X Series Solenoid Valves

Low Temperature Range

ENGINEERING YOUR SUCCESS.

Introduction

Parker Fluid Control Solutions Europe has introduced an upgrade to it 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 reactiveness 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 dismounted 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

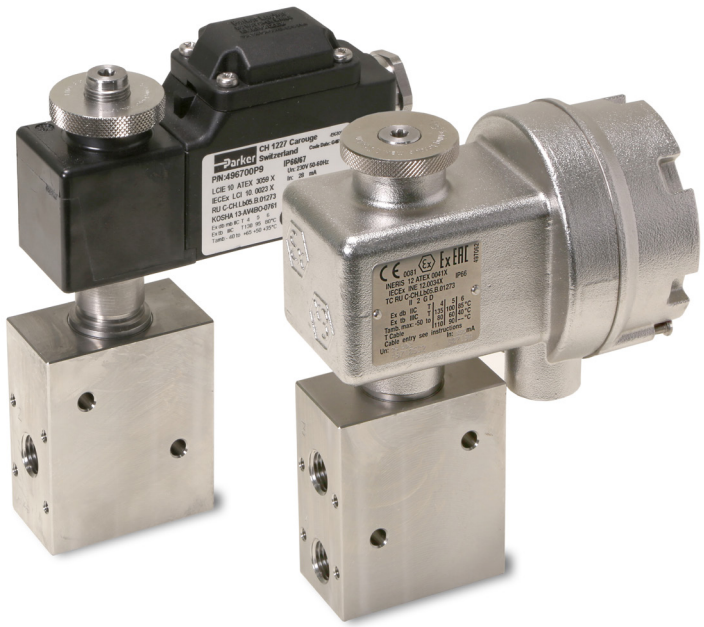
DIN V 19251 AK7 certified valves, integrable in complete SIL 2 & 3 safety loops (IEC 61508).

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

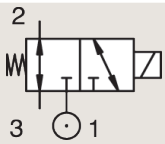
DIN V 19251 AK7 certified valves, integrable in complete SIL 2 safety loops (IEC 61508).

* Valve with Manual Override function



Technical Specifications

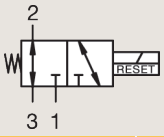
316L STAINLESS ST.
PIPE MOUNTING
UNIVERSAL



Port size	Orifice Ø	Flow factor	Operating Pressure Differential			Fluid Temp.		Seat Seal	Parker Valves			ATEX Zone	Protection Mode	Power		Coil Group	Dwg. No.
			Min	Max(MOPD)		Min	Max		Valve Ref.	Housing Ref.	Coil Ref.			AC	DC		
NPT	mm	Qn l/min	bar	AC bar	DC bar	°C	°C							W	W		
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

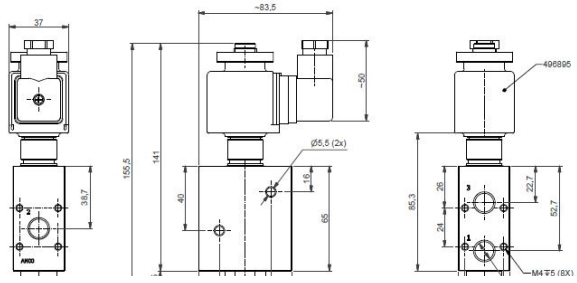
Note:
1. Valve delivered with an individual material traceability certificate (3.1 following EN10204)
2. With manual override

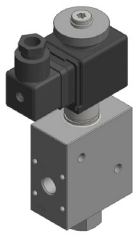
316L STAINLESS ST.
PIPE MOUNTING
UNIVERSAL - MANUAL RESET



Port size	Orifice Ø	Flow factor	Operating Pressure Differential			Fluid Temp.		Seat Seal	Parker Valves			ATEX Zone	Protection Mode	Power		Coil Group	Dwg. No.
			Min	Max(MOPD)		Min	Max		Valve Ref.	Housing Ref.	Coil Ref.			AC	DC		
NPT	mm	Qn l/min	bar	AC bar	DC bar	°C	°C							W	W		
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

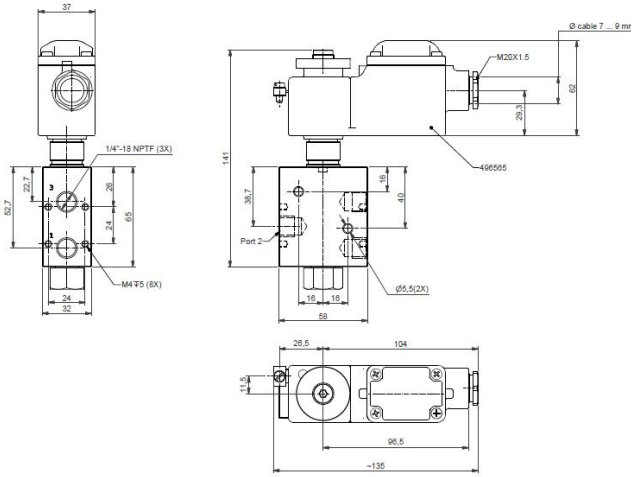
Note:
1. Valve delivered with an individual material traceability certificate (3.1 following EN10204)

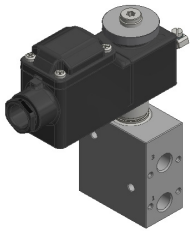




Dwg Number: 8544

Technical Drawings





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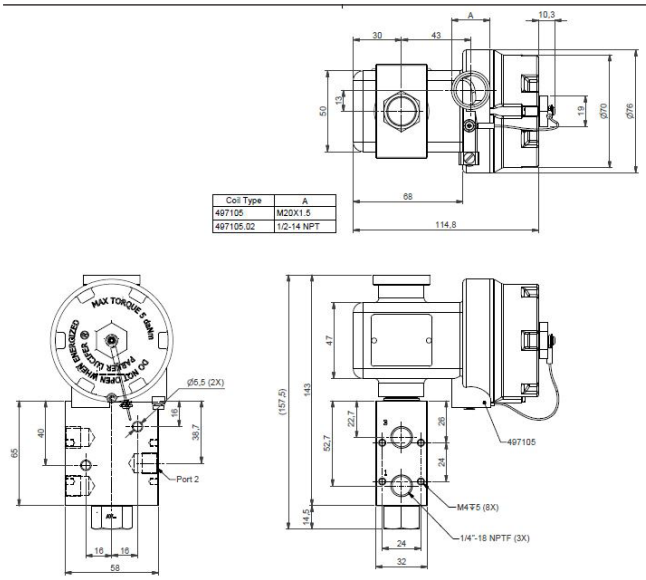

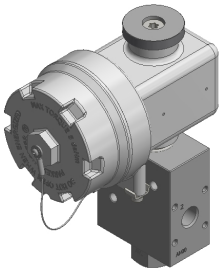

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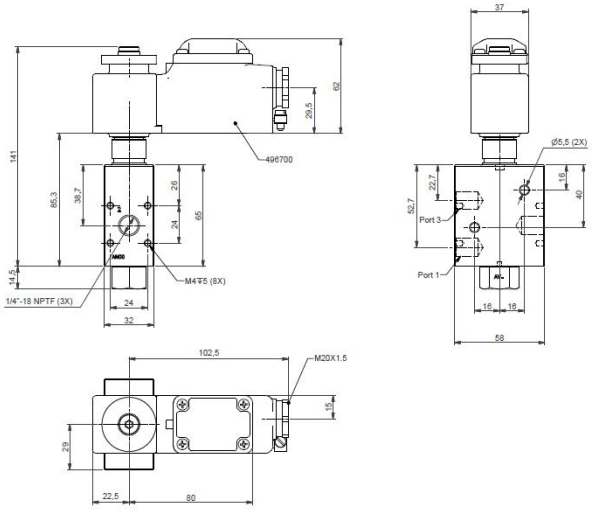

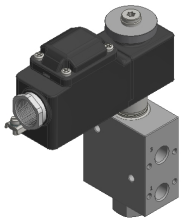

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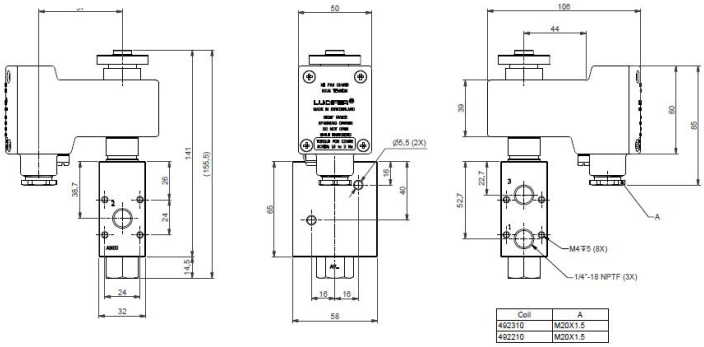

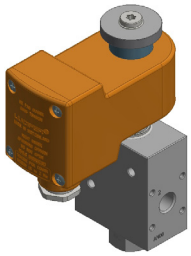

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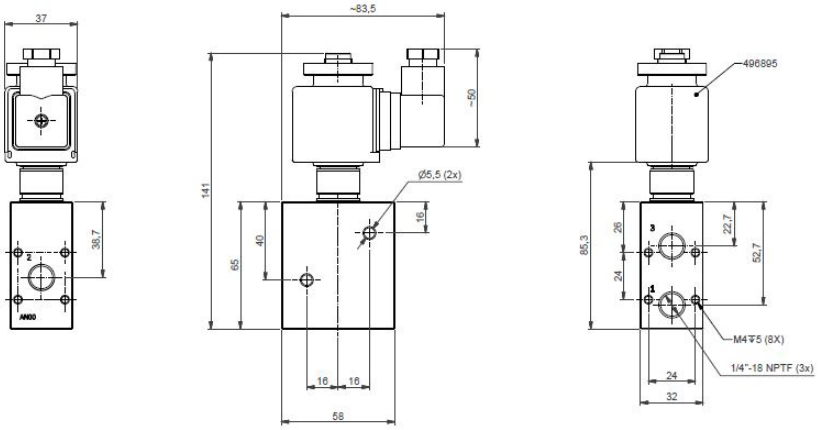

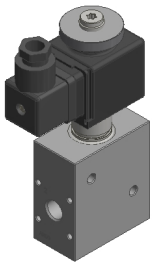

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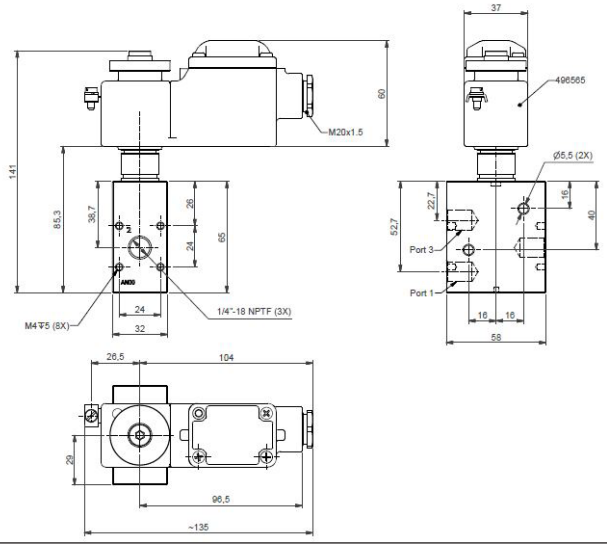
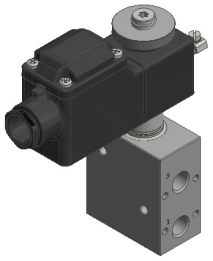
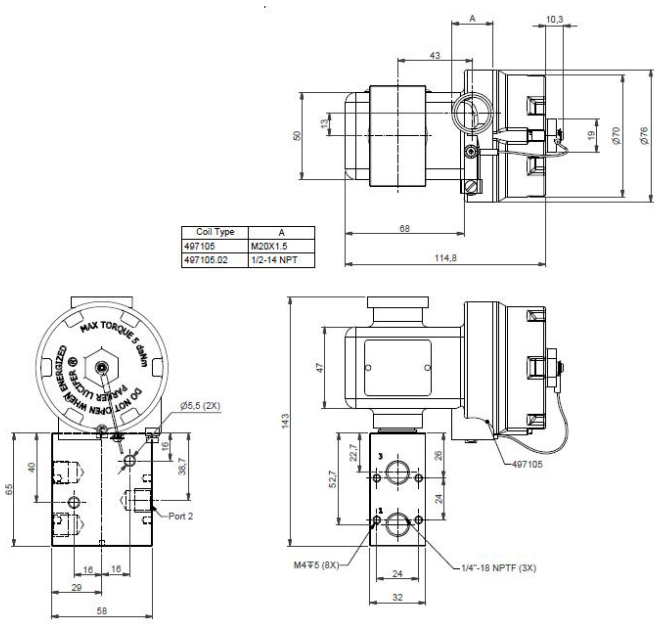
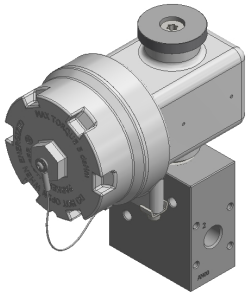




Dwg Number: 8550

Technical Drawings





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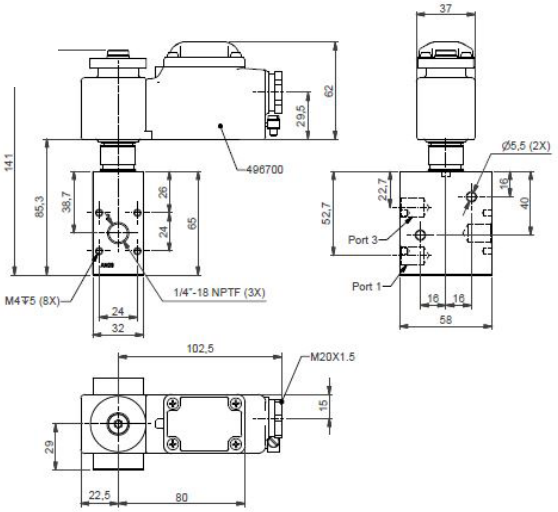

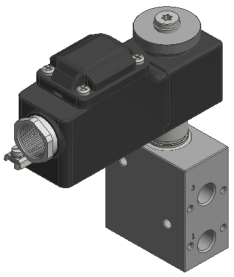

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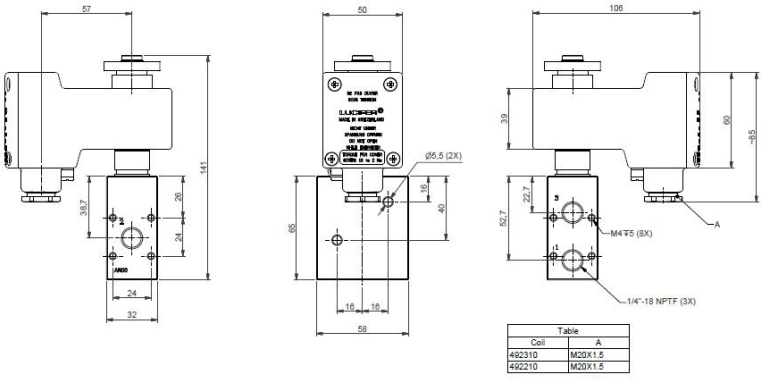
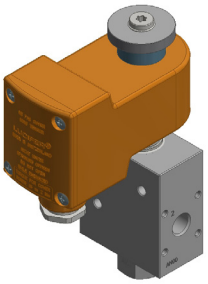




Dwg Number: 8548

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.

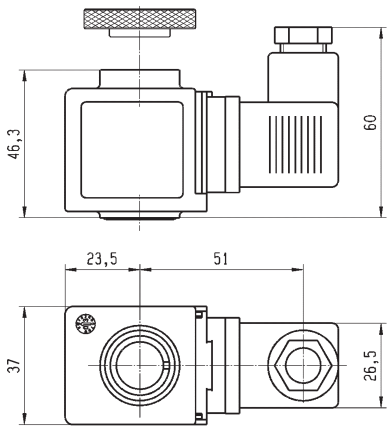
This is an encapsulated assembly comprising a coil, integral magnetic iron path and snap-on plug connection.
The synthetic material encapsulation provides an effective compact housing, offering full protection against dust, oil, water, etc.

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 24/50-60	P9 P0	24 48 110	C2 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 inclued 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.

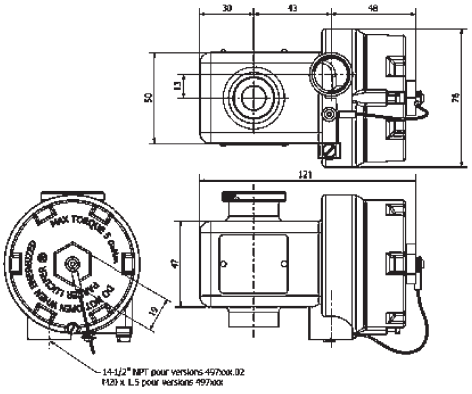
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex db IIC T4 / T5 / T6 is required.

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 equipement 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 IIIC - 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**
			24/50-60 110-115 / 50-60 220-230 / 50-60	P0 1P 3P	12 24 48 110	C1 C2 C4 C5

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



X Series - Coil Availability

ZONE 1/21

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.

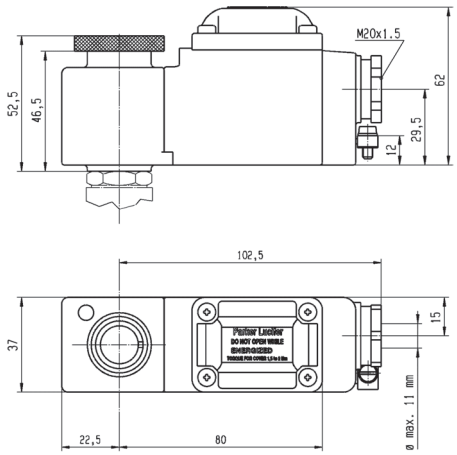
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex db mb IIC T4 to T6 is required.

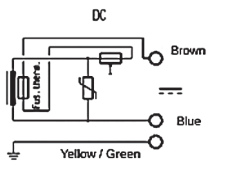
Benefits: Rotatable 360° fibreglass-reinforced plastic housing (class H). Solenoid coil, rectifier (silicium diodes), fuses and varistor protection are completely encapsulated into the coil housing by epoxy resin for shock and corrosion protection.

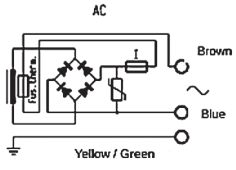
The plastic housing is delivered with 1/2" NPT or M20 x 1.5 threaded hole for wide range of cable glands. Small size for ease of mounting in confined space.

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		-	
Voltages "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

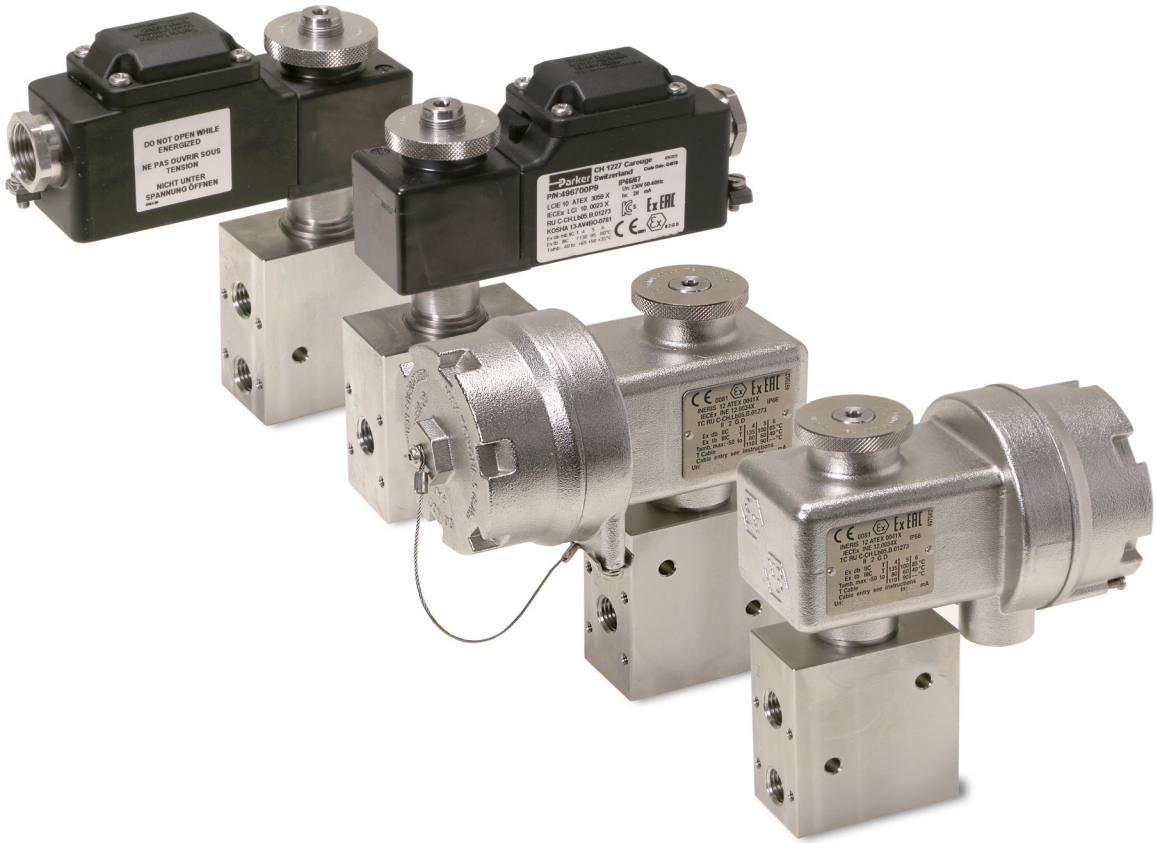
Identified stainless steel parts have either a EN10204.3.1B declaration or a supplier's attest

- **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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