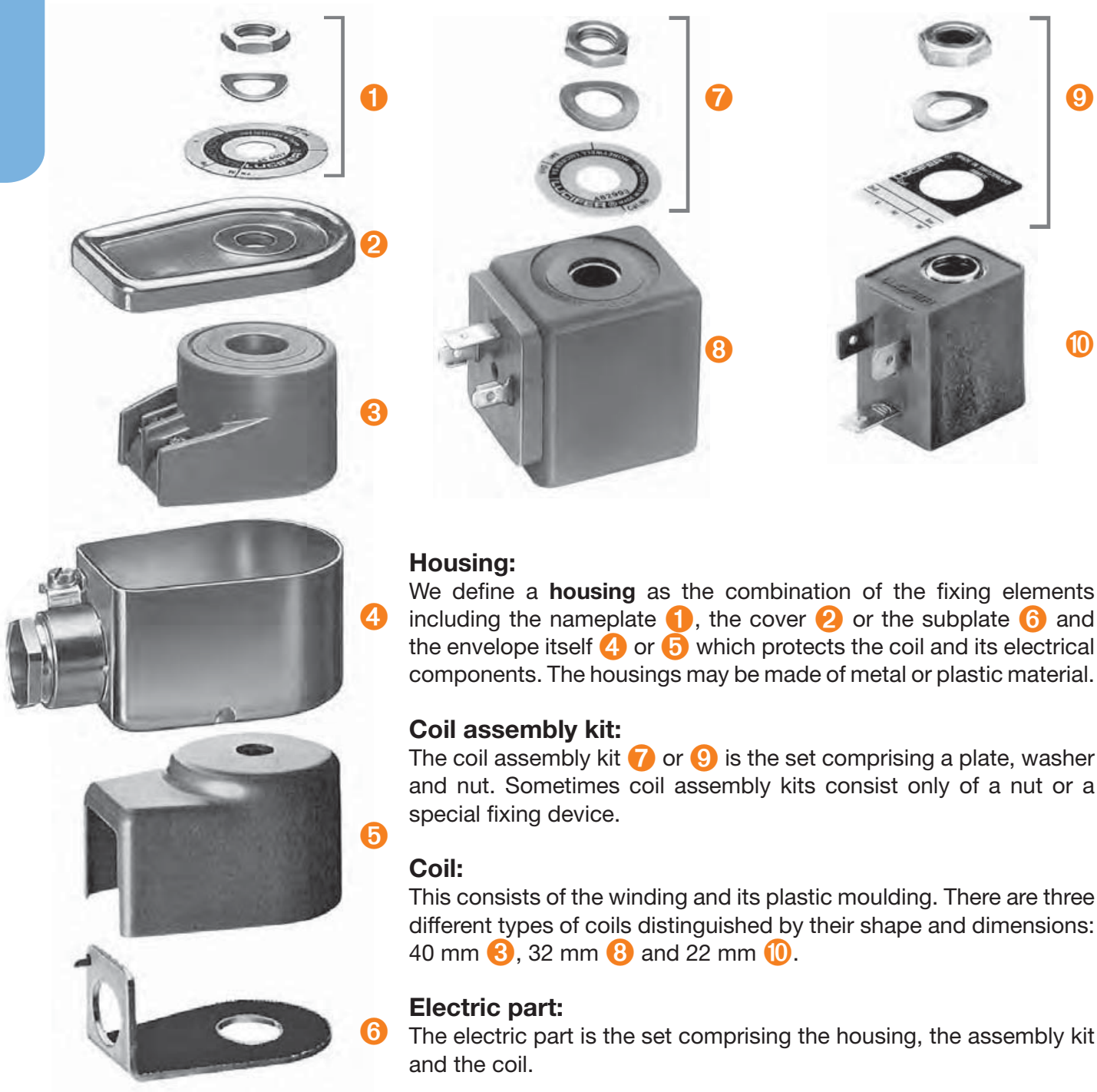
A COMPLETE RANGE OF COILS, HOUSINGS AND ELECTRICAL PARTS FOR SOLENOID VALVES

Parker Hannifin Corporation
Fluid Control Division Europe
General Catalogue FCDE/0110/UK/V1.0

DEFINITIONS

HOUSINGS OR COIL ASSEMBLY KITS, COILS AND ELECTRICAL PARTS



Housing:

We define a **housing** as the combination of the fixing elements including the nameplate 1, the cover 2 or the subplate 6 and the envelope itself 4 or 5 which protects the coil and its electrical components. The housings may be made of metal or plastic material.

Coil assembly kit:

The coil assembly kit 7 or 9 is the set comprising a plate, washer and nut. Sometimes coil assembly kits consist only of a nut or a special fixing device.

Coil:

This consists of the winding and its plastic moulding. There are three different types of coils distinguished by their shape and dimensions: 40 mm 3, 32 mm 8 and 22 mm 10.

Electric part:

The electric part is the set comprising the housing, the assembly kit and the coil.

Attention:

Any Lucifer® coil or electrical part may be energised only when mounted on a valve.
Otherwise there is a risk of damaging the product and its surroundings (overheating, explosion, fire, etc.).

TABLE OF CONTENT

INDEX BY COIL REFERENCE

Coil Reference	Coil Group	Designation	Power DC Pn (W)	Power AC Pn (W)	Ambient Temperature	UL	Degree of Protection	ATEX or NEMA 4X Protection (Gas)	Page
481000	2.0/2.1	Coil with screw terminal, 40 mm	8.0	8.0	-40°C to +50°C	-	IP 44 to 67	-	482
481044	2.0/2.2	Coil with screw terminal High power, 40 mm	-	14.0	-40°C to +50°C	-	IP 44 to 67	-	483
481180	1.1	Coil for DIN plug connection, 22 mm	5.0	4.0	-40°C to +50°C	-	IP65	-	461
481865	2.0/2.1	Coil for DIN plug connection, 32 mm	9.0	8.0	-40°C to +50°C	-	IP65	-	454
482605	1.1	Explosion proof encapsulated electrical part "mb", 32 mm	5.0	4.0	-40°C to +65°C	-	IP65	II 2 G Ex mb II T4 / T5	499
482606	1.1	Explosion proof encapsulated electrical part "mb", low power, 32 mm	2.5	2.0	-40°C to +65°C	-	IP65	II 2 G Ex mb II T4 / T5	499
482730	3.0	Coil for DIN plug connection, reduced power, 32 mm	7.0	6.0	-40°C to +50°C	-	IP65	-	456
482740	6.0	Coil for DIN plug connection, low power, 32 mm	1.6	-	-40°C to +50°C	-	IP65	-	457
482870.01	12.0	Explosion proof intrinsically safe electrical part "ia", 50 mm	3.0	-	-40°C to +65°C	-	IP66	II 1 G Ex ia IIC T6	417
483270	11.0	Flame proof electrical part "db", 50 mm	8.0	8.0	-40°C to +80°C	-	IP66	II 2 G Ex db IIC T4/T5/T6	498
483371	2.0/2.1	Explosion proof increased safety electrical part "eb", 50 mm	8.0	8.0	-40°C to +65°C	-	IP67	II 2 G Ex eb IIC T4	509
483510	2.0/2.1	Coil for DIN plug connection, 32 mm	-	9.0	-40°C to +50°C	-	IP65	-	454
483520	2.0/2.1	Coil with screw terminal, double frequency, 40 mm	-	9.0	-40°C to +50°C	-	IP 44 to 67	-	482
483541	14.1	Coil with screw terminal, high temperature-high power, 40 mm	20.0	20.0	-40°C to +50°C	-	IP 44 to 67	-	485
483580.01	7.0	Explosion proof intrinsically safe electrical part "ia", 32 mm	3.0	-	-40°C to +55°C	-	IP65	II 1 G Ex ia IIC T6	513
483590	1.1	Coil for DIN plug connection,double frequency, 22 mm	-	3.0	-40°C to +50°C	-	IP65	-	463
483764	14.2	Coil for DIN plug connection, 32 mm, UL	-	9.0	-40°C to +50°C	●	IP65	-	459
483816	2.2	Coil for DIN plug connection for Jet Valves, 32 mm	14.0	14.0	-40°C to +50°C	-	IP65	-	460
483824	14.1	Coil with screw terminal, high temperature-high power, 40 mm	19.0	19.0	-40°C to +50°C	-	IP 44 to 67	-	485
484990	4.0	Coil with screw terminal,bistable,for impulse applications, 40 mm	-	11.0	-40°C to +50°C	-	IP44	-	487
485100	2.0/2.1	Coil with screw terminal,high temperature, 40 mm	8.0	8.0	-40°C to +50°C	-	IP 44 to 67	-	484
485400	4.0	Coil with screw terminal,bistable,for impulse applications, 40 mm	13.0	-	-40°C to +50°C	-	IP44	-	487
486265	2.0/2.2	Coil with screw terminal,high temperature-high power, 40 mm	14.0	14.0	-40°C to +50°C	-	IP 44 to 67	-	484
488143	1.1	Coil for DIN plug connection,double frequency, 22 mm	-	2.5	-40°C to +50°C	-	IP65	-	464
488553	2.0/2.1	Coil with screw terminal,double frequency, H class, 40 mm	-	9.0	-40°C to +50°C	-	IP 44 to 67	-	486
488650.01	7.0	Explosion proof intrinsically safe electrical part "ia", 50 mm	0.3 to 3.0	-	-40°C to +65°C	-	IP66	II 1 G Ex ia IIC T6	518
488660.01	7.0	Explosion proof intrinsically safe electrical part "ia", 50 mm	3.0	-	-40°C to +65°C	-	IP67	II 1 G Ex ia IIC T6	519
488670.01	7.0	Explosion proof intrinsically safe electrical part "ia", 50 mm	0.3 to 3.0	-	-40°C to +65°C	-	IP65	II 1 G Ex ia IIC T6	520
488980	1.1	Coil for DIN plug connection, low power, 22 mm	2.5	2.0	-40°C to +50°C	-	IP65	-	461
490885	7.0	Explosion proof intrinsically safe electrical part, "NEMA", 50 mm	3.0	-	-40°C to +60°C	-	NEMA 4 - 4X	Cl. I, Div.I, Gr. A, B, C, D	518
490890	7.0	Explosion proof intrinsically safe electrical part, "NEMA", 50 mm	3.0	-	-40°C to +60°C	-	NEMA 4 - 4X	Cl. I, Div.I, Gr. A, B, C, D	519
491514	2.0/2.1	Coil for DIN plug connection, 32 mm, UL	-	11.0	-40°C to +50°C	●	IP65	-	458
492070	2.0/2.1	Explosion proof encapsulated electrical part "mb", with water proof metal housing, 50mm	8.0	9.0	-40°C to +65°C	-	IP67	II 2 G Ex mb II T4 / T5	501
492190	2.0/2.1	Explosion proof increased safety and encapsulated electrical part "eb", 50 mm	9.0	11.0	-40°C to +75°C	-	IP66	II 2 G Ex eb mb II T3 / T4	512
492210	9.0	Explosion proof increased safety and encapsulated electrical part "eb", "Booster", 50 mm	1.0 to 1.8	-	-40°C to +75°C	-	IP66	II 2 G Ex eb mb II T5 / T6	511
492310	10.1	Explosion proof increased safety and encapsulated electrical part "eb", 50 mm	6.0	6.0	-40°C to +75°C	-	IP66	II 2 G Ex eb mb II T4 / T5	510
492335	12.0	Explosion proof intrinsically safe electrical part, "NEMA", 50 mm	3.0	-	-40°C to +60°C	-	NEMA 4 - 4X	Cl. I, Div.I, Gr. A, B, C, D	517
492425	2.0/2.2	Coil for DIN plug connection, high temperature, 32 mm	14.0	14.0	-40°C to +50°C	-	IP65	-	455
492453	2.0/2.1	Coil for DIN plug connection, high temperature, 32 mm	9.0	8.0	-40°C to +50°C	-	IP65	-	455
492670	2.0/2.1	Explosion proof encapsulated electrical part "mb", 32 mm	9.0	8.0	-40°C to +50°C	-	IP65	II 2 G Ex mb II T4	500
492912	1.1	Coil for DIN plug connection, 22 mm, UL	4.0	3.0	-40°C to +50°C	●	IP65	-	462
492965.01	9.0	Explosion proof intrinsically safe electrical part "ia", " Booster", 50 mm	0.3 to 2.3	-	-40°C to +65°C	-	IP66	II 1 G Ex ia IIC T6	516
493640	2.0/2.1	Flame proof encapsulated electrical part "db mb", double frequency	8.0	8.0	-40°C to +75°C	-	IP65	II 2 G Ex db mb IIC T4	508
494040	2.0/2.1	Explosion proof increased safety electrical part "eb", 50 mm	8.0	8.0	-40°C to +90°C	-	IP67	II 2 G Ex eb IIC T3 / T4	509
495294	13.0	Coil with ISO-DIN connector, 12-24VDC for transportation applications, 32 mm	9.0	-	-40°C to +120°C	-	IP69K	-	488
495865	1.1	Explosion proof electrical part "nc AC", low power, 22 mm	2.5	2.0	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T5	490
495870	2.0/2.1	Explosion proof electrical part "nc AC", 32 mm	9.0	8.0	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T3 / T4	492

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Coil Reference	Coil Group	Designation	Power DC Pn (W)	Power AC Pn (W)	Ambient Temperature	UL	Degree of Protection	ATEX or NEMA 4X Protection (Gas)	Page
495875	2.0/2.1	Explosion proof electrical part "nc AC", 32 mm	7.0	6.0	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T3 / T4	494
495880	2.0/2.2	Explosion proof electrical part "nc AC", 32 mm	14.0	14.0	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T3	495
495900	6.0	Flame proof encapsulated electrical part "db mb", low power, 37 mm	2.0	2.5	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4 / T5 / T6	504
495905	2.0/2.1	Flame proof encapsulated electrical part "db mb", 37 mm	8.0	8.0	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4	505
495910	8.0	Explosion proof intrinsically safe electrical part "ia", "booster", 37 mm	0.3 to 1.2	-	-40°C to +80°C	-	IP67	II 1 G Ex ia IIC T6 / T5 /T4	514
495915	4.0	Explosion proof increased safety electrical part "nc AC", 50 mm	13.0	11.0	-40°C to +65°C	-	IP67	II 3 G Ex nc AC IIC T3	496
496081	2.0/2.1	Coil with flying leads,IP 67, 32 mm	9.0	9.0	-40°C to +50°C		IP67	-	480
496082	2.0/2.2	Coil with flying leads, IP 67, 32 mm, UL	16.0	13.0-14.0	-40°C to +120°C	●	IP67	-	481
496110	2.0/2.1	Explosion proof electrical part "nc AC", 32 mm	-	9.0	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T3 / T4	492
496125	6.0	Explosion proof electrical part "nc AC", low power, 32 mm	1.6	-	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T5 / T6	493
496131	1.2	Coil for DIN plug connection, double frequency, 22 mm	3.0	3.0	-40°C to +50°C	-	IP65	-	465
496155	2.0/2.2	Explosion proof increased safety electrical part "nc AC", 50 mm	14.0	14.0	-40°C to +65°C	-	IP67	II 3 G Ex nc AC IIC T3	497
496193	13.0	Coil with ISO-DIN connector, 12-24VDC, for transportation applications, 32 mm	9.0	-	-40°C to +120°C	-	IP69K	-	488
496482	1.2	Coil for DIN plug connection, double frequency coil, 22 mm	3.0	3.0	-40°C to +50°C	-	IP65	-	466
496555	10.2	Flame proof encapsulated electrical part "db mb", 37 mm	6.0	6.0	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4 / T5 / T6	506
496560	10.1	Flame proof encapsulated electrical part "db mb", 37 mm	8.0	8.0	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4	506
496565	9.0	Explosion proof intrinsically safe electrical part "ia", " Booster", 37 mm	0.77 to 2.58	-	-40°C to +80°C	-	IP67	II 1 G Ex ia IIC T6 / T5 / T4	515
496637	1.2	Explosion proof electrical part "nc AC", double frequency, 22 mm	3.0	3.0	-40°C to +50°C	-	IP65	II 3 D Ex TC IIIC T 95°C	491
496700	10.2	Flame proof encapsulated electrical part "db mb", 37 mm	6.0	6.0	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4 / T5 / T6	507
496800	10.1	Flame proof encapsulated electrical part "db mb", 37 mm	8.0	8.0	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4	507
496895	10.1	Coil for DIN plug connection for oil and gas, 37 mm	8.0	8.0	-40°C to +50°C	-	IP65	-	476
D4	24.0	Coil for DIN plug connection, 32 mm, UL	16.0	13.0	-40°C to +50°C	●	IP65	-	554
D5	24.0	Coil for DIN plug connection, 32 mm	9.0	8.0	-40°C to +50°C	-	IP65	-	555
HZ10	2.0/2.1	Explosion proof encapsulated electrical part "mb", double frequency	8.0	8.0	-40°C to +50°C	-	IP65	II 2 G Ex mb II T4 / T5	502
HZ11	2.0/2.2	Explosion proof encapsulated electrical part "mb", double frequency	14.0	14.0	-40°C to +50°C	-	IP65	II 2 G Ex mb II T4 / T5	503
JB14	21.0	Coil for DIN plug connection	16.0	-	-10°C to +50°C	-	IP65	-	470
JB16	21.0	Coil for DIN plug connection	-	14.0	-10°C to +50°C	-	IP65	-	470
KH09	22.0	Coil for DIN plug connection	-	9.0	-10°C to +80°C	-	IP65	-	471
KT09	22.0	Coil for DIN plug connection	-	9.0	-10°C to +50°C	-	IP65	-	471
KT10	22.0	Coil for DIN plug connection	10.0	-	-10°C to +50°C	-	IP65	-	471
LA	24.0	Coil with flying leads, IP67, 32 mm	9.0	9.0	-10°C to +50°C	-	IP67	-	478
LB-LC	24.0	Coil with flying leads, 32 mm, UL	16.0	13.0-14.0	-10°C to +50°C	●	IP67	-	479
WB4.5	1.3	Coil for DIN plug connection, 22 mm	-	4.5	-10°C to +50°C	-	IP65	-	467
WB4.5 UR	1.3	Coil for DIN plug connection, 22 mm	-	4.5	-10°C to +50°C	●	IP65	-	467
WB5.0	1.3	Coil for DIN plug connection, 22 mm	5.0	-	-10°C to +50°C	-	IP65	-	467
WB5.0 cURus	1.3	Coil for DIN plug connection, 22 mm	5.0	-	-10°C to +50°C	●	IP65	-	467
WB8.0	1.3	Coil for DIN plug connection, 22 mm	-	8.0	-10°C to +50°C	-	IP65	-	467
XS03	24.0	Coil for DIN plug connection, 32 mm	-	9.0	-40°C to +50°C	-	IP65	-	475
XT09	23.0	Coil for DIN plug connection	-	9.0	-10°C to +50°C	-	IP54	-	472
YB09	20.1	Coil with flying leads, IP67, UL for AC	-	9.0	-10°C to +50°C	●	IP67	-	477
YB12	20.1	Coil with flying leads, IP67	12.0	-	-10°C to +50°C	-	IP67	-	477
ZB09	20.0	Coil for DIN plug connection, UL for AC	-	9.0	-10°C to +50°C	●	IP65	-	468
ZB12	20.0	Coil for DIN plug connection	12.0	-	-10°C to +50°C	-	IP65	-	468
ZB14	20.2	Coil for DIN plug connection, high power - high temperature series	-	14.0	-10°C to +50°C	-	IP65	-	469
ZB16	20.2	Coil for DIN plug connection, high power - high temperature series	16.0	-	-10°C to +50°C	-	IP65	-	469
ZH14	20.2	Coil for DIN plug connection, high power - high temperature series	-	14.0	-10°C to +80°C	-	IP65	-	469
ZH16	20.2	Coil for DIN plug connection, high power - high temperature series	16.0	-	-10°C to +80°C	-	IP65	-	469

INDEX BY COIL GROUP

Coil Group	Coil Reference	Designation	Power DC Pn (W)	Power AC Pn (W)	Ambient Temperature	UL	Degree of Protection	ATEX or NEMA 4X Protection (Gas)	Page
1.1	488980	Coil for DIN plug connection, low power,22 mm	2.5	2.0	-40°C to +50°C	-	IP65	-	461
1.1	492912	Coil for DIN plug connection, UL 22 mm	4.0	3.0	-40°C to +50°C	●	IP65	-	462
1.1	481180	Coil for DIN plug connection, 22 mm	5.0	4.0	-40°C to +50°C	-	IP65	-	462
1.1	488143	Coil for DIN plug connection,double frequency, 22 mm	-	2.5	-40°C to +50°C	-	IP65	-	464
1.1	483590	Coil for DIN plug connection,double frequency, 22 mm	-	3.0	-40°C to +50°C	-	IP65	-	463
1.1	495865	Explosion proof electrical part "nc AC", low power, 22 mm	2.5	2.0	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T5	490
1.1	482606	Explosion proof encapsulated electrical part "mb", low power, 32 mm	2.5	2.0	-40°C to +65°C	-	IP65	II 2 G Ex mb II T4 / T5	499
1.1	482605	Explosion proof encapsulated electrical part "mb", 32 mm	5.0	4.0	-40°C to +65°C	-	IP65	II 2 G Ex mb II T4 / T5	499
1.2	496131	Coil for DIN plug connection, double frequency, 22 mm	3.0	3.0	-40°C to +50°C	-	IP65	-	465
1.2	496482	Coil for DIN plug connection,double frequency coil, 22 mm	3.0	3.0	-40°C to +50°C	-	IP65	-	466
1.2	496637	Explosion proof electrical part "nc AC", 22 mm, double frequency	3.0	3.0	-40°C to +50°C	-	IP65	II 3 D Ex tc IIIC T 95°C	491
1.3	WB5.0	Coil for DIN plug connection, 22 mm	5.0	-	-10°C to +50°C	-	IP65	-	467
1.3	WB5.0 cURus	Coil for DIN plug connection, 22 mm	5.0	-	-10°C to +50°C	●	IP65	-	467
1.3	WB4.5	Coil for DIN plug connection, 22 mm	-	4.5	-10°C to +50°C	-	IP65	-	467
1.3	WB4.5 UR	Coil for DIN plug connection, 22 mm	-	4.5	-10°C to +50°C	●	IP65	-	467
1.3	WB8.0	Coil for DIN plug connection, 22 mm	-	8.0	-10°C to +50°C	-	IP65	-	467
2.0/2.1	481000	Coil with screw terminal, 40 mm	8.0	8.0	-40°C to +50°C	-	IP 44 to 67	-	482
2.0/2.1	485100	Coil with screw terminal,high temperature, 40 mm	8.0	8.0	-40°C to +50°C	-	IP 44 to 67	-	484
2.0/2.1	481865	Coil for DIN plug connection, 32 mm	9.0	8.0	-40°C to +50°C	-	IP65	-	454
2.0/2.1	492453	Coil for DIN plug connection, high temperature, 32 mm	9.0	8.0	-40°C to +50°C	-	IP65	-	455
2.0/2.1	496081	Coil with flying leads, IP 67, 32 mm	9.0	9.0	-40°C to +50°C	-	IP67	-	480
2.0/2.2	496082	Coil with flying leads,IP 67, 32 mm, UL	16.0	13.0-14.0	-40°C to +120°C	●	IP67	-	481
2.0/2.1	483510	Coil for DIN plug connection, 32 mm	-	9.0	-40°C to +50°C	-	IP65	-	454
2.0/2.1	483520	Coil with screw terminal, double frequency, 40 mm	-	9.0	-40°C to +50°C	-	IP 44 to 67	-	482
2.0/2.1	488553	Coil with screw terminal,double frequency, H class, 40 mm	-	9.0	-40°C to +50°C	-	IP 44 to 67	-	486
2.0/2.1	491514	Coil for DIN plug connection, 32 mm, UL	-	11.0	-40°C to +50°C	●	IP65	-	458
2.0/2.1	495875	Explosion proof electrical part "nc AC", 32 mm	7.0	6.0	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T3 / T4	494
2.0/2.1	495870	Explosion proof electrical part "nc AC", 32 mm	9.0	8.0	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T3 / T4	492
2.0/2.1	496110	Explosion proof electrical part "nc AC", 32 mm	-	9.0	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T3 / T4	492
2.0/2.1	492670	Explosion proof encapsulated electrical part "mb", 32 mm	9.0	8.0	-40°C to +50°C	-	IP65	II 2 G Ex mb II T4	500
2.0/2.1	492070	Explosion proof encapsulated electrical part "mb", with water proof metal housing, 50 mm	8.0	9.0	-40°C to +65°C	-	IP67	II 2 G Ex mb II T4 / T5	501
2.0/2.1	493640	Flame proof encapsulated electrical part "db mb", double frequency	8.0	8.0	-40°C to +75°C	-	IP65	II 2 G Ex db mb IIC T4	508
2.0/2.1	495905	Flame proof encapsulated electrical part "db mb", 37 mm	8.0	8.0	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4	505
2.0/2.1	494040	Explosion proof increased safety electrical part "eb", 50 mm	8.0	8.0	-40°C to +90°C	-	IP67	II 2 G Ex eb IIC T3 / T4	509
2.0/2.1	483371	Explosion proof increased safety electrical part "eb", 50 mm	8.0	8.0	-40°C to +65°C	-	IP67	II 2 G Ex eb IIC T4	509
2.0/2.1	492190	Explosion proof increased safety and encapsulated electrical part "eb", 50 mm	9.0	11.0	-40°C to +75°C	-	IP66	II 2 G Ex eb mb II T3 / T4	512
2.0/2.2	486265	Coil with screw terminal,high temperature-high power, 40 mm	14.0	14.0	-40°C to +50°C	-	IP 44 to 67	-	484
2.0/2.2	492425	Coil for DIN plug connection, high temperature, 32 mm	14.0	14.0	-40°C to +50°C	-	IP65	-	455
2.0/2.2	481044	Coil with screw terminal High power, 40 mm	-	14.0	-40°C to +50°C	-	IP 44 to 67	-	483
2.0/2.2	495880	Explosion proof electrical part "nc AC", 32 mm	14.0	14.0	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T3	495
2.0/2.2	496155	Explosion proof increased safety electrical part "nc AC", 50 mm	14.0	14.0	-40°C to +65°C	-	IP67	II 3 G Ex nc AC IIC T3	497
2.0/2.1	HZ10	Explosion proof encapsulated electrical part "mb", double frequency	8.0	8.0	-40°C to +50°C	-	IP65	II 2 G Ex mb II T4 / T5	502
2.0/2.2	HZ11	Explosion proof encapsulated electrical part "mb", double frequency	14.0	14.0	-40°C to +50°C	-	IP65	II 2 G Ex mb II T4 / T5	503
2.2	483816	Coil for DIN plug connection for Jet Valves, 32 mm	14.0	14.0	-40°C to +50°C	-	IP65	-	460
3.0	482730	Coil for DIN plug connection, reduced power, 32 mm	7.0	6.0	-40°C to +50°C	-	IP65	-	456
4.0	485400	Coil with screw terminal,bistable, for impulse applications, 40 mm	13.0	-	-40°C to +50°C	-	IP44	-	487
4.0	484990	Coil with screw terminal,bistable, for impulse applications, 40 mm	-	11.0	-40°C to +50°C	-	IP44	-	487
4.0	495915	Explosion proof increased safety electrical part "nc AC", 50 mm	13.0	11.0	-40°C to +65°C	-	IP67	II 3 G Ex nc AC IIC T3	496

INDEX BY COIL GROUP

Coil Group	Coil Reference	Designation	Power DC Pn (W)	Power AC Pn (W)	Ambient Temperature	UL	Degree of Protection	ATEX or NEMA 4X Protection (Gas)	Page
6.0	482740	Coil for DIN plug connection, low power, 32 mm	1.6	-	-40°C to +50°C	-	IP65	-	457
6.0	496125	Explosion proof electrical part "nc AC", low power, 32 mm	1.6	-	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T5 / T6	490
6.0	495900	Flame proof encapsulated electrical part "db mb", low power, 37 mm	2.0	2.5	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4 / T5 / T6	504
7.0	483580.01	Explosion proof intrinsically safe electrical part "ia", 32 mm	3.0	-	-40°C to +55°C	-	IP65	II 1 G Ex ia IIC T6	513
7.0	488660.01	Explosion proof intrinsically safe electrical part "ia", 50 mm	3.0	-	-40°C to +65°C	-	IP67	II 1 G Ex ia IIC T6	519
7.0	488650.01	Explosion proof intrinsically safe electrical part "ia", 50 mm	0.3 to 3.0	-	-40°C to +65°C	-	IP66	II 1 G Ex ia IIC T6	518
7.0	488670.01	Explosion proof intrinsically safe electrical part "ia", 50 mm	0.3 to 3.0	-	-40°C to +65°C	-	IP65	II 1 G Ex ia IIC T6	520
7.0	490885	Explosion proof intrinsically safe electrical part, "NEMA", 50 mm	3.0	-	-40°C to +60°C	-	NEMA 4 - 4X	Cl. I, Div.I, Gr. A, B, C, D	518
7.0	490890	Explosion proof intrinsically safe electrical part, "NEMA", 50 mm	3.0	-	-40°C to +60°C	-	NEMA 4 - 4X	Cl. I, Div.I, Gr. A, B, C, D	519
8.0	495910	Explosion proof intrinsically safe electrical part "ia", "booster", 37 mm	0.3 to 1.2.0	-	-40°C to +80°C	-	IP67	II 1 G Ex ia IIC T6 / T5 /T4	514
9.0	492210	Explosion proof increased safety and encapsulated electrical part "eb", " Booster", 50 mm	1.0 to 1.8	-	-40°C to +75°C	-	IP66	II 2 G Ex eb mb II T5 / T6	511
9.0	496565	Explosion proof intrinsically safe electrical part "ia", " Booster", 37 mm	0.77 to 2.58	-	-40°C to +80°C	-	IP67	II 1 G Ex ia IIC T6 / T5 / T4	515
9.0	492965.01	Explosion proof intrinsically safe electrical part "ia", " Booster", 50 mm	0.3 to 2.3	-	-40°C to +65°C	-	IP66	II 1 G Ex ia IIC T6	516
10.1	496895	Coil for DIN plug connection for oil and gas, 37 mm	8.0	8.0	-40°C to +50°C	-	IP65	-	476
10.1	496560	Flame proof encapsulated electrical part "db mb", 37 mm	8.0	8.0	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4	506
10.1	496800	Flame proof encapsulated electrical part "db mb", 37 mm	8.0	8.0	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4	507
10.1	492310	Explosion proof increased safety and encapsulated electrical part "eb", 50 mm	6.0	6.0	-40°C to +75°C	-	IP66	II 2 G Ex eb mb II T4 / T5	510
10.2	496555	Flame proof encapsulated electrical part "db mb", 37 mm	6.0	6.0	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4 / T5 / T6	506
10.2	496700	Flame proof encapsulated electrical part "db mb", 37 mm	6.0	6.0	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4 / T5 / T6	507
11.0	483270	Flame proof electrical part "db", 50 mm	8.0	8.0	-40°C to +80°C	-	IP66	II 2 G Ex db IIC T4/T5/T6	498
12.0	482870.01	Explosion proof intrinsically safe electrical part "ia", 50 mm	3.0	-	-40°C to +65°C	-	IP66	II 1 G Ex ia IIC T6	517
12.0	492335	Explosion proof intrinsically safe electrical part, "NEMA", 50 mm	3.0	-	-40°C to +60°C	-	NEMA 4 - 4X	Cl. I, Div.I, Gr. A, B, C, D	517
13.0	495294	Coil with ISO-DIN connector, 12-24VDC for transportation applications, 32 mm	9.0	-	-40°C to +120°C	-	IP69K	-	488
13.0	496193	Coil with ISO-DIN connector, 12-24VDC for transportation applications, 32 mm	9.0	-	-40°C to +120°C	-	IP69K	-	488
14.1	483824	Coil with screw terminal, high temperature-high power, 40 mm	19.0	19.0	-40°C to +50°C	-	IP 44 to 67	-	485
14.1	483541	Coil with screw terminal, high temperature-high power, 40 mm	20.0	20.0	-40°C to +50°C	-	IP 44 to 67	-	485
14.2	483764	Coil for DIN plug connection, 32 mm, UL	-	9.0	-40°C to +50°C	●	IP65	-	459
20.0	ZB12	Coil for DIN plug connection	12.0	-	-10°C to +50°C	-	IP65	-	468
20.0	ZB09	Coil for DIN plug connection, UL for AC	-	9.0	-10°C to +50°C	●	IP65	-	468
20.1	YB12	Coil with flying leads, IP67	12.0	-	-10°C to +50°C	-	IP67	-	477
20.1	YB09	Coil with flying leads, IP67, UL for AC	-	9.0	-10°C to +50°C	●	IP67	-	477
20.2	ZB16	Coil for DIN plug connection, high power -high temperature series	16.0	-	-10°C to +50°C	-	IP65	-	469
20.2	ZH16	Coil for DIN plug connection, high power -high temperature series	16.0	-	-10°C to +80°C	-	IP65	-	469
20.2	ZB14	Coil for DIN plug connection, high power -high temperature series	-	14.0	-10°C to +50°C	-	IP65	-	469
20.2	ZH14	Coil for DIN plug connection, high power -high temperature series	-	14.0	-10°C to +80°C	-	IP65	-	469
21.0	JB14	Coil for DIN plug connection	16.0	-	-10°C to +50°C	-	IP65	-	470
21.0	JB16	Coil for DIN plug connection	-	14.0	-10°C to +50°C	-	IP65	-	470
22.0	KT10	Coil for DIN plug connection	10.0	-	-10°C to +50°C	-	IP65	-	471
22.0	KH09	Coil for DIN plug connection	-	9.0	-10°C to +80°C	-	IP65	-	471
22.0	KT09	Coil for DIN plug connection	-	9.0	-10°C to +50°C	-	IP65	-	471
23.0	XT09	Coil for DIN plug connection	-	9.0	-10°C to +50°C	-	IP54	-	472
24.0	D5	Coil for DIN plug connection, 32 mm	9.0	8.0	-40°C to +50°C	-	IP65	-	474
24.0	LA	Coil with flying leads, IP67, 32 mm	9.0	9.0	-10°C to +50°C	-	IP67	-	478
24.0	D4	Coil for DIN plug connection, 32 mm, UL	16.0	13.0	-40°C to +50°C	●	IP65	-	473
24.0	LB-LC	Coil with flying leads, IP 67, 32 mm, UL	16.0	13.0-14.0	-10°C to +50°C	●	IP67	-	479
24.0	XS03	Coil for DIN plug connection, 32 mm	-	9.0	-40°C to +50°C	-	IP65	-	475

INDEX FOR EXPLOSION PROOF ELECTRICAL PARTS

Coil Reference	Coil Group	Designation	Power DC Pn (W)	Power AC Pn (W)	Ambient Temperature	UL	Degree of Protection	ATEX or NEMA 4X Protection (Gas)	Page
496637	1.2	Explosion proof electrical part "nc AC", 22 mm, double frequency	3.0	3.0	-40°C to +50°C	-	IP65	II 3 D Ex tc IIIC T 95°C	491
495880	2.0/2.2	Explosion proof electrical part "nc AC", 32 mm	14.0	14.0	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T3	495
496155	2.0/2.2	Explosion proof increased safety electrical part "nc AC", 50 mm	14.0	14.0	-40°C to +65°C	-	IP67	II 3 G Ex nc AC IIC T3	497
495915	4.0	Explosion proof increased safety electrical part "nc AC", 50 mm	13.0	11.0	-40°C to +65°C	-	IP67	II 3 G Ex nc AC IIC T3	496
495870	2.0/2.1	Explosion proof electrical part "nc AC", 32 mm	9.0	8.0	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T3 / T4	492
495875	2.0/2.1	Explosion proof electrical part "nc AC", 32 mm	7.0	6.0	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T3 / T4	494
496110	2.0/2.1	Explosion proof electrical part "nc AC", 32 mm	-	9.0	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T3 / T4	492
495865	1.1	Explosion proof electrical part "nc AC", low power, 22 mm	2.5	2.0	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T5	490
496125	6.0	Explosion proof electrical part "nc AC", low power, 32 mm	1.6	-	-40°C to +50°C	-	IP65	II 3 G Ex nc AC IIC T5 / T6	493
492670	2.0/2.1	Explosion proof encapsulated electrical part "mb", 32 mm	9.0	8.0	-40°C to +50°C	-	IP65	II 2 G Ex mb II T4	500
482605	1.1	Explosion proof encapsulated electrical part "mb", 32 mm	5.0	4.0	-40°C to +65°C	-	IP65	II 2 G Ex mb II T4 / T5	498
482606	1.1	Explosion proof encapsulated electrical part "mb", low power, 32 mm	2.5	2.0	-40°C to +65°C	-	IP65	II 2 G Ex mb II T4 / T5	498
492070	2.0/2.1	Explosion proof encapsulated electrical part "mb", with water proof metal housing, 50 mm	8.0	9.0	-40°C to +65°C	-	IP67	II 2 G Ex mb II T4 / T5	501
HZ10	2.0/2.1	Explosion proof encapsulated electrical part "mb", double frequency	8.0	8.0	-40°C to +50°C	-	IP65	II 2 G Ex mb II T4 / T5	502
HZ11	2.0/2.2	Explosion proof encapsulated electrical part "mb", double frequency	14.0	14	-40°C to +50°C	-	IP65	II 2 G Ex mb II T4 / T5	503
483270	11.0	Flame proof electrical part "db", 50 mm	8.0	8.0	-40°C to +80°C	-	IP66	II 2 G Ex db IIC T4/T5/T6	498
493640	2.0/2.1	Flame proof encapsulated electrical part "db mb", double frequency	8.0	8.0	-40°C to +75°C	-	IP65	II 2 G Ex db mb IIC T4	508
495905	2.0/2.1	Flame proof encapsulated electrical part "db mb", 37 mm	8.0	8.0	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4	505
496560	10.1	Flame proof encapsulated electrical part "db mb", 37 mm	8.0	8.0	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4	506
496800	10.1	Flame proof encapsulated electrical part "db mb", 37 mm	8.0	8.0	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4	507
495900	6.0	Flame proof encapsulated electrical part "db mb", low power, 37 mm	2.0	2.5	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4 / T5 / T6	504
496555	10.2	Flame proof encapsulated electrical part "db mb", 37 mm	6.0	6.0	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4 / T5 / T6	506
496700	10.2	Flame proof encapsulated electrical part "db mb", 37 mm	6.0	6.0	-40°C to +65°C	-	IP67	II 2 G Ex db mb IIC T4 / T5 / T6	507
494040	2.0/2.1	Explosion proof increased safety electrical part "eb", 50 mm	8.0	8.0	-40°C to +90°C	-	IP67	II 2 G Ex eb IIC T3 / T4	509
483371	2.0/2.1	Explosion proof increased safety electrical part "eb", 50 mm	8.0	8.0	-40°C to +65°C	-	IP67	II 2 G Ex eb IIC T4	509
492190	2.0/2.1	Explosion proof increased safety and encapsulated elect. part "eb", 50 mm	9.0	11.0	-40°C to +75°C	-	IP66	II 2 G Ex eb mb II T3 / T4	512
492310	10.1	Explosion proof increased safety and encapsulated electrical part "eb", 50 mm	6.0	6.0	-40°C to +75°C	-	IP66	II 2 G Ex eb mb II T4 / T5	510
492210	9.0	Explosion proof increased safety and encapsulated electrical part "eb", " Booster", 50 mm	1.0 to 1.8	-	-40°C to +75°C	-	IP66	II 2 G Ex eb mb II T5 / T6	511
495910	8.0	Explosion proof intrinsically safe electrical part "ia", "booster", 37 mm	0.3 to 1.2	-	-40°C to +80°C	-	IP67	II 1 G Ex ia IIC T6 / T5 /T4	514
496565	9.0	Explosion proof intrinsically safe electrical part "ia", " Booster", 37 mm	0.77 to 2.58	-	-40°C to +80°C	-	IP67	II 1 G Ex ia IIC T6 / T5 / T4	515
483580.01	7.0	Explosion proof intrinsically safe electrical part "ia", 32 mm	3.0	-	-40°C to +55°C	-	IP65	II 1 G Ex ia IIC T6	513
488650.01	7.0	Explosion proof intrinsically safe electrical part "ia", 50 mm	0.3 to 3.0	-	-40°C to +65°C	-	IP66	II 1 G Ex ia IIC T6	518
488660.01	7.0	Explosion proof intrinsically safe electrical part "ia", 50 mm	3.0	-	-40°C to +65°C	-	IP67	II 1 G Ex ia IIC T6	519
488670.01	7.0	Explosion proof intrinsically safe electrical part "ia", 50 mm	0.3 to 3	-	-40°C to +65°C	-	IP65	II 1 G Ex ia IIC T6	520
492965.01	9.0	Explosion proof intrinsically safe electrical part "ia", " Booster", 50 mm	0.3 to 2.3	-	-40°C to +65°C	-	IP66	II 1 G Ex ia IIC T6	516
482870.01	12.0	Explosion proof intrinsically safe electrical part "ia", 50 mm	3.0	-	-40°C to +65°C	-	IP66	II 1 G Ex ia IIC T6	517
490885	7.0	Explosion proof intrinsically safe electrical part, "NEMA", 50 mm	3.0	-	-40°C to +60°C	-	NEMA 4 - 4X	Cl. I, Div.I, Gr. A, B, C, D	518
490890	7.0	Explosion proof intrinsically safe electrical part, "NEMA", 50 mm	3.0	-	-40°C to +60°C	-	NEMA 4 - 4X	Cl. I, Div.I, Gr. A, B, C, D	519
492335	12.0	Explosion proof intrinsically safe electrical part, "NEMA", 50 mm	3.0	-	-40°C to +60°C	-	NEMA 4 - 4X	Cl. I, Div.I, Gr. A, B, C, D	517

LIST OF COIL GROUPS

Parker coils and electrical parts are classified by groups determining their compatibility with Parker solenoid valves.

Group	For application with
1.1	Standard valves or on 2000 Series with standard pilot
1.2	Standard valves or on 2000 Series for high flow
1.3	Standard valves or on 2000 Series of W coil
2.0	Standard valves or on 7000 Series with standard pilot
2.1	Standard valves or on 7000 Series, for coils 8 - 9 W
2.2	Standard valves or on 7000 Series, for coils 14 W
3.0	Standard valves or on 7000 Series with reduced power
4.0	Standard valves or on 7000 Series, for bistable (Impulse) coils or electrical parts
6.0	Special valves "97" or on 7000 Series, for Intrinsicaly safe coils or electrical parts
7.0	Special valves "90", for coils and intrinsically safe electrical parts
8.0	Special valves "97" or on 7000 Series, for Intrinsicaly safe coils or electrical parts with booster
9.0	Special valves "xx" or on 9000 Series, for Intrinsicaly safe coils or electrical parts with booster
10.1	Standard valves or on 9000 Series with standard pilot
10.2	Standard valves or on 9000 Series "db mb"
11.0	Standard valves or on 9000 Series "1D"
12.0	Standard valves or on 9000 Series with manual reset
13.0	Special valves or on 7000 Series for Transportation
14.1	Special valves or on 7000 Series for Oil Burners
14.2	Special valves or on 7000 Series for Oil Burners
20.1	Standard valves or on 7000 Series for Z-Y coil
20.2	Standard valves or on 7000 Series for Z-Y "High Power" coil
21.0	Standard valves or on 7000 Series for J-B coil
22.0	Standard valves for KP-KT-KH coil
23.0	Standard valves for XP-XT coil for Oil Burners
24.0	Standard valves for Liquipure coils for Beverage Dispensing

TABLE OF CONTENT

COILS FOR DIN PLUG CONNECTION

COILS 32 mm

These coils 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.

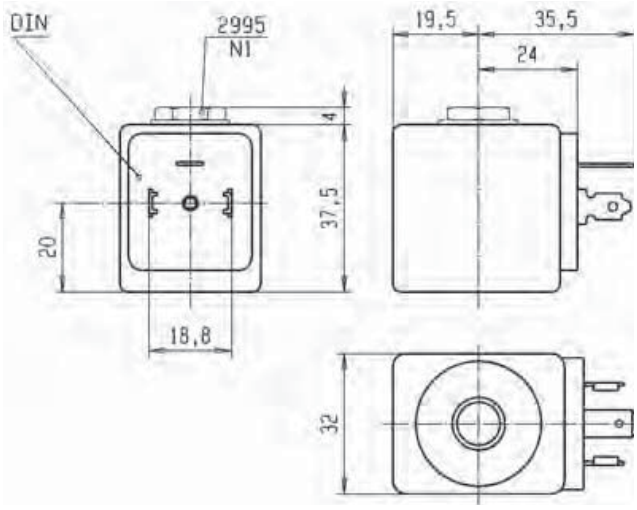
Specification			Standard		Double frequency	
Ref. (without DIN plug) Ref. (with DIN plug)			481865 482725		483510 482635	
Coil Group			2.0 / 2.1			
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug).			
Class of insulation			F 155°C			
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type A			
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	**Pn** (hot)	9 W		-	
		P (cold) 20°C	12 W		-	
	AC	**Pn** (holding)	8 W		9 W	
		Attraction cold	26 VA (9 W)		32 VA (10 W)	
Weight			130 g (without plug)			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			24/50 48/50 110/50 220-230/50	A2 A4 A5 3D	24 48 110	C2 C4 C5
			VAC/Hz	Code		
			24/50, 24/60 48/50, 48/60 110-115/50, 120/60 220-240/50, 240/60	P0 S4 S5 S6		

To Order a Coil choose Coil Ref + Voltage Code, example: **481865** for **24 VDC** = **481865C2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, see example below:

The coil assembly kit **Ref. 2995** corresponds to the "housing" of Lucifer® valve numbering system (Valve - housing - coil - voltage).

It is composed of a nameplate giving details of the valve type, a round washer and a nut to ensure the fixing between 32 mm coil and the valve.



COIL GROUP
2.0/2.1
2.2

COILS FOR DIN PLUG CONNECTION

HIGH TEMPERATURE COILS 32 mm

These coils 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.

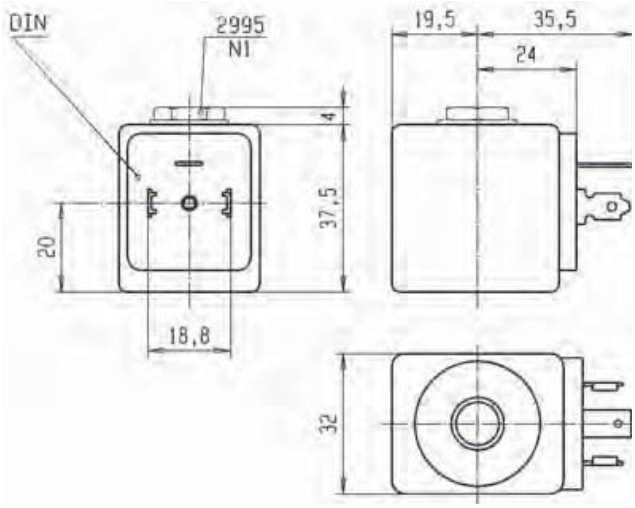
Specification			High temperature				High temp. + high power			
Ref. (without DIN plug) Ref. (with DIN plug)			492453 492726				492425 492727			
Coil Group			2.0 / 2.1				2.0 / 2.2			
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug).							
Class of insulation			H 180°C							
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type A							
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.							
Elect. Power	DC	**Pn** (hot)	9 W				14 W			
		P (cold) 20°C	12 W				21 W			
	AC	**Pn** (holding)	8 W				14 W			
		Attraction cold	26 VA (9 W)				55 VA (18 W)			
Weight			130 g (without plug)							
Voltages "Un"			VAC/Hz	Code	VDC	Code	VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			24/50 48/50 110/50 220/50-230/50	A2 A4 A5 3D	24	C2	24/50 110/50 230/50	A2 A5 F4	24	C2

To Order a Coil choose Coil Ref + Voltage Code, example: **492453** for **24VDC= 492453C2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, see example below:

The coil assembly kit **Ref. 2995** corresponds to the "housing" of Lucifer® valve numbering system (Valve - housing - coil - voltage).

It is composed of a nameplate giving details of the valve type, a round washer and a nut to ensure the fixing between 32 mm coil and the valve.



Parker Hannifin Corporation
Fluid Control Division Europe
General Catalogue FCDE/0110/UK/V1.0

COILS FOR DIN PLUG CONNECTION

REDUCED POWER COIL 32 mm

These coils 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.

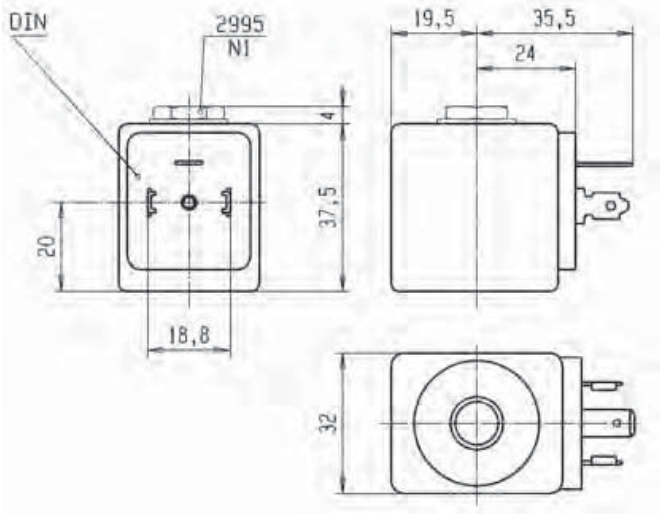
Specification			Reduced power			
Ref. (without DIN plug) Ref. (with DIN plug)			482730 482735			
Coil Group			3.0			
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug).			
Class of insulation			F 155°C			
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type A			
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	**Pn** (hot)	7 W			
		P (cold) 20°C	9 W			
	AC	**Pn** (holding)	6 W			
		Attraction cold	20 VA (7 W)			
Weight			130 g (without plug)			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			24/50 48/50 110/50-115/50 220-230/50	A2 A4 A7 3D	24 48	C2 C4

To Order a Coil choose Coil Ref + Voltage Code, example: **482730** for **24VDC** = **482730C2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, see example below:

The coil assembly kit **Ref. 2995** corresponds to the "housing" of Lucifer® valve numbering system (Valve - housing - coil - voltage).

It is composed of a nameplate giving details of the valve type, a round washer and a nut to ensure the fixing between 32 mm coil and the valve.



COIL GROUP

6.0

COILS FOR DIN PLUG CONNECTION

LOW POWER COIL 32 mm

These coils 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.

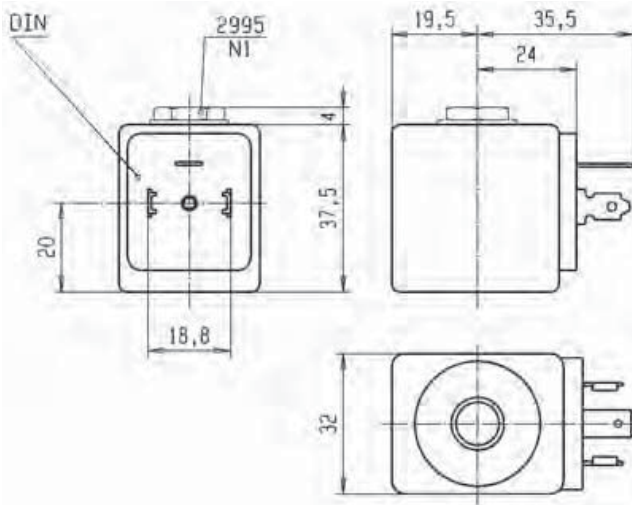
Specification			Miniwatt	
Reference (without DIN plug) Reference (with DIN plug)			**482740** **482745**	
Coil Group			**6.0**	
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug).	
Class of insulation			F 155°C	
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type A	
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.	
Elect. Power	DC	**Pn** (hot)	1.6 W	
		P (cold) 20°C	2.1 W	
	AC	**Pn** (holding)	-	
		Attraction cold	-	
Weight			130 g (without plug)	
Voltages "Un"			VDC	Code
-10% to +10% of the Un			24 48 110	C2 C4 C5

To Order a Coil choose Coil Ref + Voltage Code, example: **482740** for **24VDC** = **482740C2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, see example below:

The coil assembly kit **Ref. 2995** corresponds to the "housing" of Lucifer® valve numbering system (Valve - housing - coil - voltage).

It is composed of a nameplate giving details of the valve type, a round washer and a nut to ensure the fixing between 32 mm coil and the valve.



UL COIL 32 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.

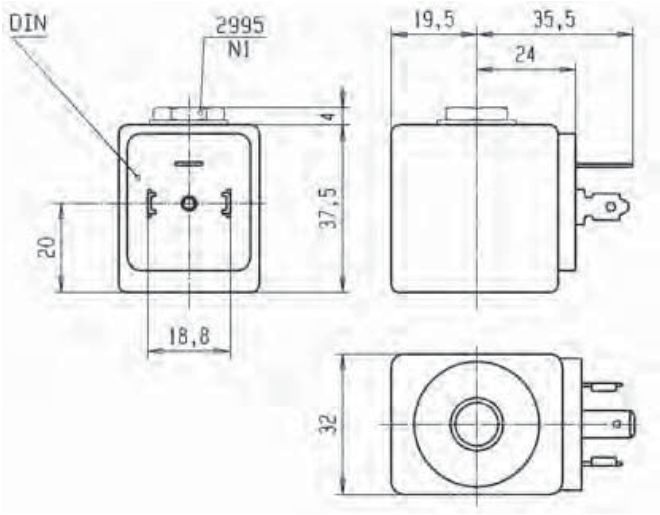
Specification			UL-recognized coil - UL File E125678 - designation AMIF			
Reference (without DIN plug)			491514			
Coil Group			2.0 / 2.1			
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug).			
Class of insulation			F (155°C)			
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type A			
Ambient temperature			-40°C to 50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	**Pn** (hot)	-	12 W		
		P (cold) 20°C	-	16 W		
	AC	**Pn** (holding)	11 W	-		
		Attraction cold	40 VA (13 W)	-		
Weight			130 g (without plug)			
Voltages "Un"			VAC/Hz	Code	VDC	Code
- 15% to +10% of the Un			110/50-120/60 220/50-240/60	P3 Q3	24	C2

To Order a Coil choose Coil Ref + Voltage Code, example: **491514** for **24VDC** = **491514C2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, see example below:

The coil assembly kit **Ref. 2995** with non UL valve and Ref. 2995.03 with UL valve correspond to the "housing" of Lucifer® valve numbering system (Valve - housing - coil - voltage).

It is composed of a nameplate giving details of the valve type, a round washer and a nut to ensure the fixing between 32 mm coil and the valve.



COIL GROUP

14.2

COILS FOR DIN PLUG CONNECTION

UL COIL 32 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.

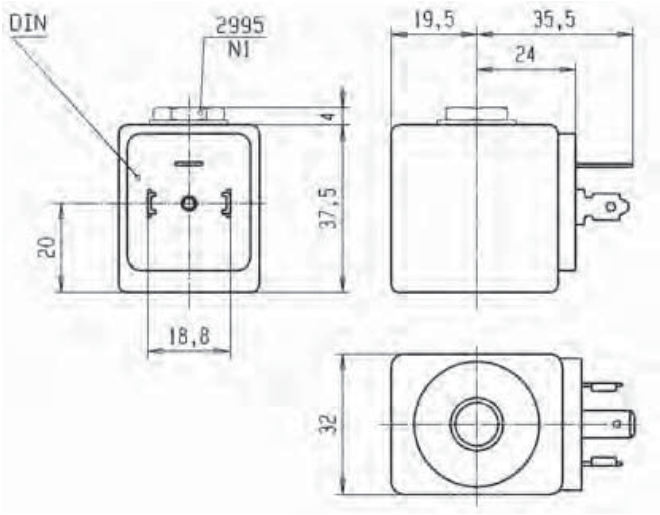
Specification			Coil for oil burner - UL recognized	
Reference (without DIN plug)			483764	
Coil group			14.2	
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug).	
Class of insulation			F 155°C	
Electrical connection			With DIN 43650 A Plug	
Ambient temperature			-40°C to 50°C The application is limited also by the temperature range of the valve.	
Elect. Power	DC	**Pn** (hot)	-	
		P (cold) 20°C	-	
	AC	**Pn** (holding)	9 W	
		Attraction cold	-	
Weight			138 g	
Voltages "Un"			VAC/Hz	Code
- 15% to +10% of the Un			240/50-60 110/50-115/60 230/50-240/60	Q1 Q9 T1

To Order a Coil choose Coil Ref + Voltage Code, example: **483764** for **240/50-60** = **483764Q1**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, see example below:

The coil assembly kit **Ref. 2995** corresponds to the "housing" of Lucifer® valve numbering system (Valve - housing - coil - voltage).

It is composed of a nameplate giving details of the valve type, a round washer and a nut to ensure the fixing between 32 mm coil and the valve.



COILS FOR DIN PLUG CONNECTION

COIL 32 mm FOR JET VALVES

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.

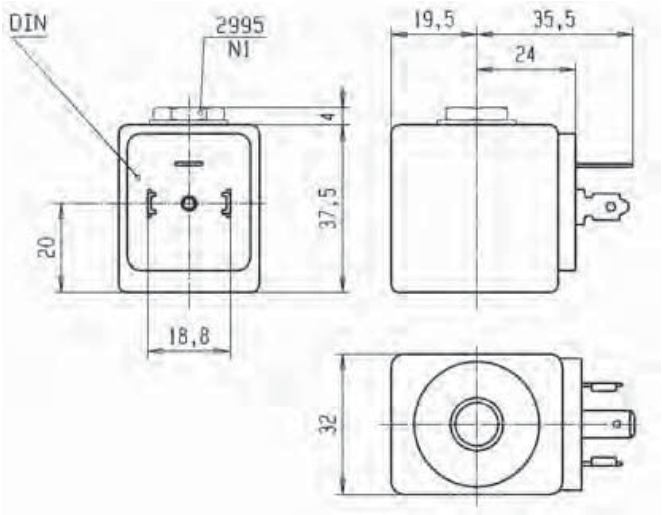
Specification			32 mm coil 14 W			
Reference			483816			
Coil Group			2.2			
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug).			
Class of insulation			F 155°C			
Electrical connection			With DIN 43650 A Plug			
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	**Pn** (hot)	14 W			
		P (cold) 20°C	-			
	AC	**Pn** (holding)	14 W			
		Attraction cold	-			
Weight			160 g			
Voltages "Un"			**VAC/Hz**	**Code**	**VDC**	**Code**
-10% to +10% of the Un			24/50	A2	24 V	C2

To Order a Coil choose Coil Ref + Voltage Code, example: 483816 for 24VDC = 483816C2
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, see example below:

The coil assembly kit **Ref. 2995** corresponds to the "housing" of Lucifer® valve numbering system (Valve - housing - coil - voltage).

It is composed of a nameplate giving details of the valve type, a round washer and a nut to ensure the fixing between 32 mm coil and the valve.



COIL GROUP

1.1

COILS FOR DIN PLUG CONNECTION

COILS 22 mm

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

This coil is designed for valves equipped with a miniature tube assembly (2000 series valves). 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.
Coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

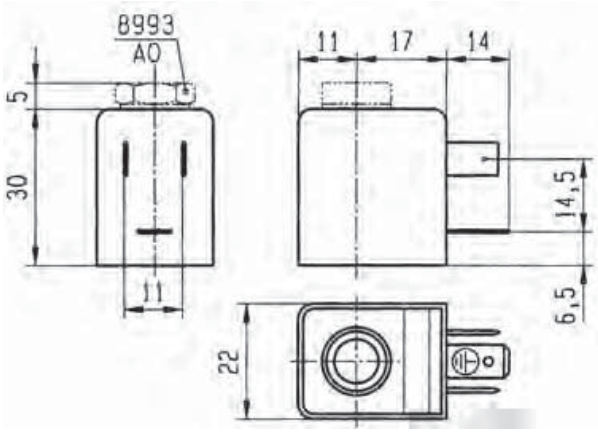
Specification			Low power				High power			
Ref. (without DIN plug) Ref. (with DIN plug)			488980 481045				481180 481530			
Coil Group			1.1							
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug).							
Class of insulation			F 155°C							
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type B.							
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.							
Elect. Power	DC	**Pn** (hot)	2.5 W				5 W			
		P (cold) 20°C	3 W				6.5 W			
	AC	**Pn** (holding)	2 W				4 W			
		Attraction cold	5.7 VA (2.5 W)				8.9 VA (5 W)			
Weight			100 g with DIN Plug							
Voltages "Un"			VAC/Hz	Code	VDC	Code	VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			24/50 48/50 110/50-115/50	A2 A4 0A	24 48 110	C2 C4 C5	24/50 110/50-115/50 220/50-230/50	A2 0A 3D	24	C2

To Order a Coil choose Coil Ref + Voltage Code, example: **488980** for **24VDC** = **488980C2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, see example below:

The coil assembly kit **Ref. 8993** corresponds to the numbering system for Lucifer® valve housings (Valve - housing - coil - voltage).

It is composed of a nameplate with the details of the valve type, a washer and a nut to secure the 22 mm coil to the valve.



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Fluid Control Division Europe
General Catalogue FCDE/0110/UK/V1.0

COILS FOR DIN PLUG CONNECTION

UL COIL 22 mm

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

This coil is designed for valves equipped with a miniature tube assembly (2000 series valves). 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.
Coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

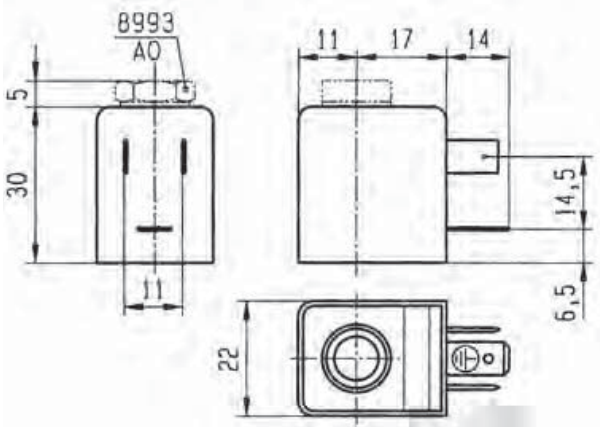
Specification			Standard UL (only if used with 321K, 121M, 131M valves)			
Reference (without DIN plug) Reference (with DIN plug)			492912 492919			
Coil Group			1.1			
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug).			
Class of insulation			A 105°C for UL/CSA			
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type B.			
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	**Pn** (hot)	4 W			
		P (cold) 20°C	4.5 W			
	AC	**Pn** (holding)	3 W			
		Attraction cold	7.5 VA (4 W)			
Weight			100 g with DIN Plug			
Voltages "Un"			VAC/Hz	Code	VDC	Code
- 15% to +10% of the Un			24/50-24/60 48/50-48/60 115/50-120/60 230/50-240/60	P0 S4 P8 T1	24	C2

To Order a Coil choose Coil Ref + Voltage Code, example: **492912** for **24VDC** = **492412C2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, see example below:

The coil assembly kit **Ref. 8993** corresponds to the "housing" of Lucifer® valve numbering system (Valve - housing - coil - voltage).

It is composed of a nameplate giving details of the valve type, a round washer and a nut to ensure the fixing between 32 mm coil and the valve.



COIL GROUP

1.1

COILS FOR DIN PLUG CONNECTION

DOUBLE FREQUENCY COIL 22 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 coil is designed for valves equipped with a miniature tube assembly (2000 series valves). 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.
Coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

DIN plug connector to be ordered separately (see coil accessories section).

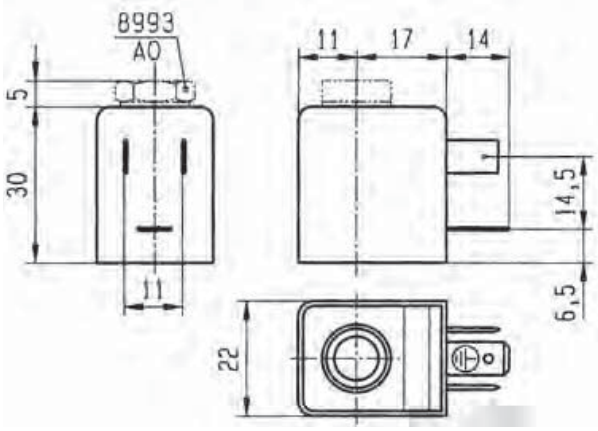
Specification			Double frequency	
Reference (without DIN plug)			483590	
Coil group			1.1	
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug).	
Class of insulation			F 155°C	
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type B.	
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.	
Elect. Power	DC	**Pn** (hot)	-	
		P (cold) 20°C	-	
	AC	**Pn** (holding)	3 W	
		Attraction cold	7.5 VA (4 W)	
Weight			100 g with DIN Plug	
Voltages "Un"			VAC/Hz	Code
-10% to +10% of the Un			24/50, 24/60 48/50, 48/60 110-115/50, 120/60 220-240/50, 240/60	P0 S4 S5 S6

To Order a Coil choose Coil Ref + Voltage Code, example: **483590** for **24/50,24/60** = **483590P0**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, see example below:

The coil assembly kit **Ref. 8993** corresponds to the "housing" of Lucifer® valve numbering system (Valve - housing - coil - voltage).

It is composed of a nameplate giving details of the valve type, a round washer and a nut to ensure the fixing between 32 mm coil and the valve.



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General Catalogue FCDE/0110/UK/V1.0

COILS FOR DIN PLUG CONNECTION

DOUBLE FREQUENCY COIL 22 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 coil is designed for valves equipped with a miniature tube assembly (2000 series valves). 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.
Coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

DIN plug connector to be ordered separately (see coil accessories section).

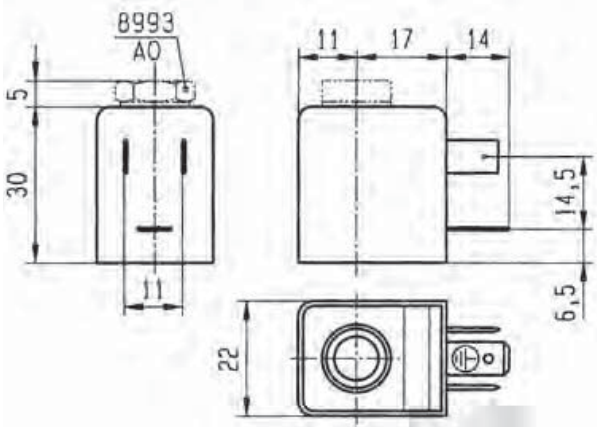
Specification			Double frequency	
Reference (without DIN Plug)			488143	
Coil group			1.1	
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug).	
Class of insulation			F 155°C	
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type B.	
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.	
Elect. Power	DC	**Pn** (hot)	-	
		P (cold) 20°C	-	
	AC	**Pn** (holding)	2.5 W	
		Attraction cold	-	
Weight			60 g	
Voltages "Un"			VAC/Hz	Code
-10% to +10% of the Un			100/50-60 200/50-60	P1 P6

To Order a Coil choose Coil Ref + Voltage Code, example: **488143** for **100/50-60** = **488143P1**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, see example below:

The coil assembly kit **Ref. 8993** corresponds to the "housing" of Lucifer® valve numbering system (Valve - housing - coil - voltage).

It is composed of a nameplate giving details of the valve type, a round washer and a nut to ensure the fixing between 32 mm coil and the valve.



COIL GROUP

1.2

COILS FOR DIN PLUG CONNECTION

DOUBLE FREQUENCY COIL 22 mm

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

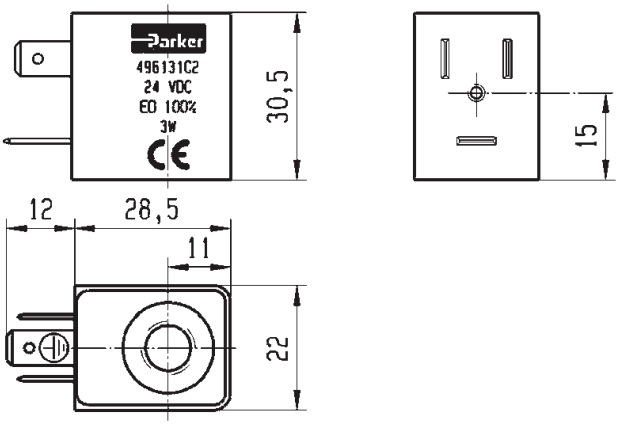
This coil is designed for valves equipped with a miniature tube assembly (2000 series valves). This is an encapsulated assembly comprising a coil, integral magnetic iron path and snap-on plug connection.

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.
Coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.
DIN plug connector to be ordered separately (see coil accessories section).

Specification			Double frequency			
Reference (without DIN Plug)			496131			
Coil group			1.2			
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug).			
Class of insulation			F 155°C			
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type B.			
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	**Pn** (hot)	3 W			
		P (cold) 20°C	-			
	AC	**Pn** (holding)	3 W			
		Attraction cold	-			
Weight			60 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			24/50-60	P0	24 V	C2
			110/50-60	P2	48 V	C4
			230/50-60	P9	110 V	C5
			48/50-60	S4		

To Order a Coil choose Coil Ref + Voltage Code, example: **496131** for **24VDC** = **496131C2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

"The housing kit is already included in the coil reference, it is not needed to order it separately."



COILS FOR DIN PLUG CONNECTION

DOUBLE FREQUENCY COIL 22 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 coil is designed for valves equipped with a miniature tube assembly (2000 series valves). This is an encapsulated assembly comprising a coil, integral magnetic iron path and snap-on plug connection.

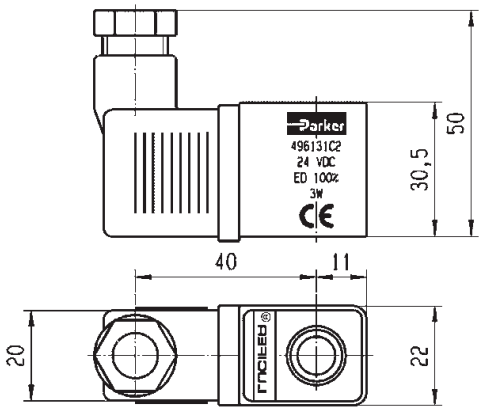
The synthetic material encapsulation provides an effective compact housing, offering full protection against dust, oil, water, etc.
Ease of mounting in confined space - offers shock and corrosion protection - simplifies conversion of existing equipment to other requirements, etc.
Coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

DIN plug connector to be ordered separately (see coil accessories section).

Specification			Double frequency			
Reference (without DIN Plug)			496482			
Coil group			1.2			
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug).			
Class of insulation			F 155°C			
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type B.			
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	**Pn** (hot)	3 W			
		P (cold) 20°C	-			
	AC	**Pn** (holding)	3 W			
		Attraction cold	-			
Weight			75 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			24/50-60	P0	24 V	C2
			110/50-60	P2	48 V	C4
			230/50-60	P9	110 V	C5
			48/50-60	S4		

To Order a Coil choose Coil Ref + Voltage Code, example: **496482** for **24VDC** = **496482C2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

"The housing kit is already included in the coil reference, it is not needed to order it separately."



COIL GROUP

1.3

COILS FOR DIN PLUG CONNECTION

WB COIL SERIES 22 mm

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

These coils can be mounted with the majority of type 2 operators. Coil manufactured with H class copper wire, moulded in thermoplastic material polyester with 30% glass fiber. IP65 protection rate with DIN 43650A three pin connector and appropriate gasket.

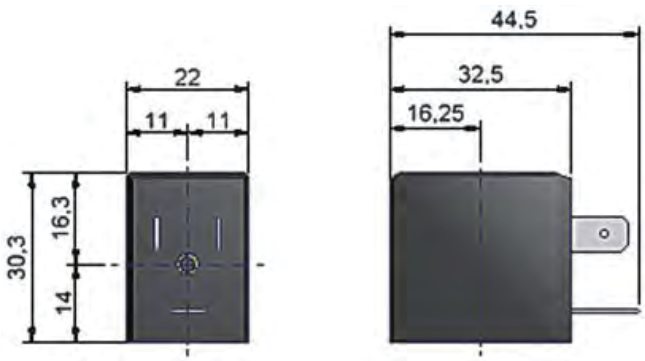
The synthetic material encapsulation provides an effective compact housing, offering full protection against dust, oil, water, etc. Coils conforms to the IEC/ CENELEC safety standards and complies with European low-voltage directive. For UL recognized version: UL file MH19410.

DIN plug connector to be ordered separately (see coil accessories section).

Specification			Standard	UL recognized version	High Power
Ref. (without DIN plug)			WB4.5 for AC WB5.0 for DC	WB4.5 UR WB5.0 cURus (only 24VDC)	WB8.0
Coil Group			1.3		
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug + gasket)		
Class of insulation			F 155°C	F 155°C	F 155°C
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type B.		
Ambient temperature			-10°C to +50°C The application is limited also by the temperature range of the valve.	-10°C to +50°C	-10°C to +50°C
Elect. Power	DC	**P** (cold) 20°C	5 W	-	-
	AC	**Pn** (holding)	4.5 W	4.5 W	8 W
		Attraction cold	7.5 VA	7.5 VA	11 VA
Weight			90 g (without plug)		

Voltages "Un"	WB4.5 VAC/Hz	Order Number	WB4.5 UR VAC/Hz	Order Number	WB8.0 VAC/Hz	Order Number
-10% to +10% of Un for AC - 5 % to + 10 % for Un DC	100/50-60 115/50-60 230/50-60 110/50	**302609** **304260** **302612** **304316**	115/60 208-240/60 24/60	**304087** **304089** **304086**	115/50-60 230/50-60 24/50-60	**302672** **302674** **302670**
	WB5.0 VDC	**Order Number**	**WB5.0 cURus VDC**	**Order Number**		
	110 VDC 12 VDC	**302660** **302652**	24 VDC	**302654**		

To Order a Coil: Use 6 digits ordering number - **Code Example:** WB8.0 for 115/50-60 = **302672**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.



COIL GROUP

20.1

COILS FOR DIN PLUG CONNECTION

ZB COIL SERIES

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

Coil manufactured with H class copper wire, moulded in thermoplastic material polyester with 30% glass fiber.
IP65 protection rate with EN 175301-803:2006-A. Three pin connector.

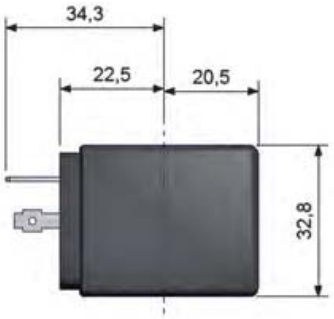
This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

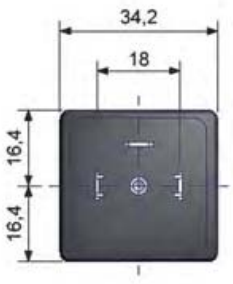
For UL recognized version: UL file MH19410.

DIN plug connector to be ordered separately (see coil accessories section).

Specification			Standard				UL recognized version	
Reference (without DIN plug)			ZB09/ZB12				ZB09 for AC only	
Coil Group			20.1					
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug and gasket)					
Class of insulation			F 155°C					
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 - A					
Ambient temperature			-10°C to +50°C The application is limited also by the temperature range of the valve.					
Elect. Power	DC	**P** (cold) 20°C	12 W					
	AC	**P** (cold) 20°C	9 W					
		Attraction cold	25 VA					
Weight			130 g					
Voltages "Un"			VAC/Hz	Order Number	VDC	Order Number	VAC/Hz	Order Number
-10% to +10% of Un for AC - 5 % to + 10 % for Un DC.			ZB09 24/50-60 ZB09 12/50-60 ZB09 230/50-60 ZB09 115/50-60 ZB09 100/50-60 ZB09 240/50-60 ZB09 48/50-60 ZB09 110-120/60 ZB09 380/50-60	**304004** **304002** **304012** **304010** **304009** **304014** **304008** **304011** **304016**	ZB12 12DC ZB12 24DC ZB12 110DC ZB12 48VDC	**304018** **304020** **304022** **304021**	ZB09 24/60 ZB09 110-120/60 ZB09 208-240/60	**304048** **304011** **304051**

To Order a Coil: Use 6 digits ordering number **- Code Example:** ZB09 24/50-60 = **304004**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.





COIL GROUP

20.2

COILS FOR DIN PLUG CONNECTION

ZB/ZH HIGH POWER - HIGH TEMPERATURE COIL SERIES

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

Coil manufactured with H class copper wire, moulded in thermoplastic material polyester with 30% glass fiber.
IP65 protection rate with EN 175301-803:2006-A. Three pin connector.

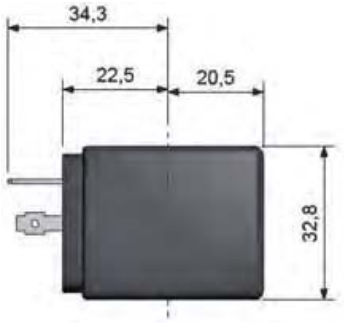
This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

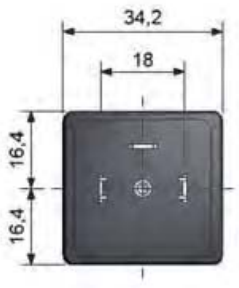
DIN plug connector to be ordered separately (see coil accessories section).

Specification			High power	High temperature + high power
Ref. (without DIN plug) Ref. (with DIN plug)			ZB14/ZB16	ZH14/ZH16
Coil Group			20.2	
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug and gasket)	
Class of insulation			F 155°C	
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 - A	
Ambient temperature			ZB14/ZB16 -10°C to +50°C	ZH14/ZH16 -10°C to +80°C
			The application is limited also by the temperature range of the valve.	
Elect. Power	DC	**P** (cold) 20°C	16 W	
	AC	**P** (cold) 20°C	14 W	
		Attraction cold	33 VA	
Weight			130 g (without plug)	

Voltages "Un"	VAC/Hz	Order Number	VDC	Order Number	VAC/Hz	Order Number	VDC	Order Number
-10% to +10% of Un for AC - 5 % to + 10 % for Un DC	ZB14 12/50-60	**304052**	ZB16 12DC	**304068**	ZH14 24/50-60	**304100**	ZH16 24DC	**304112**
	ZB14 24/50-60	**304054**	ZB16 24DC	**304070**	ZH14 115/50-60	**304102**	ZH16 12DC	**304110**
	ZB14 100/50-60	**304084**	ZB16 110DC	**304072**	ZH14 230/50-60	**304104**		
	ZB14 115/50-60	**304060**						
	ZB14 230/50-60	**304062**						
	ZB14 240/50-60	**304064**						
	ZB14 380/50-60	**304066**						
	ZB14 48/50-60	**304058**						

To Order a Coil: Use 6 digits ordering number - **Code Example:** ZH16 for 24VDC = **304112**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.





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COIL GROUP

21.0

COILS FOR DIN PLUG CONNECTION

JB COIL SERIES

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

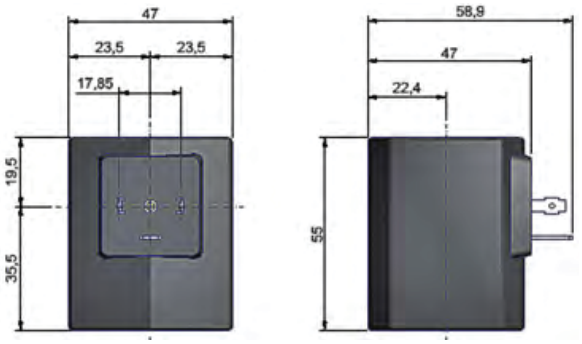
Coil manufactured with H class copper wire, moulded in thermoplastic material polyester with 30% glass fiber.
IP65 protection rate with EN 175301-803:2006-A. Three pin connector.

This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

DIN plug connector to be ordered separately (see coil accessories section).

Specification			Standard			
Ref. (without DIN plug)			JB14/JB16			
Coil Group			21.0			
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug and gasket)			
Class of insulation			F 155°C			
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 - A			
Ambient temperature			-10°C to +50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	**P** (cold) 20°C	16 W			
	AC	**P** (cold) 20°C	14 W			
		Attraction cold	55 VA			
Weight			130 g (without plug)			
Voltages "Un"			VAC/Hz	Order Number	VDC	Order Number
-10% to +10% of Un for AC - 5 % to + 10 % for Un DC.			JB14 24/50-60 JB14 115/50-60 JB14 230/50-60 JB14 240/50-60	**304900** **304910** **304915** **304920**	JB16 12DC JB16 24DC JB16 196DC	**304945** **304950** **304958**

To Order a Coil: Use 6 digits ordering number - Code Example: JB16 for 12 VDC = 304945
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.



COIL GROUP

22.0

COILS FOR DIN PLUG CONNECTION

KT/KH COIL SERIES

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

Coil manufactured with H class copper wire, moulded in thermoplastic material polyester with 30% glass fiber.
IP65 protection rate with EN 175301-803:2006-A. Three pin connector.

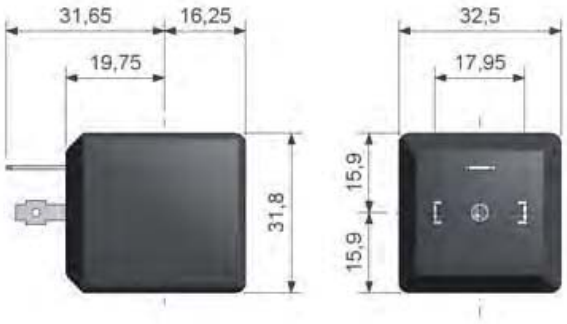
This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

DIN plug connector to be ordered separately (see coil accessories section).

Specification			Standard	High Temperature
Ref. (without DIN plug)			KT09/KT10	KH09
Coil Group			22.0	
Degree of protection			IP65 according to IEC / EN 60529 standards (with DIN plug and gasket)	
Class of insulation			F 155°C	180 (H)
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 - A	
Ambient temperature			-10°C to +50°C The application is limited also by the temperature range of the valve.	-10°C to +80°C
Elect. Power	DC	P (cold) 20°C	10 W	-
	AC	P (cold) 20°C	9 W	9 W
		Attraction cold	20 VA	20 VA
Weight			150 g (without plug)	

Voltages "Un"	VAC/Hz	Order Number	VDC	Order Number	VAC/Hz	Order Number
-10% to +10% of Un for AC - 5 % to + 10 % for Un DC	KT09 24/50	**304621**	KT10 12DC	**304666**	KH09 24/50	**304746**
	KT09 115/50	**304631**	KT10 24DC	**304971**	KH09 230/50	**304748**
	KT09 208-230/60	**304656**				
	KT09-230/50	**304639**				
	KT09 240/50	**304641**				

To Order a Coil: Use 6 digits ordering number - Code Example: KT10 for 12VDC = 304666
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.



COILS FOR DIN PLUG CONNECTION

XT09 COIL SERIES

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

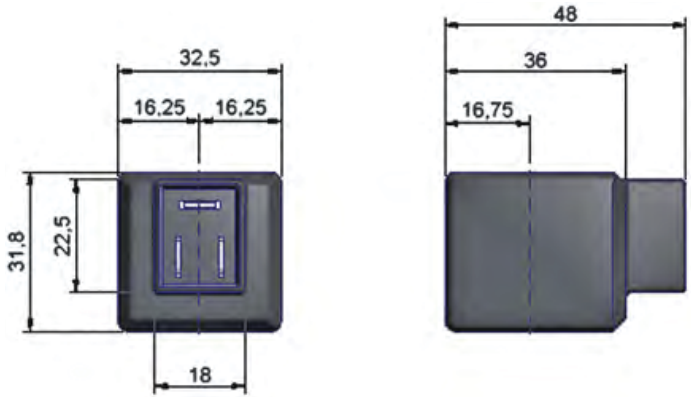
Coil manufactured with H class copper wire, moulded in thermoplastic material polyester with 30% glass fiber. IP54 protection rate with special 2P+E connection. Special plug with integrated powercord available separately.

This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

DIN plug connector to be ordered separately (see coil accessories section).

Specification			For Heating Applications	
Ref. (without DIN plug)			XT09	
Coil Group			23.0	
Degree of protection			IP54 according to IEC / EN 60529 standards (with special plug supplied separately)	
Class of insulation			F 155°C	
Electrical connection			Special 2 P + E plug connection	
Ambient temperature			-10°C to +50°C The application is limited also by the temperature range of the valve.	
Elect. Power	DC	P (cold) 20°C	-	
	AC	P (cold) 20°C	9 W	
		Attraction cold	22 VA	
Weight			150 g (without plug)	
Voltages "Un"			VAC/Hz	Order Number
-10% to +10% of Un for AC			XT09 230/50	304776

To Order a Coil: Use 6 digits ordering number - **Code Example:** XT09 230/50 = **304776**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.



COIL GROUP

24.0

COILS FOR DIN PLUG CONNECTION

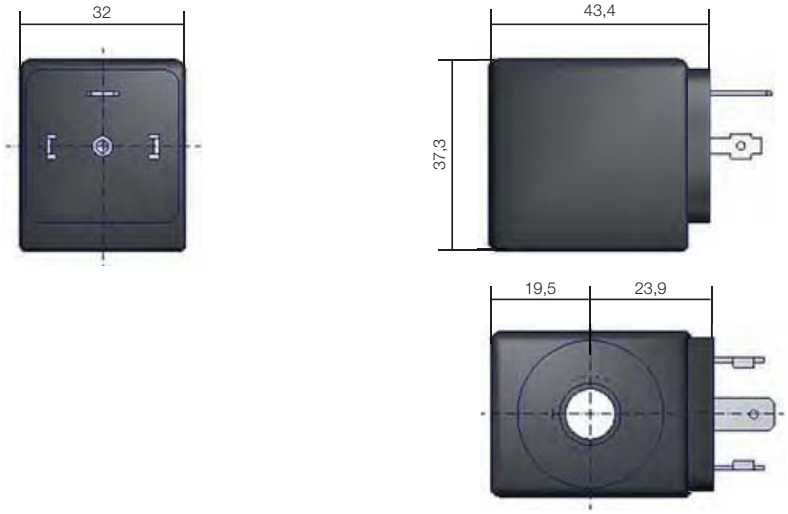
D4 SERIES - UL COILS 32 mm

This coil is UL-approved as a recognized component for the insulation Class 155, conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

DIN plug connector to be ordered separately (see coil accessories section).

Specification			UL Recognized			
Reference (without DIN plug)			D4 Series			
Coil group			24.0			
Degree of protection			IP65 according to IEC / EN 60529 standards (with DIN plug)			
Class of insulation			F 155°C			
Electrical Connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type A			
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	Pn (hot)	16 W			
		P (cold) 20°C	-			
	AC	Pn (holding)	13 W			
		Attraction cold	40 VA			
Weight			130 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of Un for AC			24/60 110/50 - 120/60 220/50 - 240/60	D4E D4F D4G	24	D4B

To Order a Coil: Use 6 digits ordering number **- Code Example:** D4 for 24VAC/60Hz = **D4E**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.



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COILS FOR DIN PLUG CONNECTION

D5 COIL SERIES 32 mm

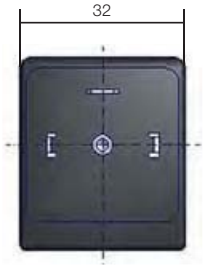
Encapsulated in synthetic material, Connector for 2P+E according with DIN EN 175301-803, Form A, IP65 degree of protection to be considered with connector plug only.

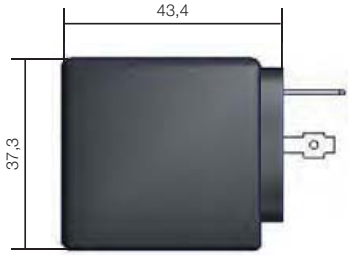
This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

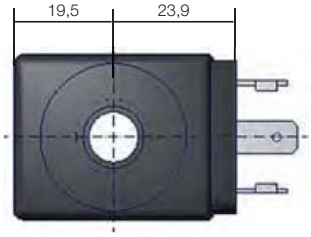
DIN plug connector to be ordered separately (see coil accessories section).

Specification			Mono Frequency VDE Coil			
Reference (without DIN plug)			D5 Series			
Coil group			24.0			
Degree of protection			IP65 according to IEC / EN 60529 standards (with DIN plug)			
Class of insulation			F 155°C			
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type A.			
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	**Pn** (hot)	9 W			
		P (cold) 20°C	-			
	AC	**P** (cold) 20°C	8 W			
		Attraction cold	40 VA			
Weight			130 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of Un for AC			24/50 110/50 220-230/50 24/60 230/60 115/60	D5H D5XA5 D5L D5E D5XJ3 D5XK8	24	D5B

To Order a Coil: Use 6 digits ordering number - Code Example: D5 for 24 VAC/60 Hz = DSE
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.







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COIL GROUP

24.0

COILS FOR DIN PLUG CONNECTION

XS03 COIL SERIES 32 mm

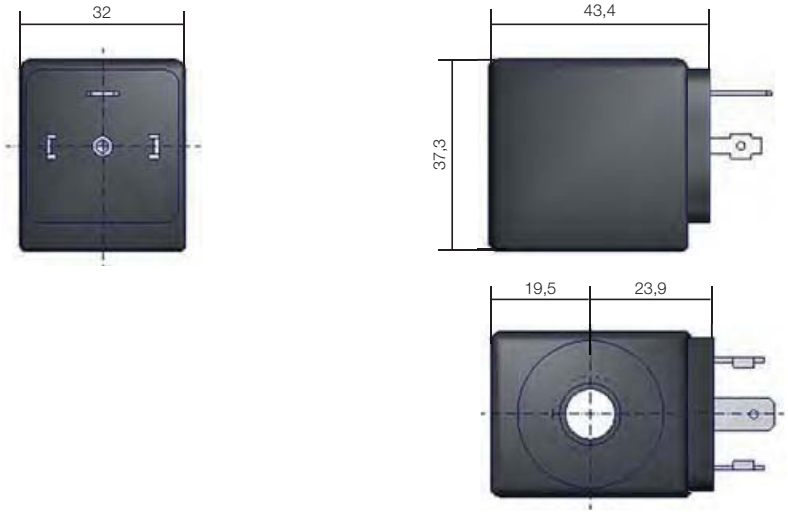
Encapsulated in synthetic material, Connector for 2P+E according with DIN EN 175301-803, Form A, IP65 degree of protection to be considered with connector plug only.

This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

DIN plug connector to be ordered separately (see coil accessories section).

Specification			Bi- Frequency VDE Coil	
Reference (without DIN plug)			XS03 Series	
Coil group			24.0	
Degree of protection			IP65 according to IEC / EN 60529 standards (with DIN plug)	
Class of insulation			F 155°C	
Electrical Connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type A	
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.	
Elect. Power	DC	Pn (hot)	-	
		P (cold) 20°C	-	
	AC	Pn (holding)	9 W	
		Attraction cold	32 VA	
Weight			130 g	
Voltages "Un"			VAC/Hz	Code
-10% to +10% of Un for AC			24/50 - 24/60 110-115/50 - 120/60 220-240/50 - 240/60	XS09XM XS03XS5 XS03XS6

To Order a Coil: Use 6 digits ordering number **- Code Example:** XS03 for 24/50-24/60 = **XS09XM**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.



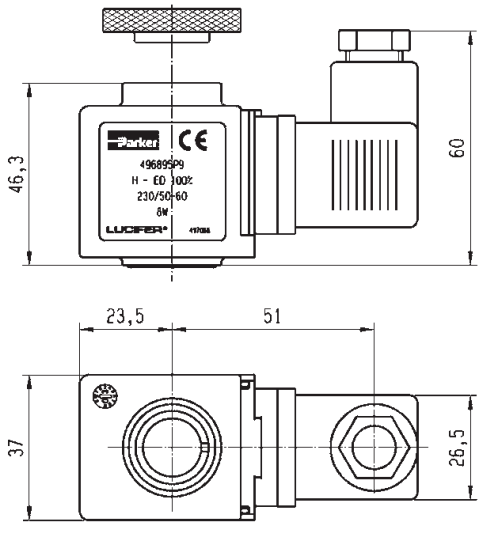
COILS FOR DIN PLUG CONNECTION

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 to be ordered separately (see coil accessories section).

Specification			Coil for Oil and Gas 8 W			
Reference (with DIN plug)			496895			
Coil group			10.1			
Degree of protection			IP65			
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 r ange 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			230/50-60 110/50-60 24/50-60 48/50-60	P9 P2 P0 S4	24 48 110	C2 C4 C5

To Order a Coil choose Coil Ref + Voltage Code, example: **496895** for **24VDC** = **496895C2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.



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COIL GROUP

20.1

COILS WITH FLYING LEADS

YB COIL SERIES IP67

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

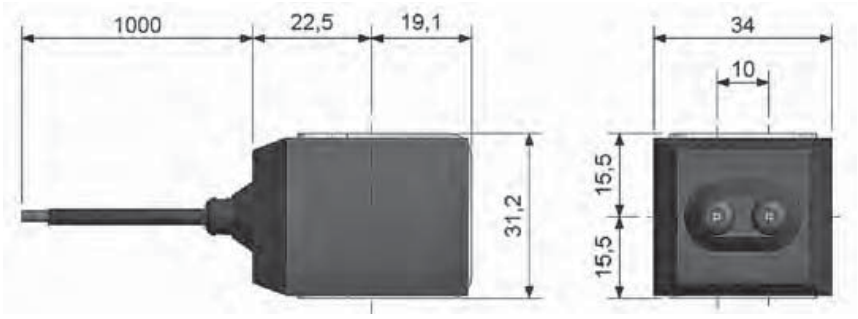
Coil manufactured with H class copper wire, moulded in thermoplastic material polyester with 30% glass fiber.
IP67 protection rate. Electrical connection: 2 x 1000 mm cables.

This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

For UL recognized version: UL file MH19410.

Specification			Standard				UL recognized version	
Reference			YB09/YB12				YB09	
Coil Group			20.1					
Degree of protection			**IP67** according to IEC / EN 60529 standards					
Class of insulation			F 155°C					
Electrical connection			The coil is connected with a 2 x 1000 mm flying leads integrated.					
Ambient temperature			-10°C to +50°C The application is limited also by the temperature range of the valve.					
Elect. Power	DC	**P** (cold) 20°C	12 W				-	
	AC	**Pn** (holding)	9 W				9 W	
		Attraction cold	24 VA				24 VA	
Weight			150 g					
Voltages "Un"			VAC/Hz	Order Number	VDC	Order Number	VAC/Hz	Order Number
-10% to +10% of Un for AC - 5 % to + 10 % for Un DC.			YB09 115/50-60 YB09 230/50-60 YB09 24/50-60 YB09 240/50-60	**304396** **304398** **304390** **304400**	YB12 12DC YB12 24DC	**304412** **304416**	YB09 24/60 YB09 110-120/60 YB09 208-240/60	**304481** **304488** **304483**

To Order a Coil: Use 6 digits ordering number - Code Example: YB09 for 24 VAC/60 Hz = 304481
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.



COILS WITH FLYING LEADS

LA COIL SERIES 32 mm IP67

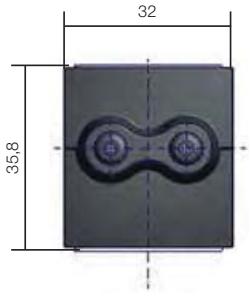
Encapsulated in synthetic material. Degree of protection IP67 as per IEC/EN60529.

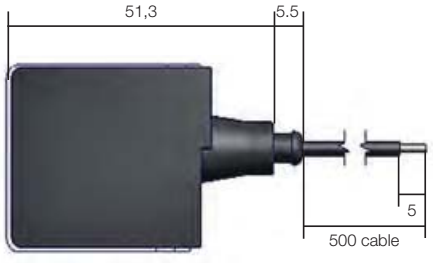
Connection: 2 x 500 mm cables.

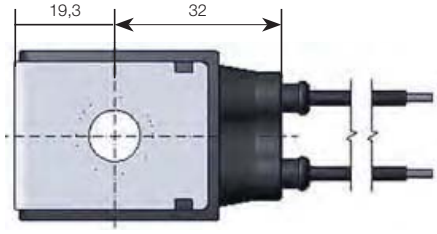
This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

Specification			Coil with two 500 mm flying leads			
Reference			LA Series			
Coil group			24.0			
Degree of protection			**IP67** according to IEC / EN 60529 standards			
Class of insulation			F 155°C			
Ambient temperature			-10°C to +50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	**Pn** (hot)	9 W			
		P (cold) 20°C	-			
	AC	**Pn** (holding)	9 W			
		Attraction cold	32 VA			
Weight			180 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of Un for AC			24/50 - 24/60 110-115/50 - 120/60 220-240/50 - 240/60	LAM LAXS5 LAXS6	24	LAB

To Order a Coil: Use 6 digits ordering number - **Code Example:** LA Series for 24 VDC = **LAB**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.







Parker Hannifin Corporation
Fluid Control Division Europe
General Catalogue FCDE/0110/UK/V1.0

COIL GROUP

24.0

COILS WITH FLYING LEADS

LB-LC COIL SERIES 32 mm UL IP67

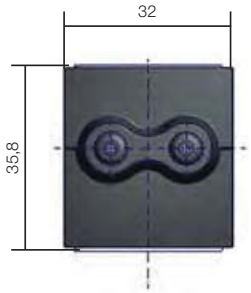
Encapsulated in synthetic material. Degree of protection IP67 as per IEC/EN60529.

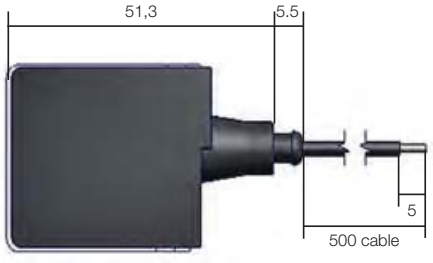
Connection: 2 x 500mm cables.

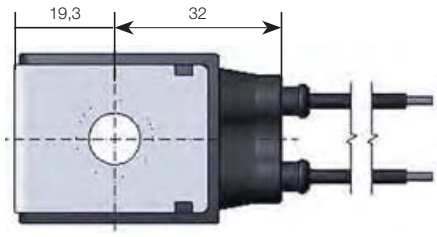
This coil is UL-approved as a recognized component for the insulation Class 155, conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

Specification			UL Coil with two 500 mm flying leads			
Reference			LB-LC Series			
Coil group			24.0			
Degree of protection			**IP67** according to IEC / EN 60529 standards			
Class of insulation			F 155°C			
Ambient temperature			-10°C to +50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	**Pn** (hot)	16 W			
		P (cold) 20°C	-			
	AC	**Pn** (holding)	13-14 W			
		Attraction cold	40 VA			
Weight			180 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of Un for AC			24/60 110/50 - 120/60 208-240/60 220/50 240/60	LBE LBF LBXU3 LBG	24	LCB

To Order a Coil: Use 6 digits ordering number - Code Example: LB-LC for 24 VDC = LCB
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.







Parker Hannifin Corporation
Fluid Control Division Europe
General Catalogue FCDE/0110/UK/V1.0

COIL 32 mm IP67

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

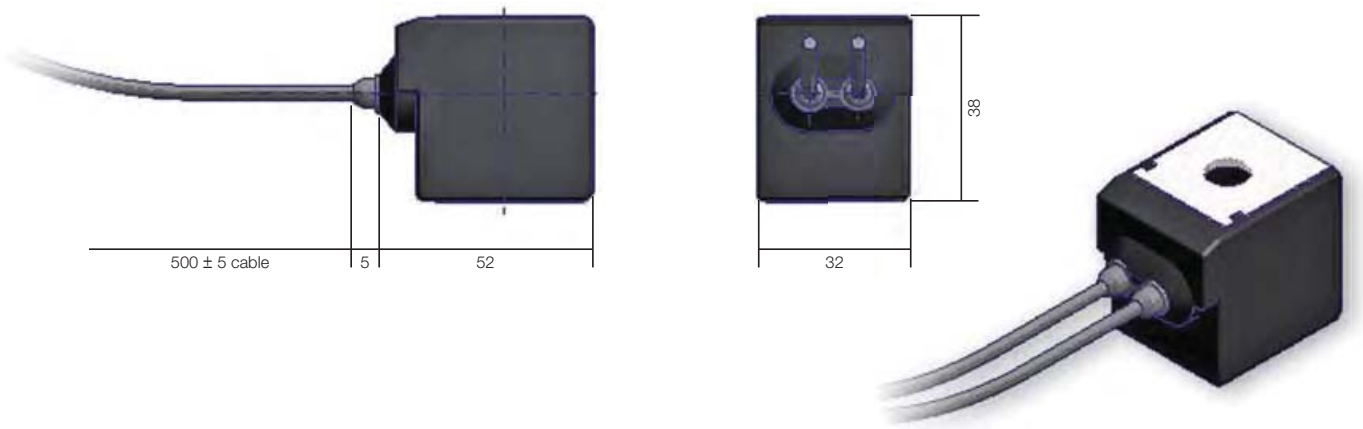
This is an encapsulated assembly comprising a coil, integral magnetic iron path and snap-on plug connection.

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.

Specification			Coil with two 500 mm flying leads			
Reference			496081			
Coil Group			2.0 / 2.1			
Degree of protection			**IP67** according to IEC / EN 60529 standards			
Class of insulation			F 155°C			
Ambient temperature			- 40 °C to +50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	**Pn** (hot)	9 W			
		P (cold) 20°C	-			
	AC	**Pn** (holding)	9 W			
		Attraction cold	32 VA			
Weight			180 g			
Voltages "Un"			VAC/Hz	Order Number	VDC	Order Number
-10% to +10% of Un for AC			24/50 - 24/60 110-115/50 - 120/60 220-240/50 - 240/60	**439816** **439820** **439822**	24 12	**439818** **439814**

To Order a Coil: Use 6 digits ordering number - Code Example: 496081 for 24VDC = 439818
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

For Parker Lucifer® valves please order housing Ref: 2995



COIL GROUP

2.0/2.2

COILS WITH FLYING LEADS

COIL 32 mm IP67 UL

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

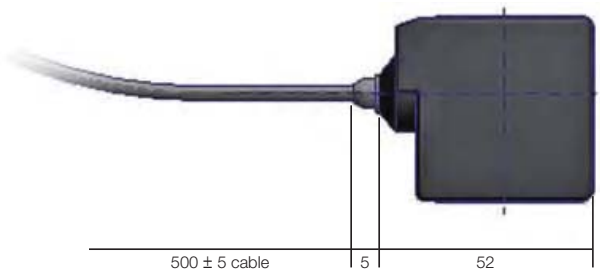
This is an encapsulated assembly comprising a coil, integral magnetic iron path and snap-on plug connection.

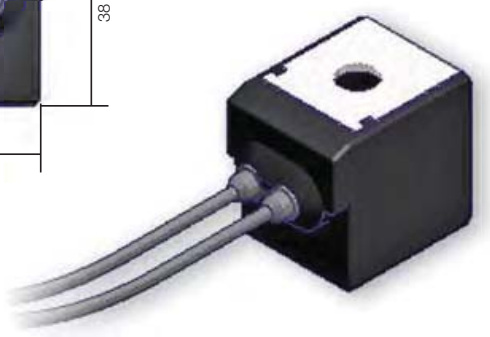
The synthetic material encapsulation provides an effective compact housing, offering full protection against dust, oil, water, etc.
Ease of mounting in confined space - offers shock and corrosion protection - simplifies conversion of existing equipment to other requirements, etc.
Coils conform to the IEC/CENELEC safety standards and complies with European low-voltage directive.

Specification			UL Coil with two 500 mm flying leads			
Reference			496082			
Coil Group			2.0 / 2.2			
Degree of protection			**IP67** according to IEC / EN 60529 standards			
Class of insulation			F 155°C			
Ambient temperature			-40°C to +120°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	**Pn** (hot)	16 W			
		P (cold) 20°C	-			
	AC	**Pn** (holding)	13-14 W			
		Attraction cold	40 VA			
Weight			180 g			
Voltages "Un"			VAC/Hz	Order Number	VDC	Order Number
-10% to +10% of Un for AC			24/60 110/50 - 120/60 208-240/60 220/50 - 240/60	**439826** **439828** **439824** **439834**	24 12	**439832** **439830**

To Order a Coil: Use 6 digits ordering number - Code Example: 496082 for 24VDC= 439832
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

For Parker Lucifer® valves please order housing Ref: 2995





COILS WITH SCREW TERMINALS

STANDARD COILS 40 mm

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

They can be mounted with all metal housings.

The coil winding is completely encapsulated in synthetic material.

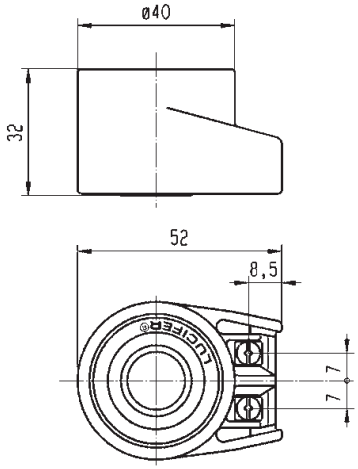
Easy mounting in confined spaces. Electrical connection with screw terminals for wire up to 1.5 mm².

Coils conform to the IEC/CENELEC safety standards and complies with European low-voltage directive.

Specification			Standard				Double Frequency	
Reference			481000				483520	
Coil Group			2.0 / 2.1					
Class of insulation			F 155°C					
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve..					
Elect. Power	DC	Pn (hot)	8W				-	
		P (cold) 20°C	9W				-	
	AC	Pn (holding)	8W				9W	
		Attraction cold	32 VA (9 W)				36 VA (10 W)	
Weight			130 g				130 g	
Voltages "Un"			VAC/Hz	Code	VDC	Code	VAC/Hz	Code
-10% to +10% of the Un (-15 % to +5 % for double-frequency coil with voltage code S6 if 240 V/50/Hz is used).			24/50 48/50 110/50-115/50 220/50-230/50	A2 A4 0A 3D	24 48 110	C2 C4 C5	24/50-60 48/50-60 110-115/50-120/60 220-240/50-240/60	P0 S4 S5 S6

To Order a Coil choose Coil Ref + Voltage Code, example: **481000** for **24VDC** = **481000C2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, see examples below:



Ref. 4270 - Protection IP 44

Ref. 4538 - Protection IP 67

COIL GROUP

2.0/2.2

COILS WITH SCREW TERMINALS

HIGH POWER COILS 40 mm

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

They can be mounted with all metal housings.

The coil winding is completely encapsulated in synthetic material.

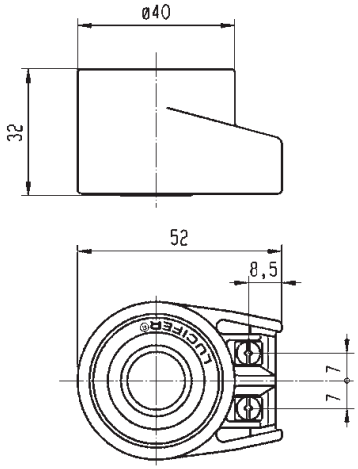
Easy mounting in confined spaces. Electrical connection with screw terminals for wire up to 1.5 mm².

Coils conform to the IEC/CENELEC safety standards and complies with European low-voltage directive.

Specification			High Power	
Reference			481044	
Coil Group			2.0 / 2.2	
Class of insulation			F 155°C	
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.	
Elect. Power	DC	Pn (hot)	-	
		P (cold) 20°C	-	
	AC	Pn (holding)	14 W	
		Attraction cold	56 VA (20 W)	
Weight			130 g	
Voltages "Un"			VAC/Hz	Code
-10% to +10% of the Un			24/50 110/50 220/50 230/50	A2 A5 A7 F4

To Order a Coil choose Coil Ref + Voltage Code, example: **481044** for **24VAC/50Hz = 481044A2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, see examples below:



Ref. 4270 - Protection IP 44

Ref. 8520 - Protection IP 67

COILS WITH SCREW TERMINALS

RoHS CE

HIGH TEMPERATURE COILS 40 mm

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

They can be mounted with all metal housings.

The coil winding is completely encapsulated in synthetic material.

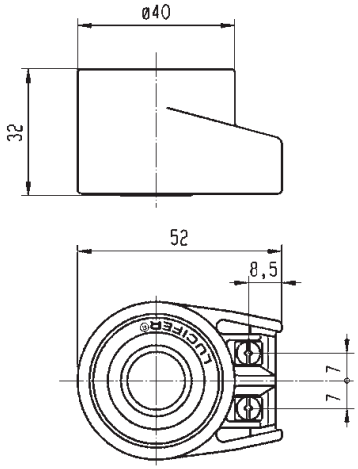
Easy mounting in confined spaces. Electrical connection with screw terminals for wire up to 1.5 mm².

Coils conform to the IEC/CENELEC safety standards and complies with European low-voltage directive.

Specification			High Temperature		High Temperature & High Power			
Reference			485100		486265			
Coil Group			2.0 / 2.1		2.0 / 2.2			
Class of insulation			H 180°C					
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		14 W			
		P (cold) 20°C	9 W		21 W			
	AC	Pn (holding)	8 W		14 W			
		Attraction cold	32 VA (9 W)		56 VA (20 W)			
Weight			140 g					
Voltages "Un"			VAC/Hz	Code	VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			24/50 110/50-115/50 220/50-230/50	A2 0A 3D	24/50 110/50 220/50 230/50	A2 A5 A7 F4	12 24 48	C1 C2 C4

To Order a Coil choose Coil Ref + Voltage Code, example: **485100** for **24VAC/50Hz = 485100A2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, see examples below:



Ref. 4270 - Protection IP 44

Ref. 8520 - Protection IP 67

COIL GROUP

14.1

COILS WITH SCREW TERMINALS

HIGH TEMPERATURE & HIGH POWER COILS 40 mm OIL BURNER

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

They can be mounted with all metal housings.

The coil winding is completely encapsulated in synthetic material.

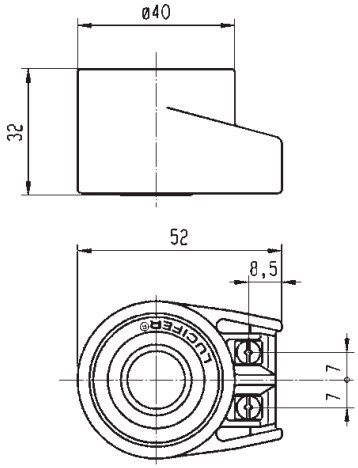
Easy mounting in confined spaces. Electrical connection with screw terminals for wire up to 1.5 mm².

Coils conform to the IEC/CENELEC safety standards and complies with European low-voltage directive.
This coil range is used only in safety application according to DIN/EN/ISO 23551-1:2009-10 (Oil burners)

Specification			High Temperature & High power					
Reference			483824		483541			
Coil Group			14.1					
Class of insulation			H 180°C					
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.					
Elect. Power	DC	Pn (hot)	19 W		20 W			
		P (cold) 20°C	19 W		20 W			
	AC	Pn (holding)	19 W		20 W			
		Attraction cold	56 VA (20 W)		56 VA (20 W)			
Weight			130 g					
Voltages "Un"			VAC/Hz	Code	VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			24/50 110/50-115/50 220/50-230/50	A2 0A 3D	24/50 110/50 230/50	A2 A5 F4	24 48	C2 C4

To Order a Coil choose Coil Ref + Voltage Code, example: **483541** for **24VDC** = **483541C2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, Ref: 8760.24 and Ref: 8520.23



Ref. 8760.24

Ref. 8520.23

COIL DOUBLE FREQUENCY 40 mm H CLASS

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

They can be mounted with all metal housings.

The coil winding is completely encapsulated in synthetic material.

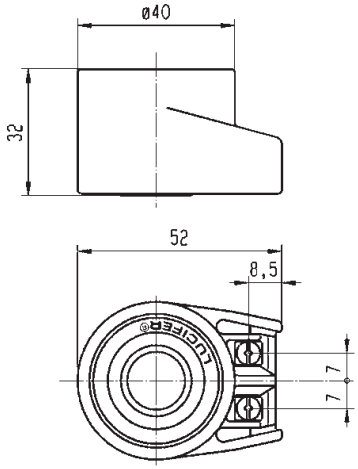
Easy mounting in confined spaces. Electrical connection with screw terminals for wire up to 1.5 mm².

Coils conform to the IEC/CENELEC safety standards and complies with European low-voltage directive.

Specification			Double Frequency 100 V - 200 V	
Reference			488553	
Coil Group			2.0/2.1	
Class of insulation			H 180°C	
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.	
Elect. Power	DC	Pn (hot)	-	
		P (cold) 20°C	-	
	AC	Pn (holding)	9 W	
		Attraction cold	-	
Weight			130 g	
Voltages "Un"			VAC/Hz	Code
-10% to +10% of the Un			110/50-60 200/50-60	P1 P6

To Order a Coil choose Coil Ref + Voltage Code, example: **488553** for **110/50-60** = **488553P1**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

These coils must be used with suitable housings, see examples below:



Ref. 4270 - Protection IP 44

Ref. 2985 - Protection IP 54

COIL GROUP

4.0

COILS WITH SCREW TERMINALS

BISTABLE COILS 40 mm FOR IMPULSE APPLICATIONS

These coils can be mounted with every Parker solenoid valves corresponding to the specified Coil Group.

See column "Coil Group" within valve pages.

These coils are specially designed for Lucifer® bistable (or impulse or magnetic latch) solenoid valves for Heating Applications.

They can be mounted only with the Lucifer® metallic housing 4269.
The coil winding is completely encapsulated in synthetic material.
Easy mounting in confined spaces. Electrical connection with screw terminals for wire up to 1.5 mm².

Coils conform to the IEC/CENELEC safety standards and complies with European low-voltage directive.

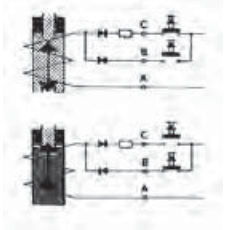
Specification			Bistable (Impulse)			
Reference			484990		485400	
Coil Group			4.0			
Class of insulation			F 155°C			
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.			
Length of impulses			Switch on (terminals A-B): minimum 50 ms Switch off (terminals A-C): minimum 35 ms			
Electr. Power consuption	DC	Attraction (hot)	-		13 W	
		Attraction (cold)	-		19 W	
		Release (hot)	-		8 W	
		Release (cold)	-		10 W	
	AC	Attraction (hot)	11 W		-	
		Attraction (cold)	17 W		-	
		Release (hot)	4 W		-	
		Release (cold)	7 W		-	
Weight			150 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			24/50-24/60 48/50-48/60 110-115/50-115/60 220-230/50-60	P0 S4 1P 3P	24 48 110	C2 C4 C5

To Order a Coil choose Coil Ref + Voltage Code, example: **485400** for **24VDC** = **485400C2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

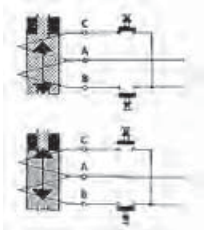
These coils must be used with suitable housings, see examples below:

DIAGRAM

Alternating Current



Direct Current



Only an electrical impulse given to terminals A-C reverses the magnetic field. This magnetic field demagnetises the reversible magnet enough to allow the return spring to bring the plunger back to its initial position and close the valve.

Ref. 4269 - Protection IP 44

Ref. 2985 - Protection IP 54

Parker Hannifin Corporation
Fluid Control Division Europe
General Catalogue FCDE/0110/UK/V1.0

COILS 12 V - 24 V FOR TRANSPORTATION APPLICATIONS 32 mm

These coils can be mounted with every Parker solenoid valves corresponding to the specified Coil Group.

See column "Coil Group" within valve pages.

These coils are specially designed for Lucifer® solenoid valves for Transportation Applications.
They can be mounted with the standard Lucifer® housing 2161 or customized housing.

The coil winding is completely encapsulated in epoxy.
Easy mounting and dismounting in confined spaces. Bayonet twist and lock coupling for tight, vibration resistant connection.

Coils conform to the IEC/CENELEC safety standards and complies with European low-voltage directive.

Specification			Transportation			
Reference			496193		495294	
Coil Group			13.0			
Degree of protection			IP69K per DIN 400050 part 9			
Ambiant temperature			- 40°C to +120°C The application is limited also by the temperature range of the valve and duty cycle of the valve.			
Insulation Class			F 155°C			
Electrical connection			ISO 15170-A1-2.3-Sn/K2		DIN 72585-A3-2.1	
Elect. Power	DC	Pn (hot)	9 w			
		P (cold) 20°C	-			
	AC	Pn (holding)	-			
		Attraction cold	-			
Weight			147 g			
Voltages "Un"			VDC	Code	VDC	Code
- 30% to + 30% of the Un			12 24	C1 C2	12 24	C1 C2

To Order a Coil choose Coil Ref + Voltage Code, example: **496193** for **24VDC** = **496193C2**

These coils must be used with suitable housings Ref.2161.

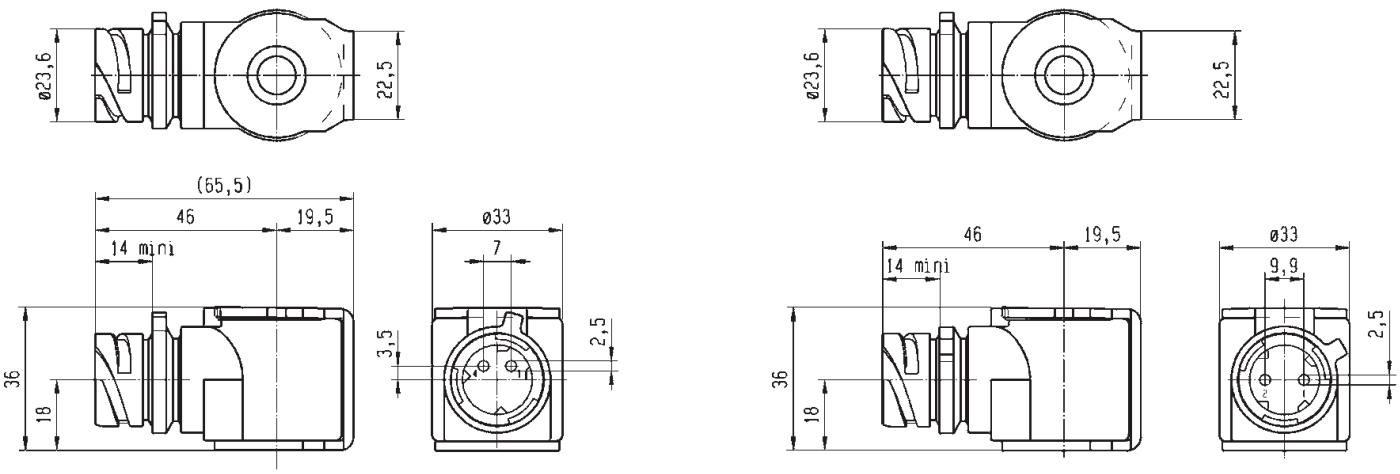


TABLE OF CONTENT

ELECTRICAL PART LOW POWER 22 mm

This coil can be mounted with every Parker ATEX solenoid valves corresponding to the specified Coil Group.

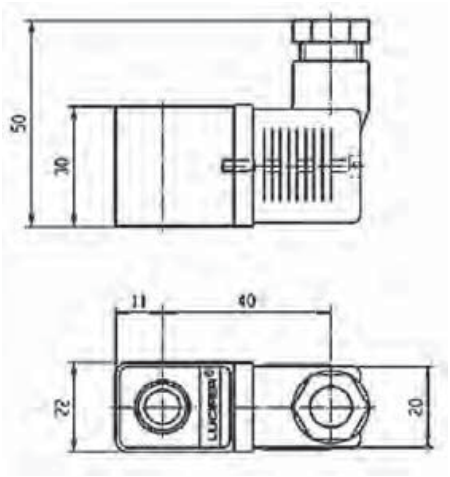
See column "Coil Group" within valve pages.

Application:
Control of solenoid valves in dangerous areas where explosion-proof protection Ex nc AC IIC T5 is required.

Benefits:
The synthetic material encapsulation of the coil provides an effective compact housing, offering full protection against dust, oil, water, etc.
Small size for ease of mounting in confined spaces.

Reference			495865			
Certificate			LCIE 05 ATEX 6003 X			
Coil Group			1.1			
Type of protection		Gas	II 3 G - Ex nc AC IIC T5			
		Dust	II 3 D - Ex tc IIIC - T 95°C			
Degree of protection			**IP65** (with plug) according to IEC/EN 60529			
Ambiant temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.			
Insulation Class			F 155°C			
Electrical connection			These coils with connection 2P + G - when mounted together with the supplied Pg 9 plug (delivered with the coil),			
Elect. Power	DC	**Pn** (hot)	2.5 W			
		P (cold) 20°C	3 W			
	AC	**Pn** (holding)	2 W			
		Attraction cold	5.7 VA (2.5 W)			
Weight			120 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			24/50 48/50 110/50-115/50 220/50-230/50	A2 A4 0A 3D	24 48 110	C2 C4 C5

To Order a Coil choose Coil Ref + Voltage Code, example: **495865** for **24VDC** = **495865C2**



ELECTRICAL PART DOUBLE FREQUENCY 22 mm

This coil can be mounted with every Parker ATEX solenoid valves corresponding to the specified Coil Group.

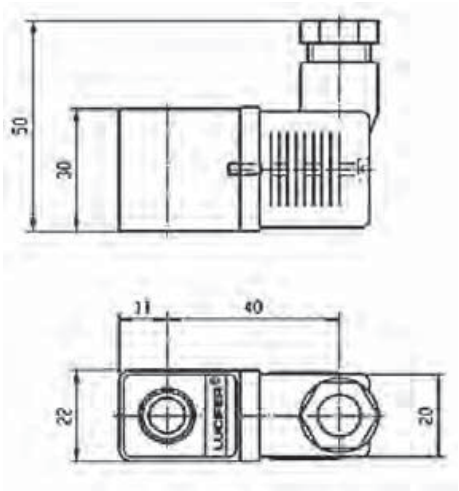
See column "Coil Group" within valve pages.

Application:
Control of solenoid valves in dangerous areas where explosion-proof protection Ex nc AC IIC T5 is required.

Benefits:
The synthetic material encapsulation of the coil provides an effective compact housing, offering full protection against dust, oil, water, etc.
Small size for ease of mounting in confined spaces.

Specification			Double Frequency			
Reference			496637			
Certificate			ATEX			
Coil group			1.2			
Type of protection		Gas	-			
		Dust	II 3 D - Ex tc IIIC - T 95°C			
Degree of protection			**IP65** (with plug) according to IEC/EN 60529			
Ambiant temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.			
Insulation Class			F 155°C			
Elect. Power	DC	**Pn** (hot)	3 W			
		P (cold) 20°C	-			
	AC	**Pn** (holding)	3 W			
		Attraction cold	5.7 VA (2.5 W)			
Weight			75 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			24/50-60 110/50-60 230/50-60 48/50-60	P0 P2 P9 S4	24 V 48 V 110 V	C2 C4 C5

To Order a Coil choose Coil Ref + Voltage Code, example: **496637** for **24VDC** = **496637C2**



ELECTRICAL PART 32 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.

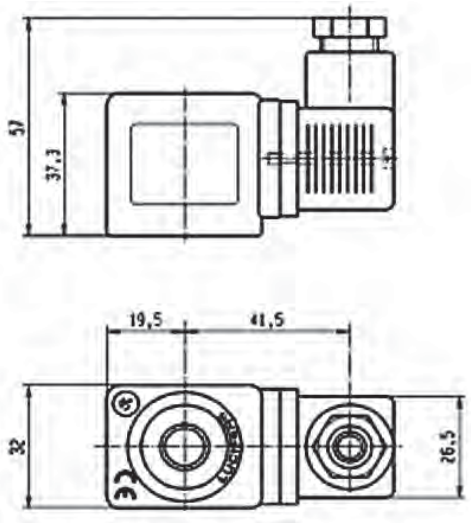
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex nc AC IIC T3 to T6 is required.
Ease of mounting in confined space - offers shock and corrosion protection - simplifies conversion of existing equipment to other requirements, etc. Coils conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

Small size for ease of mounting in confined spaces.

Reference			495870	496110
Certificate			LCIE 05 ATEX 6003 X	
Coil Group			2.0 / 2.1	
Type of protection		Gas	II 3 G - Ex nc AC IIC T3 / T4	II 3 G - Ex nc AC IIC T3 / T4
		Dust	II 3 D - Ex tc IIIC - T195°C / T130°C	II 3 D - Ex tc IIIC - T195°C / T130°C
Degree of protection			**IP65** (with plug) according to IEC/EN 60529	
Insulation Class			F (155°C)	
Duty cycle			100%	
Ambiant temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.	
Elect. Power	DC	**Pn** (hot)	9 W	-
		P (cold) 20°C	12 W	-
	AC	**Pn** (holding)	8 W	9 W
		Attraction cold	26 VA (9 W)	32 VA (10 W)
Weight			150 g	

Voltages "Un"	VAC/Hz	Code	VDC	Code	VAC/Hz	Code
-10% to +10% of the Un	24/50	A2	24	C2	24/50-60	P0
	48/50	A4	48	C4	48/50-60	S4
	110/50	A5	110	C5	110/50-60	S5
	220-230/50	3D			220/50-60	S6

To Order a Coil choose Coil Ref + Voltage Code, example: **495870** for **24VDC** = **495870C2**



ELECTRICAL PART LOW POWER 32 mm

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

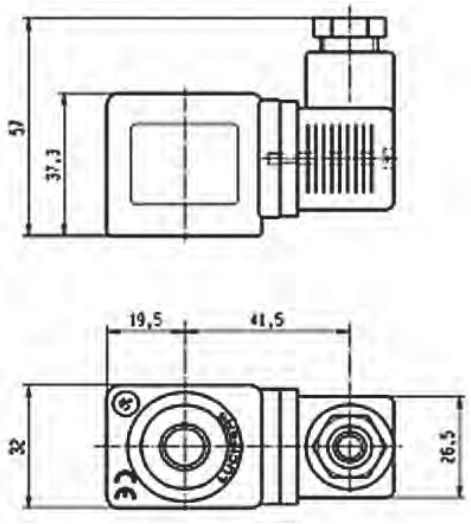
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex nc AC IIC T3 to T6 is required.
Ease of mounting in confined space - offers shock and corrosion protection - simplifies conversion of existing equipment to other requirements, etc. Coils conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

Small size for ease of mounting in confined spaces.

Reference			496125
Certificate			LCIE 05 ATEX 6003 X
Coil group			6.0
Type of protection		Gas	II 3 G - Ex nc AC IIC T5 / T6
		Dust	II 3 D - Ex tc IIIC - T80°C /T95°C
Degree of protection			**IP65** (with plug) according to IEC/EN 60529
Insulation Class			F (155°C)
Duty cycle			100%
Ambiant temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.
Elect. Power	DC	**Pn** (hot)	1.6 W
		P (cold) 20°C	2.1 W
	AC	**Pn** (holding)	-
		Attraction cold	-
Weight			150 g

Voltages "Un"	VDC	Code
-10% to +10% of the Un	24	C2
	48	C4
	110	C5

To Order a Coil choose Coil Ref + Voltage Code, example: **496125** for **24VDC** = **496125C2**



ELECTRICAL PART 32 mm

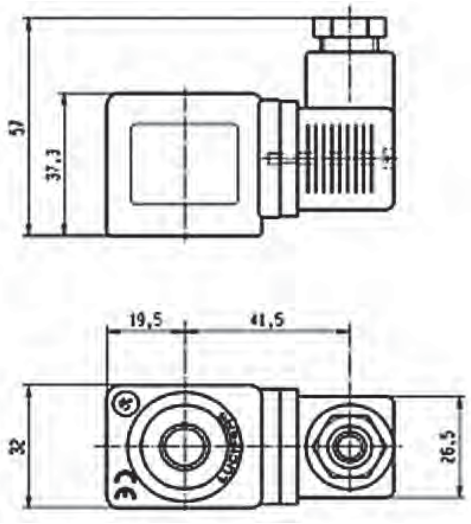
This coil can be mounted with every Parker ATEX solenoid valves corresponding to the specified Coil Group.
See column "Coil Group" within valve pages.

Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex nc AC IIC T3 to T6 is required.
Ease of mounting in confined space - offers shock and corrosion protection - simplifies conversion of existing equipment to other requirements, etc. Coils conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

Small size for ease of mounting in confined spaces.

Specification			32 mm Coil "nc AC"			
Reference			495875			
Certificate			LCIE 05 ATEX 6003 X			
Coil Group			2.0 / 2.1			
Type of protection		Gas	II 3 G - Ex nc AC IIC T3 / T4			
		Dust	II 3 D - Ex tc IIIC - T195°C / T130°C			
Degree of protection			**IP65** (with plug) according to IEC/EN 60529			
Insulation Class			F 155°C			
Duty cycle			100%			
Ambiant temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	**Pn** (hot)	7 W			
		P (cold) 20°C	-			
	AC	**Pn** (holding)	6 W			
		Attraction cold	-			
Weight			180 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			220-230/50	3D	24	C2

To Order a Coil choose Coil Ref + Voltage Code, example: **495875** for **24VDC** = **495875C2**



COIL GROUP
2.0/2.2

NON ENCAPSULATED ELECTRICAL PARTS "nc AC"

ELECTRICAL PART 32 mm

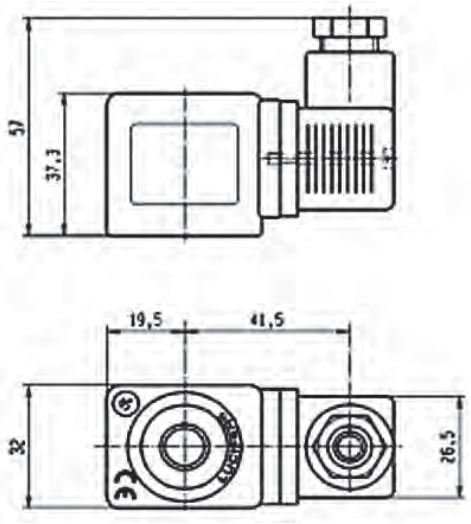
This coil can be mounted with every Parker ATEX solenoid valves corresponding to the specified Coil Group.
See column "Coil Group" within valve pages.

Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex nc AC IIC T3 to T6 is required.
Ease of mounting in confined space - offers shock and corrosion protection - simplifies conversion of existing equipment to other requirements, etc. Coils conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

Small size for ease of mounting in confined spaces.

Specification			32 mm Coil "nc AC"			
Reference			495880			
Certificate			LCIE 05 ATEX 6003X			
Coil Group			2.0 / 2.2			
Type of protection		Gas	II 3 G - Ex nc AC IIC T3 65°C			
		Dust	II 3D - Ex tc IIIC - T195°C			
Degree of protection			**IP65** (with plug) according to IEC/EN 60529			
Insulation Class			H 180°C			
Duty cycle			100%			
Ambiant temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.			
Elect. Power	DC	**Pn** (hot)	14 W			
		P (cold) 20°C	-			
	AC	**Pn** (holding)	14 W			
		Attraction cold	-			
Weight			180 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			24/50 110/50 230/50	A2 A5 F4	24	C2

To Order a Coil choose Coil Ref + Voltage Code, example: **495880** for **24VDC** = **495880C2**



Parker Hannifin Corporation
Fluid Control Division Europe
General Catalogue FCDE/0110/UK/V1.0

COIL GROUP

4.0

INCREASED SAFETY ELECTRICAL PARTS "nc AC"

ZONE 2/22

495915 - ELECTRICAL PARTS 50 mm

This coil 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 nc AC IIC T3 is required.

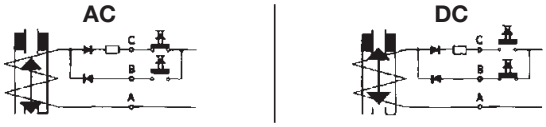
Benefits: Rotatable housing 360°, galvanized steel with internal and external screw terminals for earth connection.

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

Reference			495915			
Certificate			LCIE 05 ATEX 6010 X			
Coil group			4.0			
Type of protection		Gas	II 3 G - Ex nc AC IIC T3			
		Dust	II 3 D - Ex tc IIIC - T 195°C			
Ambient temperature			-40°C to +65°C The application is limited also by the temperature range of the valve.			
Insulation Class			F 155°C			
Electrical connection			By special cable gland M20 x 1.5 "EX eb" on screw terminals for wires up to 1.5 mm². Cable with outside diameter 6.5 mm to 13.5 mm can be simply sealed using the rubber gland with resilient sealing rings supplied			
Consomation Electrique	AC	Attraction (hot)	11 W	-		
		Attraction (cold) 20°C	17 W	-		
		Release (hot)	4 W	-		
		Release (cold) 20°C	7 W	-		
	DC	Attraction (hot)	-	13 W		
		Attraction (cold) 20°C	-	19 W		
		Release (hot)	-	8 W		
		Release (cold) 20°C	-	10 W		
Weight			320 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			110-115/50-60 220-230/50-60 48/50-60 24/50-60	1P 3P S4 P0	24 48	C2 C4
Duty cycle			Continuous duty solenoid (ED 100%)			

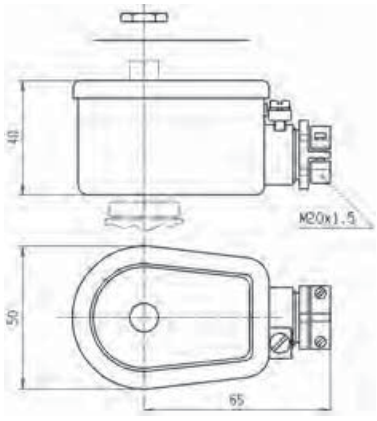
To Order a Coil choose Coil Ref + Voltage Code,
example: **495915** for **24VDC** = **495915C2**

Schema



As soon as an electrical impulse is given to the terminals A-B, the electromagnetical force attracts the plunger and simultneously magnetizes a reversible permanent magnet ring. This magnet retains the plunger in place. It stays in position even without current. Only an electrical impulse given to terminals A-C reserves the magnetic field. This magnetic field demagnetises the reversible magnet enough to allow the return spring to bring the plunger back to its initial position and close the valve.

Switch: Switch on (terminals A-B): Minimum 50 ms (maximum 1 s)
AC: Switch off (terminals A-C): Minimum 35 ms (maximum 1 s)



Parker Hannifin Corporation
Fluid Control Division Europe
General Catalogue FCDE/0110/UK/V1.0

COIL GROUP
2.0/2.2

INCREASED SAFETY ELECTRICAL PARTS "nc AC"

3.5.1 ELECTRICAL PARTS 496155

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

Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex nAC IIC T3 is required.

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

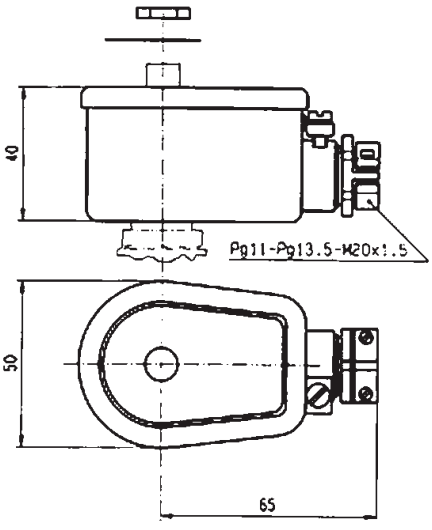
Small size for ease of mounting in confined space.Simplifies conversion of existing equipment to hazardous area requirements.

Reference			**496155**			
Certificate			**LCIE 05 ATEX 6010 X**			
Coil Group			**2.0/2.2**			
Type of protection		**Gas**	II 3 G D - Ex nc AC IIC T3			
		Dust	II 3 G D - Ex tc IIIC - T 195 °C			
Degree of protection			**IP67**			
Ambiant temperature			-40°C to +65°C The application is limited also by the temperature range of the valve.			
Insulation Class			F 155°C			
Electrical connection			By special cable gland or M20x1.5 "Ex nc AC" on screw terminals for wires up to 1.5 mm². Cables with outside diameter 6.5 mm to 13.5 mm can be simply sealed using the rubber gland with resilient sealing rings supplied.			
Elect. Power	**DC**	**Pn** (hot)	14 W			
		P (cold) 20°C	21 W			
	AC	**Pn** (holding)	14 W			
		Attraction cold	56 VA (20 W)			
Weight			320 g			
Voltages "Un"			**VAC/Hz**	**Code**	**VDC**	**Code**
-10% to +10% of the Un			24/50 110/50 230/50	A2 A5 F4	24 48	C2 C4

To Order a Coil choose Coil Ref + Voltage Code, example: **496155** for **24VAC/50Hz = 496155A2**

Fuses:

Both electrical parts have to be connected in series with a safety fuse according to IEC 60127-3.



COIL GROUP

11.0

FLAME PROOF
ELECTRICAL PARTS
"db"

ZONE 1/21

483270 & 483270.02 - ELECTRICAL PARTS 50 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 IIC T4 to T6 is required.

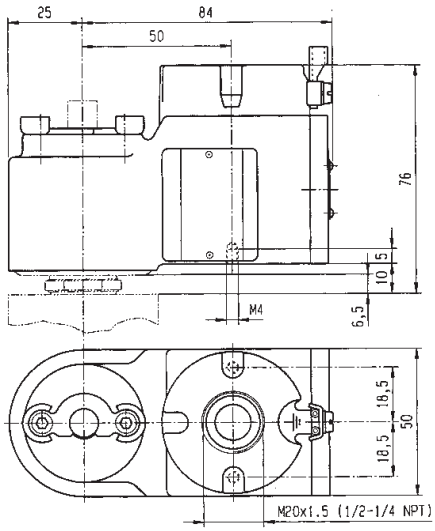
Benefits: Rotatable 360°, housing made of cast iron with internal connection chamber: Cover made of aluminium alloy fixed with 4 screws. The electromagnetic control pilot is composed of three main elements: housing, coil and plunger tube including housing plate.

Small size for ease of mounting in confined space.

Reference			**483270 (M20 x 1.5) 483270.02 (1/2 NPT)**		
Certificate			**LCIE 02 ATEX 6008 X**		
Coil group			**11.0**		
Type of protection		**Gas**	II 2 G - Ex db IIC T4	II 2 G - Ex db IIC T5	II 2 G - Ex db IIC T6
		Dust	II 2 D - Ex tb IIIC - T130°C	II 2 D - Ex tb IIIC - T 95°C	II 2 D - Ex tb IIIC - T 80°C
Degree of protection			IP66 with appropriate cable gland		
Ambient temperature			-40 to +80°C	-40°C to +75°C	-40°C to +60°C
			The application is limited also by the temperature range of the valve.		
Class of insulation			F (155 °)		
Electrical connection			The electrical connection is made within the housing connection chamber on an accessible screw terminal. The cable entry to the connecting chamber is made through 1/2" NPT thread suitable for fitting an approved Ex db IIC cable gland.		
Elect. Power	**DC**	**Pn** (hot)	8 W		
		P (cold) 20°C	9 W		
	AC	**Pn** (holding)	8 W		
		Attraction cold	9 W		
Weight			1100 g (with coil)		

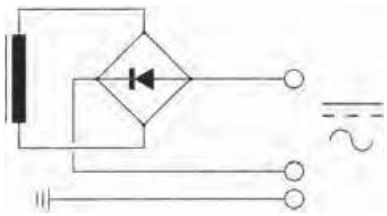
Voltages "Un"	**VAC/Hz**	**Code**	**VDC**	**Code**
-10% to +10% of the Un	24/50-60	P0	24	C2
	110-115/50-60	1P	48	C4
	220-230/50-60	3P	110	C5

To Order a Coil choose Coil Ref + Voltage Code, example: **483270** for **24VDC** = **483270C2**



Plunger tube:

The plunger tube is welded to the stainless steel plate and is thus integrated to the housing which is screwed on the valve body.
This electrical part is supplied only as complete unit mounted on a valve, as the "Ex db" protection depends on minimum gap between plunger tube, plate and housing.



COIL GROUP
1.1

ENCAPSULATED
ELECTRICAL PARTS
"mb"

ELECTRICAL PART LOW POWER 22 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 mb II T4 or T5 is required.

Benefits:
Coil and magnetic circuit encapsulated in synthetic material - offering shock and corrosion protection. AC coils with integrated thermal fuse. Small size for ease of mounting in confined spaces.

Reference			482605	482606 or 482606.160*	
Certificate			LCIE 02 ATEX 6014 X - IECEx LCI 07.0026 X		
Coil Group			1.1		
Type of protection		Gas	II 2 G - Ex mb II T4	II 2 G - Ex mb II T4	II 2 G - Ex mb II T5
		Dust	II 2 D - Ex tb IIIC - T130°C	II 2 D - Ex tb IIIC - T130°C	II 2 D - Ex tb IIIC - T 95°C
Degree of protection			**IP65** (with plug) according to IEC/EN 60529		
Ambiant temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.	-40°C to +65°C	-40°C to +40°C
Insulation Class			F 155°C		
Electrical connection			Cable connection (3 x 0.75 mm²) encapsulated with coil, cable material according to application		
Elect. Power	DC	**Pn** (hot)	5 W	2.5 W	
		P (cold) 20°C	6.5 W	3 W	
	AC	**Pn** (holding)	4 W	2 W	
		Attraction cold	8.9 VA (5 W)	5.7 VA (2.5 W)	
Weight			150 g		

Voltages "Un"	VAC/Hz	Code	VDC	Code	VAC/Hz	Code	VDC	Code
-10% to +10% of the Un	24/50 110/50-115/50 220/50-230/50	A2 0A 3D	24 110	C2 C5	24/50 48/50 110/50-115/50 220/50-230/50	A2 A4 0A 3D	24 48 110	C2 C4 C5

To Order a Coil choose Coil Ref + Voltage Code, example: **482605** for **24VDC** = **482605C2**

* 482606.160 - 6 m cable length

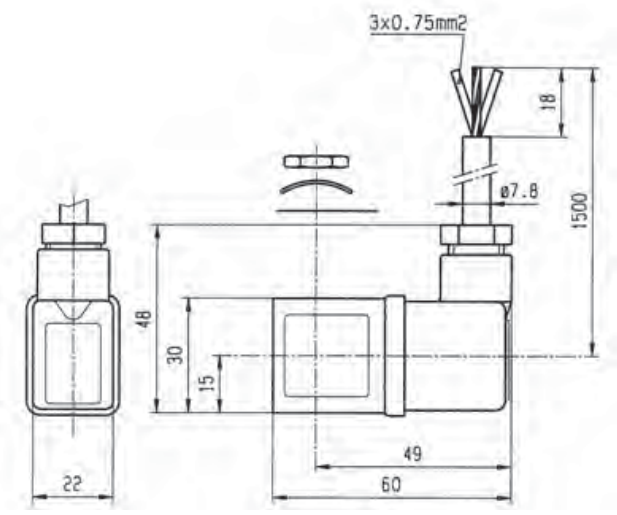
Fuses:
Both electrical parts 482605 & 482606 have to be connected in series with a safety fuse according to CEI 60127-3. Indicating example bellow:

482605:

DC: 12 V, 1000 mA - 24 V, 500 mA - 48 V, 200 mA - 110 V, 100 mA
AC 50 HZ: 24 V, 500 mA - 48 V, 250 mA - 110/115 V, 100 mA - 220/230 V, 3 mA
AC 60 Hz: 24 V, 630 mA - 110/115 V, 125 mA - 220/230 V, 63 mA

482606:

DC: 12 V, 400 mA - 24 V, 200 mA - 48 V, 100 mA - 110 V, 50 mA
AC 50 HZ: 24 V, 250 mA - 48 V, 125 mA - 110/115 V, 63 mA - 220/230 V, 32 mA
AC 60 Hz: 24 V, 315 mA - 110/115 V, 63 mA - 220/230 V, 32 mA



ELECTRICAL PART 32 mm

This coil 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 mb II T4 is required.

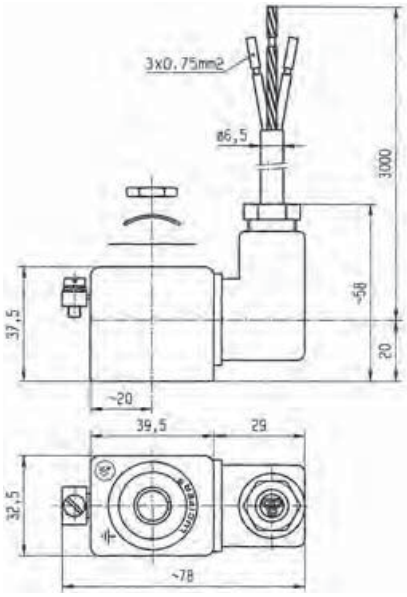
Benefits: Coil and magnetic circuit encapsulated in synthetic material offering shock and corrosion protection. AC/DC coils with integrated thermal fuse. DC coils with integrated surge suppression diode.

Small size for ease of mounting in confined spaces.

Reference			**492670 or 492670.10* or 492670.160****			
Certificate			**LCIE 02 ATEX 6015 X**			
Coil Group			**2.0 / 2.1**			
Type of protection		**Gas**	II 2 G - Ex mb II T4			
		Dust	II 2 D - Ex tb IIIC - T130°C			
Degree of protection			**IP65** (With DIN Plug connector) acc. to IEC 60529			
Ambiant temperature			-40°C to +40°C The application is limited also by the temperature range of the valve.			
Class of insulation			F 155°C			
Electrical connection			Cable connection (3 x 1.5 mm²) encapsulated with coil, cable material according to application			
Elect. Power	**DC**	**Pn** (hot)	9 W			
		P (cold) 20°C	12 W			
	AC	**Pn** (holding)	8 W			
		Attraction cold	26 VA (9 W)			
Weight			320 g			
Voltages "Un"			**VAC/Hz**	**Code**	**VDC**	**Code**
-10% to +10% of the Un			48/50 230/50	A4 F4	24 48 110	C2 C4 C5

To Order a Coil choose Coil Ref + Voltage Code, example: **492670** for **24VDC** = **492470C2**

* 492670.10 for stainless steel application - 3 m cable length
** 492670.160 - 6 m cable length



Special conditions:

The supply connection lines have to be fixed and positioned in such a way that they are protected against mechanical damages.

It is necessary to use a safety fuse with a nominal current corresponding to the coil current (max. 3 x nominal according to IEC 60127 and IEC 60269) against short-circuits.

Recommended values:

DC: 12 V, 1250 mA - 24 V, 630 mA - 48 V, 315 mA - 110 V, 125 mA
AC 50 HZ: 24 V, 1000 mA - 48 V, 500 mA - 110 V, 250 mA - 230 V, 100 mA
AC 60 Hz: 240 V, 100 mA

COIL GROUP
2.0/2.1

ENCAPSULATED ELECTRICAL PARTS "mb"

WITH WATER PROOF METAL HOUSING 50 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 mb II T4 or T5 is required.

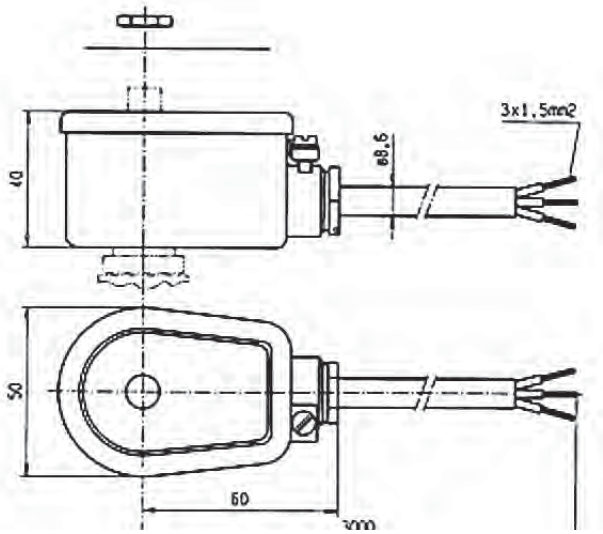
Benefits: Epoxy-coated steel housing - solenoid coil, rectifier (silicium diodes), fuse and varistor protection element are completely encapsulated in the coil housing by means of epoxy resin.

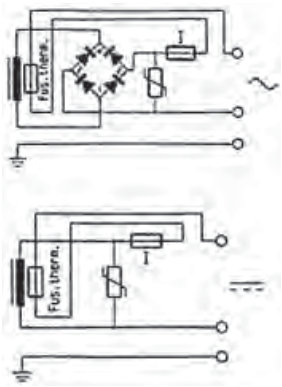
Small size for ease of mounting in confined space. Simplifies conversion of existing equipment to hazardous area requirements.

Reference			492070 492070.160 (with 6m cable length)	
Certificate			LCIE 02 ATEX 6017 X - IECEx LCI 09.0024 X	
Coil Group			2.0 / 2.1	
Type of protection		Gas	II 2 G - Ex mb II T4	II 2 G - Ex mb II T5
		Dust	II 2 D - Ex tb IIIC - T130°C	II 2 D - Ex tb IIIC - T95°C
Ambient temperature			-40°C to +65°C The application is limited also by the temperature range of the valve.	-40°C to +40°C
Insulation Class			F 155°C	
Electrical connection			Cable connection (3 x 1.5 mm²) with cable gland M20 x 1.5, external earth screw connection.	
Elect. Power	DC	Pn (hot)	8 W	
		P (cold) 20°C	10 W	
	AC	Pn (holding)	9 W	
		Attraction cold	11 W	
Weight			500 g	

Voltages "Un"	VAC/Hz	Code	VDC	Code
-10% to +10% of the Un	24/50-60	P0	24	C2
	110/50-60	P2	48	C4
	220/50-60	R5	110	C5
	230/50-60	P9		
	240/50-60	Q1		

To Order a Coil choose Coil Ref + Voltage Code, example: **492070** for **24VDC** = **492070C2**





COIL GROUP

2.0/2.1

ENCAPSULATED ELECTRICAL PARTS "mb"

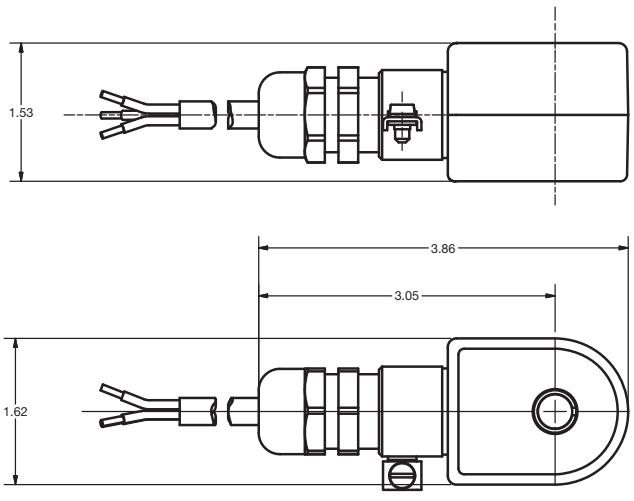
HZ10 COIL DOUBLE FREQUENCY

This coil 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 mb II T4 or T5 is required.

Specification			Double Frequency			
Reference			HZ10			
Certificate			LCIE 02 ATEX 6020 X - IECEx LCI 08.0027 X			
Coil Group			2.0 / 2.1			
Type of protection		Gas	II 2 G - Ex mb II T4/T5			
		Dust	II 2 D - Ex tb IIIC T			
Degree of protection			**IP65** (with plug)according to IEC/EN 60529			
Ambient temperature			-40°C to + 65°C The application is limited also by the temperature range of the valve.			
Insulation Class			H 180°C			
Duty cycle			100% continuous			
Electrical connection			Cable connection (3 x 1.5 mm²) with cable gland M20 x 1.5, external earth screw connection.			
Elect. Power	DC	**Pn** (hot)	8 W			
		P (cold) 20°C	-			
	AC	**Pn** (holding)	8 W			
		Attraction cold	-			
Weight			299 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			24 110	C2 C5	110/50 220/50	A5 A7

To Order a Coil choose Coil Ref + Voltage Code, example: **HZ10** for **24VDC** = **HZ10C2**



Dimensions in Inches.

COIL GROUP
2.0/2.2

ENCAPSULATED ELECTRICAL PARTS "mb"

HZ11 COIL DOUBLE FREQUENCY

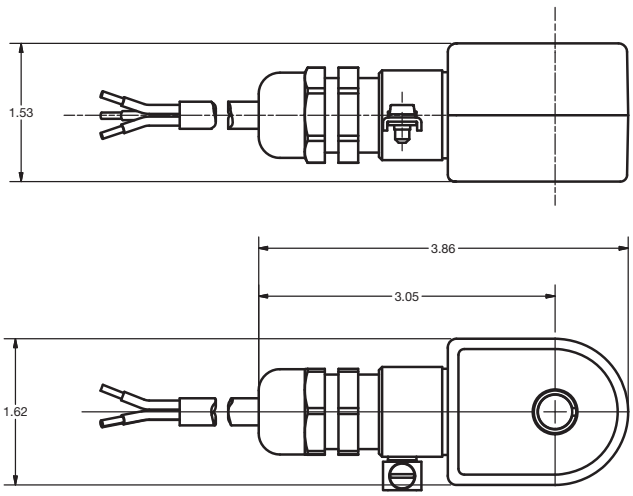
This coil can be mounted with every Parker ATEX solenoid valves corresponding to the specified Coil Group.

See column "Coil Group" within valve pages.

Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex mb II T4 or T5 is required.

Specification			Double Frequency			
Reference			HZ11			
Certificate			LCIE 02 ATEX 6020 X - IECEx LCI 08.0027 X			
Coil Group			2.0 / 2.2			
Type of protection		Gas	II 2 G - Ex mb II T4/T5			
		Dust	II 2 D - Ex tb IIIC T			
Degree of protection			**IP65** (with plug)according to IEC/EN 60529			
Ambient temperature			-40°C to + 50°C The application is limited also by the temperature range of the valve..			
Insulation Class			H 180 °C			
Duty cycle			100% continuous			
Elect. Power	DC	**Pn** (hot)	14 W			
		P (cold) 20°C	-			
	AC	**Pn** (holding)	14 W			
		Attraction cold	-			
Weight			299 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			110/50 220/50	A5 A7	24 V	C2

To Order a Coil: Coil Ref + Voltage Code, example: HZ11 for 24VDC = **HZ11C2**



Dimensions in Inches.

Parker Hannifin Corporation
Fluid Control Division Europe
General Catalogue FCDE/0110/UK/V1.0

495900 - LOW POWER ELECTRICAL PARTS 37 mm

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

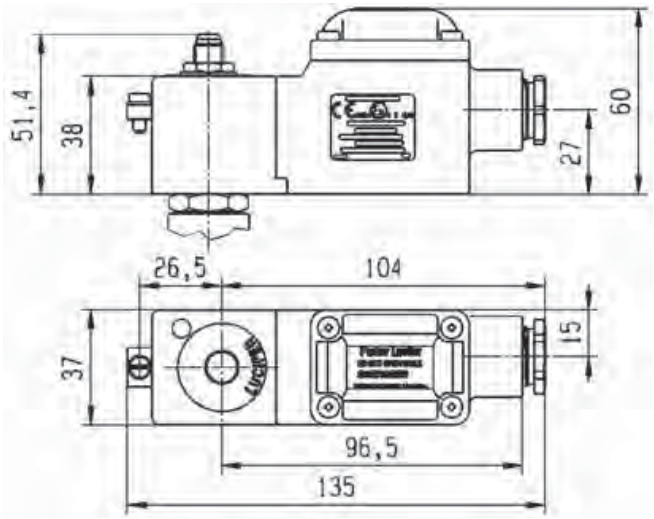
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex db mb IIC T4 to T6 is required.

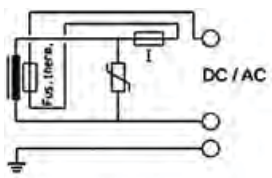
Benefits: Rotatable 360° fibreglass-reinforced plastic housing (class H). Solenoid coil, rectifier (silicium diodes), fuses and varistor protection are completely encapsulated into the coil housing by epoxy resin for shock and corrosion protection.

The plastic housing is delivered with M20 x 1.5 cable gland certified for use "db" protection. Small size for ease of mounting in confined space.

Reference			495900			
Certificate			LCIE 03 ATEX 6451 X - IECEx LCI 06.0004 X			
Coil Group			6.0			
Type of protection		Gas	II 2 G - Ex db mb IIC T4 / T5 / T6		II 2 G - Ex db mb IIC T5 / T6	
		Dust	II 2 D Ex tb IIIC - 130°C / 95°C / 80°C		II 2 D Ex tb IIIC - 95°C / 80°C	
Degree of protection			IP67			
Ambient temperature			-40°C to +65°C / +55°C / +40°C		-40°C to +65°C / +55°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 on an easily accessible connector terminals. The introduction of the cable (Ø min 5 mm, Ømax. 11 mm, section max. 2.5 mm²) in the connection box passes by the built in M20 x 1.5 cable gland			
Elect. Power	DC	Pn (hot)	-		2 W	
		P (cold) 20°C	-		2.5 W	
	AC	Pn (holding)	2.5 W		-	
		Attraction cold	3 W		-	
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of Un for AC - 10 % to + 10 % for Un DC.			24/50 48/50 115/50 230/50	A2 A4 E5 F4	24 48 110	C2 C4 C5

To Order a Coil: Coil Ref + Voltage Code, example: 495900 for 24VDC = **495900C2**





COIL GROUPS
2.0/2.1

FLAME PROOF ENCAPSULATED ELECTRICAL PARTS "db mb"

495905 - 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.

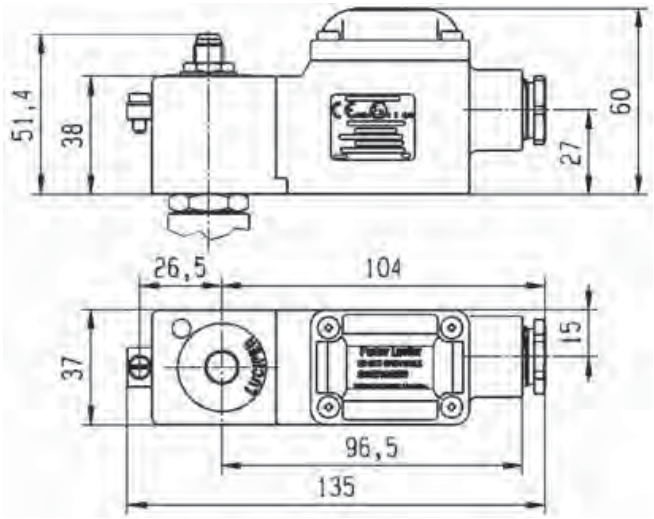
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex db mb IIC T4 is required.

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.

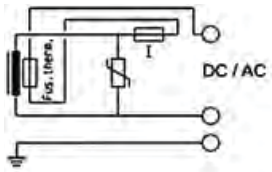
The plastic housing is delivered with M20 x 1.5 cable gland certified for use "db" protection. Small size for ease of mounting in confined space.

Reference			495905	495905.05
Certificate			LCIE 03 ATEX 6451 X - IECEx LCI 06.0004 X	
Coil Group			2.0 / 2.1	
Type of protection		Gas	II 2 G - Ex db mb IIC T4	
		Dust	II 2 D - Ex tb IIIC - 130°C	
Degree of protection			IP67	
Ambient temperature			-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 on an easily accessible connector terminals. The introduction of the cable (Ø min 5 mm, Ømax. 11 mm, section max. 2.5 mm²) in the connection box passes by the built in M20 x 1.5 cable gland.	
Elect. Power	DC	**Pn** (hot)	8 W	
		P (cold) 20°C	9 W	
	AC	**Pn** (holding)	8 W	
		Attraction cold	9 W	
Voltages "Un"			VAC/Hz	Code
-10% to +10% of Un for AC - 10 % to + 10 % for Un DC.			24/50 48/50 115/50 230/50	A2 A4 E5 F4
			VDC	Code
			24 48 110	C2 C4 C5

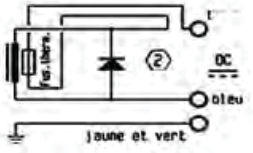
To Order a Coil choose Coil Ref + Voltage Code, example: **495905** for **24VDC** = **495905C2**



495905



***495905.05**



COIL GROUP
10.2/10.1

FLAME PROOF ENCAPSULATED ELECTRICAL PARTS "db mb"

496555 & 496560 - 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.

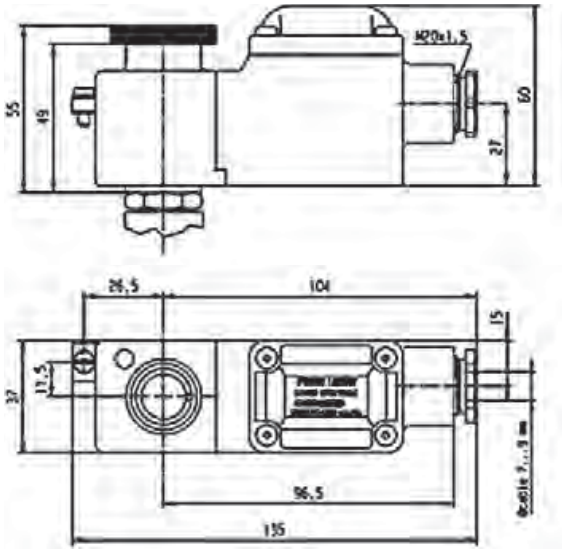
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex db mb IIC T4 to T6 is required.

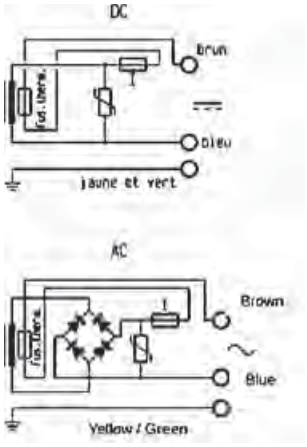
Benefits: Rotatable 360° fibreglass-reinforced plastic housing (class H). Solenoid coil, rectifier (silicium diodes), fuses and varistor protection are completely encapsulated into the coil housing by epoxy resin for shock and corrosion protection.

The plastic housing is delivered with M20 x 1.5 cable gland certified for use "db" protection. Small size for ease of mounting in confined space.

Reference			496555				496560			
Certificate			LCIE 07 ATEX 6075 X - IECEx LCI 07.0014X							
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			IP 67							
Ambiant temperature			-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 on an easily accessible connector terminals. The introduction of the cable (Ø min 5 mm, Ømax. 11 mm, section max. 2.5 mm²) in the connection box passes by the built in M20 x 1.5 cable gland.							
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: **496555** for **24VDC** = **496555C2**





COIL GROUP
10.2/10.1

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.

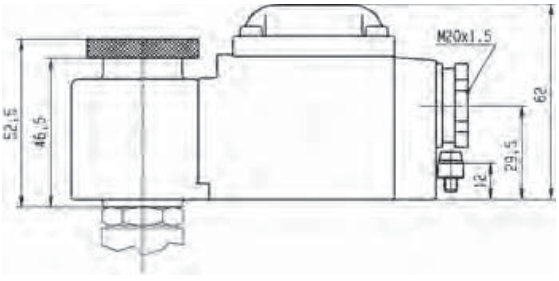
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex db mb IIC T4 to T6 is required.

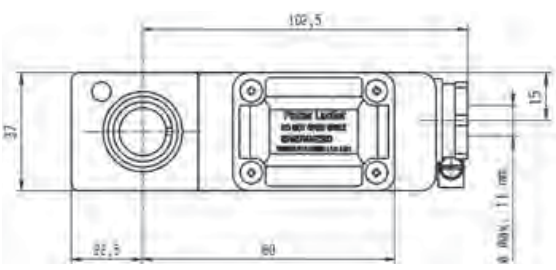
Benefits: Rotatable 360° fibreglass-reinforced plastic housing (class H). Solenoid coil, rectifier (silicium diodes), fuses and varistor protection are completely encapsulated into the coil housing by epoxy resin for shock and corrosion protection.

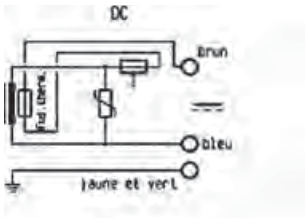
The plastic housing is delivered with 1/2" or M20 x 1.5 threaded hole for wide range of cable glands. Small size for ease of mounting in confined space.

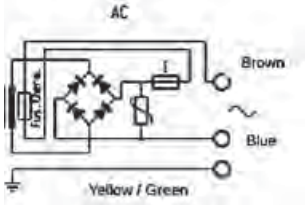
Reference			496700				496800			
Certificate			LCIE 07 ATEX 6075 X - IECEx LCI 07.0014X							
Coil Group			10.2				10.1			
Type of protection		Gas	II 2 G - Ex db mb IIC T4 / T5 / T6				II 2 G - Ex db mb IIC T4			
		Dust	II 2 D - Ex tb IIIC - T130 / 95 / 80°C				II 2 D - Ex tb IIIC - T130°C			
Degree of protection			IP67							
Ambiant temperature			-40°C to +35°C / +50°C / +65°C The application is limited also by the temperature range of the valve.				-40°C to +65°C			
Class of insulation			H (180°)							
Electrical connection			Electric connection is done in the connection box on an easily accessible connector terminals. The introduction of the cable (Ø min 5 mm, Ø max. 11 mm, section max. 2.5 mm²) in the connection box passes by the built in M20 x 1.5 cable gland.							
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 **24VDC** = **496700C2**









COIL GROUP

2.0/2.1

FLAME PROOF ENCAPSULATED ELECTRICAL PART "db mb"

493640 OR HZ09 - ELECTRICAL PARTS

This coil 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 II 2 G/D T4 to T5 is required.

Benefits: Metal armature encapsulated in synthetic material provides high shock and corrosion protection.

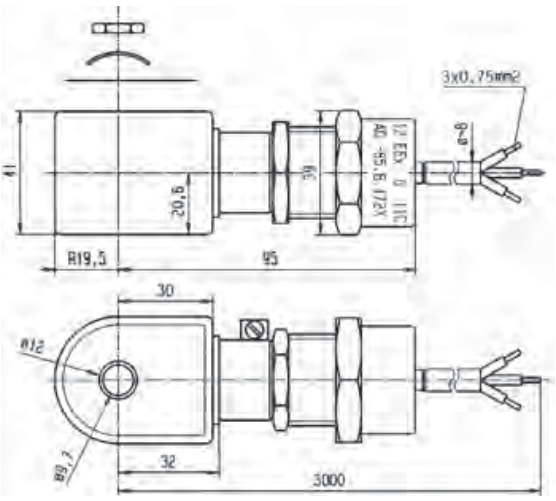
Small size for ease of mounting in confined space.

Reference			493640 or HZ09 493640.60* or HZ55
Certificate			LCIE 02 ATEX 6009 X
Coil Group			2.0 / 2.1
Type of protection		Gas	II 2 G - Ex db mb T4/T5
		Dust	II 2 D - Ex tb IIIC - T130°C / T95°C
Degree of protection			IP65
Ambiant temperature			- 40°C to +75°C / +40°C The application is limited also by the temperature range of the valve.
Class of insulation			F (155 °)
Electrical connection			Special "Ex db" cable gland, galvanized steel, with EPDM sealing. (EPR) cable, outside diameter 7.3 ± 0.5 mm and 3000 mm long.
Elect. Power	DC	Pn (hot)	8 W
		P (cold) 20°C	9 W
	AC	Pn (holding)	8 W
		Attraction cold	32 VA (9 W)
Weight			500 g

Voltages "Un"	VAC/Hz	Code	VDC	Code
- 15% to +10% of the Un	110/50	A5	24	C2
	110-120/50-60	P3	48	C4
	220-240/50-60	Q3	120	C6

To Order a Coil choose Coil Ref + Voltage Code, example: **493640** for **24VDC** = **493640C2**

* 493640.60 - 6 m cable length



Fuses

This electrical part is equipped with a standard thermal cut-off fuse on all models and voltages

This electrical part must be connected in series with a safety fuse according to IEC 60127-3.

DC: 24V, 400 mA

AC: 110/50-120/60, 200 mA
220/50-240/60, 100 mA
230/50, 95 mA

COIL GROUP
2.0/2.1

INCREASED SAFETY
ELECTRICAL PARTS
"eb"

483371 & 494040 - ELECTRICAL PARTS 50 mm

This coil 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 eb II T3 orT4 is required.

Benefits: Rotatable housing 360°, galvanized 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			483371	494040
Certificate			LCIE 02 ATEX 6011 X	LCIE 02 ATEX 6013 X
Coil Group			2.0 / 2.1	
Type of protection		Gas	II 2 G - Ex eb IIC T4	II 2 G - Ex eb IIC T3 / T4
		Dust	II 2 D - Ex tb IIIC - T130°C	II 2 D - Ex tb IIIC - T195°C / T130 °C
Degree of protection			IP67	
Ambiant temperature			-40°C to +65°C The application is limited also by the temperature range of the valve.	-40°C to +90°C / to +65°C
Class of insulation			F 155°C	F (180°)
Electrical connection			By special cable gland or M20 x 1.5 "Ex eb" on screw terminals for wires up to 1.5 mm². Cables with outside diameter 6.5 mm to 13.5 mm can be simply sealed using the ru bber gland with resilient sealing rings supplied.	
Elect. Power	DC	**Pn** (hot)	8 W	8 W
		P (cold) 20°C	9 W	9 W
	AC	**Pn** (holding)	8 W	8 W
		Attraction cold	32 VA (9 W)	32 VA (9 W)
Weight			320 g	

Voltages "Un"	VAC/Hz	Code	VDC	Code	VAC/Hz	Code	VDC	Code
-10% to +10% of the Un	24/50 48/50 110-115/50 220-230/50	A2 A4 0A 3D	24 48 110	C2 C4 C5	220-230/50	3D	24	C2

To Order a Coil choose Coil Ref + Voltage Code, example: **483371** for **24VDC** = **483371C2**

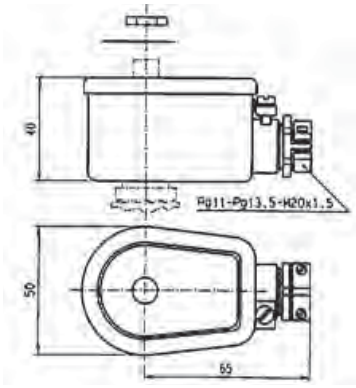
Fuses:
Both electrical parts have to be connected in series with a safety fuse according to IEC 60127-3.

483371:

DC: 24 V, 400 mA - 48V, 250 mA - 110 V, 100 mA
AC 50HZ: 24 V, 630 mA - 48V, 315 mA - 110 V, 160 mA - 220/230 V, 80 mA

494040:

DC: 12 V, 400 mA - 24V, 200 mA - 48 V, 100 mA - 110V, 50 mA
AC 50HZ: 24 V, 250 mA - 48V, 125 mA - 110/115 V, 63 mA - 220/230 V, 32 mA



492310 - ELECTRICAL PARTS 50 mm

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

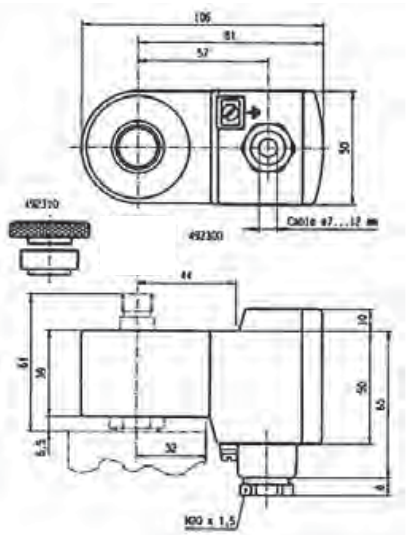
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex eb mb II T4 to T5 is required.

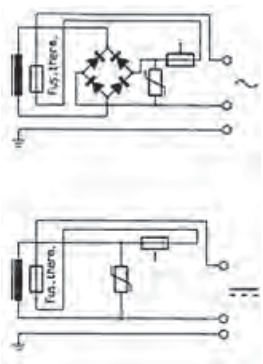
Benefits: Rotatable 360° fibreglass-reinforced plastic housing. Solenoid coil, rectifier (silicium diodes), fuses and varistor protection are completely encapsulated into the coil housing by epoxy resin for shock and corrosion protection.

Small size for ease of mounting in confined space.

Reference			492310			
Certificate			LCIE 02 ATEX 6023 X - IECEx LCI 06.0011 X			
Coil group			10.1			
Type of protection		Gas	II 2 G - Ex eb mb II T4 / T5			
		Dust	II 2 D - Ex tb IIIC - T130°C / T95°C			
Degree of protection			IP66			
Ambiant temperature			-40°C to +75°C / to +40°C The operating temperature of the valve/coil can be limited by that of the valve			
Class of insulation			F 155°C			
Electrical connection			Connection box with terminals and cable entry via gland M20 x 1.5 - Possibility for additional earth via external screw.			
Elect. Power	DC	Pn (hot)	6 W			
		P (cold) 20°C	7.5 W			
	AC	Pn (holding)	6 W			
		Attraction cold	7.5 W			
Weight			500 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			24/50-60	P0	24	C2
			48/50-60	S4	48	C4
			230/50-60	P9	110	C5

To Order a Coil choose Coil Ref + Voltage Code, example: **492310** for **24VDC** = **492310C2**





COIL GROUP
9.0

INCREASED SAFETY AND ENCAPSULATED ELECTRICAL PARTS "eb"

492210 - ELECTRICAL PARTS "BOOSTER" 50 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.

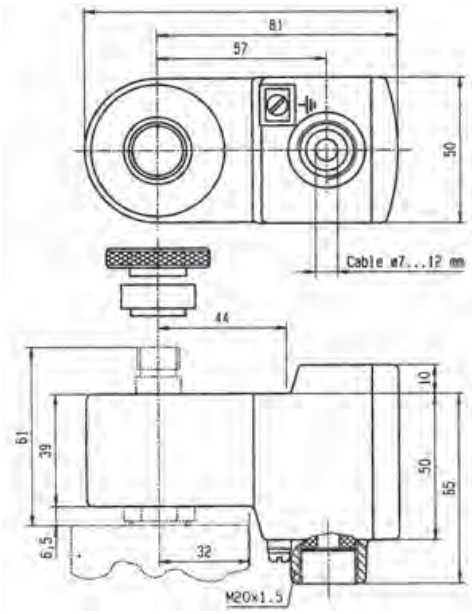
Application: Control of solenoid valves in dangerous areas where explosion-proof protection - Ex eb mb IIC T5/T6 is required.

Benefits: Rotatable housing 360°, galvanized 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.

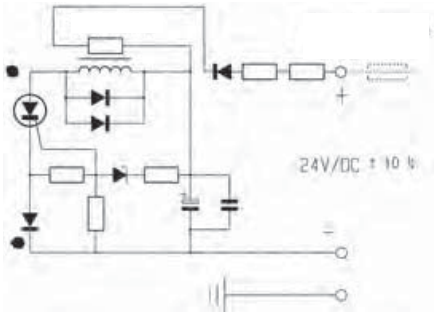
Reference		492210
Certificate		LCIE 02 ATEX 6023 X - IECEx LCI 06.0011 X
Coil group		9.0
Type of protection	Gas	II 2 G - Ex eb mb IIC T5 / T6
	Dust	II 2 D - Ex tb IIIC - T95°C / T80°C
Degree of protection		IP66
Ambient temperature		-40°C to +75°C / +40°C The operating temperature of the valve/coil can be limited by that of the valve
Insulation Class		F 155°C
Electrical connection		Connection box with terminals and cable entry via gland M20 x 1.5 Possibility for additional earth via external screw
Power consumption DC		1 to 1.8 W according to length of cable
Attraction current		I min = 60 mA (I nominal = 75 mA)
Voltage DC		U nominal = 24 VDC (C2), Umin = 21.6 VDC
Resistance		23 Ω + (R = 270 Ω)
Inductance		0 mH
Capacitance		0 µF
Response time		2 - 4 s
Weight		500 g

To Order a Coil choose Coil Ref + Voltage Code, example: **492210** for **24VDC** = **492210C2**



Indications:

Booster for Offshore valves



These electrical parts need an external fuse of I = 100 mA

492190 - ELECTRICAL PARTS 50 mm

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

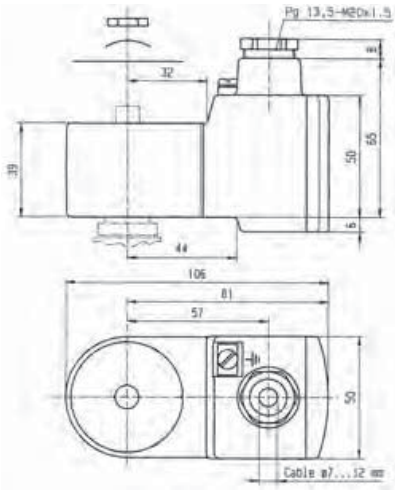
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex eb mb IIC T3 to T4 is required.

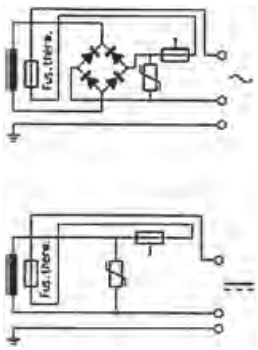
Benefits: Rotatable 360°, fiberglass -reinforced plastic housing. Solenoid coil, rectifier (silicium diodes), fuses and varistor protection are completely encapsulated into the coil housing by epoxy resin for shock and corrosion protection.

Small size for ease of mounting in confined space.

Reference			492190			
Certificate			LCIE 02 ATEX 6023 X - IECEx LCI 06.0011 X			
Coil Group			2.0 / 2.1			
Type of protection		Gas	II 2 G - Ex eb mb IIC T3 / T4			
		Dust	II 2 D - Ex tb IIIC - 195°C / 130°C			
Degree of protection			IP66			
Ambient temperature			-40°C to +75°C / +40°C The operating temperature of the valve/coil can be limited by that of the valve			
Insulation Class			F 155°C			
Electrical connection			Connection box with terminals and cable entry via gland M20 x 1.5 Possibility for additional earth via external screw			
Electrical consumption	DC	Pn (hot)	9 W			
		P (cold) 20°C	11 W			
	AC	Pn (holding)	11 W			
		Attraction cold	13 W			
Weight			320 g			
Voltages "Un"			VAC/Hz	Code	VDC	Code
-10% to +10% of the Un			24/50-60 48/50-60 110/50-60 230/50-60	P0 S4 P2 P9	24 48 110	C2 C4 C5

To Order a Coil choose Coil Ref + Voltage Code, example: **492190** for **24VDC** = **492190C2**





COIL GROUP

7.0

INTRINSICALLY SAFE ELECTRICAL PARTS "ia"

ELECTRICAL PARTS 32 mm "IS"

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

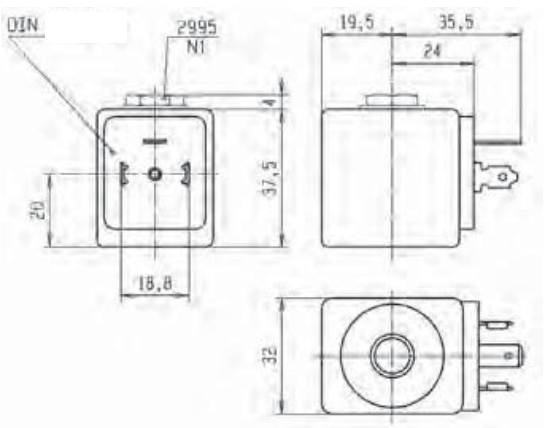
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex ia or ib IIC T6 is required.

Benefits: Fully encapsulated assembly comprising a coil, metal armature, three diodes circuit and DIN plug connection.
The encapsulation provides an effective compact housing offering full protection against dust, oil, water, etc.

Small size for ease of mounting in confined space.

Reference (without plug) (with plug)			483580.01 or DZ12 483960.01 or DZ13
Certificate			LCIE 02 ATEX 6065 X - IECEx LCI 07.0025 X
Coil Group			7.0
Type of protection		Gas	II 1 G - Ex ta IIIC - T6
		Dust	II 1 D - Ex ta IIIC - T80°C
Degree of protection			IP65 with plug
Ambiant temperature			- 40°C à + 55°C The operating temperature of the valve/coil can be limited by that of the valve.
Class of insulation			F 155°C
Electrical connection			The coil is connected with a 2P + E plug according to EN 175301-803 type A Contact 1 is marked as the positive pole ⊕.
Maximum supply voltage			28 VDC (N7) - 110 mA The minimum operating voltage at maximum 60°C is 14 VDC.
Power	DC	Minimum	500 mW
		Maximum	3 W
			Depending on applied voltage, IS barrier type and resistance of connected cable
Coil resistance at 20°C Impedance Apparent inductance Apparent capacitance			340 Ω 340 Ω 0 mH 0 µF
Weight			160 g (with plug)

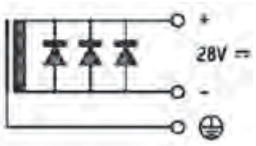
To Order a Coil choose Coil Ref + Voltage Code, example: **483580** for **28VDC** = **483580N7**



Important

The intrinsically safe supply circuit should have enough capacity in all environmental conditions to assure a **minimum operating current of 35 mA** through the coil.

The minimal holding current is 20 mA.



For the barrier compatibility see the corresponding table in in appendix section.

495910 - MINIWATT - 0.3 W
ELECTRICAL PARTS "IS" "BOOSTER" 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.

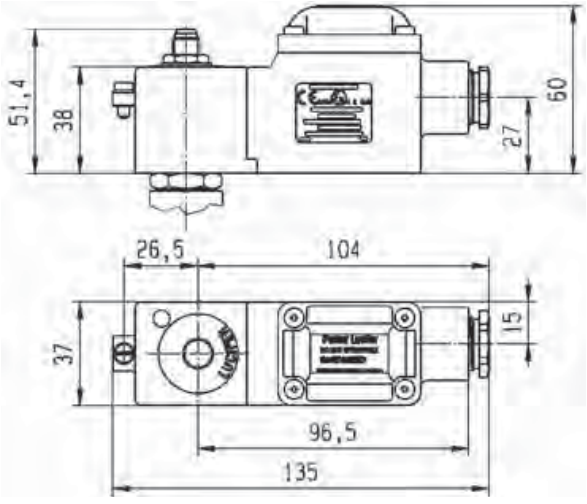
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex ia IIC T4 to T6 is required.

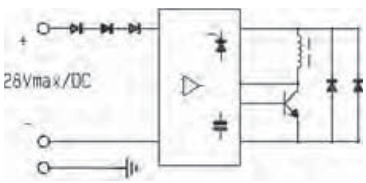
Benefits: Rotatable 360° fibreglass-reinforced plastic housing (class H). Solenoid coil, rectifier (silicium diodes), fuses and varistor protection are completely encapsulated into the coil housing by epoxy resin for shock and corrosion protection.

The plastic housing is delivered with M20 x 1.5 cable gland. Small size for ease of mounting in confined space.

Reference			495910	495910.02 (Blue Cable Gland)
Certificate			LCIE 03 ATEX 6464 X - IECEx LCI 07.0006 X	
Coil Group			8.0	
Type of protection		Gas	II 1 G - Ex ta IIIC - T6 T5 T4	II 1 G - Ex ia IIB - T6 T5 T4
		Dust	II 1 D - tD A20 - T80 T95 T130°C	
Degree of protection			IP67	
Ambiant temperature			- 40°C to +65°C / +75°C / +80°C The application is limited also by the temperature range of the valve..	
Electrical connection			Electric connection is done in the connection box on an easily accessible connector terminals. The introduction of the cable (Ø min 7 mm, Ømax. 11 mm, section max. 2.5 mm²) in the connection box passes by the built in M20 x 1.5 cable gland	
Maximum supply voltage			28 VDC (N7) - 110 mA	28 VDC (N7) - 280 mA
Power	DC	Minimum	0.3 W (with 13 VDC)	0.3 W (with 13 VDC)
		Maximum	1.2 W (with 24 VDC)	2.58 W (with 24 VDC)
			Depending on applied voltage, IS barrier type and resistance of connected cable	
Line check			4 mA or 5 VDC max	
Coil resistance at 20°C Impedance Apparent inductance Apparent capacitance			Charge ~ 550 Ω - Holding ~ 500 Ω 0 mH 0 µF	
Response time			2 - 3 s	
Weight			500 g	

To Order a Coil choose Coil Ref + Voltage Code, example: **495910** for **28VDC** = **495910N7**





COIL GROUP
9.0

INTRINSICALLY SAFE ELECTRICAL PARTS "ia"

496565 ELECTRICAL PARTS "BOOSTER" "IS" 37 mm

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

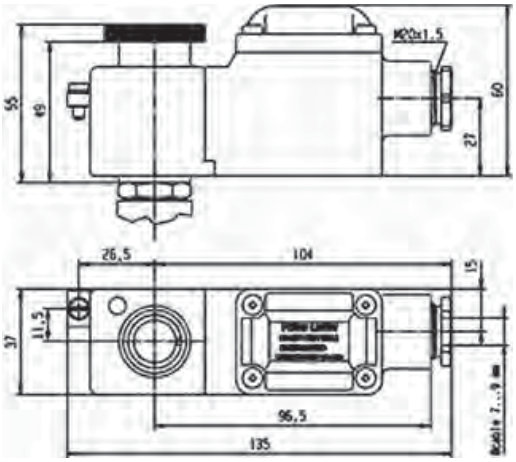
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex ia IIC T4 to T6 is required.

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 M20 x 1.5 cable gland. Small size for ease of mounting in confined space.

Reference		496565	
Certificate		LCIE 08 ATEX 6071 X - IECEx LCI 08.0030 X	
Coil group		9.0	
Type of protection	Gas	II 1 G - Ex ia IIC - T6 / T5 / T4	II 1 G - Ex ia IIB - T6 / T5 / T4
	Dust	II 1 D - Ex ta IIIC - T80 / T95 T130°C	II 1 D - Ex ta IIIC - T80 / T95 T130°C
Degree of protection		IP67	
Ambiant temperature		- 40°C to +65°C / +75°C / +80°C The application might also be limited by the temperature range of the valve.	
Electrical connection		Cable connection through a plastic cable gland M20 x 1.5 allowing use of cable diameter from 7 to 12 mm. Additional earth connection possible with external screw terminal.	
Minimum Courant of function		20 mA	
Minimum voltage of function at 60°C		28 VDC (N7)	
Safety parameters Maximum acceptable values: Ui (V) / Ii (mA) / Pi (W)		28 V / 110 mA / 0.77 W 27 V / 120 mA / 0.81 W 26 V / 135 mA / 0.88 W 25 V / 150 mA / 0.94 W 24 V / 170 mA/ 1.02 W	28 V / 280 mA / 1.96 W 27 V / 320 mA / 2.16 W 26 V / 350 mA / 2.27 W 25 V / 390 mA / 2.43 W 24 V / 430 mA/ 2.58 W
Line check		4 mA or 5 VDC max	
Apparent Impedance Typ. Apparent Inductance Apparent Capacitance		Attraction ~ 600 Ω - Holding ~ 570 Ω 0 mH 0 µF	
Response Time Typ.		2 - 4 s	
Weight		500 g	

To Order a Coil choose Coil Ref + Voltage Code,
example: **496565** for **13VDC** = **496565N7**



492965 ELECTRICAL PART "BOOSTER" "IS" 50 mm

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

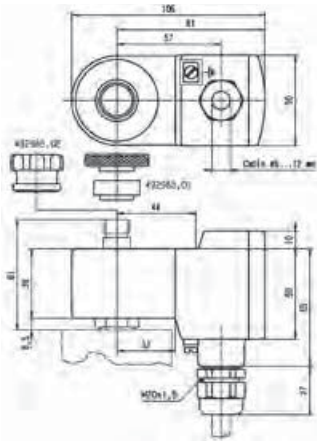
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex ia or ib IIC T6 is required.

Benefits: Rotatable 360° housing, epoxy-coated metal housing and cover. Coil, electronic circuits and other elements required for intrinsic safety are completely encapsulated in the housing with epoxy material for shock and corrosion protection.

Small size for ease of mounting in confined space.

Reference			492965.01 - Stainless steel fixation
Certificate			LCIE 02 ATEX 6066 X - IECEx LCI 07.0007 X
Coil Group			9.0
Type of protection		Gas	II 1 G - Ex ia IIC - T6
		Dust	II 1 D - Ex ta IIIC - T80°C
Degree of protection			IP66
Ambiant temperature			- 40°C to +65°C The application is limited also by the temperature range of the valve.
Electrical connection			Cable connection through a plastic or stainless steel cable gland M20 x 1.5 allowing use of cable diameter from 10 to 12 mm. Additional earth connection possible with external screw terminal.
Maximum supply voltage			28 VDC (N7) - 110 mA
Power	DC	Minimum	0.3 W (avec 13 VDC)
		Maximum	2.3 W (avec 24 VDC)
			Depending on applied voltage, IS barrier type and resistance of connected cable
Line check			4 mA or 5 VDC max
Coil resistance at 20°C Impedance Apparent inductance Apparent capacitance			85 Ω 275 Ω (with 13 VDC) - 260 Ω (with 24 VDC) 0 mH 0 µF
Response time			2 - 4 s
Weight			500 g

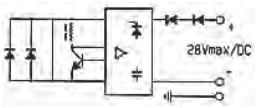
To Order a Coil choose Coil Ref + Voltage Code, example: **492965.01** for **28VDC** = **492965.01N7**



Important

The intrinsically safe supply circuit should have enough capacity in all environmental conditions to assure a **minimum operating current of 29 mA** through the coil.

The minimal holding current is 20 mA.



For the barrier compatibility see the corresponding table in appendix section.

COIL GROUP

12.0

INTRINSICALLY SAFE ELECTRICAL PARTS "ia"

482870.01 & 492335 "NEMA" ELECTRICAL PARTS "IS" 50 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.

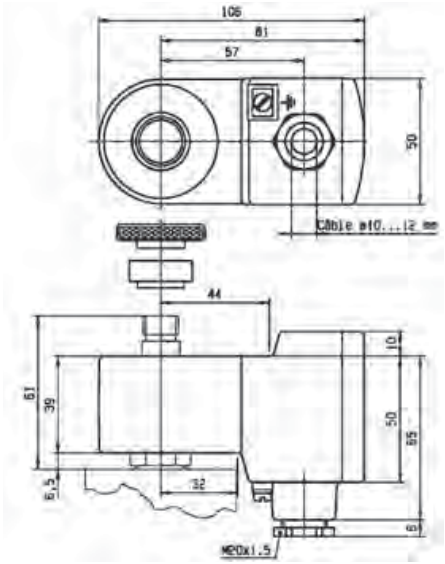
Application: Control of solenoid valves in dangerous areas where an explosion-proof protection Ex ia IIC or IIB T6 is required.

Benefits: Rotatable 360° housing, polyamid with fibreglass housing and cover. Coil, electronic circuits and other elements required for intrinsic safety are completely encapsulated in the housing with epoxy material for shock and corrosion protection.

Small size for ease of mounting in confined space.

Reference			482870.01	492335
Certificate			LCIE 02 ATEX 6024 X	LCIE - FM - CSA
Coil Group			12,0	
Type of protection		Gas	II 1 G - Ex ia IIC - T6	Cl. I, Div.I, Gr. A, B, C, D Cl. II, Div.I, Gr. E, F, G
		Dust	II 1 D - Ex ta IIIC - T80°C	
Degree of protection			IP66	NEMA 4 - 4X
Ambiant temperature			- 40°C to +65°C The application is limited also by the temperature range of the valve.	+60°C
Electrical connection			Cable connection through a stainless steel cable gland M20 x 1.5 allowing use of cable diameter from 10 to 12 mm. Additional earth connection possible with external screw terminal.	
Maximum supply voltage			28 VDC (N7) - 280 mA	30 VDC (N7) - 100 mA
Power	DC	Minimum	300 mW	
		Maximum	3 W	
			Depending on applied voltage, IS barrier type and resistance of connected cable	
Coil resistance at 20°C Impedance Apparent inductance Apparent capacitance			295 Ω 345 Ω 0 mH 0 µF	
Weight			500 g	

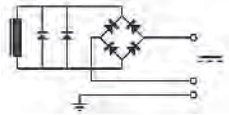
To Order a Coil choose Coil Ref + Voltage Code, example: **492335** for **30VDC** = **492335N7**



Important

The intrinsic safety supply circuit must have sufficient capacitance in all ambient conditions to guarantee a minimum operating current in excess of **29 mA** across the coil.

The minimum current for holding in the energised position is 20 mA



For the barrier compatibility see the corresponding table in appendix section.

488650.01 & 490885 "NEMA" ELECTRICAL PARTS "IS" 50 mm

This coil can be mounted with every Parker ATEX solenoid valves corresponding to the specified Coil Group.

See column "Coil Group" within valve pages.

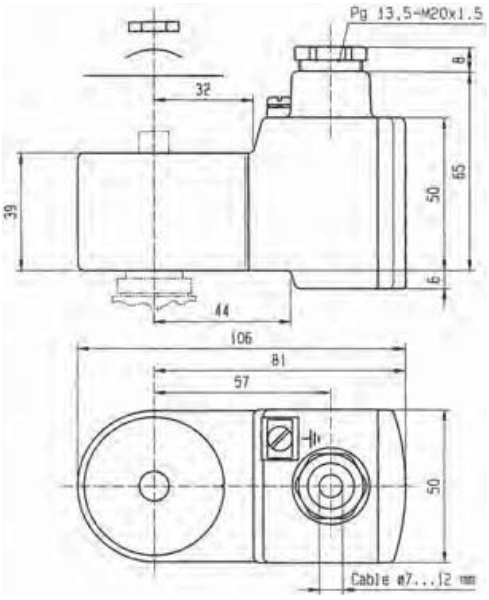
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex ia or ib IIC T6 is required.

Benefits: Rotatable 360° housing, polyamid with fibreglass housing and cover. Coil, electronic circuits and other elements required for intrinsic safety are completely encapsulated in the housing with epoxy material for shock and corrosion protection.

Small size for ease of mounting in confined space.

Reference			488650.01	490885
Certificate			LCIE 02 ATEX 6024 X	LCIE / FM / CSA
Coil Group			7.0	
Type of protection		Gas	II 1 G - Ex ia IIC - T6	Cl. I, Div.I, Gr. A, B, C, D Cl. II, Div.I, Gr. E, F, G
		Dust	II 1 D - Ex ta IIIC - T80°C	
Degree of protection			IP66	NEMA 4 - 4X
Ambiant temperature			- 40°C to +65°C The operating temperature of the valve/coil can be limited by that of the valve.	60°C
Electrical connection			Cable entry through a cable gland M20 x1.5. Screw terminals for leads 3 x 1.5 mm² max. Additional earth connection possible with external screw terminal	
Maximum supply voltage			28 VDC (N7) - 110 mA The minimum operating voltage at maximum 60°C is 11.5 VDC.	30 VDC(N7) - 100 mA
Power	DC	Minimum	300 mW	
		Maximum	3 W	
			Dependent on the applied voltage, type of barrier IS and the resistance of the connected cable	
Coil resistance at 20°C Impedance Apparent inductance Apparent capacitance			295 Ω 345 Ω 0 mH 0 µF	
Weight			500 g	

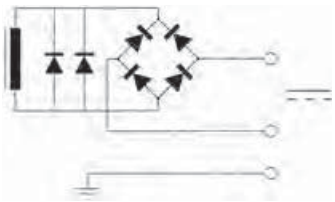
To Order a Coil choose Coil Ref + Voltage Code, example: **490885** for **30VDC** = **490885N7**



Important

The intrinsically safe supply circuit should have enough capacity in all environmental conditions to assure a **minimum operating current of 29 mA** through the coil.

The minimal holding current is 20 mA.



For the barrier compatibility see the corresponding table in appendix section.

COIL GROUP

7.0

INTRINSICALLY SAFE ELECTRICAL PARTS "ia"

488660.01 & 490890 " NEMA" ELECTRICAL PARTS "IS" 50 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.

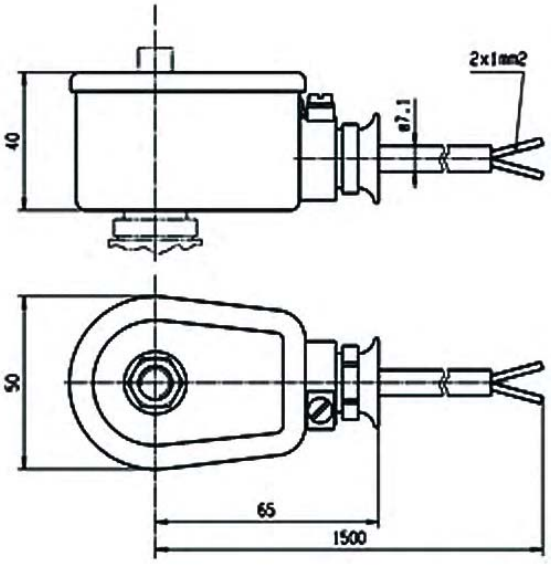
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex ia or ib IIC T6 is required.

Benefits: Rotatable 360° housing, epoxy-coated metal housing and cover. Coil, electronic circuits and other elements required for intrinsic safety are completely encapsulated in the housing with epoxy material for shock and corrosion protection.

Small size for ease of mounting in confined space.

Reference			488660.01	490890
Certificate			LCIE 02 ATEX 6024 X	LCIE / FM / CSA
Coil Group			7.0	
Type of protection		Gas	II 1 G - Ex ia IIC - T6	Cl. I, Div.I, Gr. A, B, C, D Cl. II, Div.I, Gr. E, F, G
		Dust	II 1 D - Ex ta IIIC - T80°C	
Degree of protection			IP67	NEMA 4 - 4X
Ambiant temperature			- 40°C to +65°C The operating temperature of the valve/coil can be limited by that of the valve	+60°C
Electrical connection			Cable entry through a cable gland M20 x1.5. Screw terminals for leads 3 x 1.5 mm² max. Additional earth connection possible with external screw terminal.	
Maximum supply voltage			28 VDC - 110 mA (N7) The minimum operating voltage at maximum 60°C is 11.5 VDC.	30 VDC - 100 mA (N7)
Power	DC	Minimum	300 mW	
		Maximum	3 W	
			Dependent on the applied voltage, type of barrier IS and the resistance of the connected cable	
Coil resistance at 20°C Impedance Apparent inductance Apparent capacitance			295 Ω 345 Ω 0 mH 0 µF	
Weight			500 g	

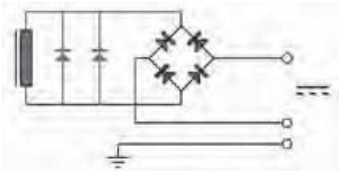
To Order a Coil choose Coil Ref + Voltage Code, example: **490890** for **30VDC** = **490890N7**



Important

The intrinsic safety supply circuit must have sufficient capacitance in all ambient conditions to guarantee a minimum operating current in excess of **29 mA** across the coil.

The minimum current for holding in the energised position is 20 mA.



For the barrier compatibility see the corresponding table in appendix section.

488670.01 - ELECTRICAL PARTS "IS" 50 mm

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

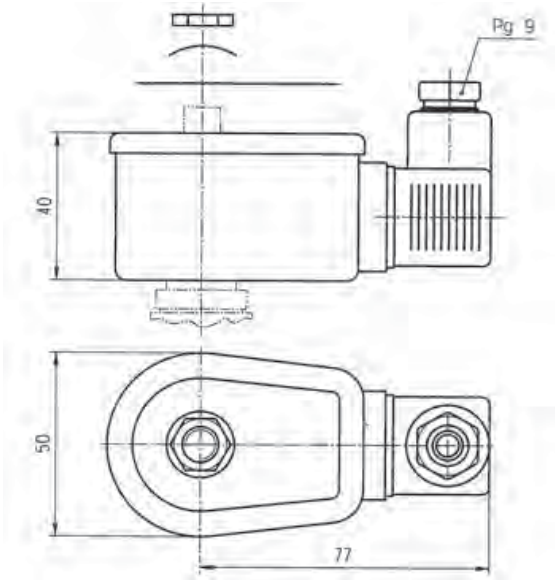
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex ia or ib IIC T6 is required.

Benefits: Rotatable 360° housing, epoxy-coated metal housing and cover. Coil, electronic circuits and other elements required for intrinsic safety are completely encapsulated in the housing with epoxy material for shock and corrosion protection.

Small size for ease of mounting in confined space.

Reference			488670.01
Certificate			LCIE 02 ATEX 6024 X
Coil group			7.0
Type of protection		Gas	II 1 G - Ex ia IIC - T6
		Dust	II 1 D - Ex ta IIIC - T80°C
Degree of protection			IP65
Ambiant temperature			- 40°C to +65°C The operating temperature of the valve/coil can be limited by that of the valve
Electrical connection			Cable entry through a cable gland M20 x1.5. Screw terminals for leads 3 x 1.5 mm² max. Additional earth connection possible with external screw terminal.
Maximum supply voltage			28 VDC (N7) - 110 mA The minimum operating voltage at maximum 60°C is 11.5 VDC.
Power	DC	Minimum	300 mW
		Maximum	3 W
			Dependent on the applied voltage, type of barrier SI and the resistance of the connected cable
Coil resistance at 20°C Impedance Apparent inductance Apparent capacitance			295 Ω 345 Ω 0 mH 0 µF
Weight			500 g

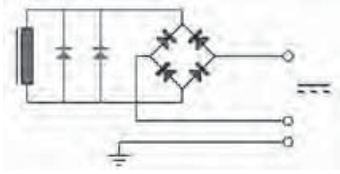
To Order a Coil choose Coil Ref + Voltage Code, example: **488670.01** for **28VDC** = **488670.01N7**



Important

The intrinsic safety supply circuit must have sufficient capacitance in all ambient conditions to guarantee a minimum operating current in excess of **29 mA** across the coil.

The minimum current for holding in the energised position is 20 mA.



For the barrier compatibility see the corresponding table in appendix section.

TABLE OF CONTENT

HOUSING

4270

COIL STANDARD HOUSING WITH SCREW TERMINALS

Standard housing:

Reference:	4270
Material:	Epoxy-coated steel with cataphoresis traitement
Degree of protection:	**IP** according to IEC/EN 60529 **IP 10** with armoured conduit **IP 44** with cable gland
Electrical connection:	Can be made with armoured conduit or cable gland M12x1.5. Parts No. 484092 and 484093 to be ordered separately. Grounding connection by screw M3 on the inside of housing base plate.
Weight:	120 g

Benefits:

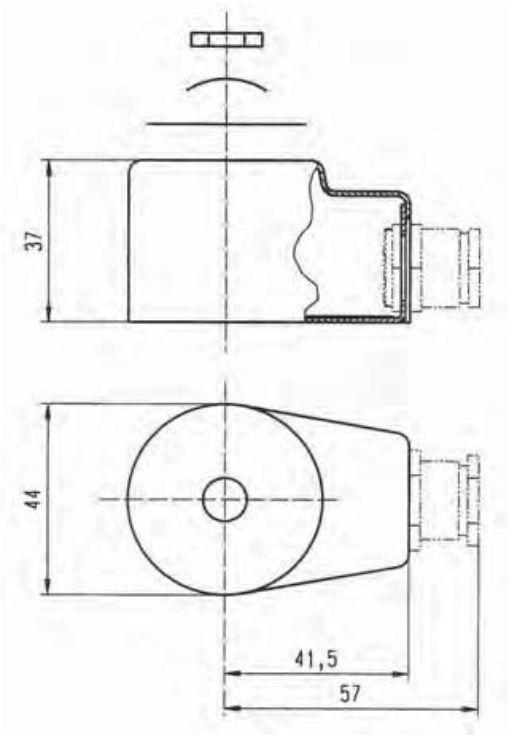
This metal housing offers the ideal protection against shocks and corrosion- rotatable 360° - easy mounting in confined spaces - single-nut mounting - light weight - simplifies conversion of existing equipment to other requirements.

Application:

The majority of the Lucifer® valves can be fitted with this standard housing, and can be mounted with several compatible Lucifer® coils grupe.

Compatible coils:

- **481000 - Standard Coil**
  8 W Class F (155°C)
- **483520 - Double-Frequency Coil**
  9 W Class F (155°C)
- **481044 - Standard High-Power Coil**
  14 W Class F (155°C)
- **485100 - Standard High-Temperature Coil**
  8 W Class H (180°C)
- **486265 - High-Temperature and High-Power Coil**
  14 W Class H (180°C



HOUSING

4269

HOUSING FOR BISTABLE (IMPULSE) COILS

Housing for bistable coil:

Reference:	4269
Material:	Epoxy-coated steel
Degree of protection:	**IP** according to IEC/EN 60529 **IP 10** with armoured conduit **IP 44** with cable gland
Electrical connection:	Can be made with armoured conduit or cable gland M12x1.5. Parts No. 484092 and 484093 to be ordered separately. Grounding connection by screw M3 on the inside of housing base plate.
Weight:	120 g

Benefits:

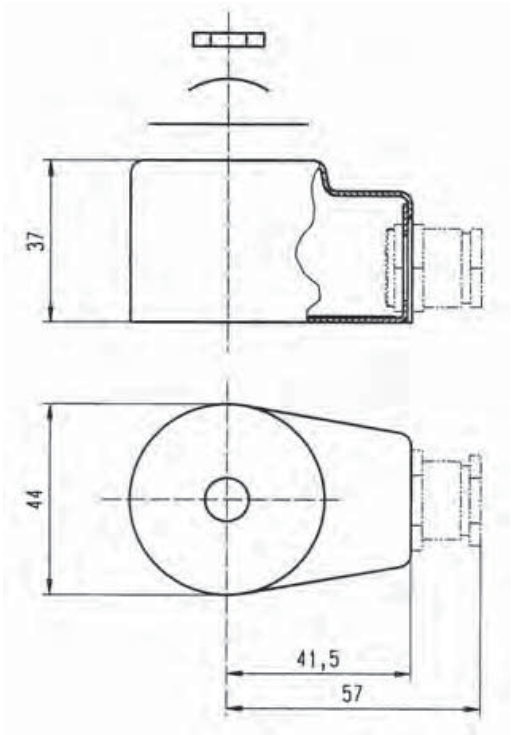
This metal housing offers the ideal protection against shocks and corrosion- rotatable 360° - easy mounting in confined spaces - single-nut mounting - light weight - simplifies conversion of existing equipment to other requirements.

Application:

This housing is specially designed for group 706 coils and can be mounted only with valves controlled by electrical impulses.

Compatible coils:

- **484990 - Impulse coil for AC**
  11 W Class F (155°C)
- **485400 - Impulse coil for DC**
  13 W Class F (155°C)



HOUSING

4538 WATERPROOF AND DUSTPROOF HOUSING

Waterproof housing:

Reference:	4538
Material:	Galvanized passivated steel
Degree of protection:	**IP** according to IEC/EN 60529 **IP 67** with cable gland
Electrical connection:	Cable connection by cable gland M12x1.5 according to DIN 46320. Cable with outer diameter 6.5 - 13.5 mm can be simply sealed using a rubber gland with resilient sealing rings. The enclosure is internally and externally fitted with grounding and earthing screw terminals.
Weight:	180 g

Benefits:

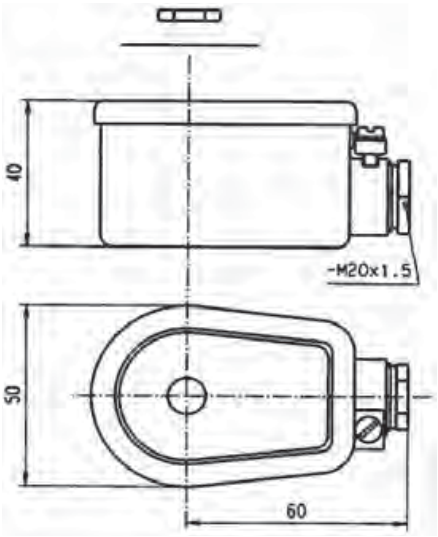
This enclosure is dust- and waterproof. It corresponds to the degree of "International Protection" IP 67 according to IEC / EN 60529. Corrosion resistant, the metal housing offers good protection for the coil against shocks and other outside influences - rotatable 360° - easy mounting in confined spaces - easy access to the screw terminals - single-nut mounting - light weight - simple conversion of existing electrical equipment to other requirements without interruption of fluid passage in the valve.

Application:

This housing can be equipped with several coils of our programme, like the standard, double-frequency and magnetic latch coils.

Compatible coils:

- **481000 - Standard Coil**
  8 W Class F (155°C)
- **483520 - Double-Frequency Coil**
  9 W Class F (155°C)
- **484990 - Impulse Coil for AC**
  11 W Class F (155°C)
- **485400 - Impulse Coil for DC**
  13 W Class H (180°C)



HOUSING

8520

WATERPROOF HOUSING FOR HIGH-TEMPERATURE COILS

Waterproof housing:

Reference:	8520
Material:	Galvanized passivated steel
Degree of protection:	**IP** according to IEC/EN 60529 **IP 67** with cable gland
Electrical connection:	Cable connection by cable gland M12x1.5 according to European standards. Cable with outer diameter 6.5 - 13.5 mm can be simply sealed using a rubber gland with resilient sealing rings. The enclosure is internally and externally fitted with grounding and earthing screw terminals.
Weight:	180 g

Benefits:

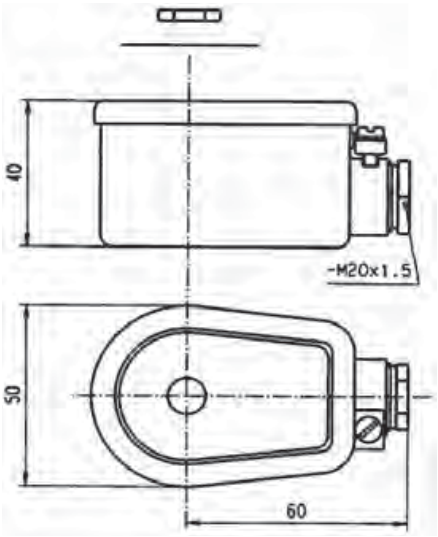
This enclosure is dust- and waterproof. It corresponds to the degree of "International Protection" IP 67 according to IEC / EN 60529. Corrosion resistant, the metal housing offers good protection for the coil against shocks and other outside influences - rotatable 360° - easy mounting in confined spaces - easy access to the screw terminals - single-nut mounting - light weight - simple conversion of existing electrical equipment to other requirements without interruption of fluid passage in the valve.

Application:

The majority of the Lucifer® valves can be fitted with this housing and can be mounted with several compatible Lucifer® coils for high temperature (14 W, 8 W Class F or H).

Compatible coils:

- **481044 - High Power Coil**
  14 W Class F (155°C)
- **486265 - High Power Coil**
  14 W Class H (180°C)
- **485100 - Coil for High Temperature**
  8 W Class H (180°C)



22 mm
32 mm

COIL ASSEMBLY KITS

COIL ASSEMBLY KIT FOR 22 mm COIL

The coil assembly kit corresponds to the numbering system for Lucifer® valve housings (Valve - housing - coil - voltage).

It is composed of a nameplate with the details of the valve type, a washer and a nut to secure the 22 mm coil to the valve.

Caution: these coil assembly kits for 22 mm coils are not adapted for high flow valves, ask your distributor for the adapted kit.

Reference	Specification	Application
8993	Standard - aluminium nameplate - passivated washer and nut - pressure indication in [bar]	Standard valves
8993.03	Standard - aluminium nameplate - passivated washer and nut - pressure indication in [psi]	Standard valves
8122	Special - aluminium nameplate - stainless steel washer and nut - pressure indication in [psi]	316L St. Steel Valves
8567	Special - knurled flat aluminium nut	Water valves- series 321K3…

COIL ASSEMBLY KIT FOR 32 mm COIL

The coil assembly kit corresponds to the "housing" of Lucifer® valve numbering system (Valve - housing - coil - voltage).

It is composed of a nameplate giving details of the valve type, a round washer and a nut to ensure the fixing between 32 mm coil and the valve.

Reference	Specification	Application
2995	Standard - Aluminium nameplate - Passivated iron washer and nut - Pressure indication in [bar]	Standards valves
2995.03	Standard - Aluminium nameplate - Passivated iron washer and nut - Pressure indication in [psi]§q	UL / CSA valves
8132	Special - Aluminium nameplate - Stainless steel washer and nut - Pressure indication in [psi]	316L St. Steel valves
2161	Special - Aluminium nameplate - Passivated iron washer and nut - Pressure indication in [bar]	Transportation valves
2168	Special AD Blue - Aluminium nameplate - Passivated iron washer and nut - Pressure indication in [bar]	Transportation valves
2169	Special AD Blue - Aluminium nameplate - Passivated iron washer and nut - Pressure indication in [bar]	Transportation valves

ACCESSORIES

DIN PLUG CONNECTOR ACCORDING TO EN 175301-803 -B

No. 481043

Electrical connection suitable for all 22 mm coils
(e.g. 488980, 481180)

DIN PLUG CONNECTOR ACCORDING TO EN 175301-803 - A

No. 486586 for standard version
No. 492645 for high temperature version

Electrical connection suitable for all 32 mm coils
(e.g. 481865, 492425)

STAINLESS STEEL ASSEMBLY KIT

Nut No. 482213 M14 x 1+ Ring No. 482214 +
O-Ring No. 483917

Coil assembly kit for offshore electrical parts
(e.g. 482870.01, 483330.01, 492210, 492965.01, 496565, 496700)

PLASTIC NUT WITH METAL INSERT

No. 8886

For Oil & Gaz electrical parts
(e.g. 492965.01, 492300,)

CABLE GLAND

No. 492398 - Pg 13.5 -Ex eb II
No. 493841 - M20x1.5 - Ex ia IIC

Electrical connection and mooring cable with 6 to 12 mm diameter, for electrical parts approved "eb mb" or "ia"
(e.g. 492190, 492965….)

CABLE GLAND

No. 493426 - 1/2"-14 NPT

Electrical connection and mooring cable with 6 to 12 mm diameter, for flameproof approved electrical parts
(e.g. 493640)

INTRODUCTION

Current European regulations concerning electrical equipment for potentially explosive environments are based on optional and partial European directives which require regular modification in the form of application or adaptation directives in order to keep pace with technical developments.

The basic European text in this field, directive **76/117/EC**, which allow the free circulation of goods within the European Union, provides the general framework for the present regulations.

Electrical equipment for use in potentially explosive environments is certified by a government-approved body when it meets relevant European standards (EN 60079-0 and upwards) covering each type of protection (**db**, **ia**, **eb**, **m**, **p**, etc). Such equipment is then issued with a **an EC type examination certificate**, entitling it to carry the distinctive marking.

This mark opens the way for trading within the European Union and occasionally beyond.

Although largely beneficial, it has revealed certain drawbacks, notably a lack of flexibility and the absence of a global concept for safety. It has now been completely revised by the **new European directive 94/9/EC from March 23, 1994**.

The EC type examination certificate to harmonised standards obtained in compliance with previous directives will remain valid until June 30, 2003, but their validity will cover only conformity to the harmonised standards specified in these directives.

EUROPEAN MEMBER COUNTRIES

DEFINITIONS

EXPLOSIVE ENVIRONMENTS

Mixture with air, under atmospheric conditions, of flammable substances in the form of gases, vapours, 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.

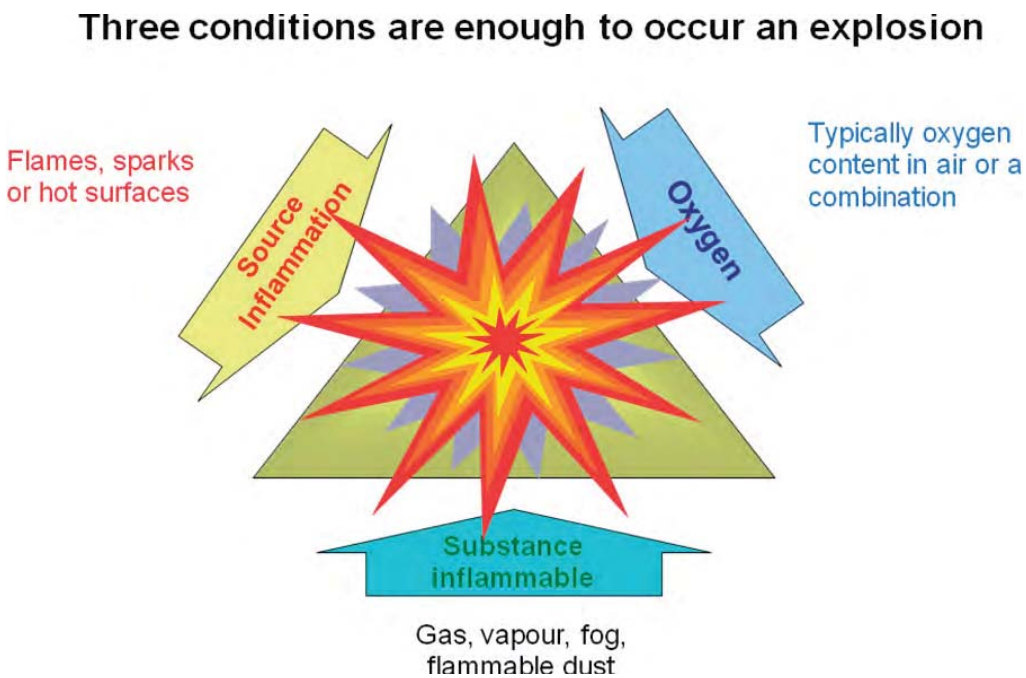
INGREDIENTS FOR AN EXPLOSION

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:

- 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:



Parker Hannifin Corporation
Fluid Control Division Europe
General Catalogue FCDE/0110/UK/V1.0

DEFINITIONS

ZONES

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

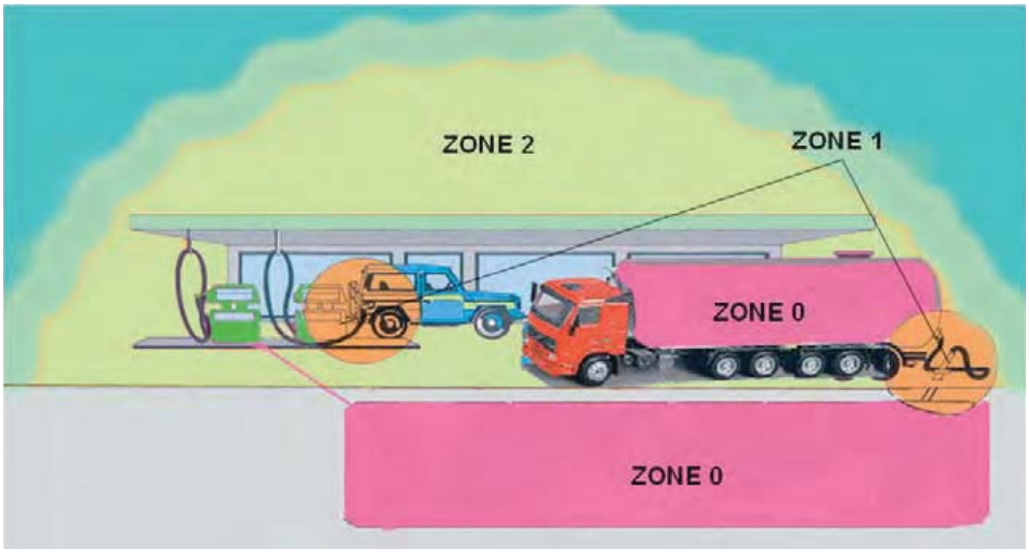
Zone 0 (20)	**Zone 1** (21)	**Zone 2** (22)
An area in wich an explosive **gas** (dust) atmosphere is present CONTINUOUSLY or is present for LONG PERIODS (~1000 h/y).	An area in wich an explosive **gas** (dust) atmosphere is present LIKELY TO OCCUR in normal operation (~10 to 999 h/y).	An area in wich 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:



DEFINITIONS

CLASSIFICATION OF HAZARDOUS LOCATION

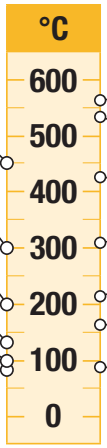
Category	Fault protection	Atmosphere	Zone	Example of protections
EC Type examination by Notified Body ⟶ annex III				
1 Very high level	2 types of protection or 2 indépendant faults	**G** (Gas)	**0**	"ia", "ma", "px" or "ia-ma", "db/eb"
		D (Dust)	**20**	
EC Type examination by Notified Body ⟶ annex III				
2 High level	One type of protection	**G** (Gas)	**1**	One type of protection
	Habitual frequent malfunction	**D** (Dust)	**21**	Ib, db, mb, eb, py, o,…
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**	

Classification of Hazardous Location

Group	Gas Reference
I	Methane
IIA	Propane
IIB	Ethylene
IIC	Hydrogen / Acethylene

Surface Temperature Classes

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



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

MODE OF PROTECTION USED BY PARKER LUCIFER®

MODES DE PROTECTION

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

STANDARDS AND TYPE OF PROTECTION

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, px, 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	lc	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

STANDARDS AND TYPE OF PROTECTION

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

NON ELECTRICAL EQUIPMENT FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERE

Standards	Protection	Title
EN 13463-1	-	Basic method and requirements
EN 13463-2	fr	Protection by flow restricting enclosure
EN 13463-3	db	Protection by flameproof enclosure
EN 13463-5	c	Protection by constructional safety
EN 13463-6	b	Protection by control of ignition source
EN 13463-7	p	Protection by pressurized enclosure
EN 13463-8	k	Protection by liquid immersion

ZONES AND EQUIPEMENT PROTECTION LEVEL (EPL)

Gas		Dust	
Zone	EPL	Zone	EPL
0	Ga	20	Da
1	Ga and Gb	21	Da and Db
2	Ga, Gb and Gc	22	Da, Db and Dc

CATEGORIES AND EQUIPEMENT PROTECTION LEVEL (EPL)

Categories	Gas	Dust	Safety
1	Ga	Da	Very high
2	Gb	Db	High
3	Gc	Dc	Normal

EXAMPLES OF MARKING

ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES EQUIPMENT GROUP II

Ex de IIC T5 Gb

Equipment Groups (Dust)	
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

Surface Temperature Max.

Ex tb IIIC T95°C Db

Ex tb IIIC T95°C

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

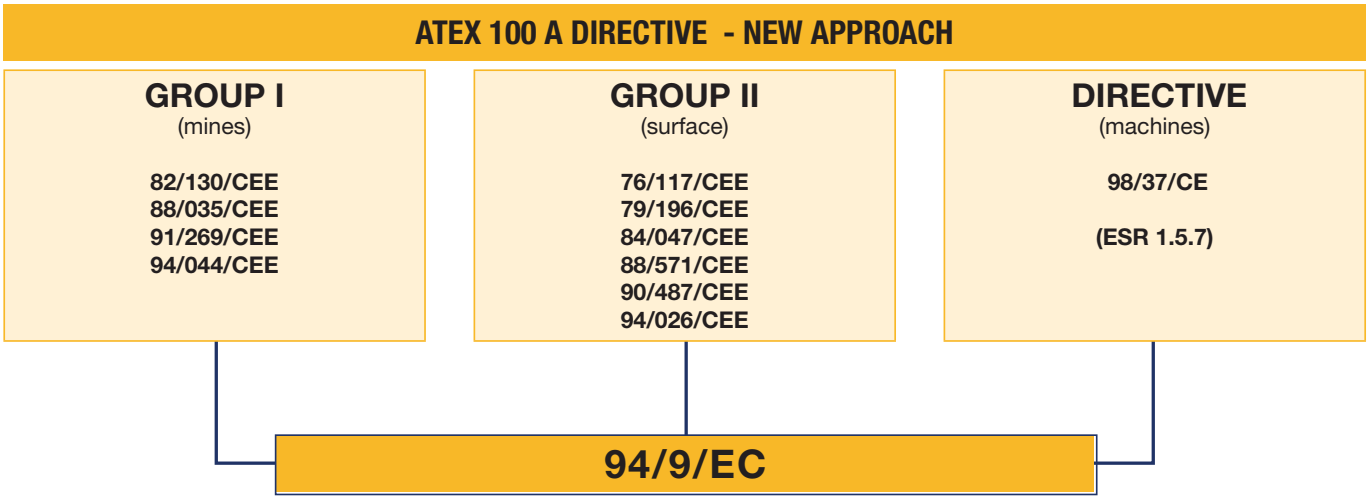
Zone	Equipment Protection Level (EPL)
20	Da
21	Db and Da
22	Dc, Db and Da

WHAT ABOUT THE DIRECTIVE ?
(94/9/EC - 1994-03-23)

WHAT ABOUT THE DIRECTIVE ? (94/9/EC - 1994-03-23)

In keeping with the **"new approach"**, the new directive lays down the framework for a total harmonization of regulations covering this field.

It makes no direct references to standards but sets out the essential health and safety requirements to be met and introduces the **CE** marking.



THE FRAMEWORK OF THE DIRECTIVE

The main principles of the new directive can be summarized as follows:

- It applies to **electric** and **non-electric** equipment.
- It defines **essential health and safety requirements**.
- It takes into consideration **all potential hazards** equipment may cause, in particular at design and production level.
- **The one directive** applies to both **mines** susceptible to fire damp and **surface industries**.
- It stresses the importance of equipment being **used in accordance with its intended purpose**.
- It recognises The European Standards Committee **CEN** and the European Committee for Electrotechnical Standardisation **CENELEC** as competent bodies to fix the required harmonised standards.
- It provides for the **contribution of labour and management**.
- It defines **procedures for assessing conformity** to essential requirements, on the basis of modules which qualify equipment to carry the **CE** mark of conformity.

APPLICATIONS

The directive applies to the industrial field and concerns the following equipment:

- **Equipment** (machines, apparatus, etc.)
- **Protective systems** (discharge devices, explosion suppression devices, etc.)
- **Components** (parts with no autonomous function, terminals, etc.)
- **Safety devices, controlling devices and regulating devices** intended for use outside potentially explosive environments but required for safety with respect to explosions (relays, barriers, pressure switches, thermostats, etc.)

WHAT ABOUT THE DIRECTIVE ?
(94/9/EC - 1994-03-23)

EXCLUDED FROM THE SCOPE OF THE NEW DIRECTIVE

The following equipment falls outside the scope of the new directive:

- Medical devices intended for use in a medical environment.
- Equipment and protective systems relating only to the risk of explosion of unstable chemical substances (explosives, etc.)
- Equipment intended for use in domestic and non-commercial environments.
- Personal protective equipment covered by directive 89/686/EC.
- Seagoing vessels and mobile offshore units.
- Means of transport, except for vehicles intended for use in a potentially explosive environment.

APPLICATION DATES

ATEX 100A DIRECTIVE - NEW APPROACH	
94/9/EC	
Application dates	
• Transposition to national law	1/9/1995
• Application (optional)	1/3/1996
• Application (total)	1/7/2003

POTENTIAL IGNITION SOURCES AND OTHER HAZARDS TO BE CONTROLLED

The following all represent potential hazards:

- Various sources of ignition, such as sparks, flames, electric arcs, high surface temperature, acoustic energy, optical radiation or electromagnetic waves.
- Static electricity.
- Pressure compensation operations.
- Disturbance from external sources, such as changing environmental conditions, extraneous voltage, humidity, vibration or contamination.

Provision is also made for specific requirements governing devices used to provide additional equipment safety.

These requirements necessitate detailed analysis to asses the operational reliability of such devices and their interaction with other components connected with the equipment.

GUIDANCE CHART FOR IS-BARRIERS

Manufacturer	Reference	Ex	IS Standard Electrical Parts							IS Booster Electrical Parts		
			Ex ia IIC T6 488650.01/02 488660,01 488670,01 LCIE/AUS	Ex ia IIC T6 490885 490890 (490895) LCIE/FM/CSA	Ex ia IIC T6 483580.01/03 483960.01/03 LCIE/AUS	Ex ia 490880 (493997) LCIE/FM/CSA	Ex ia IIB T6 482160,01 LCIE	Ex ia IIC T6 482870,01 LCIE	Ex ia 492335 LCIE/FM/CSA	Ex ia IIC T6 492965.01/02 LCIE	Ex ia IIC T6 496565 LCIE	Ex ia IIC T6 495910 LCIE
A puissance 3	NAEV 22-140	ia	●	-	●	-	●	●	-	●	●	●
	NAEV 26-100	ia	●	-	●	-	●	●	-	●	●	●
ABB	V171132-54	ib	●	-	●	-	●	●	-	●	●	●
	V171132-55	ib	●	-	-	-	●	●	-	●	●	●
	V171132-61	ia	●	-	-	-	●	●	-	●	●	●
	DO 890	ib	●	-	●	-	●	●	-	●	●	●
	S900-DO4-EX	ib	●	-	●	-	●	●	-	●	●	●
BRADLEY	FEX-EX 24V	ia	●	●	●	●	●	●	-	●	●	●
COOPER	LB 2101	ia	●	●	●	●	●	●	●	●	●	●
	LB 2105	ia	●	●	●	●	●	●	●	●	●	●
	LB 2112	ia	●	●	●	●	●	●	●	●	●	●
ELCON	1881 / 1882	ia	●	●	●	●	●	●	●	●	●	●
	471 / 472	ia	●	●	●	●	●	●	●	●	●	●
	2871/2872	ia	●	●	●	●	●	●	●	●	●	●
	2874/2875/2876	ia	●	●	●	●	●	●	●	●	●	●
GEORGIN	AVB 122	ia	●	-	●	-	●	●	-	●	●	●
	AVB 125	ia	●	-	●	-	●	●	-	●	●	●
	AVB 128	ia	●	-	●	-	●	●	-	●	●	●
Hima	F3328A	ib	●	-	●	-	●	●	-	●	●	●
	F3335	ib	●	-	-	-	●	●	-	●	●	●
	H4007	ib	●	-	●	-	●	●	-	●	●	●
MTL	728P, 7128P, 7728P	ia	-	-	-	-	●	-	-	●	●	●
	728, 7028, 7128, 7728	ia	●	●	●	●	●	●	●	●	●	●
	3021, 4021, 4021S	ia	●	-	●	-	●	●	-	●	●	●
	3022	ia	-	-	-	-	●	-	-	-	-	-
	4023	ia	-	-	-	-	●	-	-	-	-	-
	4024	ia	●	-	●	-	●	●		●	●	●
	4025	ia	●	●	●	●	●	●	●	●	●	●
	5021, 5023, 5024	ia	●	-	●	-	●	●	-	●	●	●
	5025	ia	●	-	●	-	●	●	●	●	●	●
	4521 / 4523 / 4524	ia	●	-	-	-	●	●	●	●	●	●
	5521 / 5523 / 5524	ia	●	-	-	-	●	●	●	●	●	●
Pepperl & Fuchs	Z 728	ia	●	●	●	●	●	●	●	●	●	●
	Z 779	ia	●	●	●	●	●	●	●	●	●	●
	EGA-041-3	ia	-	●	●	●	●	●	●	●	●	●
	KFD2-SD-EX1.36	ia	-	-	-	-	-	●	-	-	-	-
	KFD2-SL-EX1.36	ia	-	-	-	-	-	●	-	-	-	-
	KFD2-SD-EX1.48	ia	-	●	-	●	-	●	●	●	●	●
	KFD2-SL-EX1.48	ia	-	●	-	●	-	●	●	●	●	●
	KFD2-SL-EX1.48.90A	ia	-	-	-	-	-	-	-	●	●	●
	KFD2-SL-EX1.48.90A	ia	-	-	-	-	-	-	-	●	●	●
	KFD2-SL2-EX1.LK	ia	-	●	-	●	-	●	●	●	●	●
	KFD2-SL2-EX2	ia	-	●	-	●	-	●	●	●	●	●
	KSD2-BO-EX	ia	-	●	●	●	●	●	●	●	●	●
	RSD-BO-EX4	ib	-	●	-	●	-	●	●	●	●	●
	RSD-VO-EX8	ib	-	-	-	-	-	-	-	●	●	●

GUIDANCE CHART FOR IS-BARRIERS

Manufacturer	Reference	Ex	IS Standard Electrical Parts							IS Booster Electrical Parts		
			Ex ia IIC T6 488650.01/02 488660,01 488670,01 LCIE/AUS	Ex ia IIC T6 490885 490890 (490895) LCIE/FM/CSA	Ex ia IIC T6 483580.01/03 483960.01/03 LCIE/AUS	Ex ia 490880 (493997) LCIE/FM/CSA	Ex ia IIB T6 482160,01 LCIE	Ex ia IIC T6 482870,01 LCIE	Ex ia 492335 LCIE/FM/CSA	Ex ia IIC T6 492965.01/02 LCIE	Ex ia IIC T6 496565 LCIE	Ex ia IIC T6 495910 LCIE
SIEMENS	5RD00-0AB0	ib	-	-	-	-	-	-	-	●	-	-
	7RD00-0AB0	ia	-	-	-	-	-	-	-	●	●	●
	7RD01-0AB0	ia	-	-	-	-	-	-	-	●	●	●
	7RD10-0AB0	ia	-	-	-	-	-	-	-	●	●	●
	7RD11-0AB0	ia	-	-	-	-	-	-	-	●	●	●
	7RD20-0AB0	ia	-	-	-	-	-	-	-	●	●	●
	7RD21-0AB0	ia	-	-	-	-	-	-	-	●	●	●
STAHL	9001/01-252-100-14	ia	●	●	27 V	27 V	●	●	●	●	●	●
	9001/01-280-100-10	ia	●	●	24 V	24 V	●	●	●	●	●	●
	9001/01-280-110-10	ia	●	-	24 V	-	●	●	-	●	●	●
	9002/13-280-100-04	ia	24 V	24 V	27 V	27 V	24 V	24 V	24 V	17 V	17 V	17 V
	9311/52-11-10	ia	-	●	●	25 V	25 V	●	●	15 V	15 V	15 V
	9111/63-11-00	ia	-	●	●	25 V	25 V	●	●	15 V	15 V	15 V
	9351/10-15-10	ia	-	●	●	-	-	●	●	●	●	●
	9351/10-16-10	ia	-	●		●	-	●	●	●	●	●
	9351/10-17-10	ia	-	-	-	-	-	●	-	-	-	-
	9381/10-187-050-10	ib	-	●	●	●	●	●	●	●	●	●
	9381/10-246-055-10	ib	-	●	●	●	●	●	●	●	●	●
	9381/10-246-070-10	ib	-	●	●	●	●	●	●	●	●	●
	9465/12-04-11	ib	-	●	●	-	-	●	●	●	●	●
	9475/12-04-21	ia/ib	-	●	-	●	-	●	●	●	●	●
	9475/12-04-31	ia/ib	-	-	-	-	-	-	-	●	●	●
	9475/12-08-41	ia/ib	-	-	-	-	-	-	-	-	-	-
	9475/12-08-51	ib	-	-	-	-	-	-	-	-	●	●
	9475/12-08-61	ia/ib	-	-	-	-	-	-	-	-	●	●
Turck	MK72-S01-EX	ib	-	-	-	-	●	●	-	●	●	●
	MK72-S02-EEX	ib	-	-	-	-	●	●	-	●	●	●
	MK72-S04-EEX	ib	●	-	●	-	●	●	-	●	●	●
	MK72-S05-EEX	ib	●	-		-	●	●	-	●	●	●
	MK72-S06-EEX	ib	●	-	●	-	●	●	-	●	●	●
	MK72-S07-EEX	ib	●	-		-	●	●	-	●	●	●
	MK72-S09-EEX	ia		-		-			-	-	-	-
	MK72-S12-EEX	ia	●	-	●	-	●	●	-	●	●	●
	MC72 - 41	ia	●	-	●	-	●	●	-	●	●	●
	MC72 - 43	ia	●	-	●	-	●	●	-	●	●	●
	MC72 - 44	ia		-	-	-			-	●	●	●
BARTEC	07-7331-2301/1000	ia	●	-	-	-	●	●	-	●	-	-
	07-7331-2301/1100	ia	●		●		●	●		●	-	-

TABLE OF VOLTAGE CODES FOR COILS AND ELECTRICAL PARTS

This table is showing the most commonly used voltage codes, for other voltages, please ask us.

VOLTAGE CODES			C1	C2	N7	L8	C4	C5		C7	E6	P1	A5	0A	S5	P2	1P	6J	0P	P3	K8
Coil	Group	Sub-Group	12 DC	24 DC	28 DC	30 DC	48 DC	110 DC	196 DC	220 DC	100/50	100/50-60	110/50	110-115/50	110-115/50 120/60	110-115/50-60	110-115/60	100/50-115/60	110/50-120/60	115/60	
481045	1.1	-	●	●			●	●						●				●			
481180	1.1	-	●	●										●							
481530	1.1	-	●	●																	
482605	1.1	-	●	●																	
482606	1.1	-	●	●			●	●						●				●			
483590	1.1	-													●						
488143	1.1	-										●									
488980	1.1	-	●	●			●	●						●				●			
492912	1.1	-		●																	
495865	1.1	-		●			●							●				●			
496131	1.2	-	●	●			●	●								●					●
496482	1.2	-	●	●			●	●								●					●
496637	1.2	-	●	●			●	●								●					●
WB4.5	1.3	-									●	●								●	
WB5.0	1.3	-	●	●				●													
WB8.0	1.3	-																		●	
481000	2.0	2.1	●	●			●	●		●				●				●			
481865	2.0	2.1	●	●			●	●					●								●
482635	2.0	2.1													●						
482725	2.0	2.1	●	●				●					●								●
483371	2.0	2.1	●	●			●	●		●				●				●			
483510	2.0	2.1													●						
483520	2.0	2.1																			
485100	2.0	2.1		●						●				●							
488553	2.0	2.1										●									
488947	2.0	2.1										●									
491514	2.0	2.1	●	●		●														●	
492070	2.0	2.1	●	●			●	●								●					
492190	2.0	2.1	●	●			●	●		●						●					
492453	2.0	2.1	●	●			●	●					●								
492670	2.0	2.1	●	●			●	●					●								
492726	2.0	2.1		●				●													
493640	2.0	2.1		●			●						●							●	
494040	2.0	2.1		●						●				●							
495870	2.0	2.1		●			●	●					●								
495875	2.0	2.1		●																	
495905	2.0	2.1		●			●	●													●
496081	2.0	2.1	●	●											●						
496082	2.0	2.1	●	●																●	
496110	2.0	2.1													●						
HZ10	2.0	2.1																		●	
481044	2.0	2.2											●						●		
483816	2.0	2.2	●	●																	
486265	2.0	2.2	●	●			●						●						●		
492425	2.0	2.2	●	●									●								
492727	2.0	2.2	●	●																	
495880	2.0	2.2		●									●								
496155	2.0	2.2		●			●						●								
HZ11	2.0	2.2	●	●			●													●	
482730	3.0	-		●			●						●								●
482735	3.0	-		●			●														

A1	1W	P6	S2			A7	B7	R5	3D	7J	3P	4K	Q3	S6	F4	J3	P9	A2	B2	P0		B8	Q1	A9	Q2	5P	A4	S4
12/50	12/50-60	200/50-60	200-230/60	208-230/60	208-240/60	220/50	220/60	220/50-60	220-230/50	220-230/60	220-230/50-60	220-240/60	220/50-240/60	220-240/50	230/50	230/60	230/50-60	24/50	24/60	24/50-60	240/50	240/60	240/50-60	380/50	380/50-60	380/50-440/60	48/50	48/50-60
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TABLE OF VOLTAGE CODES FOR COILS AND ELECTRICAL PARTS

This table is showing the most commonly used voltage codes, for other voltages, please ask us.

VOLTAGE CODES			C1	C2	N7	L8	C4	C5		C7	E6	P1	A5	0A	S5	P2	1P	6J	0P	P3	K8
Coil	Group	Sub-Group	12 DC	24 DC	28 DC	30 DC	48 DC	110 DC	196 DC	220 DC	100/50	100/50-60	110/50	110-115/50	110-115/50 120/60	110/50-60	110-115/50-60	110-115/60	100/50-115/60	110/50-120/60	115/60
484990	4.0	-															●				
485400	4.0	-	●	●			●	●													
495915	4.0	-		●			●										●				
482740	6.0	-		●			●	●													
482745	6.0	-		●																	
495900	6.0	-	●	●			●	●													●
496125	6.0	-		●			●	●													
483580.01	7.0	-			●																
488650.01	7.0	-			●																
488660.01	7.0	-			●																
488670.01	7.0	-			●																
490885	7.0	-				●															
490890	7.0	-			●	●															
495910	8.0	-			●																
492210	9.0	-		●																	
492965.01	9.0	-			●																
496565	9.0	-			●																
492300	10.1	-	●	●			●	●		●						●					
492310	10.1	-	●	●			●	●		●						●					
496560	10.1	-		●			●														
496800	10.1	-		●			●														
496895	10.1	-		●			●														
496555	10.2	-		●			●														
496700	10.2	-		●			●														
483270	11.0	-	●	●			●	●									●				
483270.02	11.0	-	●	●			●	●									●				
492335	12.0	-				●															
482870.01	12.0	-			●																
495294	13.0	-	●	●																	
496193	13.0	-	●	●																	
483541	14.1	-																			
483824	14.1	-																			
483764	14.2	-																			
YB09	20.1	-																●		●	
YB12	20.1	-	●	●																	
ZB09	20.1	-	●	●				●				●					●			●	
ZB12	20.1	-	●	●			●	●													
ZB14	20.2	-										●								●	
ZB16	20.2	-	●	●				●													
ZH14	20.2	-																		●	
ZH16	20.2	-	●	●																	
JB14	21.0	-																			
JB16	21.0	-	●	●					●												
KH09	22.0	-																			
KP10	22.0	-	●	●																	
KT09	22.0	-												●							
XT09	23.0	-																			
D4	24.0	-		●																●	
D5	24.0	-		●									●								●
LA	24.0	-		●																●	
LB-LC	24.0	-		●																●	
XS03	24.0	-																		●	

A1	1W	P6	S2			A7	B7	R5	3D	7J	3P	4K	Q3	S6	F4	J3	P9	A2	B2	P0		B8	Q1	A9	Q2	5P	A4	S4
12/50	12/50-60	200/50-60	200-230/60	208-230/60	208-240/60	220/50	220/60	220/50-60	220-230/50	220-230/60	220-230/50-60	220-240/60	220/50-240/60	220-240/50	230/50	230/60	230/50-60	24/50	24/60	24/50-60	240/50	240/60	240/50-60	380/50	380/50-60	380/50-440/60	48/50	48/50-60
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TECHNICAL INFORMATION ABOUT SOLENOID VALVES

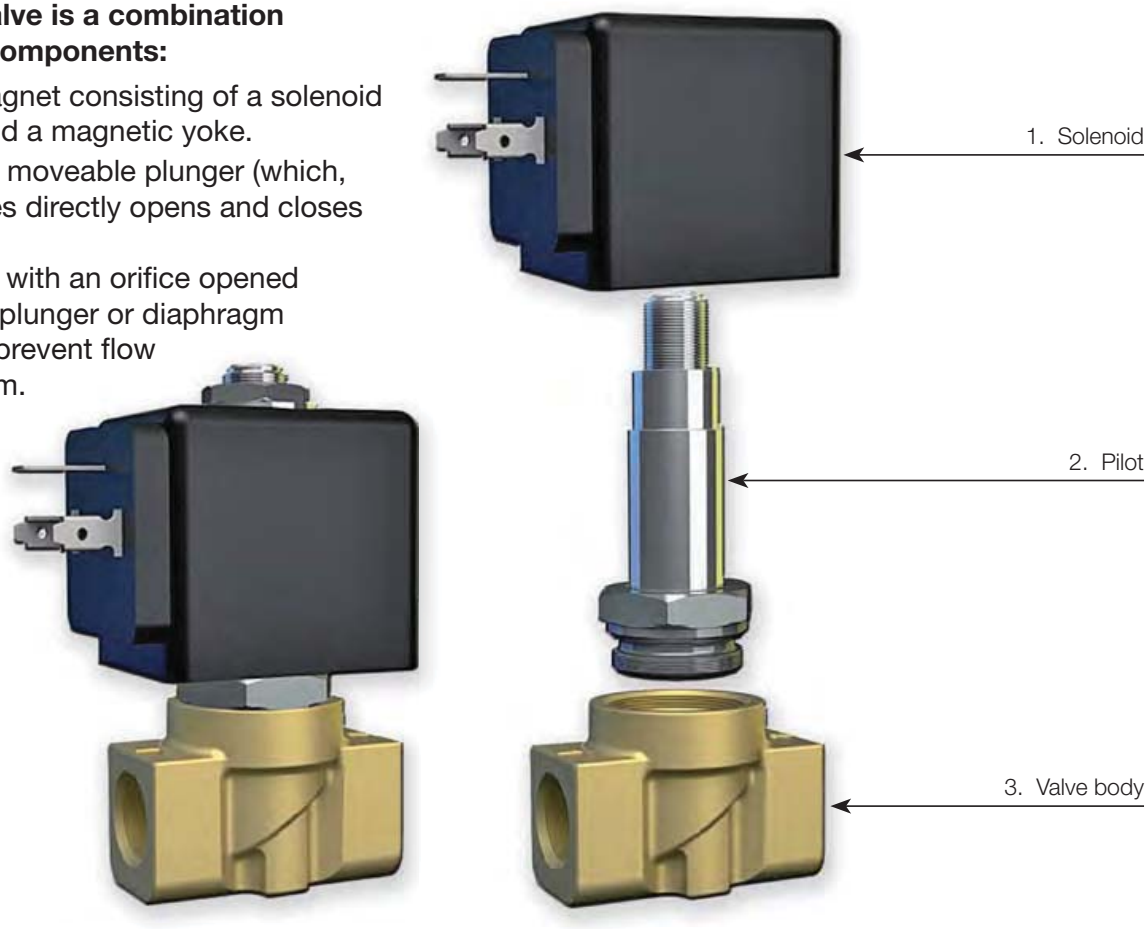
TECHNICAL INFORMATION ABOUT SOLENOID VALVES

General Information

Solenoid valves are electro-mechanical devices used for interrupting or diverting the flow of fluids by opening or closing one or more orifices.

The solenoid valve is a combination of three basic components:

1. An electromagnet consisting of a solenoid (windings) and a magnetic yoke.
2. A pilot with a moveable plunger (which, in some cases directly opens and closes the valve).
3. A valve body with an orifice opened or closed by plunger or diaphragm to enable or prevent flow of the medium.



Operating principles

The term solenoid refers to operator and coil, also known as pilot or magnetic actuator.

The coil consists of copper wire wound on a support reel. When electric current is applied into the coil, magnetic flow lines are generated which are stronger in the coil center.

This magnetic flow raises the moveable plunger in the coil until it brings it into contact with the pole piece. The valve body has an orifice through which the fluid flows when the valve is open.

The moveable plunger has an integral seat which when the solenoid coil is energised, moves off the valve (direct operated) orifice or diaphragm (pilot operated) orifice opening the valve.

When the coil is de-energised, a return spring brings the plunger back to the original closing position, thus cutting off the flow of the fluid.

BASIC COMPONENTS OF A SOLENOID VALVE

Valve body: Main part of the solenoid valve including ports, seat and orifices.

Solenoid tube assembly: Cylinder, in stainless steel, hermetically sealed and closed at one extremity. It is the guide channel of the moveable plunger which is moved magnetically. The solenoid coil is fitted on the external side of the enclosing tube.

Moveable plunger: Made by ferritic stainless steel, it is attracted by the solenoid magnetic field and slides inside the tube.

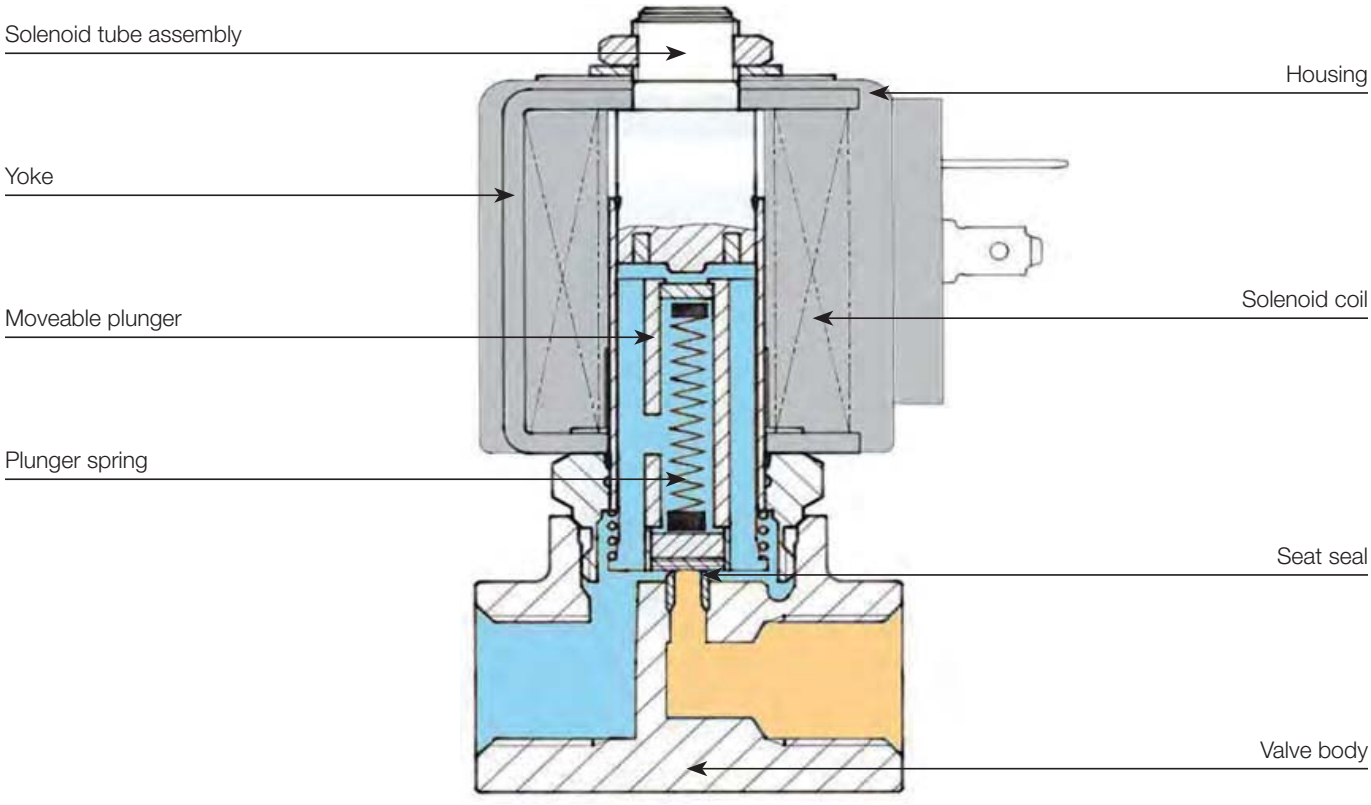
Plunger spring (or return spring): Used to hold the moveable plunger in position and to return it when de-energized.

Seat seal: Part of the moveable plunger, it is used to close a valves main orifice or pilot orifice.

Electromagnet (or solenoid coil): Electrical part consisting of a copper windings (solenoid) along, with a magnetic yoke (armature), when electric current flows through, it generates a magnetic field atracting the moveable plunger.

Housing: Part that contains and protects the coil.

Yoke: Metalic case surounding the coil and concentring electro-magnetic force on the moveable plunger.



TECHNICAL VOCABULARY USED IN TABLES

Actuation	Body	Function	Port Size	Orifice (mm)	Flow Factor Kv(l/min)	MOPD (bar)	Max Fluid Temp. (°C)	Page Parker Valves	Page Parker LUCIFER® Valves

NORMALLY CLOSED

Port size	Orifice Ø	Flow factors			Operating Pressure Differential			Fluid Temp.		Seat Seal	Parker LUCIFER® Valves			Power		Coil Group	Dwg. No.
					Min	Max(MOPD)		Min	Max		Valve Ref.	Housing Ref.	Coil Ref.				
BSP	mm	Kv l/min	KV m³/h	Qn l/min	bar	AC bar	DC bar	°C	°C					AC W	DC W		

The basic technical features of each solenoid valve are indicated in the tables, the terminology used is shown and explained below. Please notice that in certain sections you will have the choice between two product ranges: Parker valves, within blue tables and the Parker Lucifer valves, within orange tables.

Actuation: The mechianical method used to control the flow.

Body: Main part of the solenoid valve with the ports, seats and orifice needed.

Function: The way the valve operates when de-energised.

Port Size: Fitting dimensions are defined as threaded in inches (G), in BSP or Sub-base, when a flat interface for ports is adopted.

Orifice (mm): Main orifice diameter in millimetres (nominal diameter).

Flow Factors: Define the quantity of water which flows through the solenoid valve with a pressure drop of 1 bar during one minute. Expressed in l/min and m^3/h.

Max Fluid Temperature: Maximum fluid temperature the valve can withstand.

Max Ambient Temperature: Maximum ambient temperature the valve can withstand.

Minimum Operating Pressure Differential: The lowest differential pressure required for operation (bar).

Maximum Operating Pressure Differential (MOPD): The highest working differential pressure with 90% of the rated voltage (-10% Vn) applied to the solenoid coil (for AC) and 95% of the rated voltage (-5% Vn)(for DC).

NORMALLY CLOSED

Port size	Orifice Ø	Flow factors			Operating Pressure Differential			Fluid Temp.		Seat Seal	Parker Valves			Power		Coil Group	Dwg. No.
					Min	Max(MOPD)		Min	Max		Valve Order Number	Valve Type	Coil Type				
BSP	mm	Kv l/min	KV m³/h	Qn m³/h	bar	AC bar	DC bar	°C	°C					AC W	DC W		

Fluid Temperature: Minimum and Maximum admissible temperature for the media used (°C).

Seat seal: Material used for the seat discs.

Valve order number: Applicable for Parker Valves shown in blue tables.
The valve order number refers to the valves only.
(please refer to the "How To Order" section for more details).

Valve ref.: Applicable for Parker Lucifer Valves shown in orange tables.
The valve ref. refers to the valve.
(please refer to the "How To Order" section for more details).

Valve type: Refers to the Parker valve type

Housing ref.: Only for Parker Lucifer valves shown in orange tables, you can choose the housing to protect the coil.

Coil Ref.: Compatible coil reference.

Coil type: Compatible coil advised.

Power: Power consumption of a specific electrical part on selected pressure vessel, rated by AC and DC (W). Power consumption must be considered in cold conditions for the coil, at TAmb: +20°C.
For 483510, 481865 and 496081 series, power consumption indicated in the tables must be considered in warm conditions.

Coil group: Please refer to the specific section for the coil compatibility groups.

Dwg. No.: Drawing number.

TECHNICAL INFORMATION

Solenoid valves are highly engineered products that can be used in many diverse applications.

In addition to operational functionality, media compatibility and suitability for the operating environement when selecting the best product for a given application.

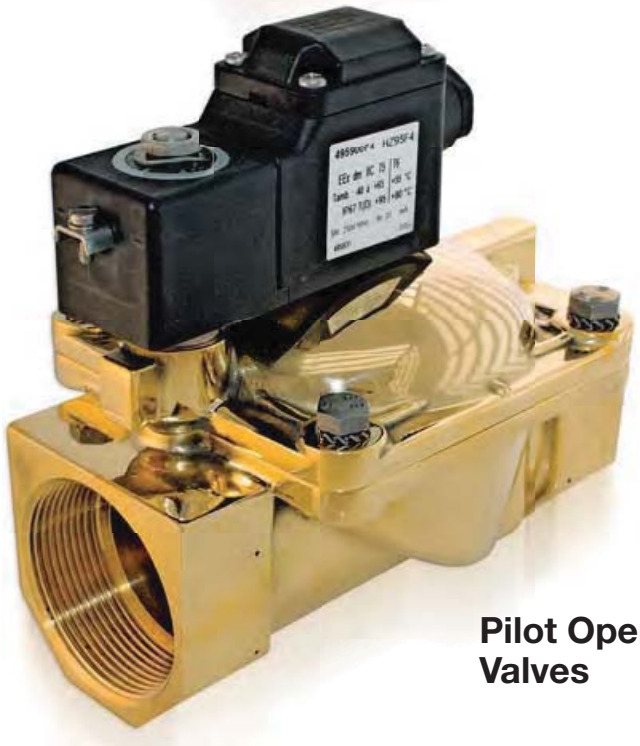
This section provides a brief overview of the components, actuation and function modes of solenoid valves avaible from Parker Hanninfin - FCDE.

Different Technologies:

Solenoid valves are electrically operated devices used to control flow.
The most common types of solenoid valve are:

Direct Operated Valves

Magnalift Valves



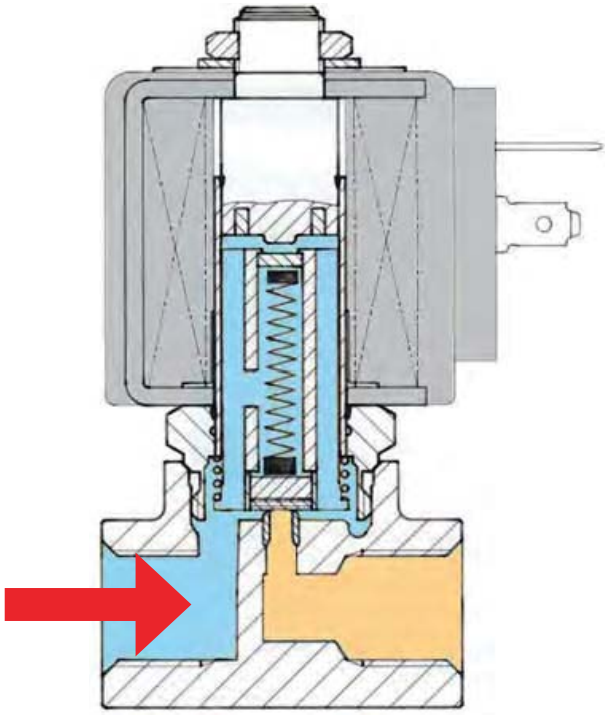
Pilot Operated Valves

DIRECT OPERATED VALVE

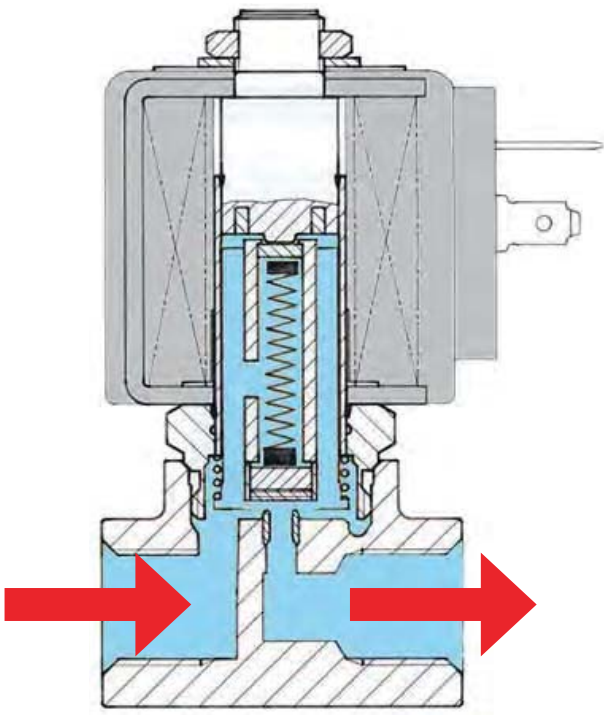
Magnetic force is used directly to open or close the plunger which controls the passage of the fluid. Performances are limited by the coil, the pressure, and the valve orifice size. For direct operated valves, the minimum working pressure is 0 bar and the maximum pressure relies on the combination (valve/coil) chosen.

Direct Operated Valve

De-energised

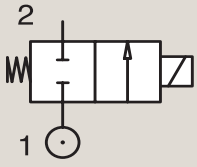


Energised



Example:

- 121 Series
- 146 Series
- N74 Series

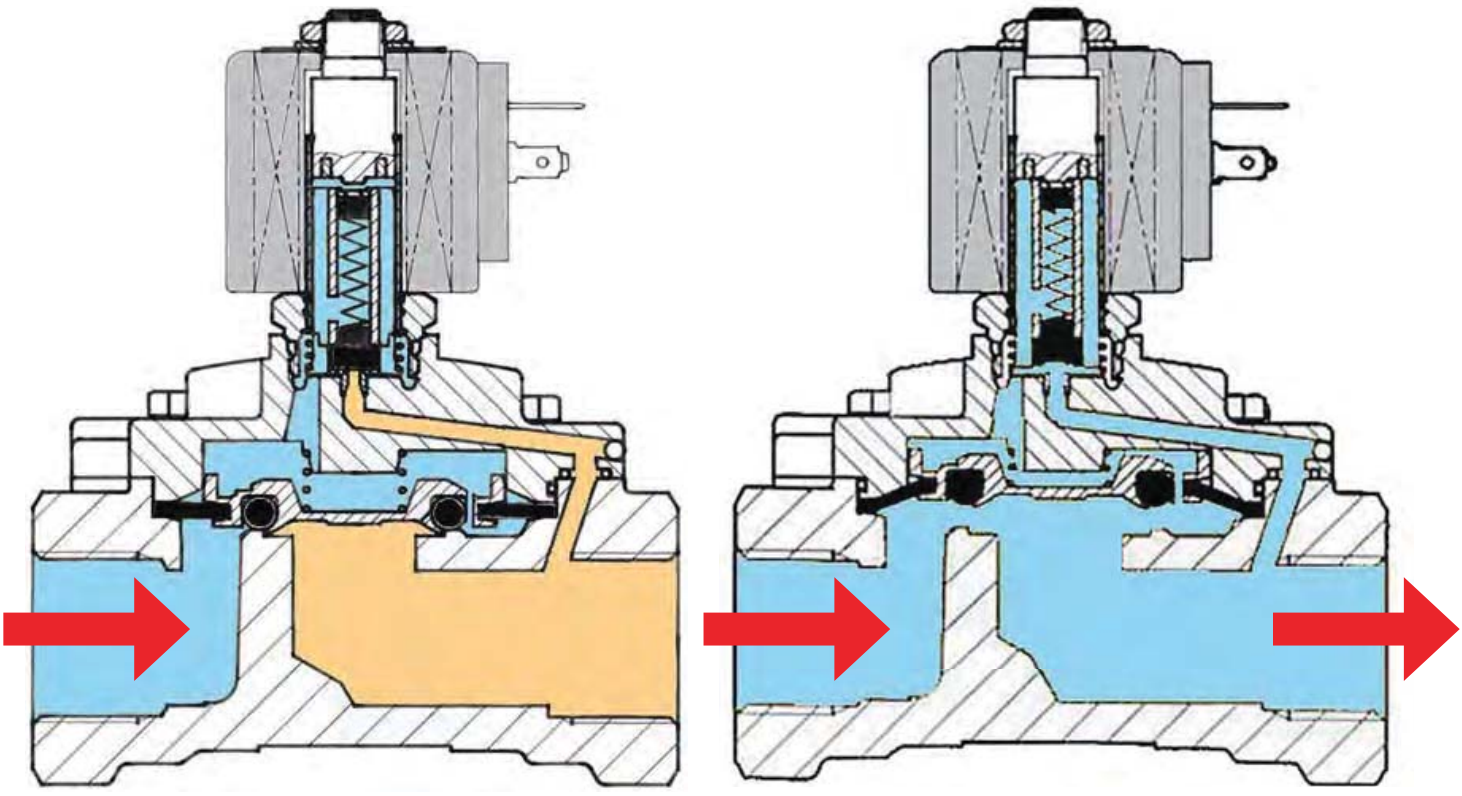


PILOT OPERATED VALVE

To control a higher flow, it is necessary to use pilot operated valves. The supply pressure enters the direct operated "pilot stage" which directs the flow to a "pilot chamber" which,in turn, applies the pilot pressure over a large area (generally a diaphragm or piston). Therefore, a large force is generated to move the main sealing elements against higher pressure or over a large orifice.
One condition of operation is to have a minimum pressure available to shift the valve (indicated in the catalogue). In most applications, this presents no particular problems (refer to magnalift valve section). The pressure rating of the valve starts between 0.1 to 0.5 bar (depending on the valve).
(NB. Pilote Operated Valves are also called Servo Operated Valves).

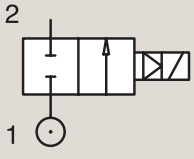
Pilot Operated Valve

De-energised **Energised**



Example:

- 321 Series
- 7321B Series
- 168.1 Series

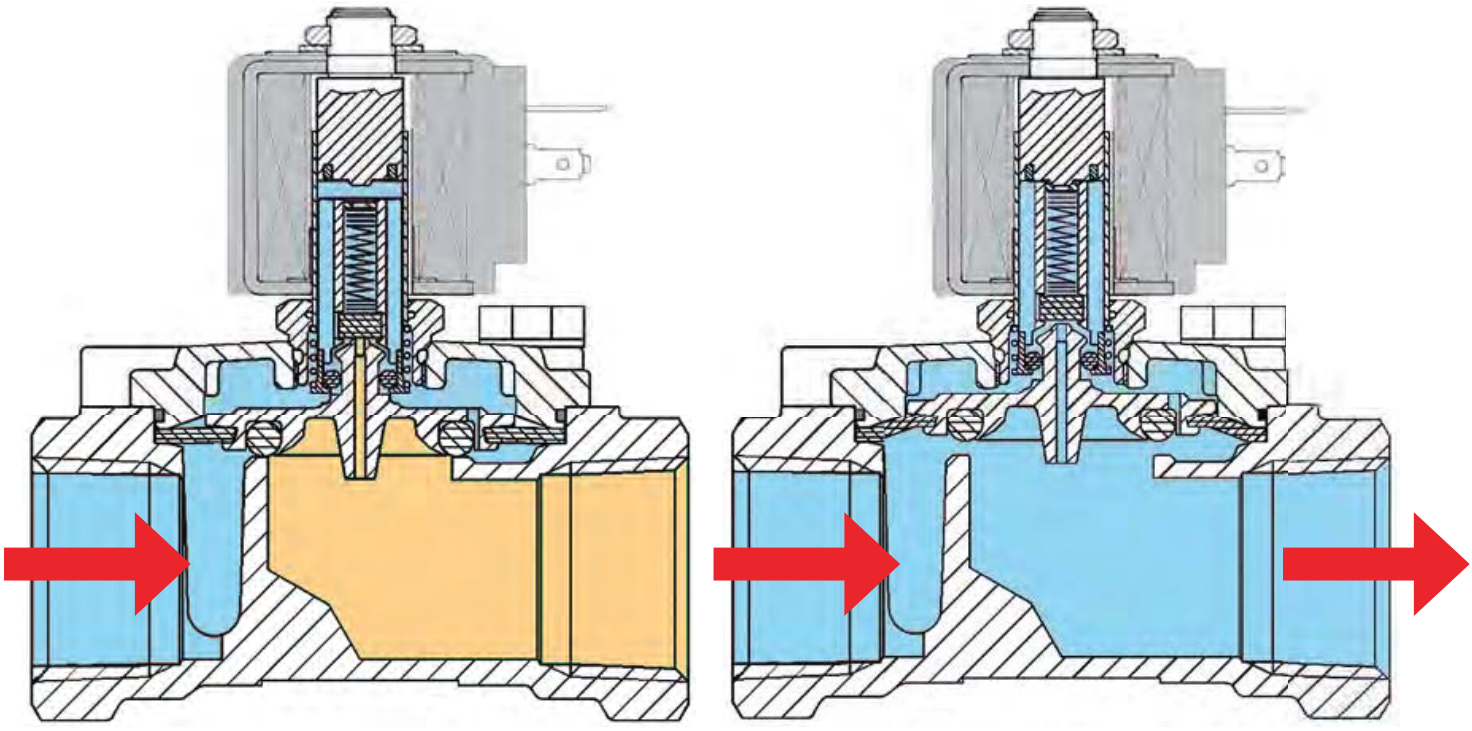


MAGNALIFT VALVE

The magnalift valves combine the features of the direct operated and pilot operated valves. A mechanical link between the plunger and diaphragm retainer allows the valve to operate as a direct operated valve at low pressures and as a pilot operated valve at higher pressures. Magnalift valves are specially designed for applications where 0 pressure is needed to operate the valve, as well as bigger flow than a direct operated valve.

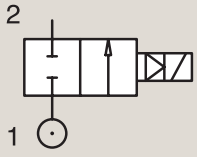
Magnalift Operated Valve

De-energised **Energised**



Example:

- 221 Series
- 123 Series



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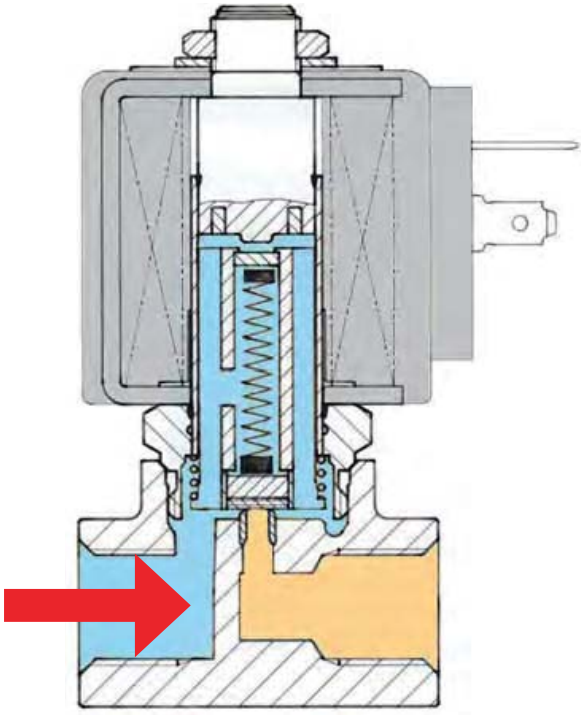
General Catalogue FCDE/0110/UK/V1.0

NORMALLY CLOSED VALVE

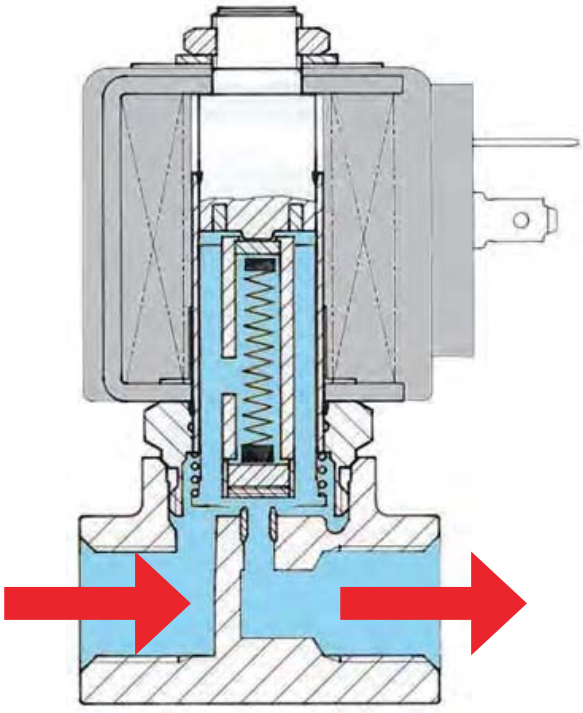
Most of our valves are available in normally closed and normally open configuration when not energized. In certain applications, you may require a normally open valve (open function in case of current failure). The differentiating factor of design of this technology, is based upon the design of the seat seal, which is reversed in comparaison to a normally closed valve.

Normally Closed Valve

De-energised

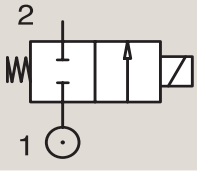


Energised



Example:

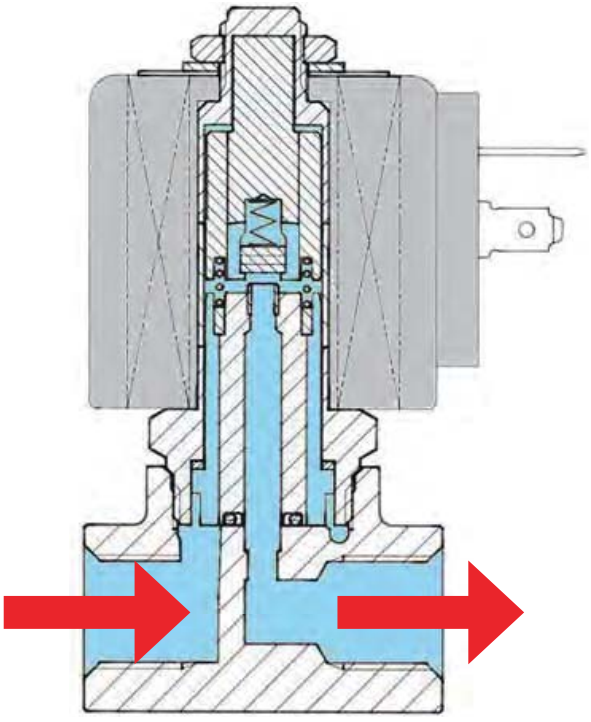
- 121 Series
- 146 Series
- N74 Series



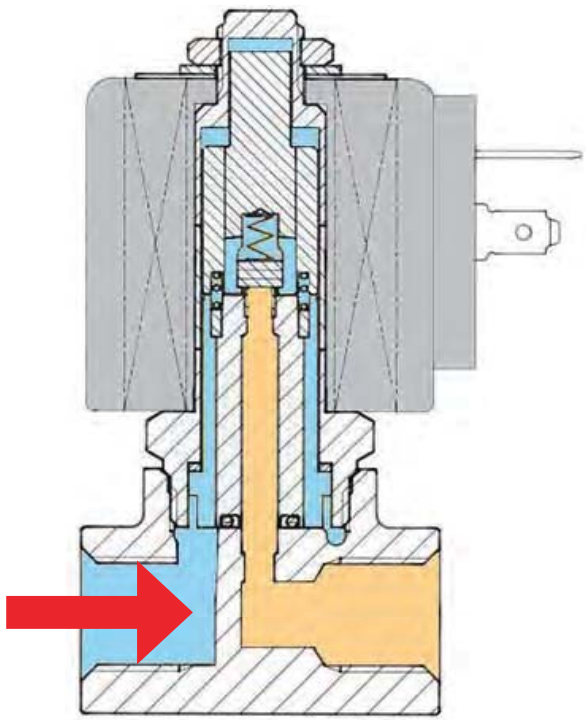
NORMALLY OPEN VALVE

Normally Open Valve

De-energised

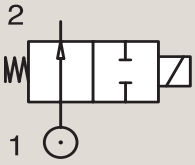


Energised



Example:

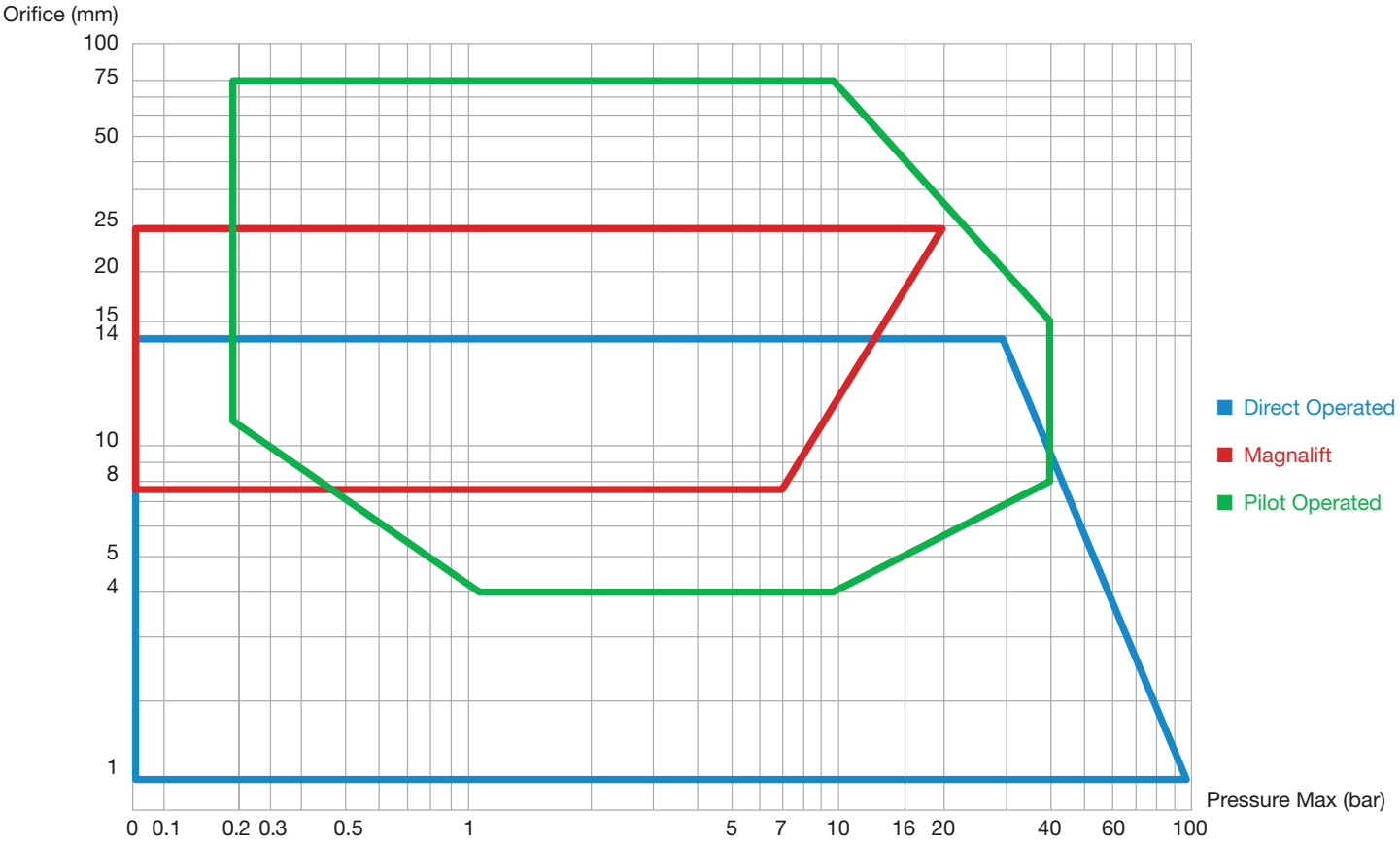
- 122 Series
- 136 Series
- 7322B Series



FLOW AND PRESSURE RANGES

Area of operation:

Each valve principle, as described in the previous pages, has a defined area of operation related to its pressure and flow capabilities. The following graph shows which type of valve is suitable for a certain situation.



Areas of operation of Parker solenoid valves.

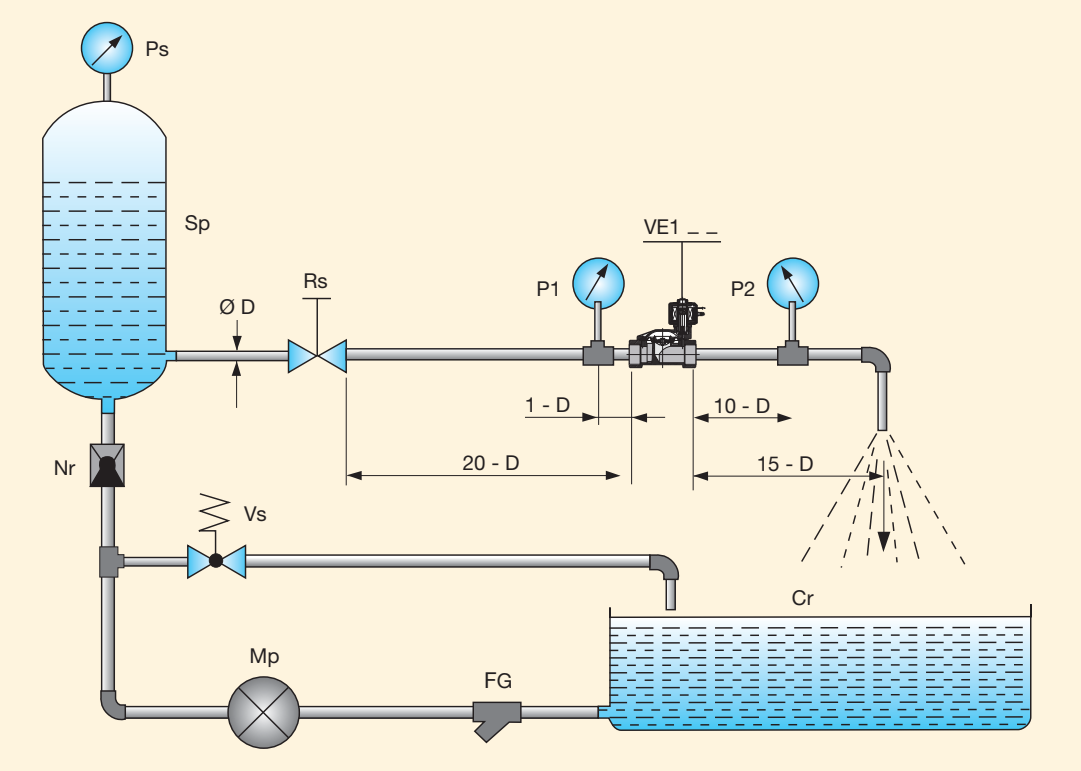
SIZING SOLENOID VALVES

The correct choice of solenoid valve is essential as it determines the regulation and performance required for practical application on a system. In order to decide on the exact type of solenoid valve, various parameters have to be known.

However the calculation method, based on the flow coefficient Kv, has proved highly practical as it can be determined on the basis of:

- Required flow rate
- Flow resistance
- Type of fluid and relative viscosity
- Specific gravity and temperature

This flow coefficient Kv is determined as defined in the VDI/VDE 2173 standards.
It represents the flow of water in m3/h or L/min with a temperature from 5 to 30°C which passes through the solenoid valve with a pressure drop of 1 bar.



Note:

The flow coefficient used in the USA is known as Cv and represents the water flow rate in US gallons per minute with a pressure drop ΔP of 1 psi.

To convert **C_V** in **Kv** and vice versa use:

1 K_V = 0.862 C_V
1 C_V = 1.16 K_V

FG = Grid Filter **Mp** = Pump **Vs** = Safety Valve **Nr** = Check Valve **Sp** = Pressure Tank **Ps** = Static Pressure Manometer

After existing conditions have been converted into this factor Kv, the type of valve is found by referring to the pages in the related sections in this catalogue.

Parameters used for selecting the solenoid valve are in the table next page.

Consult conversion tables of the various units of measurement as defined by the ISO (International Standards Organisation) - I.S. (International System) set out in this catalogue.

FLOW AND PRESSURE RANGES

Pressure
symbol **(P)**
unit of measurement **[bar]**
Working pressure

Pressure drop
symbol **(ΔP)**
unit of measurement **[bar]**
Pressure difference between inlet (P_1) and outlet (P_2) of the solenoid valve when a medium is flowing through the valve ($\Delta P = P_1 - P_2$).

Flow cœfficient
symbol **(Kv)**
unit of measurement **[m³/h]**

Specific gravity of the medium
symbol **(γ)**
unit of measurement **[Kg/dm³]**

Temperature of the medium
symbol **(t)**
unit of measurement **[°C]**

Flow rate

- for liquids
  symbol **(Q)**
  unit of measurement **[m³/h]**
- for gases
  symbol **(Qn)**
  unit of measurement **[Nm³/h]**
- for steam
  symbol **(Qv)**
  unit of measurement **[Kg/h]**

Specific volume
symbol **(Vs)**
unit of measurement **[m³/Kg]**

a) Solenoid valves for liquids:

Flow rate: $Q = Kv \cdot \sqrt{\frac{\Delta P}{\gamma}}$ where: $Q = m^3/h$, $\Delta P = bar$, $\gamma = Kg/dm^3$

Flow coefficient:
$$Kv = Q \cdot \sqrt{\frac{\gamma}{\Delta P}}$$

In the case of liquids with viscosity greater than 3°E (22 cStokes) the Kv is modified according to the formula:

$$Kv_1 = Kv + C \qquad C = \frac{\delta \cdot \sqrt{Kv}}{200 \cdot Q} + 1$$

where C is the viscosity correction factor calculated by means of the formula:
where:
δ = kinematic viscosity of the fluid expressed in centistokes
Kv = flow rate factor of the solenoid valve
Q = flow rate in m^3/h.

Pressure drop:

$$\Delta P = \gamma \cdot \left(\frac{Q}{Kv}\right)^2$$

b) Solenoid valves for gases:

If $\Delta P \leq 1/2\ P_1$ use the following formulae:

Flow rate: $Qn = 514 \cdot Kv \cdot \sqrt{\frac{\Delta P \cdot P_2}{\gamma n \cdot (273 + t)}}$

Pressure drop: $\Delta P = \frac{(273 + t) \cdot \gamma n}{P_2} \cdot \frac{Qn^2}{(514 \cdot Kv)^2}$

where: $Qn = Nm^3/h$ $P_1 = bar$ $P_2 = bar$

Flow coefficient: $Kv = \frac{Qn}{514} \cdot \sqrt{\frac{(273+t) \cdot \gamma n}{\Delta P \cdot P_2}}$

If $\Delta P > 1/2\ P_1$ use the following formula:

$$Qn = 757 \cdot Kv \cdot \sqrt{\frac{\Delta P \cdot P_2}{(273 + t) \cdot \gamma n}}$$

$t = °C$
$\gamma n = Kg/m^3$

c) Solenoid valves for steam:

If $\Delta P \leq 1/2\ P_1$ use the following formulae:

Flow rate: $Qv = 31,7 \cdot Kv \cdot \sqrt{\frac{\Delta P}{Vs}}$

Pressure drop: $\Delta P = Vs \cdot \frac{Qv^2}{(31,7 \times Kv)^2}$

where: $Qv = Kg/h$ $\Delta P = bar$ $Vs = m^3/Kg$

If $\Delta P > 1/2\ P_1$ use the following formula:

$$Qv = 22,4 \cdot Kv \sqrt{\frac{P_1}{Vs}}$$

Flow coefficient: $Kv = \frac{Qv}{31,7} \cdot \sqrt{\frac{Vs}{\Delta P}}$

Notes:

1) Should the value ΔP not be specified, use the following, which is based on experience:

- For liquids only in the case of free discharge ΔP = 90% of the input pressure (P_1).
- For gases never use a ΔP of more than 50% of the absolute inlet pressure, since the excessive pressure drop may cause an irregular flow rate. In most cases, ΔP can be considered as 10% of the input pressure.

2) Specific volume value (Vs) for dry saturated steam, see the table in diagram 3.

FLOW RATE FOR LIQUIDS

The liquid flow through a pipe or a valve is given by:

$$Q = Kv \cdot \sqrt{\frac{\Delta P}{\gamma}}$$

Where
- **Q** = Flow **[l/min]**
- **ΔP** = Differential Pressure **[bar]**
- **γ** = Density of the fluid **[kg/dm³]** (water **γ = 1 [kg/d m³]**)
- **kv** = Flow Factor **[m³/h]**

Flow factor kv:

The kv flow factor of a valve is defined as the flow rate of water in litres per minute with a pressure drop of 1 bar across the valve.

Valve manufactuerers use different definitions for kv. It may be expressed in l/h or m³/h.

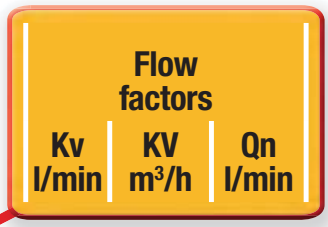
Care should therefore be taken when comparing values.

Maximum flow rate Qmax.

For particular 2-way valves the maximum flow must be limited for reasons of mechanical resistance and durability.

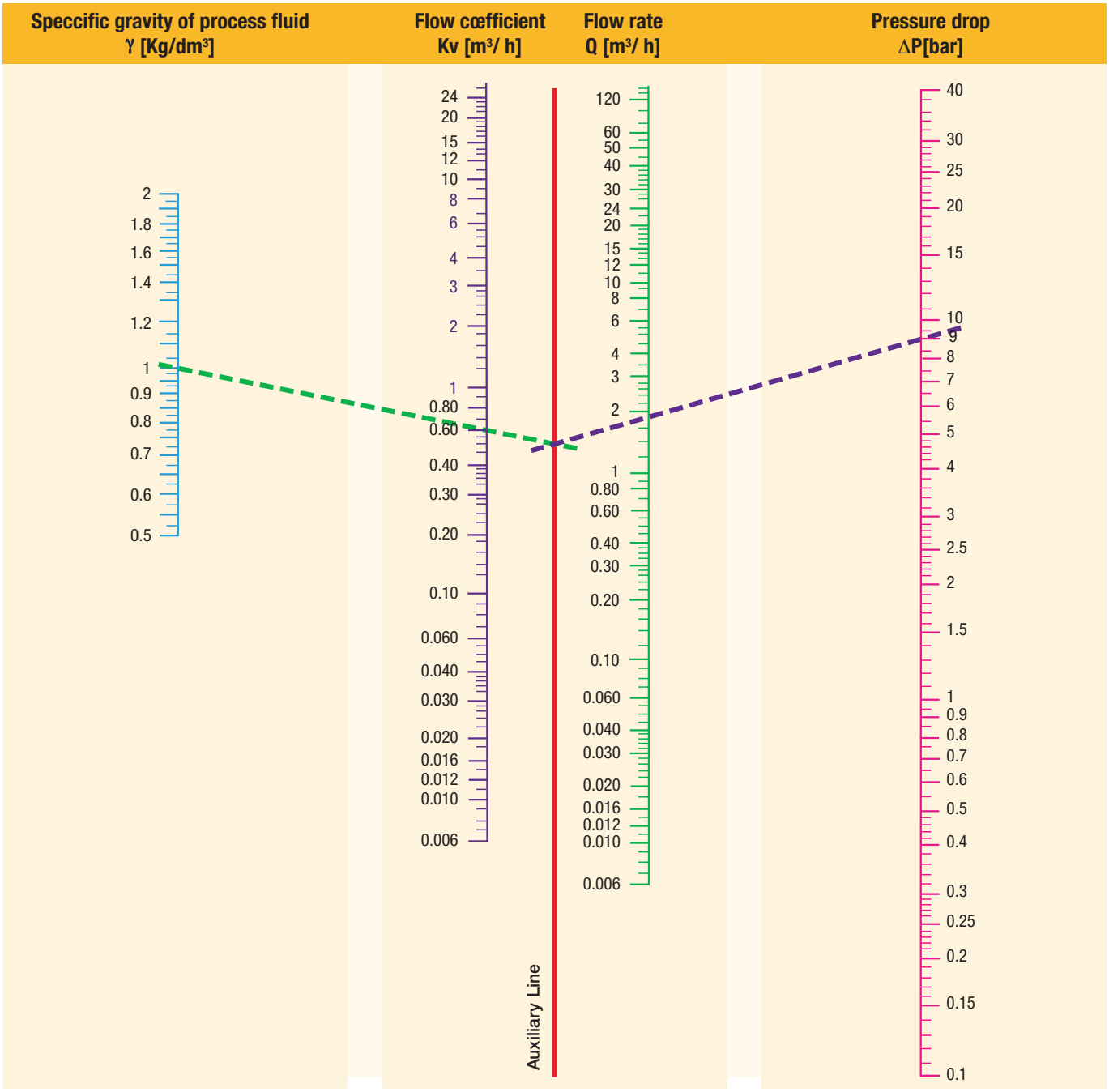
A very high flow velocity may dislocate a popet sealing or a diaphragm.

Maximum flow rates are indicated in the catalogue.



NORMALLY CLOSED

Port size	Orifice Ø	Flow factors			Operating Pressure Differential			Fluid Temp.		Seat Seal	Parker LUCIFER® Valves			Power		Coil Group	Dwg. No.
					Min	Max(MOPD)		Min	Max		Valve Ref.	Housing Ref.	Coil Ref.				
BSP	mm	Kv l/min	KV m³/h	Qn l/min	bar	AC bar	DC bar	°C	°C					AC W	DC W		



Monogram for liquid flow calculation

Specific gravity of the most common fluids (ϒ = Kg/dm³) - (t = 15°C - P = 760 mm Hg)					
Acetone	0.76	**Benzenol**	0.90	**Naphtha**	0.76
Water	1.00	**Beer**	1.02	**Pentane**	0.63
Sea water	1.02	**Hexane**	0.66	**Vegetable oil**	0.92
Ethyl alcohol	0.79	**Ethane**	0.68	**Hydraulic oil**	0.92
Methyl alcohol	0.81	**Diesel oil**	0.70	**Wine**	0.95
Petrol	0.68	**Milk**	1.03		

FLOW RATE FOR GASES

The gas flow through a valve is given by:

$$Q = C \cdot P_1 \cdot k_T \cdot \omega \cdot \gamma_{air} / \gamma_{gas}$$

Where
- **Q** = Flow Rate **[dm³/s]**
- **C** = Conductance **[dm³/s.bar]**
- P_1 = Inlet Pressure **[bar abs]**
- γ = Specific Weight **[kg/m³]**
- k_T = Temperature Correction Factor

$$\omega = \sqrt{1 - \frac{P_2/P_1 - b}{1 - b}} \qquad k_T = \sqrt{\frac{293}{273 + \text{Temp. °C}}}$$

Nominal Flow Qn:

Calculations can be made with specific flow factors based on the CETOP RP 50P standard.

For practical purposes and ease of valve selection the catalogue shows the nominal flow Qn.

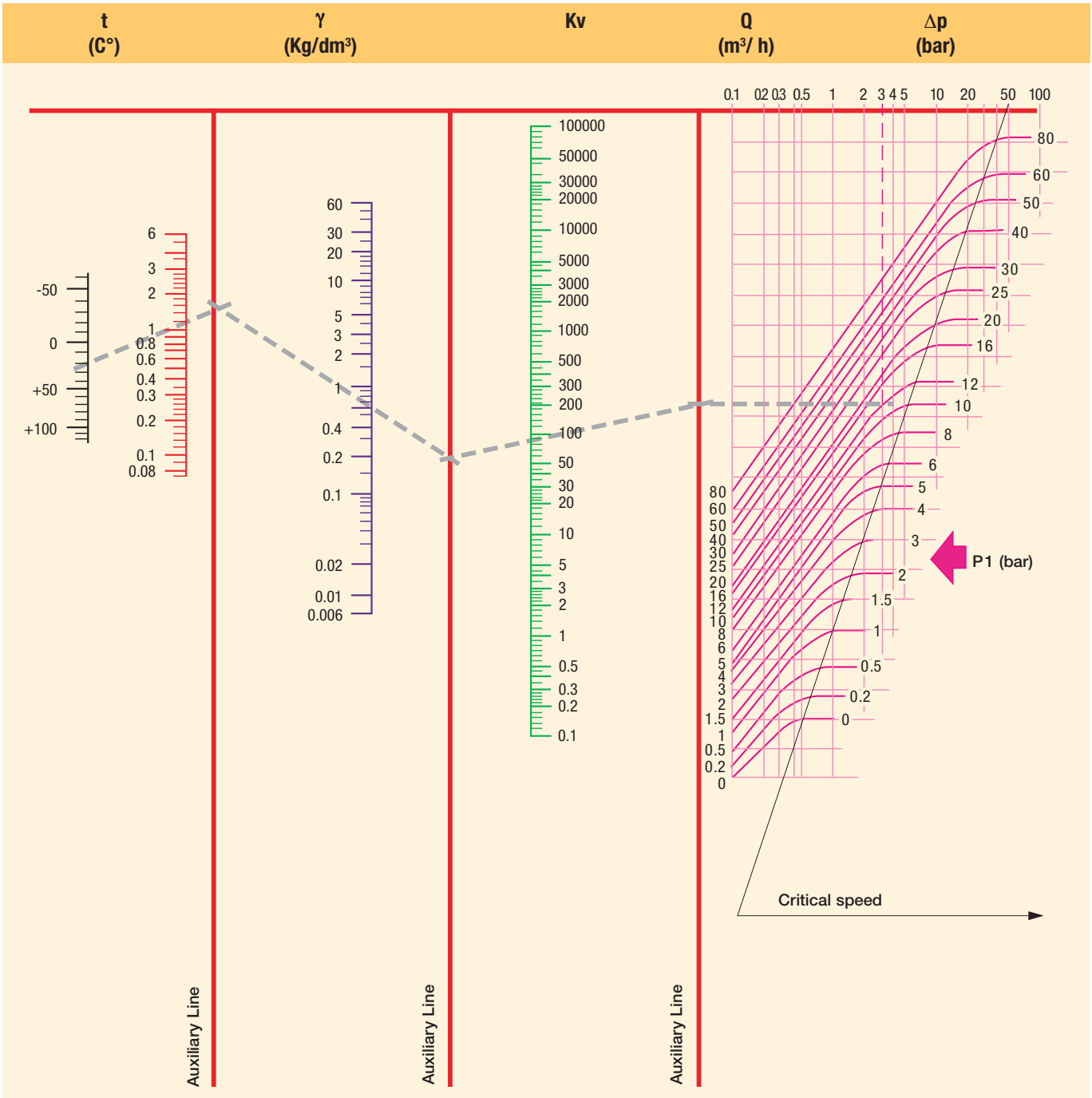
The nominal flow Qn is defined as the flow rate (L/min) of air across the valve when the inlet pressure P_1 = 6 bar and the pressure drop ΔP = 1 bar.

N.B.
The values of the flow factors and flow rates mentioned in catalogues are subjet to +/-15% tolerances.

Pneumatic application: $\gamma_{air} / \gamma_{gas} = 1$

a) Choked flow conditions $P_2 \leq b.P_1$
in this case $\omega = 1$ --> $Q = C \cdot P_1 \cdot kT$

b) Free flow conditions $P_2 > b.P_1$
in this case --> $Q = C \cdot P_1 \cdot kT \cdot \omega$

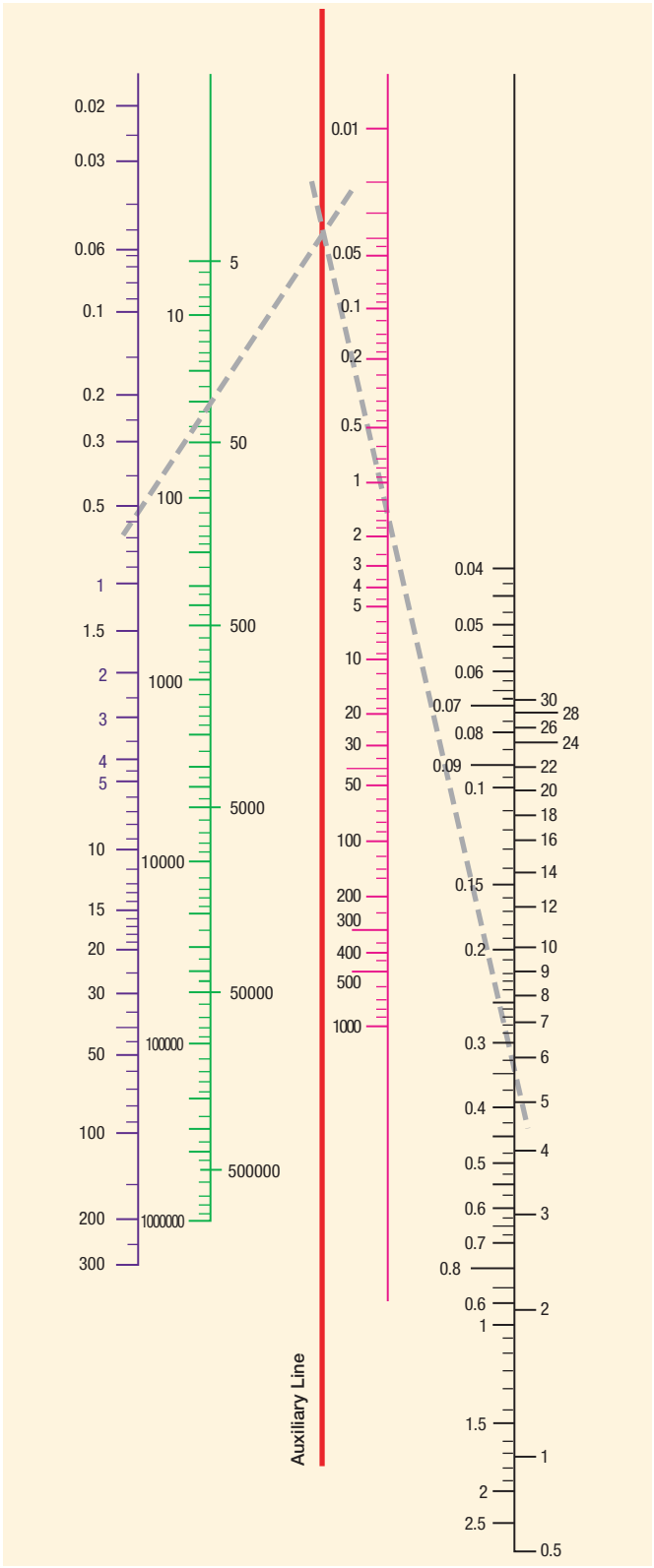


t = Fluid Temperature **γN** = Specific Gravity **Kv** = Flow Cœfficient **Qn** = Flow Rate **Δp** = Pressure Drop **P_1** = Inlet Pressure

Specific gravity of the most common gases (γ = Kg/m³) - (t = 0°C - P = 760mm Hg)					
Acetylene	1.176	**Helium**	0.179	**Natural gas**	0.723
Carbon dioxide	1.965	**Ethane**	1.035	**Methane**	0.722
Air	1.293	**Ethylene**	1.259	**Carbon monoxide**	1.250
Argon	1.780	**Hydrogen**	0.089	**Oxygen**	1.429
Nitrogen	1.255			**Propane**	1.520
Butane	2.000			**Steam**	0.805

TECHNICAL INFORMATION

Diagram 3 for Dry Satured Steam



Steam (Dry Satured) Data

P_2 bar	Temp. °C	Vs m³/Kg	P_2 bar	Temp. °C	Vs m³/Kg
0.01	6.6	131.600	10.00	179.0	0.200
0.02	17.1	68.300	110.00	183.2	0.181
0.03	23.7	46.500	120.00	187.1	0.176
0.04	28.6	35.500	13.00	190.7	0.155
0.05	32.5	28.700	14.00	194.1	0.144
0.06	35.8	24.200	15.00	197.4	0.135
0.08	41.1	18.500	16.00	200.4	0.126
0.10	45.4	15.000	17.00	203.4	0.119
0.20	5 9.7	7.800	18.00	206.2	0.113
0.30	68.7	5.330	19.00	208.8	0.107
0.40	75.4	4.070	20.00	211.4	0.102
0.50	80.9	3.300	22.00	216.2	0.093
0.60	85.5	2.790	24.00	220.8	0.085
0.70	89.5	2.410	26.00	225.0	0.079
0.80	93.0	2.130	28.00	229.0	0.073
0.90	96.2	1.910	30.00	232.8	0.068
1.00	99.1	1.730	32.00	236.4	0.064
1.50	110.8	1.180	34.00	239.8	0.060
2.00	119.6	0.900	36.00	243.1	0.057
2.50	126.8	0.730	38.00	246.2	0.053
3.00	132.9	0.620	40.00	249.2	0.051
3.50	138.2	0.530	45.00	256.2	0.045
4.00	142.9	0.470	50.00	262.7	0.040
4.50	147.2	0.420	55.00	268.7	0.036
5.00	151.1	0.380	60.00	274.3	0.033
5.50	154.7	0.350	65.00	279.6	0.030
6.00	158.1	0.320	70.00	284.5	0.028
6.50	161.2	0.300	80.00	293.6	0.024
7.00	164.2	0.280	90.00	301.9	0.021
7.50	167.0	0.260	100.00	309.5	0.018
8.00	169.6	0.250	150.00	340.5	0.011
8.50	172.1	0.230	200.00	364.2	0.006
9.00	174.5	0.220	225.00	374.0	0.003
9.50	176.8	0.210			

Kv = Flow Coefficient **Qv** = Flow Rate **Δp** = Pressure Drop **Vs** = Specific Volume **P_2** = Outlet Pressure

VISCOSITY CONVERSION TABLE

Centistokes cStokes mm²/S	°Engler °E	Saybolt Universal Second SSU	Rewood Second N°1 SRW N°1
1	1	-	-
12	2	65	55
22	3	100	90
30	4	140	120
28	5	175	155
45	6	210	185
60	8	275	245
75	10	345	305
90	12	415	370
115	15	525	465
150	20	685	610
200	26	910	810
300	39	1 385	1 215
400	53	1 820	1 620
500	66	2 275	2 025
750	97	3 365	2 995
1 500	197	6 820	6 075

OTHER USEFUL FORMULAS

Formulas:

°C	=	(°F - 32) x 5/9
°F	=	(°C x 9/5) + 32
m³/h	=	l/min x 0.06
l/min	=	m³/h x 16,67
m³/sec	=	m³/h x 2,778 x 10^{-4}
m³/sec	=	l/min x 1,667 x 10^{-5}

Examples:

(**167°F**-32) x 5/9	=	**75°C**
(**30°C** x 9/5) + 32	=	**86°F**
100 l/min x 0.06	=	**6 m³/h**
9 m³/h x 16,67	=	**150 l/min**
18.000 m³/h x 2.778 x 10 -4	=	**5 m³/sec**
479.904 l/min x 1.667 x 10-5	=	**8 m³/sec**

Parker Hannifin Corporation
Fluid Control Division Europe
CH-1227 Carouge-Genève
General Catalogue FCDE/0110/UK/V1.0

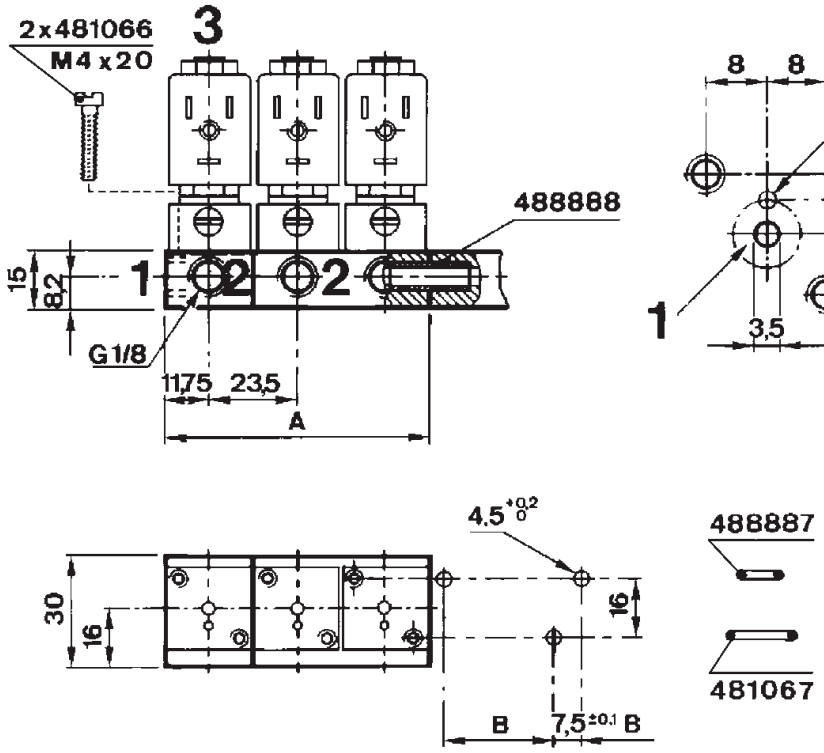
APPENDIX

TABLE OF SUB-BASES FOR VALVES (Examples)

This table is showing examples of existing Sub-bases and possible Valves associations.
For more detail see sub-bases drawings in the following pages.

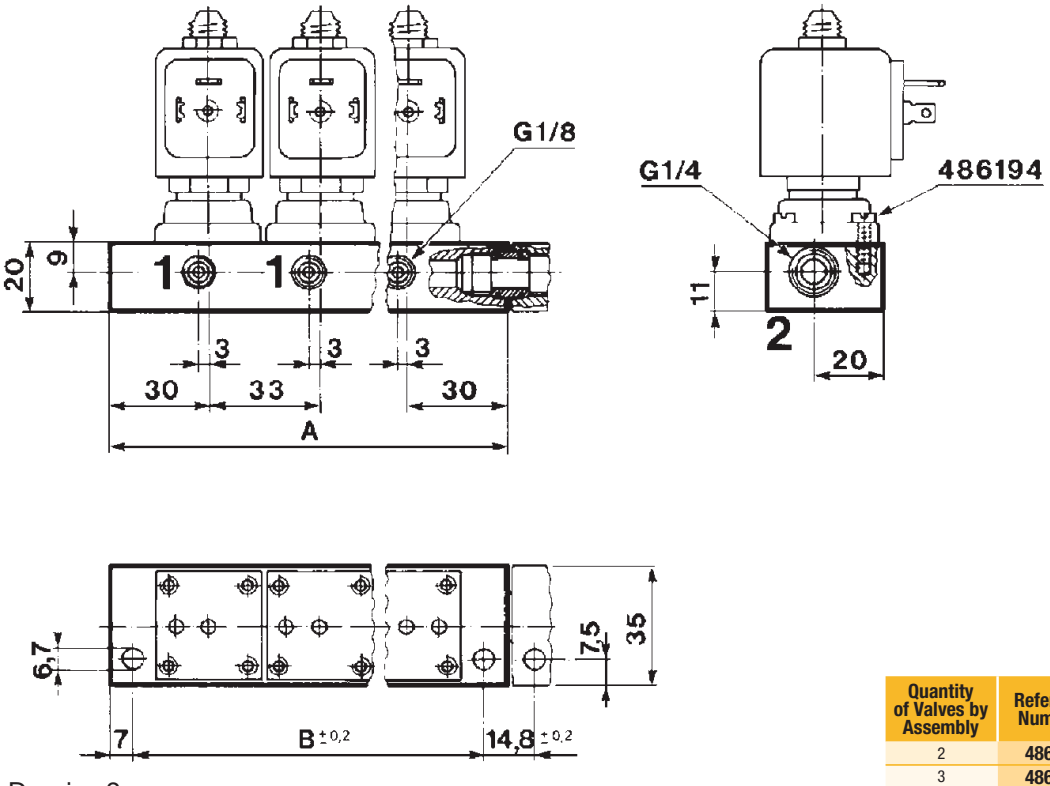
Sub-Base Reference	488860.01 /.02/.03 /.04/.05	486162 /63/64	487165 /67/69	485635 /36/37	481168.02 /.04/.06 /.08/.10	481964.04 /.06/.08/.10	485291	485290	XGSPG1 /XGSPG2
Drawing	1	2	3	4	5	6	7	8	9
Valve Reference									
131F4480	●								
131F4480		●							
131F46		●							
131F4650		●							
131M74	●								
131M74	●								
131M7450	●								
131M7450	●								
131M75	●								
131M7550	●								
132F43		●							
132F44		●							
132F46		●							
133F46		●							
133F4650		●							
2019F1									●
3019F1									●
301XGR									●
341F34				●					
341F3403				●					
341L11						●			
341L2190								●	
341L9101					●				
345F34				●					
347L11						●			
E131F26			●						
E131F43		●							
E131F4350		●							
E131F44		●							
E131F4450		●							
E133F43		●							
E133F4350		●							
E133F44		●							
E133F4450		●							
E331L21							●		

TABLE OF SUB-BASES FOR VALVES (Examples)



Drawing 1

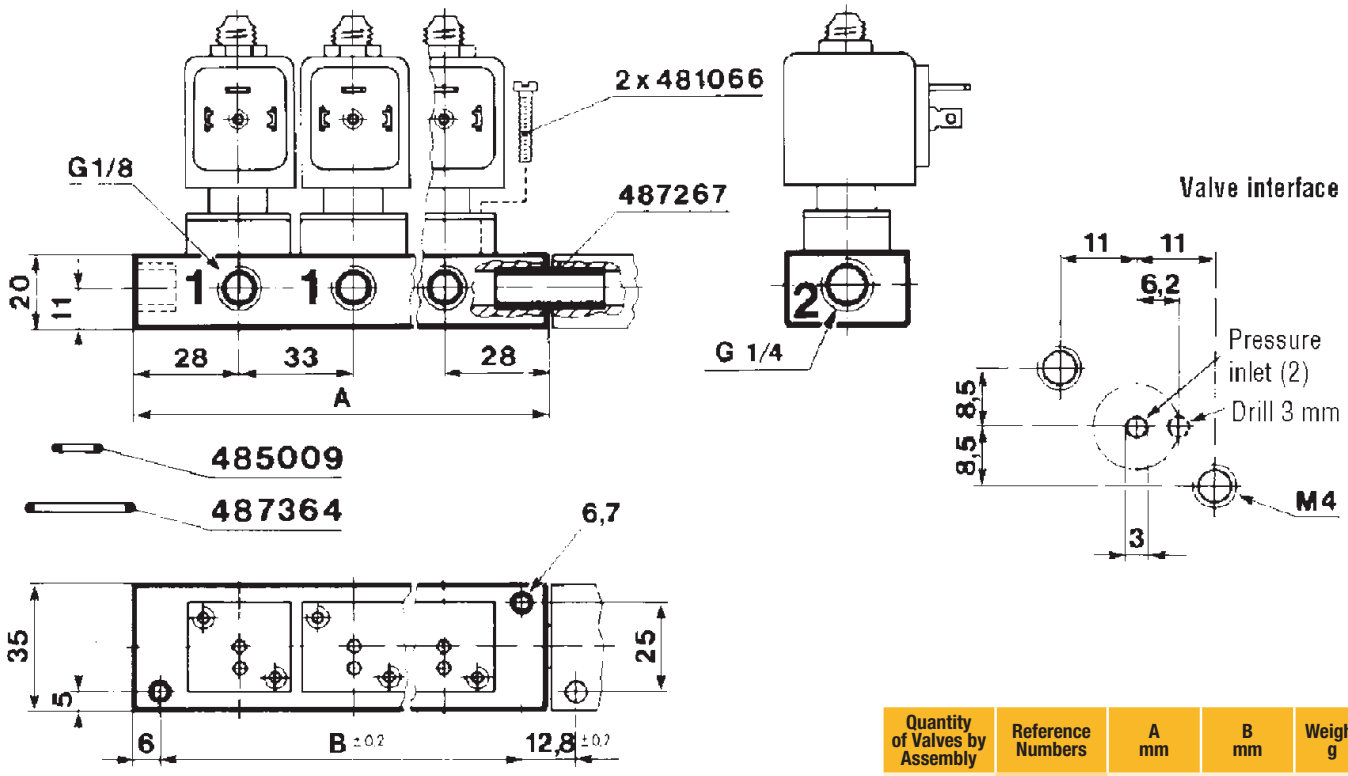
Quantity of Valves by Assembly	Reference Numbers	A mm	B mm	Weight g
1	**488860-01**	23.5	16.0 ± 0.1	25
2	**488860-02**	47.0	39.5 ± 0.1	45
3	**488860-03**	70.5	63.0 ± 0.1	70
4	**488860-04**	94.0	86.5 ± 0.1	120
5	**488860-05**	117.5	110.0 ± 0.1	120



Drawing 2

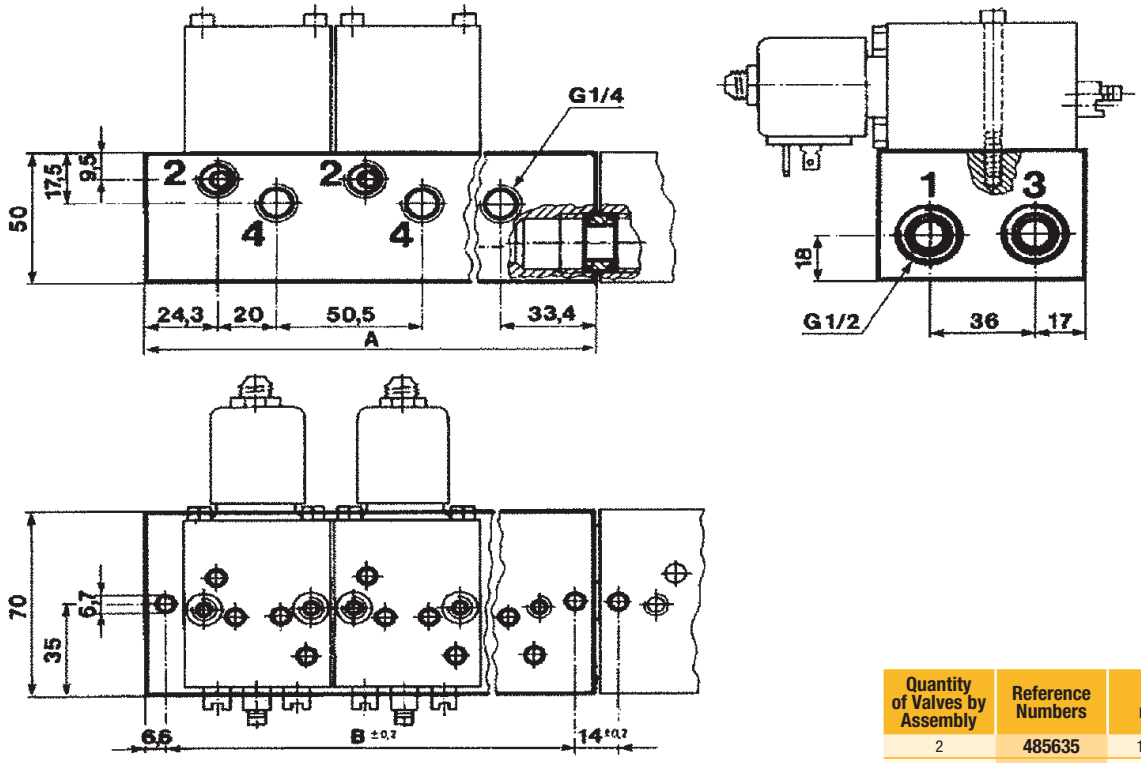
Quantity of Valves by Assembly	Reference Numbers	A mm	B mm	Weight g
2	**486162**	93	79	150
3	**486163**	126	112	210
5	**486164**	192	178	420

TABLE OF SUB-BASES FOR VALVES (Examples)



Drawing 3

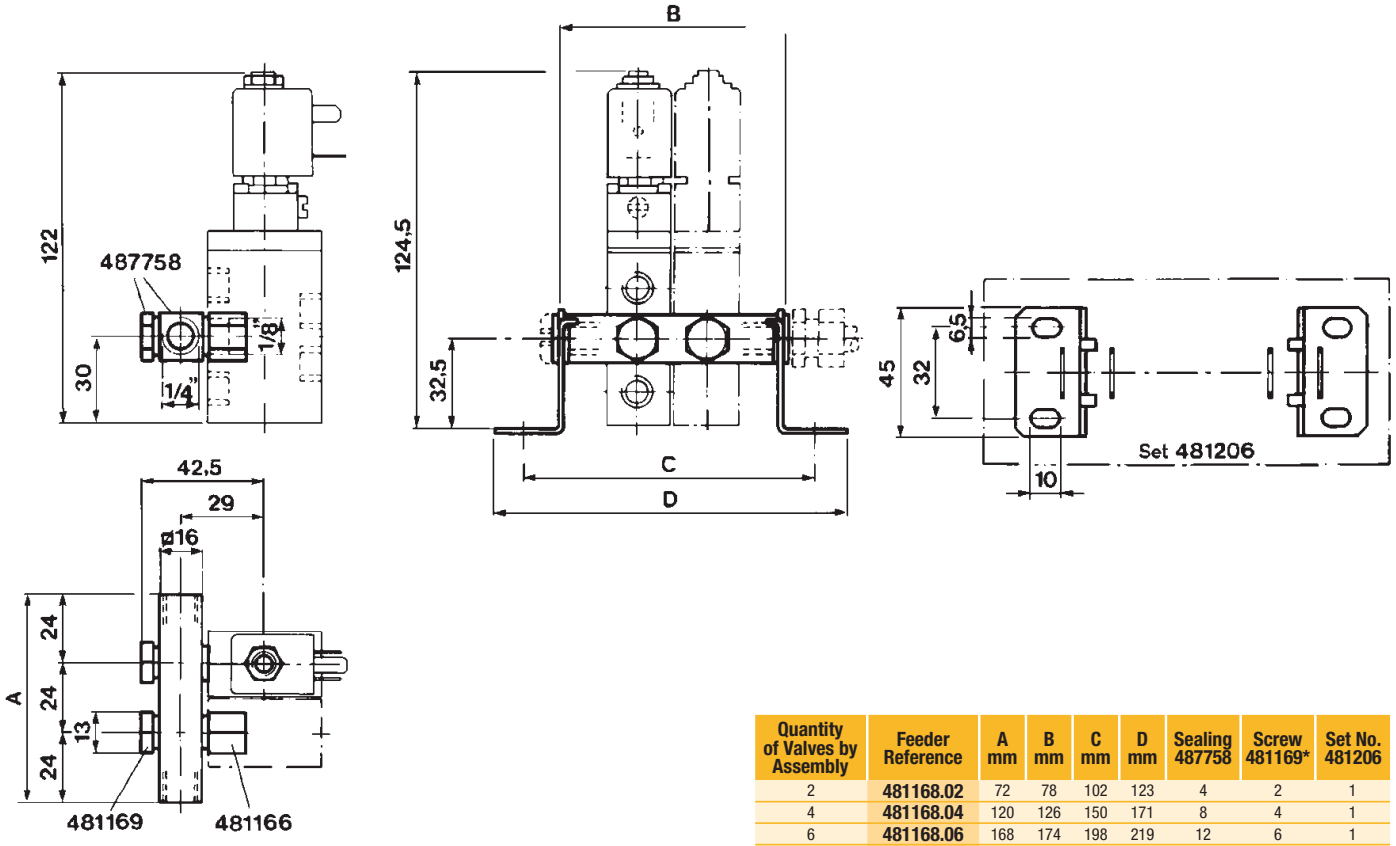
Quantity of Valves by Assembly	Reference Numbers	A mm	B mm	Weight g
1	487165	56	44	85
2	487167	89	77	135
3	487169	188	176	300



Drawing 4

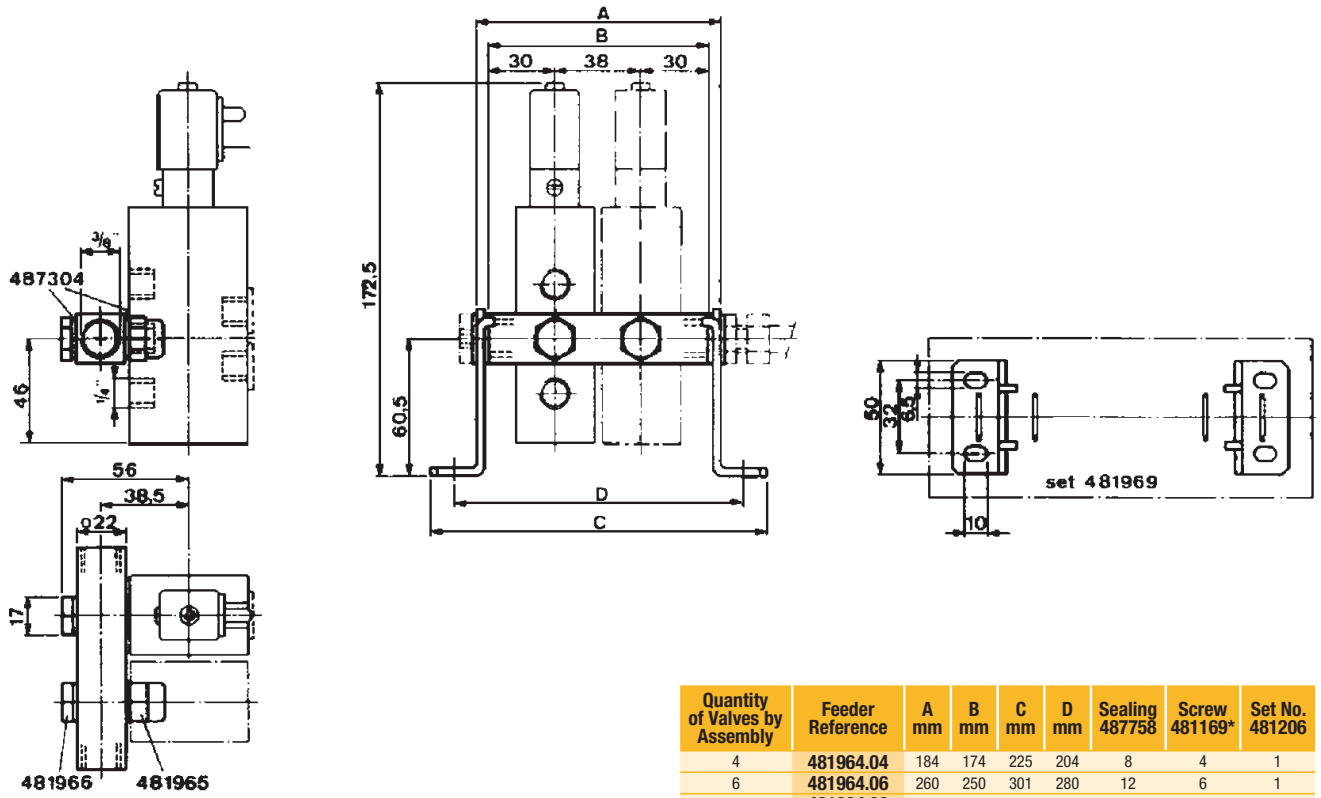
Quantity of Valves by Assembly	Reference Numbers	A mm	B mm	Weight g
2	485635	128.2	115.0	1000
3	485636	178.7	165.5	1400
5	485637	279.7	266.5	2250

TABLE OF SUB-BASES FOR VALVES (Examples)



Drawing 5

Quantity of Valves by Assembly	Feeder Reference	A mm	B mm	C mm	D mm	Sealing 487758	Screw 481169*	Set No. 481206
2	**481168.02**	72	78	102	123	4	2	1
4	**481168.04**	120	126	150	171	8	4	1
6	**481168.06**	168	174	198	219	12	6	1
8	**481168.08**	216	222	246	267	16	8	1
10	**481168.10**	264	270	294	315	20	10	1

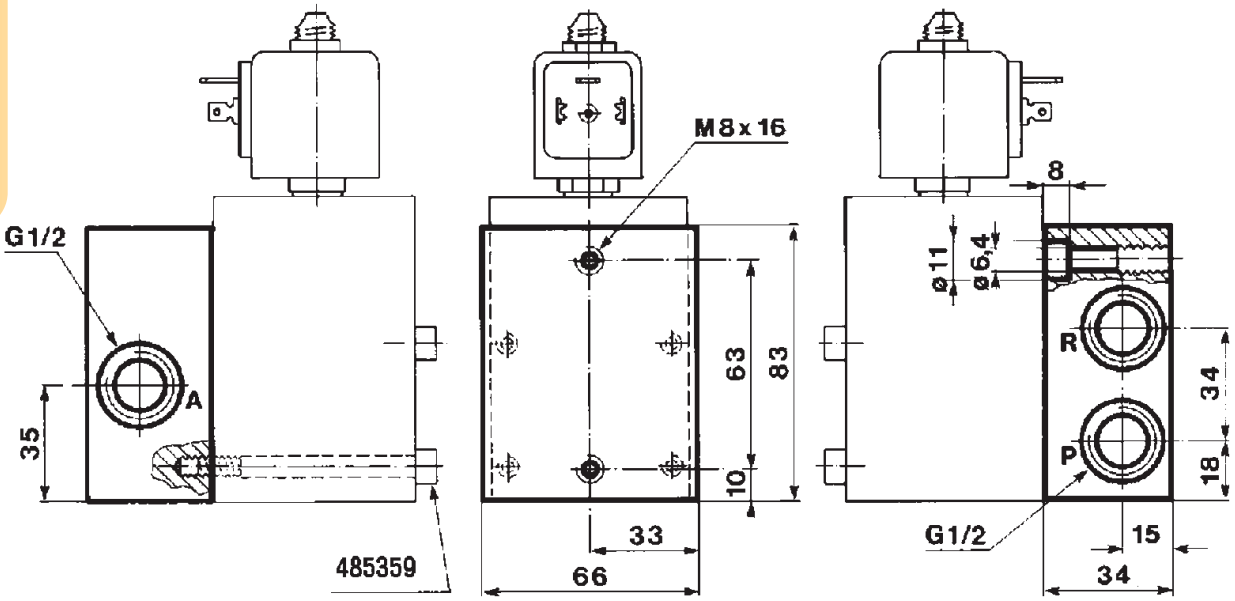


Drawing 6

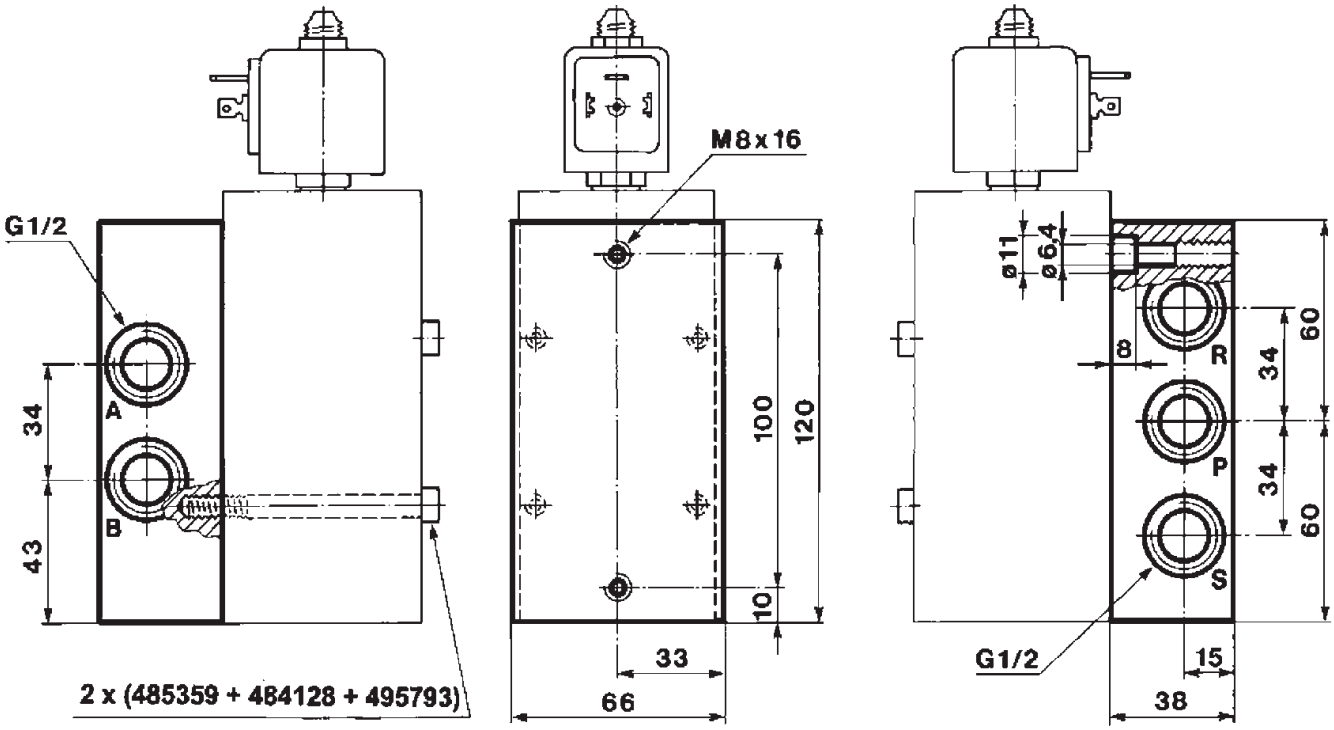
Quantity of Valves by Assembly	Feeder Reference	A mm	B mm	C mm	D mm	Sealing 487758	Screw 481169*	Set No. 481206
4	**481964.04**	184	174	225	204	8	4	1
6	**481964.06**	260	250	301	280	12	6	1
8	**481964.08**	336	326	377	356	16	8	1
10	**481964.10**	412	402	453	432	20	10	1

TABLE OF SUB-BASES FOR VALVES (Examples)

Sub-base 485291



Drawing 7



Drawing 8

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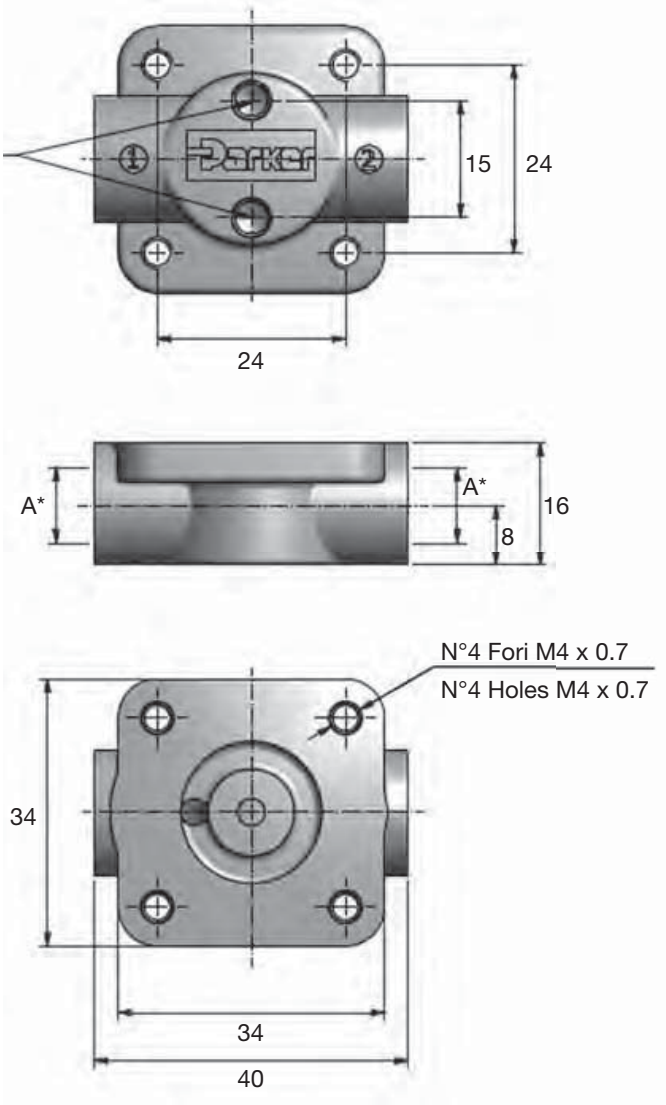
Fluid Control Division Europe
General Catalogue FCDE/0110/UK/V1.0

TABLE OF SUB-BASES FOR VALVES (Examples)



Port	Kit Reference	To be used with	Box Quantity	Screws
1/8"G	XGSPG1	Any version	10	Included
1/4"G	XGSPG2	Any version	10	Included

Drawing 9

INDEX FOR VALVES

INDEX FOR VALVES

INDEX FOR VALVES

INDEX FOR VALVES

Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements.
It means looking at customer applications from many angles to find new ways to create value.
Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver.
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- General & business aviation
- Helicopters
- Launch vehicles
- Military aircraft
- Missiles
- Power generation
- Regional transports
- Unmanned aerial vehicles

Key Products

- Control systems & actuation products
- Engine systems & components
- Fluid conveyance systems & components
- Fluid metering, delivery & atomization devices
- Fuel systems & components
- Fuel tank inerting systems
- Hydraulic systems & components
- Thermal management
- Wheels & brakes

Climate Control

Key Markets

- Agriculture
- Air conditioning
- Construction Machinery
- Food & beverage
- Industrial machinery
- Life sciences
- Oil & gas
- Precision cooling
- Process
- Refrigeration
- Transportation

Key Products

- Accumulators
- Advanced actuators
- CO_2 controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Heat exchangers
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Smart pumps
- Solenoid valves
- Thermostatic expansion valves

Hydraulics

Key Markets

- Aerial lift
- Agriculture
- Alternative energy
- Construction machinery
- Forestry
- Industrial machinery
- Machine tools
- Marine
- Material handling
- Mining
- Oil & gas
- Power generation
- Refuse vehicles
- Renewable energy
- Truck hydraulics
- Turf equipment

Key Products

- Accumulators
- Cartridge valves
- Electrohydraulic actuators
- Human machine interfaces
- Hybrid drives
- Hydraulic cylinders
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Hydrostatic steering
- Integrated hydraulic circuits
- Power take-offs
- Power units
- Rotary actuators
- Sensors

Pneumatics

Key Markets

- Aerospace
- Conveyor & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

Key Products

- Air preparation
- Brass fittings & valves
- Manifolds
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves & controls
- Quick disconnects
- Rotary actuators
- Rubber & thermoplastic hose & couplings
- Structural extrusions
- Thermoplastic tubing & fittings
- Vacuum generators, cups & sensors

Parker

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Key Markets

- Aerospace
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

Key Products

- AC/DC drives & systems
- Electric actuators, gantry robots & slides
- Electrohydrostatic actuation systems
- Electromechanical actuation systems
- Human machine interface
- Linear motors
- Stepper motors, servo motors, drives & controls
- Structural extrusions

Filtration

Key Markets

- Aerospace
- Food & beverage
- Industrial plant & equipment
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation & renewable energy
- Process
- Transportation
- Water Purification

Key Products

- Analytical gas generators
- Compressed air filters & dryers
- Engine air, coolant, fuel & oil filtration systems
- Fluid condition monitoring systems
- Hydraulic & lubrication filters
- Hydrogen, nitrogen & zero air generators
- Instrumentation filters
- Membrane & fiber filters
- Microfiltration
- Sterile air filtration
- Water desalination & purification filters & systems

Fluid & Gas Handling

Key Markets

- Aerial lift
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Life sciences
- Marine
- Mining
- Mobile
- Oil & gas
- Renewable energy
- Transportation

Key Products

- Check valves
- Connectors for low pressure fluid conveyance
- Deep sea umbilicals
- Diagnostic equipment
- Hose couplings
- Industrial hose
- Mooring systems & power cables
- PTFE hose & tubing
- Quick couplings
- Rubber & thermoplastic hose
- Tube fittings & adapters
- Tubing & plastic fittings

Process Control

Key Markets

- Alternative fuels
- Biopharmaceuticals
- Chemical & refining
- Food & beverage
- Marine & shipbuilding
- Medical & dental
- Microelectronics
- Nuclear Power
- Offshore oil exploration
- Oil & gas
- Pharmaceuticals
- Power generation
- Pulp & paper
- Steel
- Water/wastewater

Key Products

- Analytical Instruments
- Analytical sample conditioning products & systems
- Chemical injection fittings & valves
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves, regulators & digital flow controllers
- Industrial mass flow meters/controllers
- Permanent no-weld tube fittings
- Precision industrial regulators & flow controllers
- Process control double block & bleeds
- Process control fittings, valves, regulators & manifold valves

Sealing & Shielding

Key Markets

- Aerospace
- Chemical processing
- Consumer
- Fluid power
- General industrial
- Information technology
- Life sciences
- Microelectronics
- Military
- Oil & gas
- Power generation
- Renewable energy
- Telecommunications
- Transportation

Key Products

- Dynamic seals
- Elastomeric o-rings
- Electro-medical instrument design & assembly
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- High temperature metal seals
- Homogeneous & inserted elastomeric shapes
- Medical device fabrication & assembly
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- Silicone tubing & extrusions
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