



7321B – 7322B Series

2-way pilot operated solenoid valves for water, hot water and steam

Catalogue 8659/GB



NEW

**Also available with
ATEX G & D
Explosion-proof
electrical parts**



Technical specifications

General description	The 7321B, 7322B water valves series are diaphragm pilot operated valves and require a minimum differential pressure to operate
Applications	They are used for general applications with high flow rates and media such as water, hot water and steam , provided they are compatible with the component materials. Typical applications can be found in: Washing machine, car wash installations, cooling of machine tools, Hydrocleaners, autoclaves, irrigation systems etc
Temperatures	Admissible ambient temperatures: -10 to +50 °C Working fluid temperature: see table
Material specifications	Valve body: CW617N UNI EN 12165:98 Forged Brass Enclosing tube: AISI 304 stainless steel Plunger: AISI 430F St. Steel Spring: AISI 302 St. Steel Seals: NBR (Buna N) – EPDM Shading ring: Copper
RoHs compliant	
Installation	The valves can be mounted in any position. It is however recommended to install them with the coil in vertical position above the body.
Electrical parts	Detailed description: see page 8

Coil	Protection class / Temperature class	Power		Coil Ref. No.	Electrical Connection	Housing Ref.	Ambient temp.		Cross Reference	Fig.
		(hot)					deg C			
		DC	AC				Min	Max		
32 mm (Std)	Class F	9 W	8W	481865	For DIN plug	2995 *	-40	50	ZB09 (50Hz AC) ZB12 (DC)	1
	Class F	9 W	8 W	482725	With DIN plug	2995 *	-40	50	ZB09+PG9 (50Hz AC) ZB12+PG9	1
	Class F, 50/60 Hz	-	9 W	483510	For DIN plug	2995 *	-40	50	ZB09	1
	Class F, 50/60 Hz	-	9 W	482635	With DIN plug	2995 *	-40	50	ZB09+PG9	1
	Class F, 60Hz UR	16W	13W	491514	For DIN plug	2995 *	-40		ZB09 UL	1
	Class H	9 W	8 W	492453	For DIN plug	2995 *	-40	80	-	1
	Class H	9 W	8 W	492726	With DIN plug	2995 *	-40	80	-	1
	Class H	14 W	14 W	492425	For DIN plug	2995 *	-40	80	ZH14 ZH16	1
	Class H	14 W	14 W	492727	With DIN plug	2995 *	-40	80	ZH14+PG9 ZH16+PG9	1
	Ex EEx m II T4	9 W	8 W	492670	With 3000mm cable	-	-40	40	-	5
	Ex II 3 G - EEx nAC IIC T3/T4	9 W	8 W	495870	With DIN plug	-	-40	65/50	-	7
	Ex II 3 G - EEx nAC IIC T3/T4	7 W	6 W	495875	With DIN plug	-	-40	65/50	-	7
	Ex II 3 G - EEx nAC IIC T3	-	9 W	496110	With DIN plug	-	-40	50	-	7
	Ex II 3 G - EEx nAC IIC T3	14 W	14 W	495880	With DIN plug	-	-40	50	-	7
37mm Ex	II 2 G-EEx dm IIC T4	8 W	8 W	495905	For cable connection	-	-40	65	-	6
50 mm (Std)	Class F	8 W	8 W	481000	Screw-terminals	4270	-40	50	-	3
	Class F, IP 67, M20x1.5	8 W	8 W	481000	Screw-terminals	4538	-40	50	-	4
	Class H	8 W	8 W	485100	Screw-terminals	4270	-40	80	-	3
	Ex II 3 G - EEx nAC IIC T3	14 W	14 W	496155	Screw-terminals	-	-40	65	-	8

* The **fixing nut** and **nameplate** are integrated in the **valve** itself, so that the standard housing type “2995” **MUST NOT** be specified in valve numbering: see next page

Numbering system

A complete valve is usually composed of 3 elements: the **valve** itself, the **housing** and the **coil** which need to be ordered separately. For “integrated coil/housings”, the “housing reference” corresponds to the fixing nut and nameplate.

• Valve Numbering

The classic “7000” numbering system will NO LONGER be in use for the Water Valve family and will be replaced by the following (please see the complete cross reference at page 2).

New Numbering								Description	Old Numbering
7	3	2	1	B	A	N	x	x	7 3 2 1 B B G 4 T N 0 0
7									7000 operator
3									Pilot operated valve
2									Direct Lift operated valve
1									Direct operated valve
	2								2/2 way
		2							Normally Open
		1							Normally Close
				A					Family Name
				B					
				C					
				...					
				I					3/8"
				A					1/2"
				C					3/4"
				D					1"
				E					1 1/4"
				F					1 1/2"
				G					2"
				L					2 1/2"
				M					3"
					N				NBR
					V				FKM
					H				EPDM
						0	0		Standard version
						0	1		Manual Override (MO)
						0	2		Speed Control + MO
						0	6		Speed Control
						9	0		NPT
						9	1		NPT - Manual Override (MO)
						9	2		NPT - Speed Control + MO
					S	x	x	x	Special versions

• Housing and Coil numbering

The standard Parker Lucifer numbering will be used for housings and coils.

As the housing model “2995” (fixing nut and nameplate) is included in the valve body it is not necessary to order it separately. In case of complete valve order (when agreed with the factory), this housing must not be added to numbering.

Correct numbering:
7321BIN

Equivalent to: (no longer in use)
7321BBG3TN00 – N1

REMARK: each reference, that is **valve**, **housing** (when requested) and **coil**, **has to be ordered separately**. To order the assembled valve please contact the Gessate factory for agreement on Minimum Order quantity and do not indicate the housing reference

Numbering examples

7321BAN00	valve body, including the housing “2995”; box quantity: 10pcs
483510S6	coil, box quantity: 10pcs
7321BCN 481865C2	complete valve body, box quantity: 10pcs; (*)
7321BDN 4270 4810003D	complete valve body, box quantity: 10pcs; (*)

Note (*): Minimum Order Quantity (MOQ) and a Minimum Shipment Quantity (MSQ) requested for complete valve. Please contact the Gessate factory.

Specification

Port Size G	Orifice mm	Kv m3/h	Qmax m3/h	Maximum Admissible differential pressure (bar)			Max. admissible fluid temperature °C	Seals material	Order N° NEW	Cross Reference (Old numberings)		Dimension ref. N°	Note	
				min	DC	AC								
2-way valves, pilot operated, normally closed, for water														
3/8 "	13	3.00	3.00	0.10	20	20	90	NBR (*)	7321BIN00	PM133IN	7321BBG3TN00	1	-	
1/2"	13	3.00	3.00	0.10	20	20	90	NBR (*)	7321BAN00	PM133AN	7321BBG4TN00	1	-	
3/4"	20	8.40	8.40	0.10	20	20	90	NBR (*)	7321BCN00	PM133CN	7321BBG53N00	1	-	
1 "	25	9.6	9.6	0.10	20	20	90	NBR (*)	7321BDN00	PM133DN	7321BBG64N00	1	-	
1 1/4 "	35	25.20	25.20	0.10	10	10	90	NBR	7321BEN00	PM133.2EN	7321BBG78N00	1	-	
1 1/2"	40	30.00	30.00	0.10	10	10	90	NBR	7321BFN00	PM133.2FN	7321BBG88N00	1	-	
2 "	50	37.20	37.20	0.10	10	10	90	NBR	7321BGN00	PM133GN	7321BBG99N00	1	-	
2-way valves, pilot operated, normally closed for water, with manual override														
3/8"	13	3.00	3.00	0.10	20	20	90	NBR (*)	7321BIN01	PM133IN CM	7321BBG3TN00	1	-	
1/2"	13	3.00	3.00	0.10	20	20	90	NBR (*)	7321BAN01	PM133AN CM	7321BBG4TN00	1	-	
3/4"	20	8.40	8.40	0.10	10	10	90	NBR (*)	7321BCN01	PM133CN CM	7321BBG53NM0	1	2	
1 "	25	9.6	9.6	0.10	10	10	90	NBR (*)	7321BDN01	PM133DN CM	7321BBG64NM0	1	2	
1 1/4 "	35	25.20	25.20	0.10	5	5	90	NBR	7321BEN01	PM133.2EN CM	7321BBG78NM0	1	2	
1 1/2"	40	30.00	30.00	0.10	5	5	90	NBR	7321BFN01	PM133.2FN CM	7321BBG88NM0	1	2	
2 "	50	37.20	37.20	0.10	5	5	90	NBR	7321BGN01	PM133GN CM	7321BBG99NM0	1	2	
2 1/2"	65	63.00	63.00	0.20	10	10	90	NBR	7321BLN02	PM133LN CMV	7321BBGCBNM1	1	1	
3"	75	83.00	83.00	0.20	10	10	90	NBR	7321BMN02	PM133MN CMV	7321BBGDCNM1	1	1	
2-way valves, pilot operated, normally closed for hot water and steam														
3/8 "	13	3.00	3.00	0.10	10	10	140	EPDM	7321BIH00	PM133IH	7321BBG3TE00	1	3	
1/2"	13	3.00	3.00	0.10	10	10	140	EPDM	7321BAH00	PM133AH	7321BBG4TE00	1	3	
3/4"	20	8.40	8.40	0.10	10	10	140	EPDM	7321BCH00	PM133CH	7321BBG53E00	1	3	
1"	25	9.6	9.6	0.10	10	10	140	EPDM	7321BDH00	PM133DH	7321BBG64E00	1	3	
1 1/4 "	35	25.20	25.20	0.10	10	10	140	EPDM	7321BEH00	PM133.2EH	7321BBG78E00	1	3	
1 1/2"	40	30.00	30.00	0.10	10	10	140	EPDM	7321BFH00	PM133.2FH	7321BBG88E00	1	3	
2 "	50	37.20	37.20	0.10	10	10	140	EPDM	7321BGH00	PM133GH	7321BBG99E00	1	3	
2-way valves, pilot operated, normally open, for water														
3/8 "	13	3.00	3.00	0.10	20	20	90	NBR (*)	7322BIN00	PM143IN	7322BBG3TN00	2	-	
1/2"	13	3.00	3.00	0.10	20	20	90	NBR (*)	7322BAN00	PM143AN	7322BBG4TN00	2	-	
3/4"	20	8.40	8.40	0.10	20	20	90	NBR (*)	7322BCN00	PM143CN	7322BBG53N00	2	-	
1 "	25	9.6	9.6	0.10	20	20	90	NBR (*)	7322BDN00	PM143DN	7322BBG64N00	2	-	
1 1/4 "	35	25.20	25.20	0.10	10	10	90	NBR	7322BEN00	PM143.2EN	7322BBG78N00	2	-	
1 1/2"	40	30.00	30.00	0.10	10	10	90	NBR	7322BFN00	PM143.2FN	7322BBG88N00	2	-	
2 "	50	37.20	37.20	0.10	10	10	90	NBR	7322BGN00	PM143GN	7322BBG99N00	2	-	
2 1/2"	65	63.00	63.00	0.20	10	10	90	NBR	7322BLN06	PM143LN CMV	7322BBGCBNM1	2	-	
3"	75	83.00	83.00	0.20	10	10	90	NBR	7322BMN06	PM143MN CMV	7322BBGDCNM1	2	-	
Note: (*) available also with FKM diaphragm. Order N° example: 7321BAV														

Note 1.- Manual override and closure speed control standard.
 Note 2 - Available also with closure speed control (Option "02").
 Note3 – Maximum pressure for steam 4 bar (140 °C).

Manual override**..00 changes to ..01 in the reference No.**

The manual control is used to operate the valve without connecting the coil. The control consists in a slotted-head screw for a screwdriver and has two possible positions:

Closed: The letter "C" is in the upper position of the screw head (fig.1,2)

Open: The letter "A" is in the upper position of the screw head (fig.1,2)

In the closed position, the valve operates normally when coil is energised / de-energised.

Manual override plus closure speed control**..00 changes to ..02 in the reference No.**

The closure time of certain types can be changed by means of the adjusting screw (fig. 3 and 4). The latter, by acting as a throttle on the inlet equalisation (pilot) hole of the valve, slows down the closure speed of the valve, thus reducing the water hammer effect. The regulation range is as follows: **Fig. 3 - Screw fully open:** max. closure speed. **Fig. 4 - Screw fully closed:** valve always open.

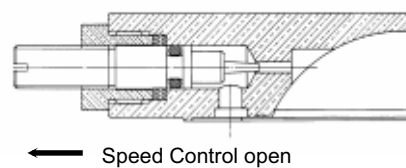
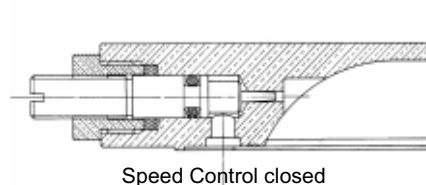
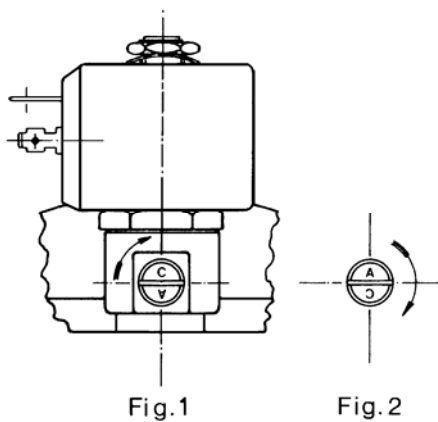
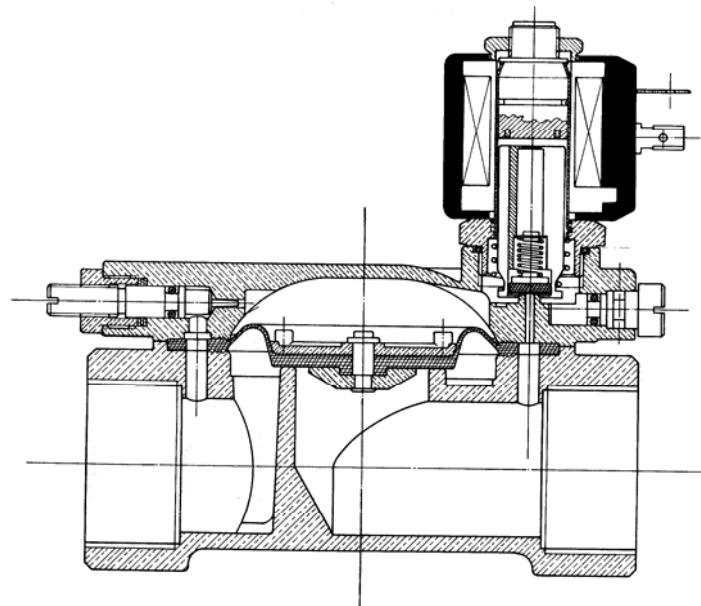


Fig. 3

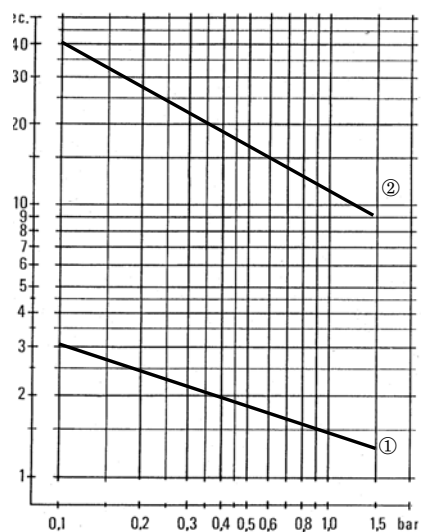
Fig. 4

Section drawing

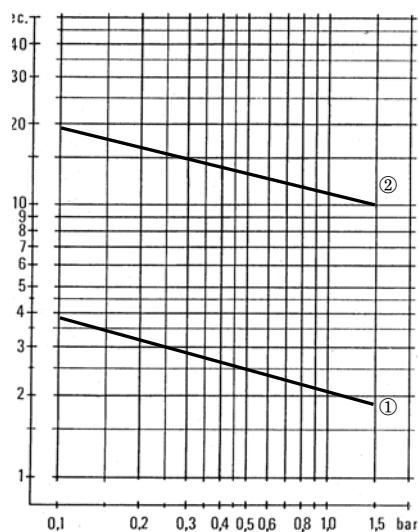
Diagrams of the closing times

Curve 1 – Closing time with adjusting screw completely open

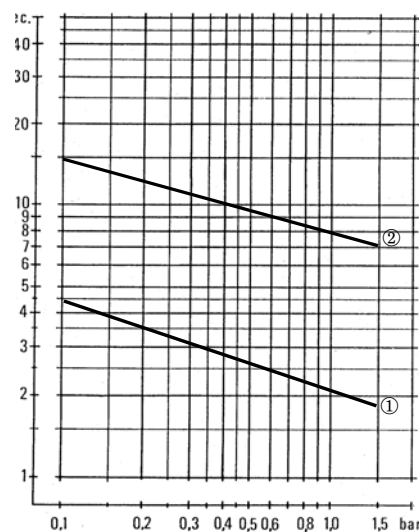
Curve 2 – Closing time with adjusting screw open by 1/2 turn



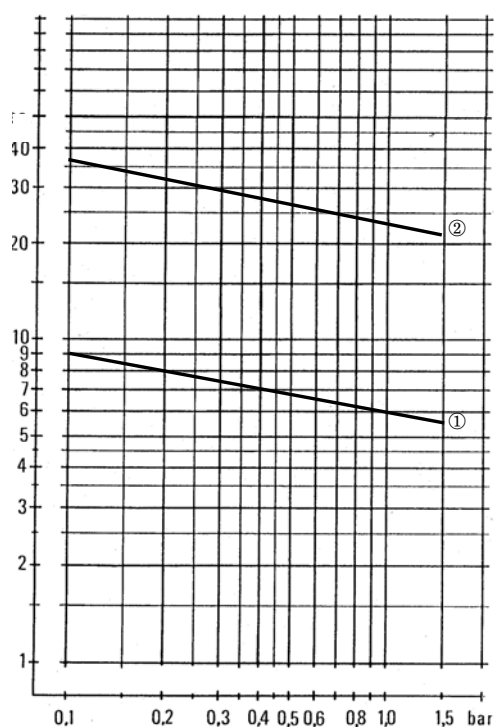
3/4" – 1"



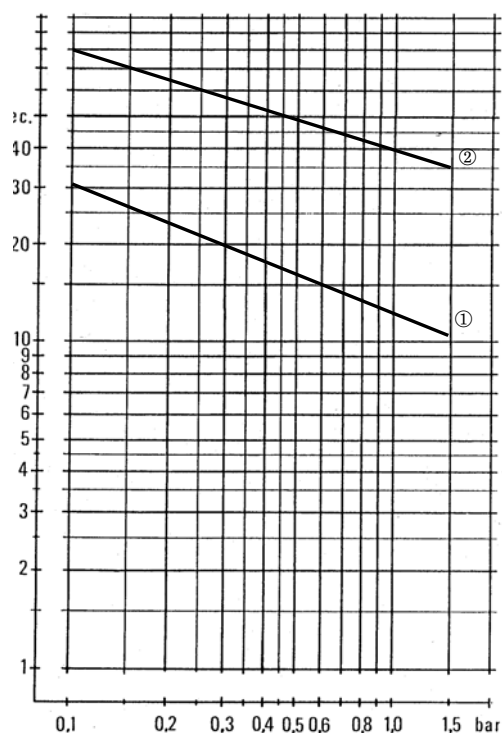
1 1/4" - 1 1/2"



2"



2 1/2"

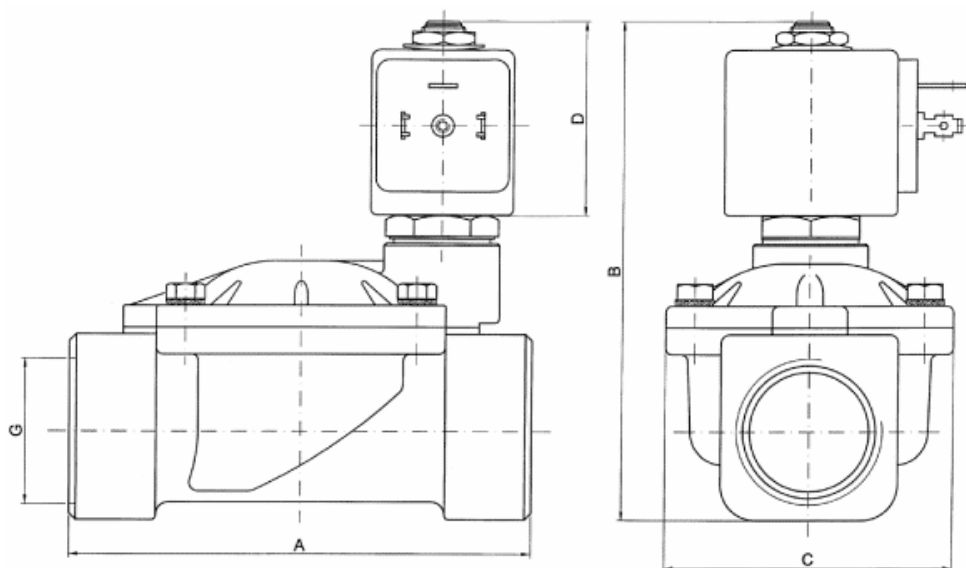


3"

Dimension drawings

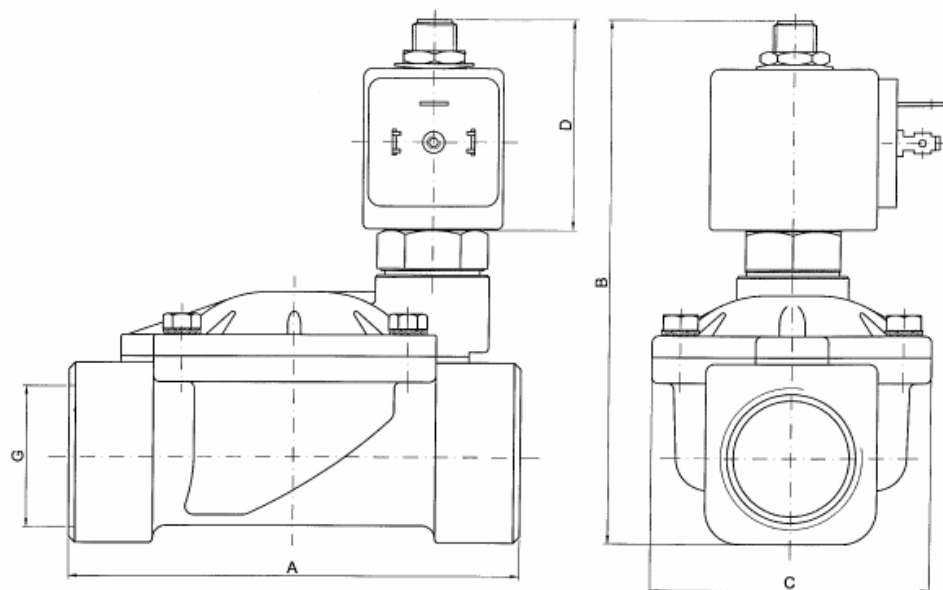
Size				
G	A	B	C	D
3/8	69	99.5	40	44
1/2	72	101.5	40	44
3/4	100	107	65	44
1	104	112.5	65	44
1 1/4	145	134	102	44
1 1/2	145	134	102	44
2	173	148	118	44
2 1/2	245	195	184	44
3	250	195	184	44

Dim. drawing No. 1



Size				
G	A	B	C	D
3/8	69	110	40	44
1/2	72	112	40	44
3/4	100	117.5	65	44
1	104	123	65	44
1 1/4	145	144.5	102	44
1 1/2	145	144.5	102	44
2	173	158.5	118	44
2 1/2	245	205.5	184	44
3	250	205.5	184	44

Dim. drawing No. 2



ELECTRICAL PARTS DESCRIPTION

1. Standard coil 481865

(DC 9W, AC 8W) encapsulated in synthetic material. Connection for 2 P + E DIN 43650 A plug. Degree of protection IP 65.

2. High Temperature coil 492425 (14W DC, AC) or 492453 (9W DC, AC) encapsulated in synthetic material. Connection for 2 P + E DIN 43650 A plug. Degree of protection IP 65.

3. Metallic coil housing 4270 with standard coil 481000 (8W), high temperature 485100 (8W) coils, encapsulated in synthetic material with screw terminals. Ground terminal on housing subplate. Degree of protection IP 10 or IP 44 when equipped with M20x1.5 cable gland.

4. Waterproof coil housing 4538 with standard coil 481000 (8W) encapsulated in synthetic material. Housing internally and externally fitted with an earth screw connection. Cable connection with outer diameter 4-11 mm through rubber cable gland M20x1.5. Degree of protection IP 67.

5. Explosion-proof EEx m II T4 (IP 65) coil/housing assembly 492670. Coil and magnetic circuit encapsulated in synthetic material. The complete housing is supplied with an encapsulated connection cable (3 x 0.75 mm² section), cable length is 3000 mm with cable gland Pg 11. Power consumption: 8W AC, 9W DC

6. Explosion-proof II 2 G-EEx dm IIC T4 495905 coil/housing assembly encapsulated in synthetic material (class H) Degree of protection IP 67. Cable connection through cable gland M20x1.5 (DIN 46320). Power consumption AC 8 W, DC 8 W.

7. Explosion-proof II 3 G-EEx nAC IIC T3/T4 495870 DC 9W and AC 8W, or Low Power 495875 DC 7W and AC 6W or double-frequency 496110 AC 9W or High Power 495880 DC and AC 14W

coil/housing assembly encapsulated in synthetic material (class F, H for High Power). Degree of protection IP 65 with DIN plug.

8. Explosion-proof II 3 G-EEx nAC IIC T3 496155 DC & AC 14W High Power . Housing internally and externally fitted with an earth screw connection. Cable connection through rubber cable gland M20x1.5. Degree of protection IP 67.

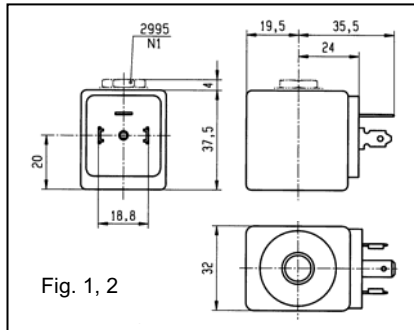


Fig. 1, 2

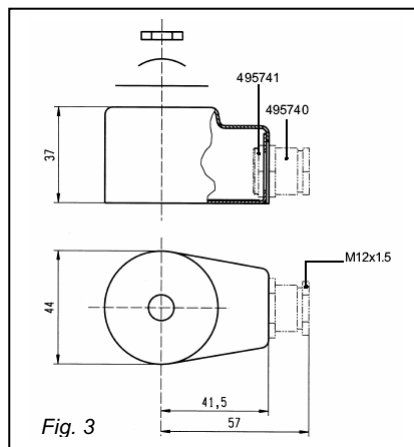


Fig. 3

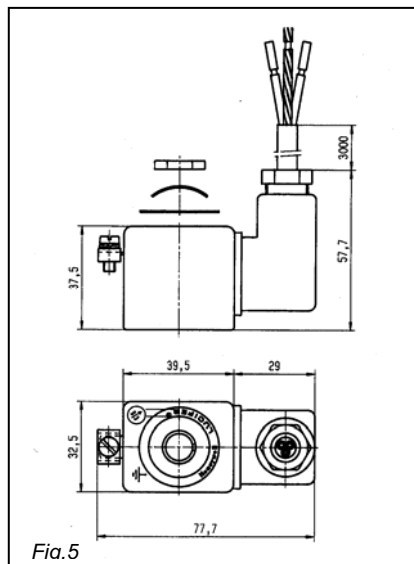


Fig. 5

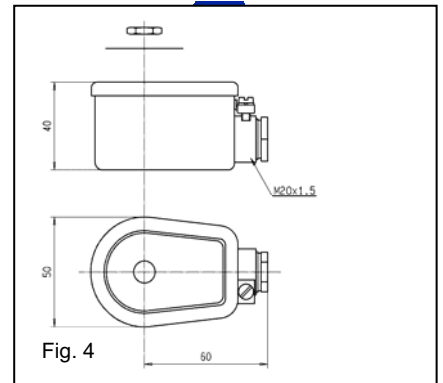


Fig. 4

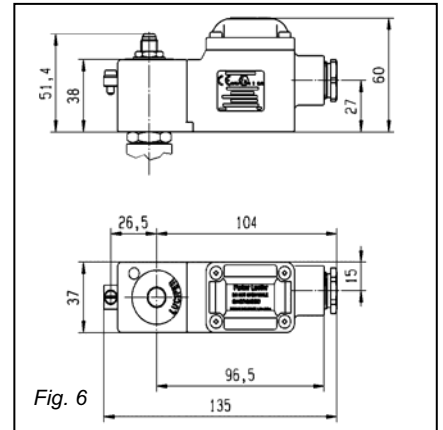


Fig. 6

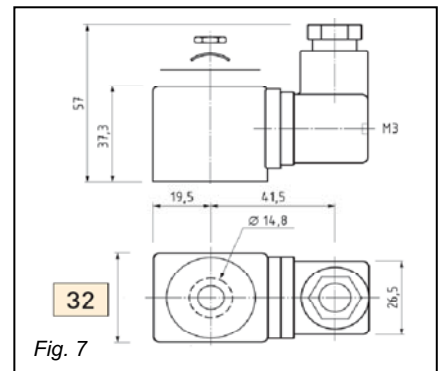


Fig. 7

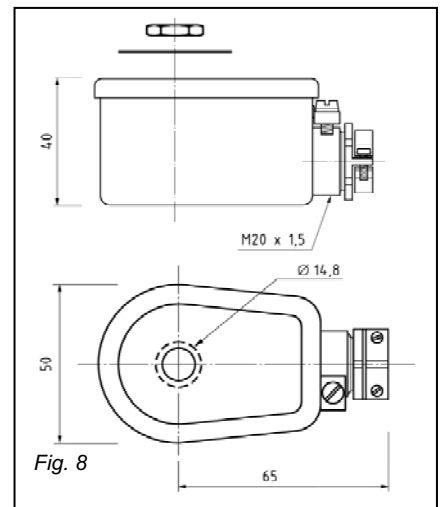


Fig. 8

Voltage code		A1	A2	A4	A5	E5	0A	A7	3D	F4	A9	B2	K8	6J	B7	J3	B8	S2	4K	P0	S4	P2	S5	0P	R5	P9	S6	S2	Q3	Q1	5P	C1	C2	C4	C5	C7			
Coils / Electrical parts		12/50	24/50	48/50	110/50	115/50	110/50-115/50	220/50	220/50-230/50	230/50	380/50	24/60	115/60	110/60-115/60	220/60	230/60	240/60	200/60-230/60	220/60-240/60	24/50-24/60	48/50-48/60	110/50-60	110-115/50,	100/50, 115/60	220/50-60	230/50-60	220-240/50-	220/50-230/60	220/50-240/60	240/50-60	380/50-440/60	12/DC	24/DC	48/DC	110/DC	220/DC			
Ref. No.	Code																																						
Coils																																							
481000	EZ0		●	●			●		●			●		●					●												●	●	●	●	●	●			
481865	DZ0		●	●	●				●		●	●	●			●																●	●	●	●	●	●		
482740	DZ1																																	●	●	●	●	●	
483510	DZ0																			●	●		●				●												
485100	EZ0		●				●		●																														
486265	EZ9		●		●			●		●	●				●			●							●				●				●	●	●	●	●	●	
492425	DZ0		●		●				●	●																							●	●	●	●	●	●	
492453	DZ0		●	●	●				●		●																						●	●	●	●	●	●	
Electrical parts																																							
483371	HZ0	●	●	●	●		●		●										●														●	●	●	●	●	●	
492070	VZ0																			●		●				●	●				●		●	●	●	●	●	●	
492190	VZ0																			●		●				●	●				●		●	●	●	●	●	●	
492670	HZ0		●	●	●					●							●																●	●	●	●	●	●	
493640	HZ0									●																					●			●	●	●	●	●	●
495870	-		●	●	●				●																									●	●	●	●	●	●
495875	-								●																											●	●	●	●
495880	-																																		●	●	●	●	●
495905	HZ9		●	●		●				●			●				●																	●	●	●	●	●	●
496110	-																			●	●		●					●							●	●	●	●	●
496155	-		●		●				●																										●	●	●	●	●