

X Series Solenoid Valves

Low Temperature Range



ENGINEERING YOUR SUCCESS.

Introduction

Parker Fluid Control Solutions Europe has introduced an upgrade to its X Series range of solenoid valves in order to support the new challenges of the oil and gas industry.

Parker's existing X Series solenoid valve range for actuator control applications in upstream & CPR is upgraded to achieve -40°C ambient temperature and full material traceability.

The X Series unique design advantage is based on coil modularity: coils can in fact be removed from the pressure vessels. Such an option offers a key advantage when cabling, installing or replacing a valve or a coil is required. In case of failures, it minimizes cost of parts to be replaced (only pressure vessel or coils requiring service would be replaced).

For maintenance purposes, since different pressure vessels could share the same coil, entire operation sites could be maintained with few spares. Such advantage also provides improvement in reactivity and service to customers. By stocking pressure vessels or coils separately having different voltage and ATEX requirements, our dealers would be able to configure a product based on customer demand.

By achieving the low temperature and material traceability features, in addition to the ease of configuration given by modularity (coils can be dismantled for any purpose including installation, maintenance, cabling), the X Series becomes the most flexible, reliable and easy to use product solution for valve actuation in the oil and gas industry.

Applications

- Pneumatic actuator control for the oil and gas
- Fail-safe function of main ON/OFF or modulating valves

Benefits

- Extensive range of ATEX and IECEx certified coils fully complying to stated EN and IEC standards
- A completely traceable manufacturing programme and 30 years field proven technology in the oil and gas industry
- Complete range of corrosion resistant valves together with cutting edge low temperature valves technology
- Product flexibility
- Low temperature resistant in extreme and harsh conditions

Technical Data

Common features:

Poppet design, VMQ seat discs

Safe body working pressure:

10500 kPa / 105 bar

Valve mounting:

direct pipe mounting

Mouting position:

Indifferent

Body material:

316L Stainless steel

Valve trim (gasket) material:

VMQ

Seat discs material:

polyamid-imid (valves X)

Medium:

Instrument or industrial air, dry or lubricated

Filtration:

50µm or better is recommended

Manual Reset function:

These valves close when the electrical signal fails. When the electrical signal comes back, the valve remains closed, it has to be reset manually. If the coil is not energized, the valve can be opened by actuating the manual reset button (as for the manual override function), but the valve remains open **only** when the coil is energized while the reset button has been pushed.

X valves range:

ON/OFF, Mix & distrib. function,
3/2 solenoid valves,
Direct operated, Universal
U133X7759*
U133X7709

Nominal diameter: 6.0 mm
Flow Qn: 680 NL/min.
(Cv 0.63)
ΔP max.: 1200 kPa
(12 bar)
Body Connection: 1/4 NPTF

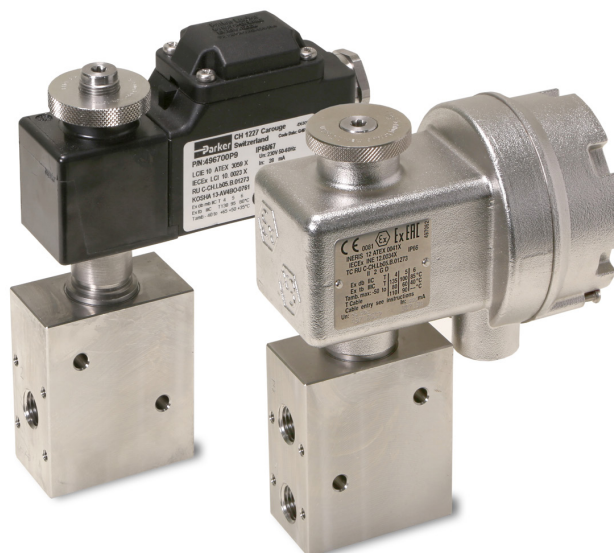
DIN V 19251 AK7 certified valves,
integrable in complete SIL 2 & 3
safety loops (IEC 61508).

* Valve with Manual Override function

ON/OFF, Mix & distrib. function,
3/2 Universal valves
with manual reset
U033X7759

Nominal diameter: 6.0mm
Flow Qn: 680 NL/
min.
(Cv 0.63)
ΔP max.: 1200 kPa
(12 bar)
Body Connection: 1/4 NPTF

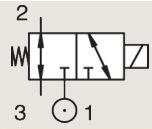
DIN V 19251 AK7 certified valves,
integrable in complete SIL 2 safety
loops (IEC 61508).



Technical Specifications

316L STAINLESS ST. PIPE MOUNTING

UNIVERSAL



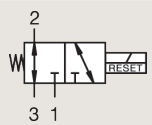
Port size	Orifice Ø	Flow factor Qn l/min	Operating Pressure Differential			Fluid Temp.		Seat Seal	Parker Valves			ATEX Zone	Protection Mode	Power		Coil Group	Dwg. No.
			Min	Max(MOPD)	DC bar	Min	Max		Valve Ref.	Housing Ref.	Coil Ref.			AC W	DC W		
NPT	mm		bar	AC bar	DC bar	°C	°C										
1/4"	6	680	0	12	12	-40	65	VMQ	U133X7759 _{1,2}	-	496895	-	-	8	8	9.0; 10.1; 10.2; 10.3	8544
	6	680	0	-	12	-40	65	VMQ	U133X7759 _{1,2}	-	496565	0-20	Ex ia IIB/IIC T4 to T6	-	0.3	9.0; 10.1; 10.2; 10.3	8539
	6	680	0	12	12	-40	65	VMQ	U133X7759 _{1,2}	-	497105	1-21	Ex db IIC T4 to T6	8	8	9.0; 10.1; 10.2; 10.3	8537
	6	680	0	12	12	-40	65	VMQ	U133X7759 _{1,2}	-	496700	1-21	Ex db mb IIC T4 to T6	6	6	9.0; 10.1; 10.2; 10.3	8545
	6	680	0	12	12	-40	65	VMQ	U133X7759 _{1,2}	-	492310	1-21	Ex mb II T4 to T5	9	8	9.0; 10.1; 10.2; 10.3	8546
	6	680	0	-	12	-40	65	VMQ	U133X7759 _{1,2}	-	492210	1-21	Ex eb mb IIC T5 to T6	-	1.8	9.0; 10.1; 10.2; 10.3	8546
	6	680	0	12	12	-40	65	VMQ	U133X7709 ₁	-	496895	-	-	8	8	9.0; 10.1; 10.2; 10.3	8551
	6	680	0	-	12	-40	65	VMQ	U133X7709 ₁	-	496565	0-20	Ex ia IIB/IIC T4 to T6	-	0.3	9.0; 10.1; 10.2; 10.3	8550
	6	680	0	12	12	-40	65	VMQ	U133X7709 ₁	-	497105	1-21	Ex db IIC T4 to T6	8	8	9.0; 10.1; 10.2; 10.3	8538
	6	680	0	12	12	-40	65	VMQ	U133X7709 ₁	-	496700	1-21	Ex db mb IIC T4 to T6	6	6	9.0; 10.1; 10.2; 10.3	8549
	6	680	0	12	12	-40	65	VMQ	U133X7709 ₁	-	492310	1-21	Ex mb II T4 to T5	9	8	9.0; 10.1; 10.2; 10.3	8548
	6	680	0	-	12	-40	65	VMQ	U133X7709 ₁	-	492210	1-21	Ex eb mb IIC T5 to T6	-	1.8	9.0; 10.1; 10.2; 10.3	8548

Note:

1. Valve delivered with an individual material traceability certificate (3.1 following EN10204)
2. With manual override

316L STAINLESS ST. PIPE MOUNTING

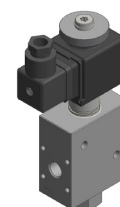
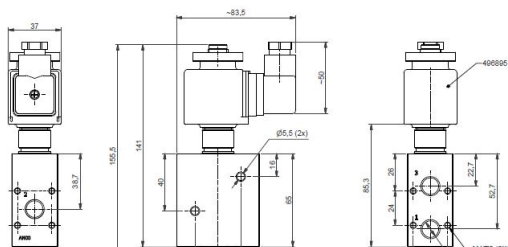
UNIVERSAL - MANUAL RESET



Port size	Orifice Ø	Flow factor Qn l/min	Operating Pressure Differential			Fluid Temp.		Seat Seal	Parker Valves			ATEX Zone	Protection Mode	Power		Coil Group	Dwg. No.
			Min	Max(MOPD)	DC bar	Min	Max		Valve Ref.	Housing Ref.	Coil Ref.			AC W	DC W		
NPT	mm		bar	AC bar	DC bar	°C	°C										
1/4"	6	680	0	12	12	-40	65	VMQ	U033X7759 ₁	-	496895	-	-	8	8	9.0; 10.1; 10.2; 10.3	8544
	6	680	0	12	12	-40	65	VMQ	U033X7759 ₁	-	497105	1-21	Ex db IIC T4 to T6	8	8	9.0; 10.1; 10.2; 10.3	8537
	6	680	0	12	12	-40	65	VMQ	U033X7759 ₁	-	496700	1-21	Ex db mb IIC T4 to T6	6	6	9.0; 10.1; 10.2; 10.3	8545
	6	680	0	12	12	-40	65	VMQ	U033X7759 ₁	-	492310	1-21	Ex mb II T4 to T5	9	8	9.0; 10.1; 10.2; 10.3	8546

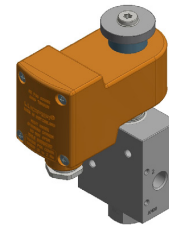
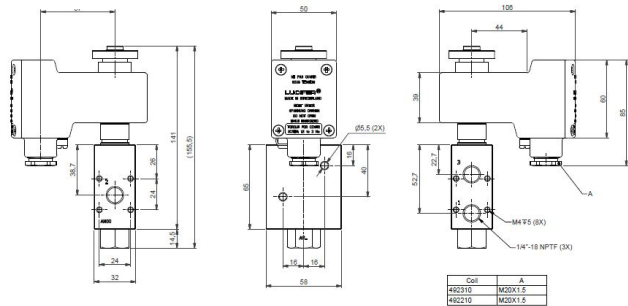
Note:

1. Valve delivered with an individual material traceability certificate (3.1 following EN10204)

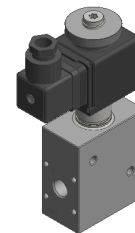
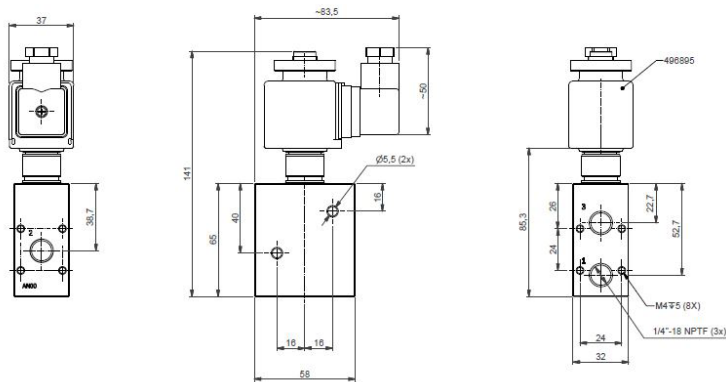


Dwg Number: 8544

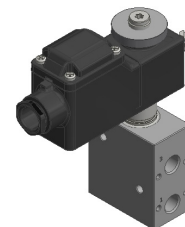
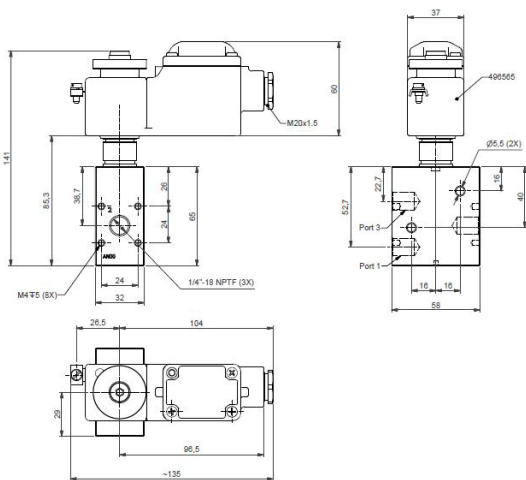
Technical Drawings



Dwg Number: 8546

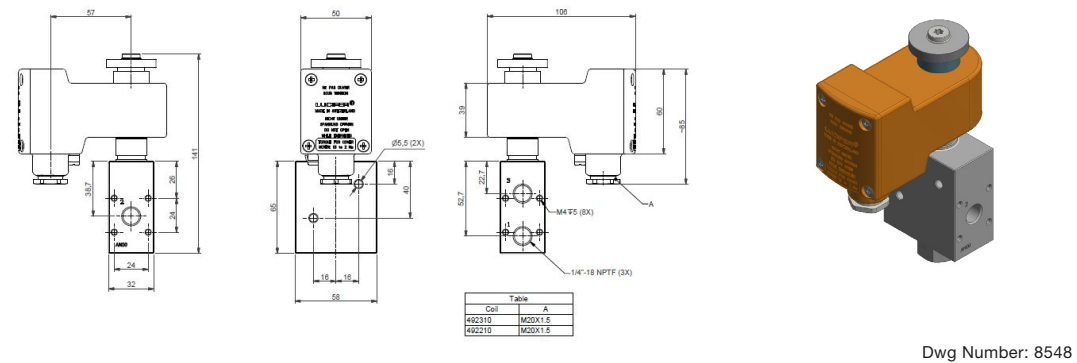
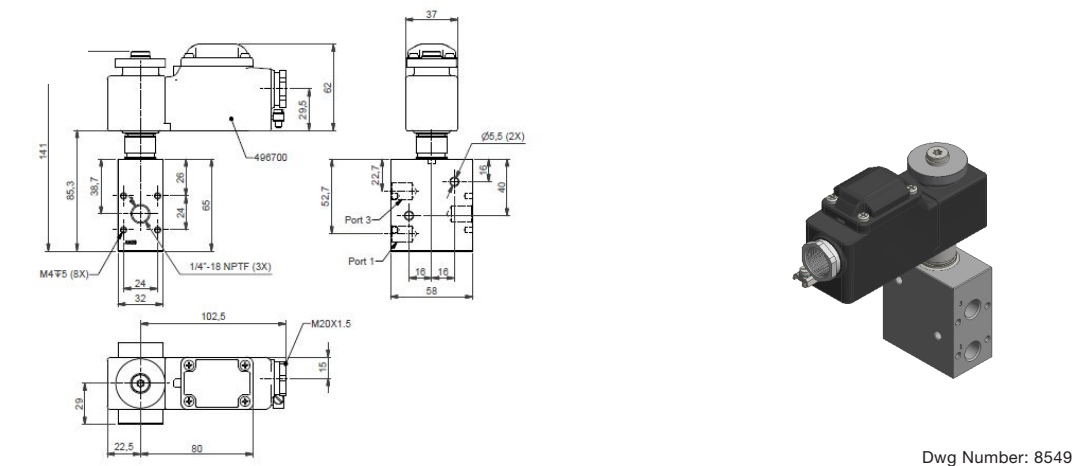
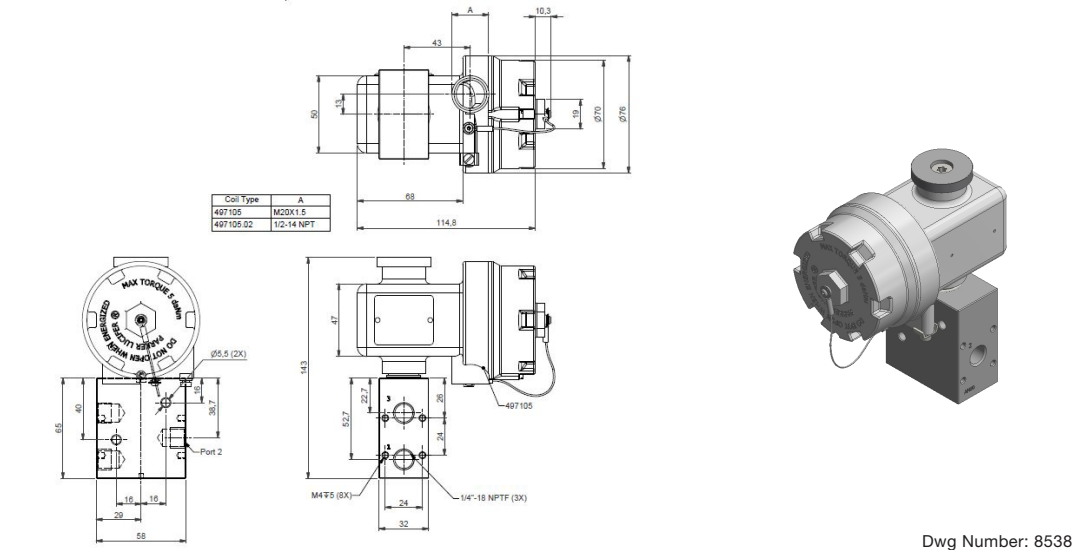


Dwg Number: 8551



Dwg Number: 8550

Technical Drawings



X Series - Coil Availability



COIL FOR OIL AND GAS 37 mm

This coil can be mounted with every Parker solenoid valves corresponding to the specified Coil Group.
See column "Coil Group" within valve pages.

This is an encapsulated assembly comprising a coil, integral magnetic iron path and snap-on plug connection.

The synthetic material encapsulation provides an effective compact housing, offering full protection against dust, oil, water, etc.

Ease of mounting in confined space - offers shock and corrosion protection - simplifies conversion of existing equipment to other requirements, etc.

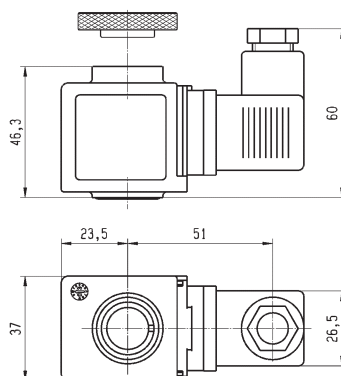
Coils conform to the IEC/CENELEC safety standards and complies with European low-voltage directive. DIN plug connector included (The AC electrical connection is delivered with a rectifier bridge).



Specification		Coil for Oil and Gas			
Reference (with DIN plug)		496895			
Coil group		10.1			
Degree of protection		IP65 according to IEC / EN 60529 standards			
Class of insulation		H 180°C			
Electrical connection		With DIN plug 492459 (AC) or 486586 (DC)			
Ambient temperature		-40°C to +50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	Pn (hot)	8 W		
		P (cold) 20°C	-		
	AC	Pn (holding)	8 W		
		Attraction cold	-		
Weight		273 g			
Voltages "Un"		VAC/Hz	Code	VDC	Code
-10% to +10% of the Un		230/50-60	P9	24	C2
		24/50-60	P0	48 110	C4 C5

To Order a Coil choose Coil Ref + Voltage Code, example: 496895 for 24 VDC = **496895C2**

More voltage possibilities can be found in the table of voltage codes at the end of the coil section.
The fixing nut (housing kit) is already included in the coil kit.



X Series - Coil Availability



FLAMEPROOF
ELECTRICAL PARTS
"db"



ZONE 1/21

497105 & 497105.02 - ELECTRICAL PARTS

These coils can be mounted with every Parker ATEX solenoid valves corresponding to the specified Coil Group.
See column "Coil Group" within valve pages.

Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex db IIC T4 / T5 / T6 is required.

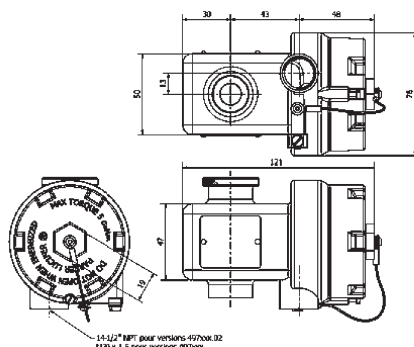
Benefits: Rotatable 360°, stainless steel with internal and external screw terminals for earth connection.

Small size for ease of mounting in confined space. Simplifies conversion of existing equipment to hazardous area requirements.



Reference	497105 (M20x1.5) 497105.02 (NPT 1/2")			
Certificate	INERIS 12ATEX0041X - IECEx INE 12.0034X			
Coil Group	10.3			
Type of protection	Gas	II 2 G - Ex db IIC T4 / T5 / T6		
	Dust	II 2 D - Ex tb III C - 130°C / 95°C / 80°C		
Degree of protection	IP66 (with relevant cable gland) according to IEC/EN 60529 Standards			
Ambient temperature	-50°C to +80°C / +60°C / +40°C The operating temperature of the valve/coil can be limited by that of the valve			
Insulation Class	H 180°C			
Electrical connection	Electric connection is done in the connection chamber on an easily accessible connector terminals. The cable entry to the connection chamber is made through a 1/2" NPT or M20x1.5 thread in which an approved Exdb IIC cable gland must be installed.			
Electrical consumption	DC	Pn (hot)	8 W	
		P (cold) 20°C	9 W	
	AC	Pn (holding)	8 W	
		Attraction cold	9 W	
Voltage Tolerance	+/- 10% of nominal voltage			
Emergising Cuty	ED 100%			
Voltages	VAC/Hz	Code	VDC	Code
	24/50-60	P0	12	C1
	110-115 / 50-60	1P	24	C2
	220-230 / 50-60	3P	48	C4
			110	C5

To Order a Coil choose Coil Ref + Voltage Code, example: 497105 for 24 VDC = 497105C2



X Series - Coil Availability

IECEX certified **Ex** EAC **CS**

FLAME PROOF ENCAPSULATED
ELECTRICAL PARTS
"db mb"



496700 & 496800 - ELECTRICAL PARTS 37 mm

These coils can be mounted with every Parker ATEX solenoid valves corresponding to the specified Coil Group.
See column "Coil Group" within valve pages.

Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex db mb IIC T4 to T6 is required.

Benefits: Rotatable 360° fibreglass-reinforced plastic housing (class H). Solenoid coil, rectifier (silicium diodes), fuses and varistor protection are completely encapsulated into the coil housing by epoxy resin for shock and corrosion protection.

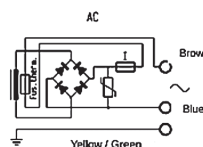
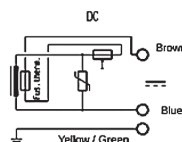
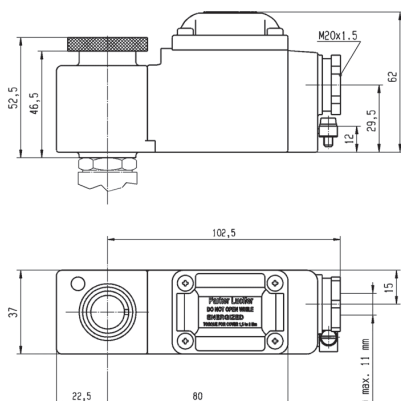
The plastic housing is delivered with 1/2" NPT or M20 x 1.5 threaded hole for wide range of cable glands. Small size for ease of mounting in confined space.

ZONE 1/21



Reference	496700 or 49670002 (NPT)				496800 or 49680002 (NPT)				
Certificate	LCIE 10 ATEX 3059 X - IECEx LCI 10.0023X								
Coil Group	10.2				10.1				
Type of protection	Gas	II 2 G - Ex db mb IIC T4 / T5 / T6				II 2 G - Ex db mb IIC T4			
	Dust	II 2 D - Ex tb IIIC - T130 / 95 / 80°C				II 2 D - Ex tb IIIC - T130°C			
Degree of protection	IP67 according to IEC/EN 60529 Standards								
Ambiant temperature	-40°C to +35°C / +50°C / +65°C				-40°C to +65°C				
		The application is limited also by the temperature range of the valve.							
Class of insulation	H (180°)								
Electrical connection	Electric connection is done in the connection box passes through a 1/2 NPT or M20x1.5 thread in which a certified Ex dBIIC cable gland must be installed								
Elect. Power	DC	Pn (hot)	-	6 W	-	-	8 W	-	
		P (cold) 20°C	-	7.5 W	-	-	10.5 W	-	
	AC	Pn (holding)	6 W	-	-	8 W	-	-	
		Attraction cold	7.5 W	-	-	10.5 W	-	-	
Voltagess "Un"	VAC/Hz	Code	VDC	Code	VAC/Hz	Code	VDC	Code	
-10% to +10% of the Un	230/50-60	P9	24	C2	230/50-60	P9	24	C2	
	110/50-60	P2	48	C4	110/50-60	P2	48	C4	
	24/50-60	P0	110	C5	24/50-60	P0	110	C5	
	48/50-60	S4	-	-	48/50-60	S4	-	-	

To Order a Coil choose Coil Ref + Voltage Code, example: 496700 for 24 VDC = 496700C2



Product Certifications

Each valve carries its own identification number. It is sent out from the factory with a Quality Assurance Certificate ensuring the following:

- Materials traceability of all identified parts is assured back to source

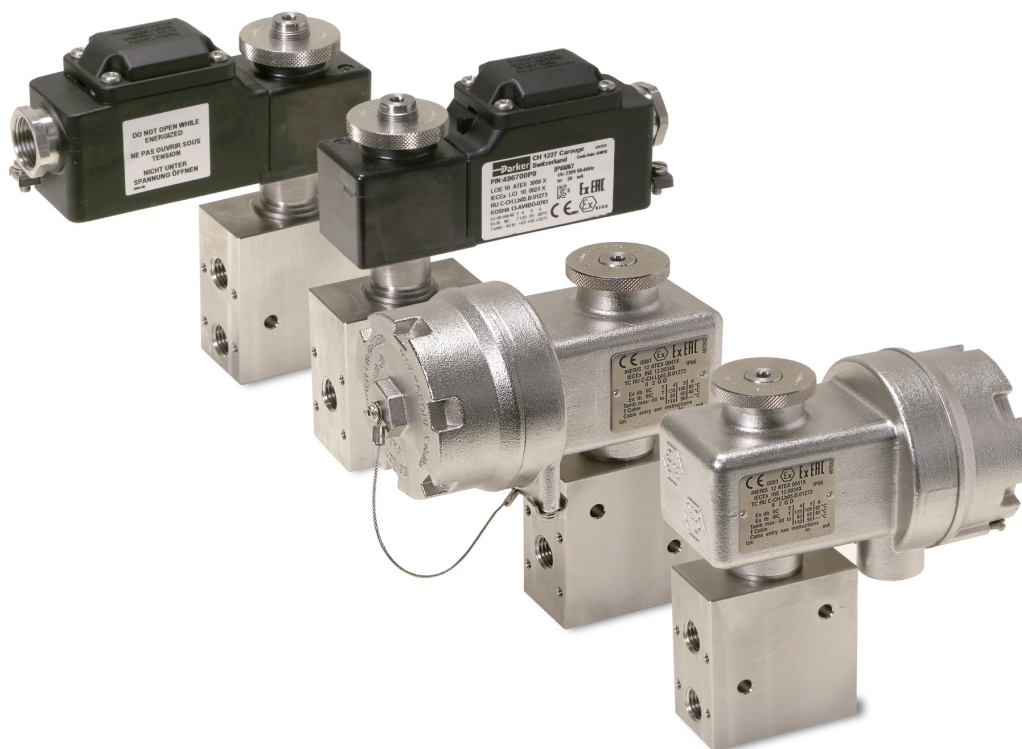
Identified stainless steel parts have either a EN10204.3.1B declaration or a supplier's attest

- **Final Test declaration**

Confirms correct valve function at minimum and maximum rated pressures, with specified mains supply rating and checks that the maximal external & internal leakage rates values respect the valves specifications

- **ATEX and IECEx certificates**

Each product is delivered with its ATEX compliance certificate.



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Your local authorized Parker distributor



EMEA Product Information Centre

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US Product Information Centre

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