCUR and if it does occur it will exist for short period only (~1 to 10 h/y).
Mode of protection: **ia** - **ma** - **px** - **…**	Mode of protection: **db** - **eb** - **ib** - **mb** - **px** - **…**	Mode of protection: **n** - **mc** - **ic** - **pz** - **…**

Classification of Hazardous Location

Explosive Environment	Continuous Presence	Intermittent Presence (normal operation conditions)	Occasional Presence (abnormal operation)
IEC	**Zone 0** (gas) **Zone 20** (dust)	**Zone 1** (gas) **Zone 21** (dust)	**Zone 2** (gas) **Zone 22** (dust)
Europe	**Zone 0** (gas) **Zone 20** (dust)	**Zone 1** (gas) **Zone 21** (dust)	**Zone 2** (gas) **Zone 22** (dust)
Canada (CEC)[1] **USA** (NEC) [2]	**Cl. I Div. 1** (gas) **Cl. II Div. 1** (dust) **Cl.III Div. 1** (fibres)	**Cl. I Div. 1** (gas) **Cl. II Div. 1** (dust) **Cl.III Div. 1** (fibres)	**Cl. I Div. 2** (gas) **Cl. II Div. 2** (dust) **Cl.III Div. 2** (fibres)

[1] (CEC): Code Canadien d'Electricité / [2] (NEC): National Electrical Code

Example

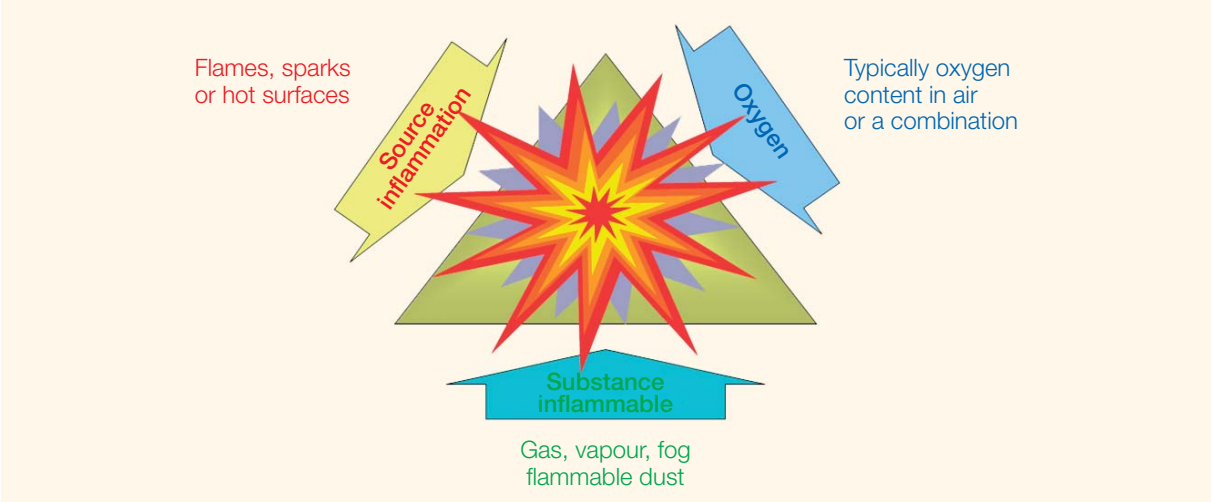


Zones details

Category	Fault protection	Atmosphere	Zone	Example of protections
EC Type examination by Notified Body → annex III				
1 **Very high level**	2 types of protection or 2 indépendant faults	**G** (Gas)	**0**	"ia", "ma", "px" or "ia-ma", "db/eb"
		D (Dust)	**20**	
EC Type examination by Notified Body → annex III				
2 **High level**	One type of protection Habitual frequent malfunction	**G** (Gas)	**1**	One type of protection Ib, db, mb, eb, py, o,…
		D (Dust)	**21**	
Internal production inspection → EC declaration of conformity				
3 **Normal**	Required level of protection	**G** (Gas)	**2**	n, ic, pz, … A, C, L, P, R
		D (Dust)	**22**	

7. Why do different temperature levels exist?

Three conditions are enough to create an explosion.



In order to prevent any explosion, we need to remove one of the conditions. Therefore, at the design level we need to make sure that no hot surface will provide the inflammation source .

Depending on the gas creating the explosive atmosphere, the ignition temperature could be different. Because of this, we need to be sure that the surface temperature of the product used will always be lower than the gas ignition temperature.

Then, the lower the gas ignition temperature is, the lower the electrical part (coil) surface temperature must be. The product surface temperature class depends also on the ambiant temperature.

Class Temperature	Max. Temperature
T1	450°C
T2	300°C
T3	200°C
T4	135°C
T5	100°C
T6	85°C

°C
600
500
400
300
200
100
0

Gas & Ignition Temperature		
560°C	Hydrogen	T1
537°C	Methane	T1
425°C	Ethylene	T2
305°C	Acetylene	T2
210°C	Kerozene	T3
160°C	Ethylether	T4
95°C	Carbon disulphide	T6

Here after see some typical gas auto-ignition temperature and the corresponding ATEX surface temperature class.

Acetaldehyde	175	T4	Ethylene	490	T1	Light gas	600	T1	n-Pentene	298	T3
AcetonE	465	T1	Ethanol	365	T2	Light hydrocarbon	650	T1	Petroleum	400	T2
Acetylene	305	T2	Fuel oil	210	T3	Methane	580	T1	Propane	470	T1
Benzene	560	T1	Hydrogen	500	T1	Methanol	470	T1	Propylene	458	T1
Butane	405	T2	Gas oil	336	T2	Naphtha	550	T1	p-Xylene	530	T1
Carbon bisulfide	149	T4	Gasoline, petrol	280	T3	Neoheaxane	425	T2	Triethylborane	-20	-
Carbon disulfide	90	T6	Kerosene	295	T3	Noepentane	450	T2	Toluene	535	T1
Carbon monoxide	609	T1	Isobutane	462	T1	n-Butane	405	T2	Silane	<21	-
Cyclohexane	245	T3	Isobutene	465	T1	n-Heptane	215	T3	Styrene	490	T1
Diethyl ether	160	T4	Isooctane	447	T2	n-Hexane	225	T3	Sulphur	243	T3
Diesel, jet A1	210	T3	Isopentane	420	T2	n-Octane	220	T3	Xylene	463	T1
Ethane	515	T1	Isopropyl alcohol	399	T2	n-Pentane	260	T3			

8. Are there different ATEX protection modes?

Yes, in red are the protection mode offered by Parker FCDE.

PROTECTION MODES

Concept	Code		Zones	
	Gas	Dust	Gas	Dust
Flameproof enclosure	**db**	**tb**	1/2	21/22
Encapstulation	ma / **mb** / **mc**	maD / **mbD**	0/1/2	20/21/22
Increased Safety	**eb**	-	1/2	-
Intrinsic Safety	**ia** / ib / ic	**iaD** / ibD	0/1/2	20/21/22
Pressurized apparatus	**pxb** / py / pz	pD	1/2	21/22
Concept Cat. 3 apparatus	**nA** nL nR **nC**	- - - -	2 2 2 2	- - - -

In red, protection modes used by Parker FCDE.

APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES EQUIPMENT GROUP II

EPL	Standards EN / IEC	Protection	Title
	60079-0	-	General requirements
Ga	60079-11	**ia**	Intrinsic safety
	60079-18	ma	Encapsulation
	60079-26	-	Equipment with equipment protection level (EPL) Ga (Zone 0)
	60079-28	op is	Protection of equipment and transmission systems using optical radiation
Gb	60079-1	**db**	Flameproof enclosures
	60079-2	p / **pxb** / py	Pressurized enclosures
	60079-5	q	Powder filling
	60079-6	o	Oil immersion
	60079-7	**eb**	Increased safety
	60079-11	**ib**	Intrinsic safety
	60079-18	**mb**	Encapsulation
	60079-25	-	Intrinsically safe systems
	60079-27	-	Fieldbus intrinsically safe concept (FISCO)
	60079-28	op is / op pr / op sh	Protection of equipment and transmission systems using optical radiation
Gc	60079-11	Ic	Intrinsic safety
	60079-18	mc	Encapsulation
	60079-15	**nA**	Non sparking
	60079-15	nR	Restricted breathing enclosure
	60079-15	nL	Limited energy (only old edition)
	60079-15	**nC**	Equipment producing operational sparks
	60079-2	pz	Pressurized enclosures
	60079-27	-	Concept de réseau de terrain de sécurité intrinsèque (FISCO)
	60079-28	op is / op pr / op sh	Protection of equipment and transmission systems using optical radiation

EPL = **E**quipement **P**rotection **L**evel - In red, protection modes used by Parker FCDE.

ELECTRICAL EQUIPMENT FOR USE IN AREAS WITH COMBUSTIBLE DUST EQUIPMENT GROUP III

EPL	Standards EN / IEC	Protection	Title
	60079-0	-	General requirements
Da	60079-31	ta	Protection by enclosure
	60079-11	ia	Protection by intrinsic safety (iaD IEC/EN 61241-11)
	61241-18	ma	Protection by encapsulation
Db	60079-31	tb	Protection by enclosure
	60079-11	ib	Protection by intrinsic safety (ibD IEC/EN 61241-11)
	60079-18	mb	Protection by encapsulation
	IEC 61241-4	pD	Type of protection "pD"
Dc	60079-31	tc	Protection by enclosure
	60079-11	ic	Protection by intrinsic safety
	60079-18	mc	Protection by encapsulation
	IEC 61241-4	pD	Type of protection "pD"

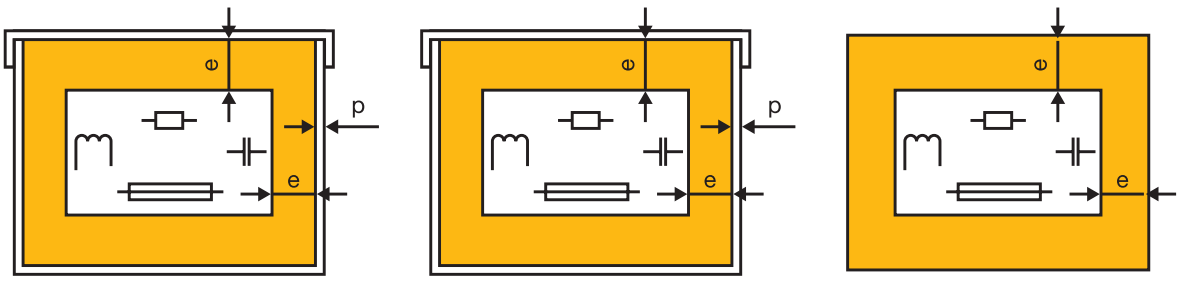
EPL = **E**quipement **P**rotection **L**evel - In red, protection modes used by Parker FCDE.

9. Does Parker FCDE propose a solution for every ATEX zone?

Yes, see the table from question 8 for the different protection modes offered by Parker FCDE (in red).

Find here after some explanation concerning the most common ATEX protection modes offered by Parker FCDE.

"m" protection mode.

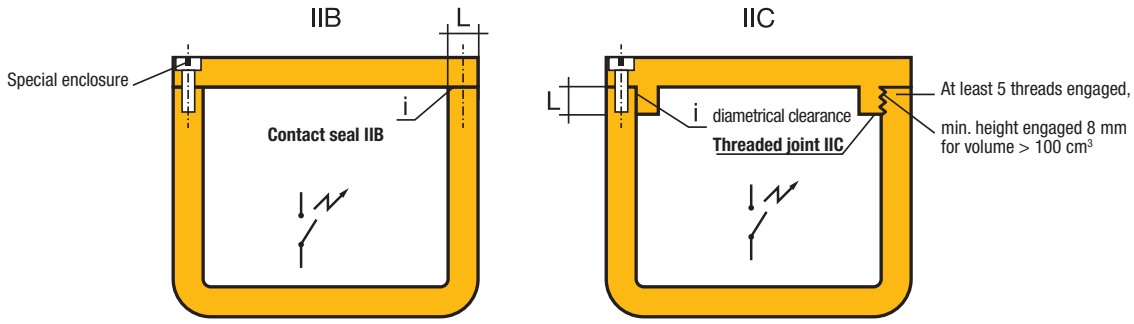


Potting - Metallic envelope
e > 1 mm

Potting - Insulating envelope
If p > 1 mm, e non-imposed
If > 1 mm, e + P > 3 mm

Casing without envelope
e > 3 mm

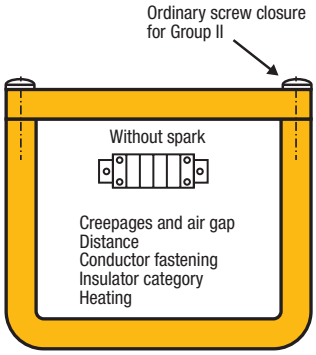
"d" protection mode



For volume > 2 dm³
Mini lenght L = 12.5 mm
Max gap i = 0.15 mm

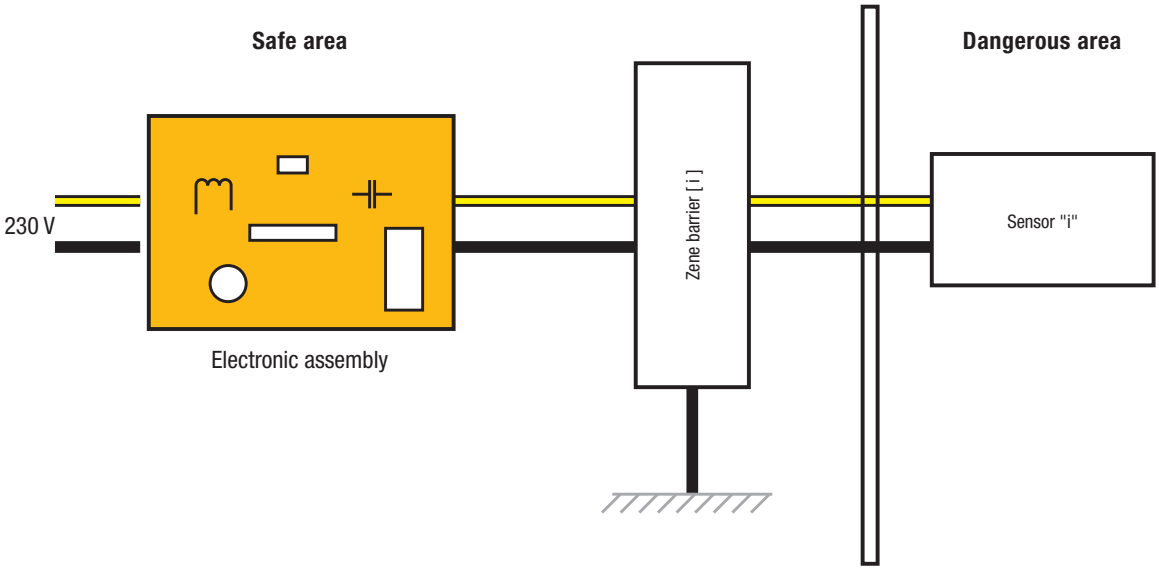
For volume > 2 dm³
Mini lenght L = 25 mm
Max dia. clearance i = 0.15 mm

"e" protection mode



Tight envelope IP54

"ia" protection mode



CATALOGUE PAGE
Go on the left Panel, on "certificates and approvals".

Please check the barrier/electrical part compatibility.
This information is available page 306 of process catalogue, or page 538 of general catalogue.

10. What does it "IP" mean?

The IP Code, Ingress Protection Rating, classifies and rates the degree of protection provided against the intrusion of solid objects, dust, accidental contact, and water in mechanical casings and with electrical enclosures.

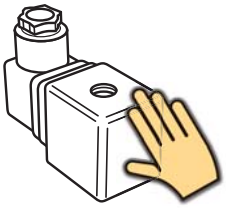
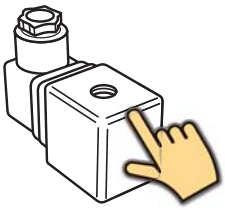
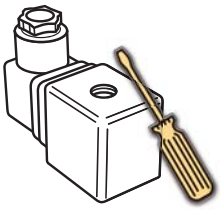
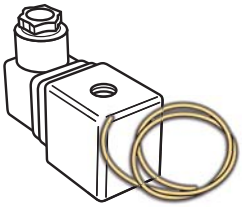
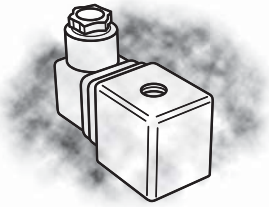
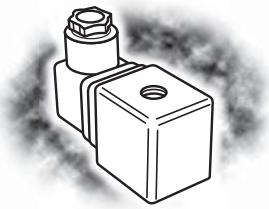
Please note that IP is, by habit, also called "protection degree", "Ingress protection", "tightness degree".

Envelope Ingress Protection is required in ATEX zones, as an explosion can occur in case of a dust intrusion inside the ATEX electrical part (coil).

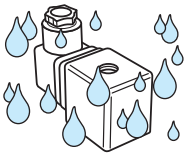
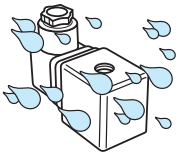
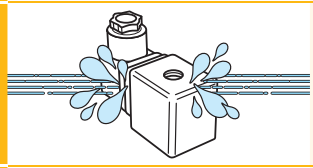
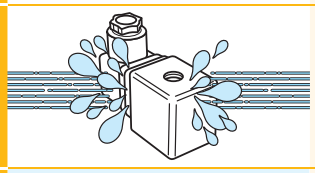
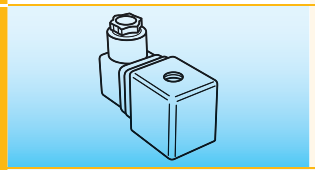
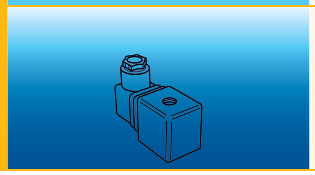
The digits indicate conformity with the conditions summarized in the tables beside. Where there is no protection rating with regard to one of the criteria, the digit is replaced with the letter X.

IP Ingress Protection **Rating Guide**

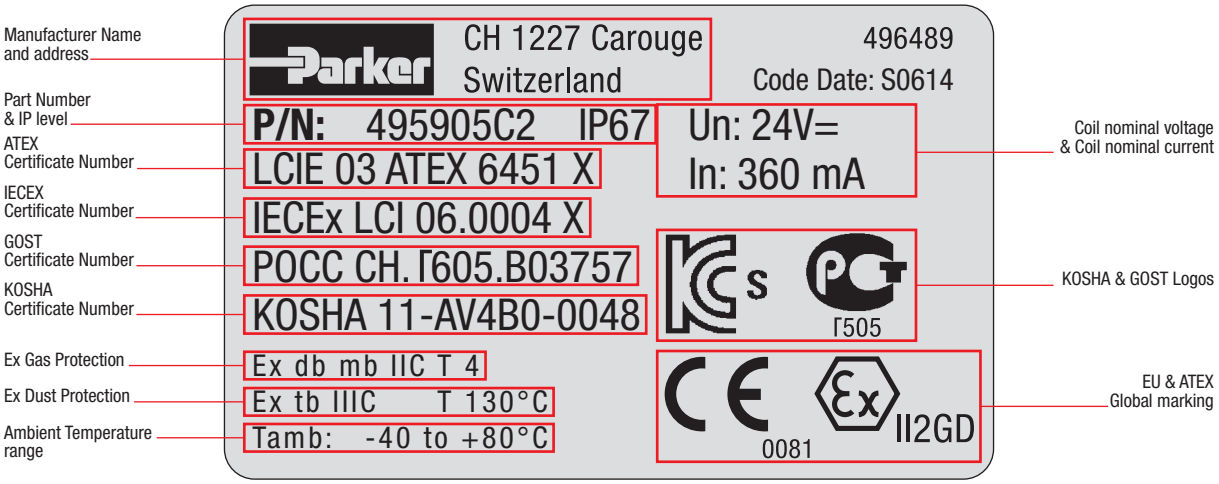
SOLIDS PROTECTION

1		Protected against a solid object greater than 50 mm, such as a hand.
2		Protected against a solid object greater than 12.5 mm, such as a finger.
3		Protected against a solid object greater than 2.5 mm, such as a screwdriver.
4		Protected against a solid object greater than 1 mm, such as a wire.
5		Dust protected. Limited ingress of dust permitted. Will not interfere with operation of the equipment. Two to eight hours.
6		Dust tight. No ingress of dust. Two to eight hours.

LIQUIDS PROTECTION

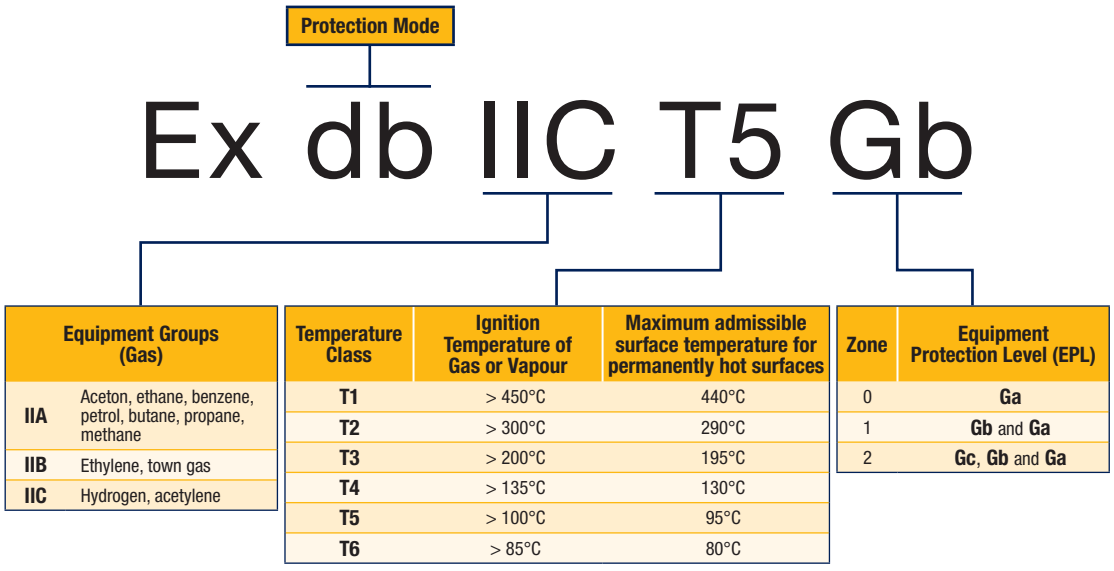
1		Protected against vertically falling drops of water. Limited ingress permitted.
2		Protected against vertically falling drops of water with enclosure tilted up to 15 degrees from the vertical. Limited ingress permitted.
3		Protected against sprays of water up to 60 degrees from the vertical. Limited ingress permitted for 3 minutes.
4		Protected against water splashed from all directions. Limited ingress permitted.
5		Protected against jets of water. Limited ingress permitted.
6		Water from heavy seas or water projected in powerful jets shall not enter the enclosure in harmful quantities.
7		Protection against the effects of immersion in water between 15 cm and 1 m for 33 minutes.
8		Protection against the effects of immersion in water under pressure for long periods.

11. How to read the complete marking of an ATEX product?



Regarding the protection mode and temperatures, please look at details here below to have deeper explanations.

ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES EQUIPMENT GROUP II

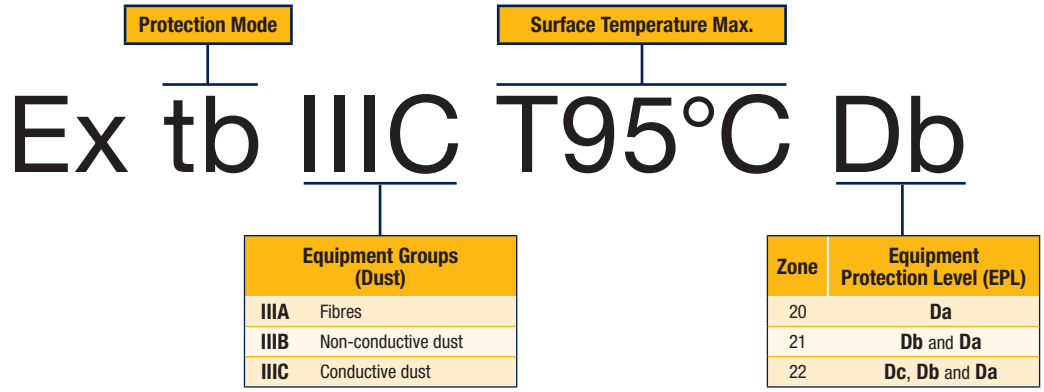


Equipment Groups (Gas)	
IIA	Aceton, ethane, benzene, petrol, butane, propane, methane
IIB	Ethylene, town gas
IIC	Hydrogen, acetylene

Temperature Class	Ignition Temperature of Gas or Vapour	Maximum admissible surface temperature for permanently hot surfaces
T1	> 450°C	440°C
T2	> 300°C	290°C
T3	> 200°C	195°C
T4	> 135°C	130°C
T5	> 100°C	95°C
T6	> 85°C	80°C

Zone	Equipment Protection Level (EPL)
0	Ga
1	Gb and Ga
2	Gc, Gb and Ga

ELECTRICAL EQUIPMENT FOR USE IN AREAS WITH COMBUSTIBLE DUST EQUIPMENT GROUP III



Equipment Groups (Dust)	
IIIA	Fibres
IIIB	Non-conductive dust
IIIC	Conductive dust

Zone	Equipment Protection Level (EPL)
20	Da
21	Db and Da
22	Dc, Db and Da

12. I'm asked for an ATEX coil, what do I have to do?

In order to properly answer your customer inquiry, the following information are mandatory:

- Zone (like 0/20, or 1/21, 2/22, or with the new classification, Ga, Gb, Gc for Gas, and Da, Db, Dc for the dust)
- Protection mode (nAc, d, mb, m, e, ib, ia, …)
- Ambient temperature (or T1 to T6 level).
- Atmosphere type (Dust or Gas or Both)

Also, because Parker FCDE provides different valve pilots, please also mention the type of assembled valve with the electrical part (coil).

Don't know what is a pilot?
Please consult the section "training" on the MIS left panel, and go for the "Technical Fundamentals"

Please note that our products are always tested under worst case conditions regarding ATEX directives.

13. I'm asked for a certificate, where to find it?

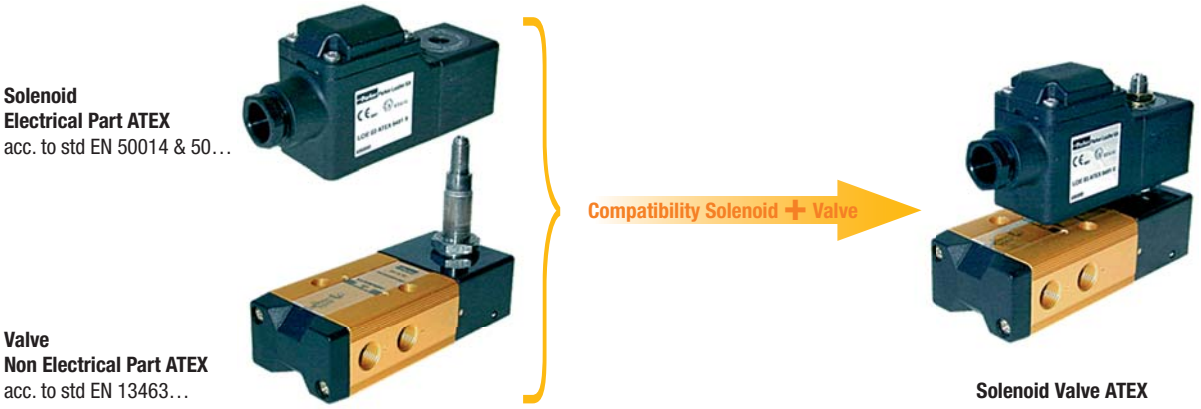
All our ATEX certificates* (and all other certificates) are available online on MIS.
* CERTIFICATE is use by habit and corresponds to "EC type examination certificate" (for ATEX).

MIS WEB SITE
Go on the left Panel, on "certificates and approvals".

Please note that our MIS site is available for Parker Internal use and for our distributors. If you need an access to it, please try to connect and request and access when connecting to the site, or get in contact with your PARKER local representative.

14. Someone told me about mechanical ATEX, what is it?

As ATEX directive is changing over the time, with the new 94/9/CE edition came the mechanical ATEX, and the dust atmosphere.
To have an assembly ATEX approved, you need a mechanical ATEX approved valve (according to Standard EN 13463), and an electrical part ATEX approved (according to Standard EN 50014&50).



Mechanical ATEX exists because source of ignition can have a mechanical origin: hot surfaces generated by friction, sparks generated by impact between metal bodies, electrostatic discharge, adiabatic compression.

15. I want to assemble an ATEX certified coil with a non ATEX certified valve, is it possible?

No, inside Europe where the ATEX directive is applicable, it is forbidden to assemble an ATEX product with a non ATEX product. Everybody doing so is responsible for this assembly, and would have to go through a declaration of conformity, which will only imply end user responsibility.

If the customer is outside EU zone, please note that only IECEx certificate applies, and that no mechanical approval is needed for IECEx.

16. What is IECEx?

IECEx is an international evolution system for the conformity of product used in an explosive atmosphere according IEC norms.

The objective of the IECEx System is to facilitate international trade in equipment and services for use in explosive atmospheres, while maintaining the required level of safety:

The IECEx is used inside the IECEx Scheme, where the ATEX is not applicable. To summarize this, it means that outside Europe, and within IECEx Scheme, you can have an explosion proof certified product.

For more details concerning the IECEX Scheme countries, please consult IECEX web site.

http://www.iecex.com/countries.htm

17. What's the major difference between ATEX and IECEx?

ATEX takes into consideration the non-electrical part (mechanical part) and the electrical part, where the IECEx only takes into account the electrical part.

An IECEx certificate is a conformity proof of the product certification according international norms, easing the process of bringing out the product on the market for all countries within IECEx scheme.

Please also note that, inside Europe, this is the ATEX that is applicable. (please see questions 3 and 16).

18. I need advices for a valve choice associated to an ATEX coil, what type of information do I have to provide?

To make sure that you will choose the right valve, you need to make sure that valve parameters are in line with customer needs.

Because of the ATEX, you also need to make sure that you'll comply the explosive environment where the product will be placed and used. You need to know:

- The maximum temperature allowed, or the explosive gas surrounding the product.

Don't know what does the maximum temperature correspond to? Please, see question 7.

- The ATEX zone (0-20, 1-21, 2-22, or according the new ATEX directive, Ga, Gb, Gc, Ta, Tb, Tc)

Don't know what is a zone? Please, see question 6.

- The ATEX protection mode (nAc, D, mb, e, ia, etc…) required

Don't know what is a protection mode? Please, see question 8 and 9.

Please see also question 12 as a reminder.

19. Are all Parker valves ATEX certified?

No, as stated in the question 15, to have an ATEX approved assembly, you need both a mechanical approval and an electrical approval (for the valve and the coil respectively).

Because of this, every valve not having mechanical ATEX approval isn't ATEX approved.

Please consult our General Catalogue (FCDE0110/UK) to make sure that the valve you have is ATEX approved. (see sections "How to Order", and the valve page itself)

As soon as ATEX logo appears on the top right table, it means that all valves within the corresponding page have the mechanical ATEX certificate.

Please consult question 14 for more details concerning mechanical ATEX.

2 WAY VALVES

For this page	Port size	Orifice (mm)	Kv (l/min)	MOPD (bar)	Fluid Temp (°C)	Amb Temp (°C)
From	1/8''	1.2	0.9	2.5	-30	-20
To	1/4''	3	4.5	100	130	50

All our Catalogues are available online on MIS.

CATALOGUE PAGE

20. I am asked for ATEX certified valves, for a use outside Euro zone, can you help me?

As ATEX is only valid for Euro zone, if you need to order explosion proof valves outside this zone, you'll need to go for another Explosion proof certified product, such as IECEx, UL, FM… (This is depending on the country)

Please consult question 3,16,17 for more details.

Please consult our General Catalogue (FCDE0110/UK) to make sure that the valve assembly you have complies with the needed approval. (See sections "How to Order" and "coil section").

Don't know where to find our catalogues?
Please consult question 19 or in the document links, page 27.

21. I would like to know more concerning ATEX directive, where can I find it?

Start with the ATEX Guidelines:

http://ec.europa.eu/enterprise/sectors/mechanical/files/atex/guide/atexguidelines-may2011_en.pdf

Then, if you still need to know more, please go on the Official web site:

http://ec.europa.eu/enterprise/sectors/mechanical/documents/guidance/atex/application/

22. I have a valve without mechanical ATEX certification, and would like to have it certified, how to proceed?

Depending on the zone (0-20, 1-21 or 2-22), the process is different.

For zones 0-20 or 1-21, you need to go through a third party approval, and for this, you need to make sure that the product complies with necessary ATEX directives.

For zones 2-22, you need to go through a declaration of conformity; a third party approval isn't mandatory, a declaration of conformity is enough as soon as the valve conforms ATEX directives.

Don't know what is a zone? Please, see question 6.

Whatever the needed zone certification for the product this process only implies customer responsibility. Furthermore, as this process is not easy, we advice to get in direct contact with a third part certification organism. (our organism is the LCIE, for example).

23. I'm asked for a coil UL and ATEX certified, is it possible? What to answer?

No, not in our actual portfolio.

Within our Parker FCDE range, we don't have an electrical part (coil) that is both UL and ATEX approved, as of today. UL approval is made for USA market mainly. We have a full range of product UL approved, but don't have both UL and ATEX certified products.

However, you have a potential solution to propose: Choose a IECEx electrical part (coil) (all our IECEx coils are also ATEX approved). USA is part of the IECEx Scheme.

http://www.iecex.com/countries.htm

This solution can help to sell our product to your customer.

Another alternative is to propose a product FM certified.

http://www.fmglobal.com/

Having an FM approval will help you to obtain the UL approbation for our product.

Please note that this request is often raised for a worldwide Explosion proof approved valve, this is the perfect application of IECEx approval.

From the IECEX website: "The objective of the IECEx System is to facilitate international trade in equipment and services for use in explosive atmospheres, while maintaining the required level of safety".

24. I already have an ATEX certified product, and I am now told that the exact same product can not be delivered ATEX certified anymore. Can I order it anyway?

This issue may possibly occur. The major reason for this is the mechanical ATEX approval.

Please consult question 14 for more details regarding mechanical ATEX.

As in the past the mechanical approval was not mandatory, the solenoid valve your customer has could have been ATEX approved without any mechanical approval. As now the directive has changed (94/9/CE), the same assembly needs to have a mechanical ATEX approval.

Also, some of our valves will not have the mechanical approval, as a similar valve covering the same application has it. Please consult our General Catalogue (FCDE0110/UK) for a view of our complete offering.

All our Catalogues are available online on MIS.

CATALOGUE PAGE

25. I already have an ATEX certified product, and I am now told that the exact same product cannot be delivered ATEX certified anymore. Is my old certificate still valid?

YES, no need to have a new certificate for the product installed before the issue of the new directive and in used on the application.

The new 94/9/CE directive scope is for new products, or newly manufactured products.

The product already in place on application before the new directive appliance fall outside the scope of directive.

26. I would like to perform some maintenance on my ATEX certified product. Can I install, maintain, repair it myself?

Yes.

General reminder:

People performing any kind of maintenance on our products are supposed to follow the general ATEX requirements defined in the directive.

One of these rules says the person doing the maintenance has to be "competent" regarding ATEX aspects. Again, this person is responsible to check if what he is doing follows our technical requirements (through installation & maintenance sheets, catalogues, etc…).

The directive says also **any equipment being maintained must have a traceability document**. In other words, maintenance people can change a damaged electrical part (coil) or valve without any issue, as long as they keep the traceability of their action in the relevant document (action done, date code, etc…).

NB: the site manager is responsible for the maintenance, and is ultimately responsible for any work carried out on our solenoid valves. He has to ensure all work is carried out in accordance with all ATEX directive even if done in accordance with ATEX directive. **The end user must keep a trace of the modification and only end user responsibility could be engaged in case of issue.**

Please note that modification on any ATEX products could be split in 2 categories: substantial modifications, and not substantial modifications:

1. **Substantial modifications** is a change that affects product performance and the application safety levels. In this situation, only the end user responsibility is implied in case of any issue. A declaration of conformity have then to be created by the end user and engage his responsibility.

A trace of the maintenance/change/modification must be performed by the end user, see question 32 for more detail.

Please note that the person who performed the change must deliver the new assembly created to its final customer together with an EC assembler declaration of conformity, as in that case directive considers he acted as an assembler. Refer to question 32 for an example of declaration.

2. Not substantial modification: maintenance, repair without product performance changes. Every intervention must be performed according to ATEX directive.

A trace of the maintenance/change/modification must be performed by the end user.

Example 1: Change a coil 496700C2 on a U133X5196, and put a new 496700C2 coil, on this exact same valve. This is a modification that could be considered as a non-substantial modification.

This action is allowed.
You must make sure that it is performed in accordance with ATEX directive (i.e: trained people, ATEX intervention authorized person, etc…).

You need to be able to trace back this intervention (you need to keep a record of this intervention for a potential inspection).

Our Declaration of Conformity

Example 2: Change a coil 496700C2 on a U133X5196, and put a 496700P9 instead, on this exact same valve. This is a modification that could be considered as a substantial modification.

This action is allowed.
Please note that these 2 coils have different voltages: 496700C2 is in VDC, 496700P9 is in VAC.
You must confirm that the coil voltage is compatible with the valve.

In this case, you'll have to go through a declaration of conformity, which will imply your responsibility.

Assembler Declaration of Conformity

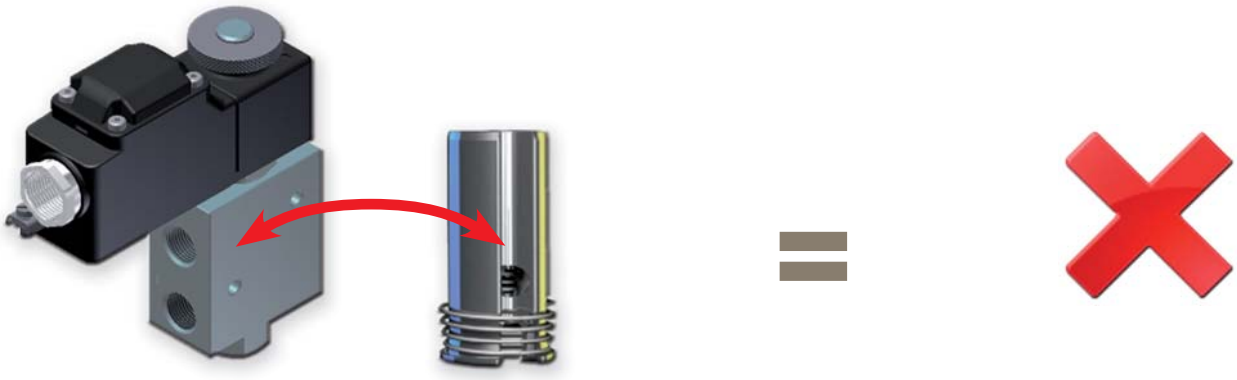
Example 3: **Change the plunger on a valve.**

This action could be allowed. Please consider 2 different cases:

1. Valve IS for an application in Intrinsically Safe area (Zone 0/20 or Ga/Da)

Don't know what is a zone? Please, see question 6.

This action isn't authorized. This is also the reason why our IS valves don't have spare part kits
Some reasons for this: spare part for ATEX valves are not allowed to be sold separately. The major reason for this is the risk of a substantial modification.



2. Valve ISN'T for an application in Intrinsically safe area (Zone 0/20 or Ga/Da)

Don't know what is a zone? Please, see question 6.

This action is allowed.
This is a modification that could be considered as a substantial modification.

In this case, you'll have to go through a declaration of conformity, which will imply your responsibility.

Assembler Declaration of Conformity

Example 4: Change a coil 496700C2 on the U133X5196. Replace it by a 496560C2.

This action is allowed.

⚠ **Please note that this new assembly MUST comply the ATEX protection mode/ requirements of the application**, and this coil change isn't allowed if the application protection mode/requirements aren't met, as it'll result in a application safety level modification and is then not allowed. (going from T4/T5/T6 to T4 only for example).

⚠ **In this case, you'll have to go through a declaration of conformity**, which will imply your responsibility.

Assembler Declaration of Conformity

Please find here under a summary of possible cases you may encounter:

Change Performed	Allowed ?	Declaration of conformity?	Keep a maintenance trace?	Precaution
Change the coil for the same coil (new) Ex: 496700C2 / 496700C2	✓	-	✓	-
Change the coil for the same with a different voltage Ex: 496700C2 / 496700P9	✓	✓	✓	Check that the electrical power supply match the coil voltage type (Precaution 1)
Change the coil for a different one with the same voltage Ex: 496700C2 / 496560C2	✓	✓	✓	Precaution 1 + You need to check the valve/new coil compatibility, using the electrical group principle
Change the coil for a different one with the different voltage Ex: 496700C2 / 496560P9	✓	✓	✓	Precaution 1 + You need to check the valve/new coil compatibility, using the electrical group principle
Change the coil for a non ATEX coil (product to be used inside ATEX zone)	✗	-	-	Please note that any electro valve that goes into an ATEX zone MUST BE ATEX APPROVED
Change the plunger of the valve (official spare part kit available)	✓	✓	✓	You need to make sure that the spare part kit corresponds to this exact valve model. You must use the official spare part kit associated to this valve
Change the plunger of the valve (official spare part kit not available)	✗	-	-	Not allowed for zone 0/20.
Change the cable gland of the coil	✓	-	✓	You need to make sure the cable gland has at least the same protection mode than the original cable gland, and that tightening torque ensures the proper IP level
Change the fuse of the coil	✓	-	✓	Check that the fuse you're using is the correct one. (see official fuse list on our MIS site)

✓ Yes ✗ No - Information not available

In any case, if you have a doubt, please don't hesitate to consult our technical support.

tech_support_fcde@parker.com

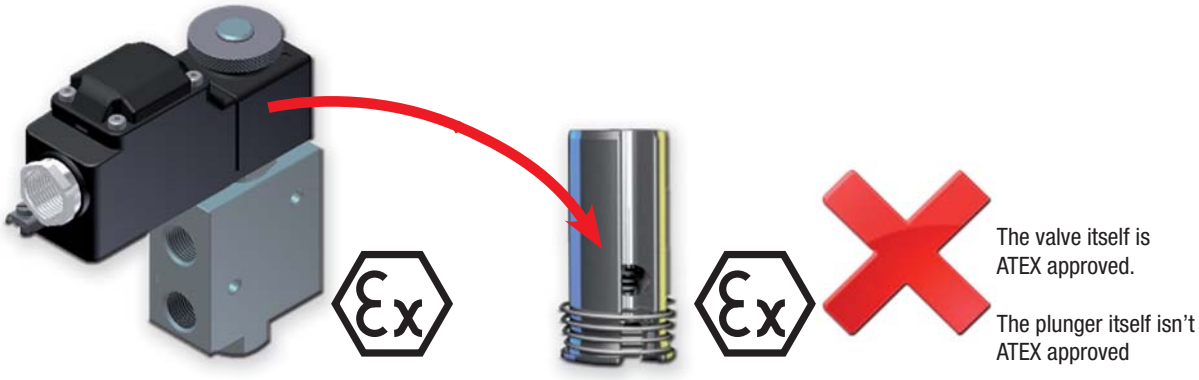
27. I would like to use an internal component of the product I bought and use it as an ATEX certified part. Is it possible?

No.

Example: A customer ordered a valve/coil assembly, and would like to use an internal component of the valve (the plunger in this example) on another valve, to have it ATEX approved.

The plunger is considered as an internal component, and therefore can not be used in another valve.

This isn't permitted, as only the complete element is ATEX approved and not the internal components.



The ATEX approval concerns complete elements, such as the complete solenoid valve, the valve itself, or the coil itself.

Please note that our products are ATEX certified when used in accordance with the technical parameters. Any use of a part of the product only can be considered as a technical modification and is therefore not allowed.

If ever the product you selected isn't corresponding to customer needs, please don't hesitate to consult our technical support for further assistance, or for a better product choice/definition.

tech_support_fcde@parker.com

28. Can I install accessories on this product (like a filter, a flow meter, ...)?

Yes,

as soon as the installation of the accessory does not modify the product performances, no problem to install it.

29. I saw a fuse inside the 37 mm coil family. What is it for? Can I change it?

The objective of the fuse inside the ATEX 37 mm series (Fig1) is to ensure that the coil will stop working in case of over voltage, current peaks or other external influences.

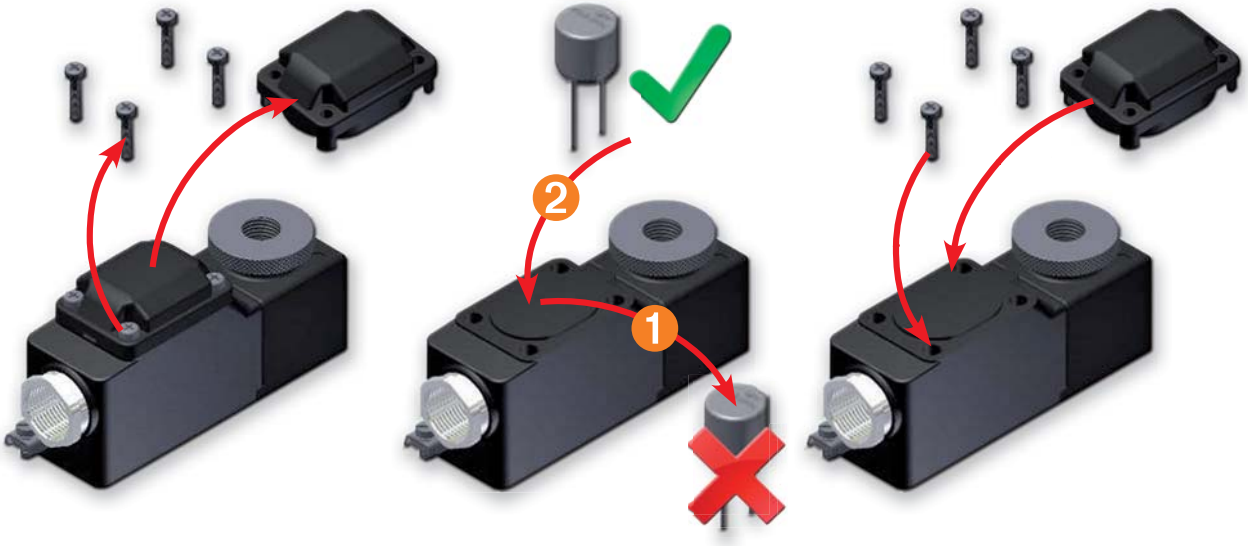
Fig1: Examples of 37 mm ATEX Coil Series

If an over-voltage or other electrical / external conditions burned the fuse, you must replace it to ensure the coil will work properly again. (in this particular case, no need to replace the complete coil).

⚠ Please note that just replacing the coil will not change anything. If the fuse burned, it's because of previous conditions. As long as the customer has not ensured proper wiring or avoided electrical voltage peaks, it will happen again. Please make sure that your customer understands the root cause and performs corrective actions before replacing the coil.

⚠ Do never use a coil cover on a different coil, even this coil is similar.

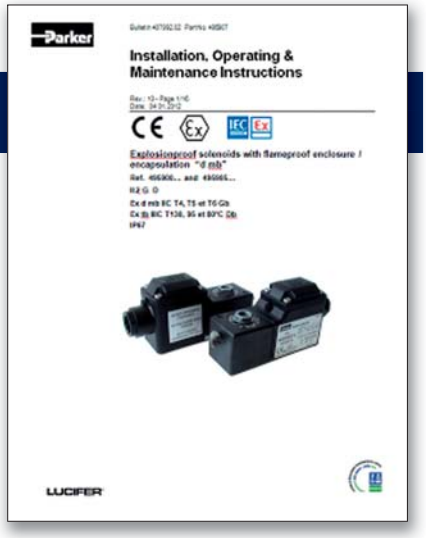
To replace the fuse: unscrew the 4 screws maintaining the cover. Take away the burned fuse, and replace it with a new one. Place back the cover and place back the screws, tightened with the correct torque.



The list of fuse for 37 mm coils is available online on MIS.

FUSE LIST FOR 37 mm COILS

30. Are the ATEX products marked? Are they delivered with a certificate?



All our electrical parts are ATEX marked. As soon as you order a complete ATEX product, you will get a product marking on it.

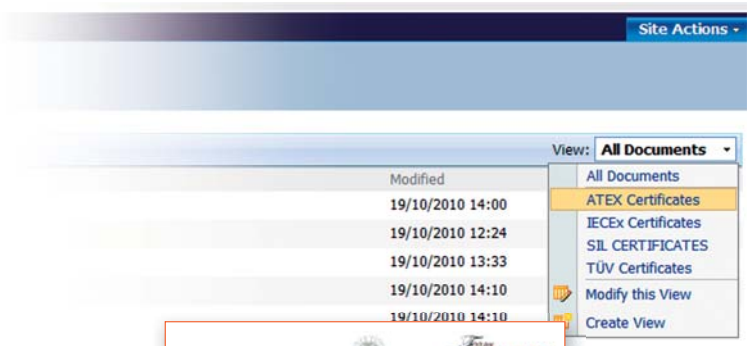
Our valve dedicated for actuators are also ATEX marked on the body.

All our ATEX certified products are delivered with the instruction of mounting (including the ATEX certificate, CE declaration of conformity, and the manual itself).

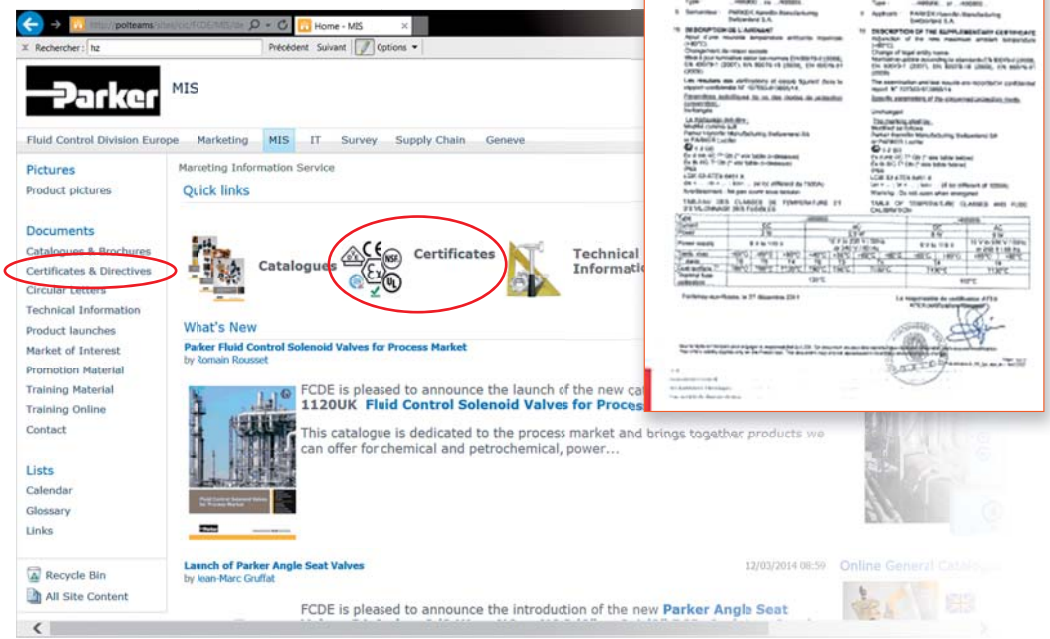
31. Where can I find the various ATEX certified products, and the corresponding ATEX certificate?

On our [web site MIS (Marketing Information System)]

On the right corner of the page, select the "ATEX Certificates" option to see an helpful view.



Another way to find it is to select "certificates" on the first page, then select "ATEX".

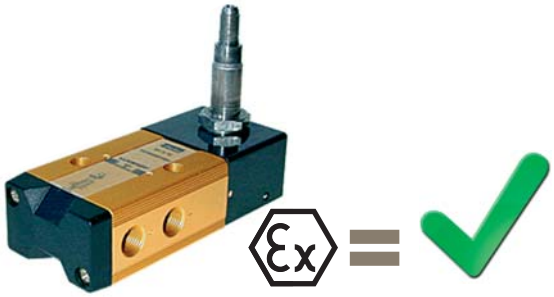


32. As a distributor, I have an ATEX valve certified on the shelf, and also an ATEX coil on the shelf. Can I assemble them?

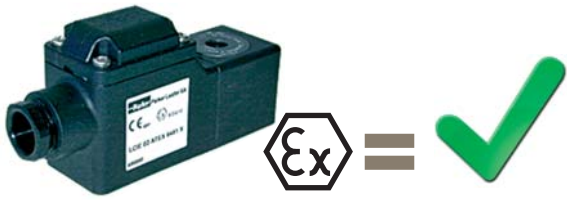
YES, under the following conditions, you need to make sure of 3 points: **A** - **B** - **C**

A. Make sure the valve and the coil are compatible. The catalogue is your reference. (coil groups)

Assembler Declaration of Conformity



Make sure that the valve is ATEX approved.



Make sure that the coil is ATEX approved.

⚠ **B.** Please note that the distributor must deliver the new created assembly to its final customer together with **an EC assembler declaration of conformity**, as in that case directive considers he acted as an assembler.

Please see below an example of the document that should be joined to the product.

⚠ **C.** Please note that **a distributor must keep a precise traceability of any ATEX product delivered**. In other words, when a distributor delivers an ATEX certified product, he must generate an internal file with the customer's name, the date, the product reference and its date code.

This rule is not only true for us, but for any ATEX product.

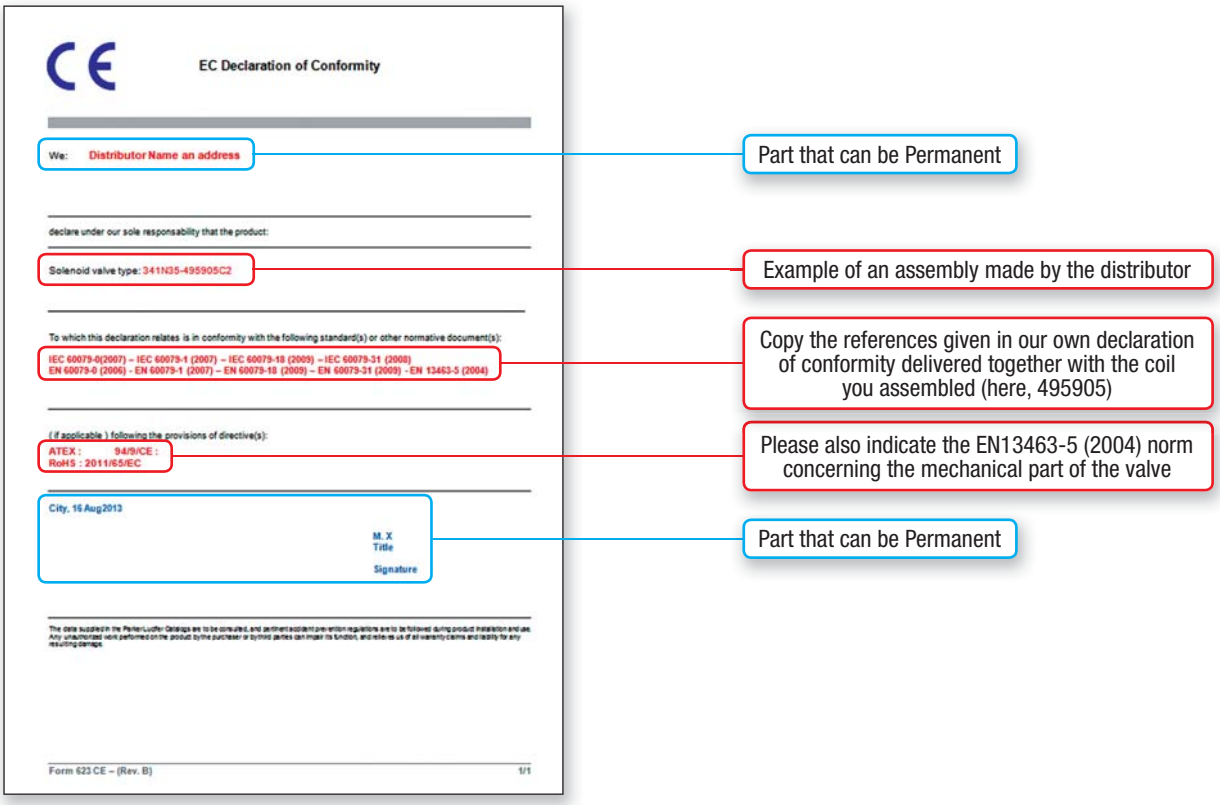
This file is an internal document for the distributor, and may be used if we want to return for any reason (product deviation, etc…) a batch of products already delivered in the field.

⚠ **We advise you to keep a trace for at least 10 years.**

Please note that the directive says a person in charge of the assembly must be "competent"; it means this person must check with available documentation (catalogues, technical specifications, installation and maintenance sheet) if the valve and the coil are technically compatible, and how to assemble them properly (following a product training for instance).

For a more detailed explanation concerning distributor possibilities and obligations, please consult our circular letter: "General information on coil modularity, ATEX, maintenance and distributors obligations", available on our MIS web site.

MIS WEB SITE



Please contact our technical support if needed.
Please also find here under an example of the traceability file.

Customer Name	Date	Valve Reference	Date Code Valve	Coil Reference	Date Code Coil	Invoice Name	Operator Name	Intervention Type	Comment	Declaration of Conformity provided
Customer A	12.08.13	U133X5196	S1210A	496700C2	S1210	5634894	-	by Parker	-	Yes
Customer A	12.08.13	U133X5196	S1210A	496700C2	S1210	5634894	-	by Parker	-	Yes
Customer B	17.09.13	121K0497	S1132	49591001N7	S1309	5321849	Mr Smith	by US	Assembly for repair	Yes
Customer C	26.09.13	U133X5156	S1127	496565P9	S1329	5021681	Mr Doe	by US	Order for plateform Brazil	Yes

The recommended parameters to record are the following:

- Customer Name
- Date
- Valve Reference
- Coil Reference
- Date Code Valve
- Date Code Coil
- Invoice Number
- Operator Name
- Intervention type
- Comment
- Declaration of Conformity provided

33. What is the maximum operating temperature of the valve?

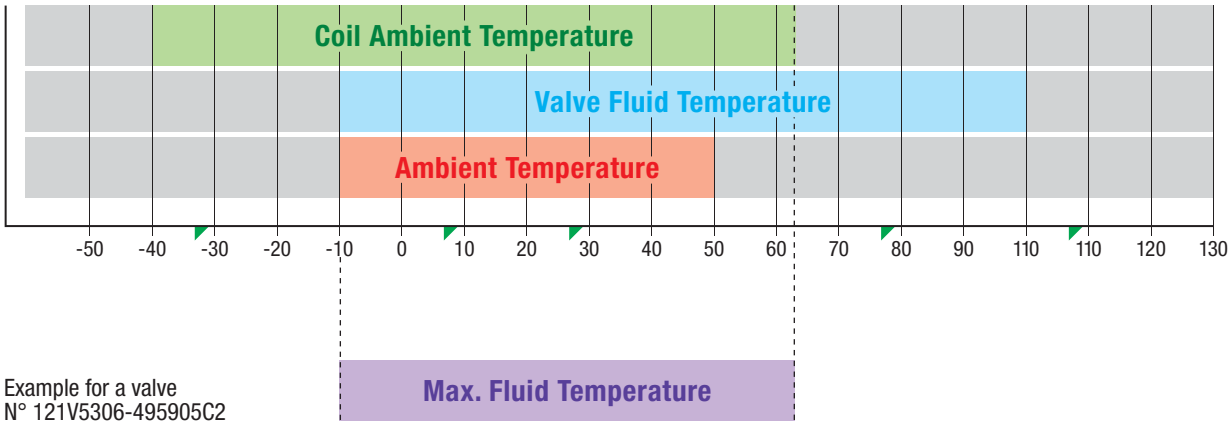
The maximum ambient / fluid temperature depends on other temperatures for the ATEX products.

The maximum fluid temperature can't be higher than the max allowed coil surface temperature.

Check then the fluid temperature limits and the coil temperature limits to know the maximum allowable fluid temperature for your application.

The lowest Maximum of these 2 temperature limits is the maximum allowed temperature.

Admissible Range



Example for a valve
N° 121V5306-495905C2

In any case, please don't hesitate to consult our technical support for further assistance, or for a better product choice/definition.

tech_support_fcde@parker.com

Links within this document:

MIS Home page: http://polteams.phconnect.com/sites/cic/FCDE/MIS/default.aspx

MIS Catalogue page: http://polteams.phconnect.com/sites/cic/FCDE/MIS/Catalogues/Forms/Catalog%20view.aspx

MIS ATEX Certificate page: http://polteams.phconnect.com/sites/cic/FCDE/MIS/Certificates/Certificates/ATEX%20Certificates

IECEx Web Site: http://www.iecex.com/countries.htm

ATEX Guidelines: http://ec.europa.eu/enterprise/sectors/mechanical/files/atex/guide/atexguidelines-may2011_en.pdf

ATEX Directives Official web site: http://ec.europa.eu/enterprise/sectors/mechanical/documents/guidance/atex/application/

IECEx Scheme: http://www.iecex.com/countries.htm

FM web site: http://www.fmglobal.com/

We hope this list of question will cover the inquiries you may have.

If you need any further support or request, please don't hesitate to contact us.

Contact information:

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Switzerland