Coil Reference

Coil Portfolio and Solenoid Enclosures (Integrated Modular Coils and Replacement Coils for Non-integrated)

General Description:

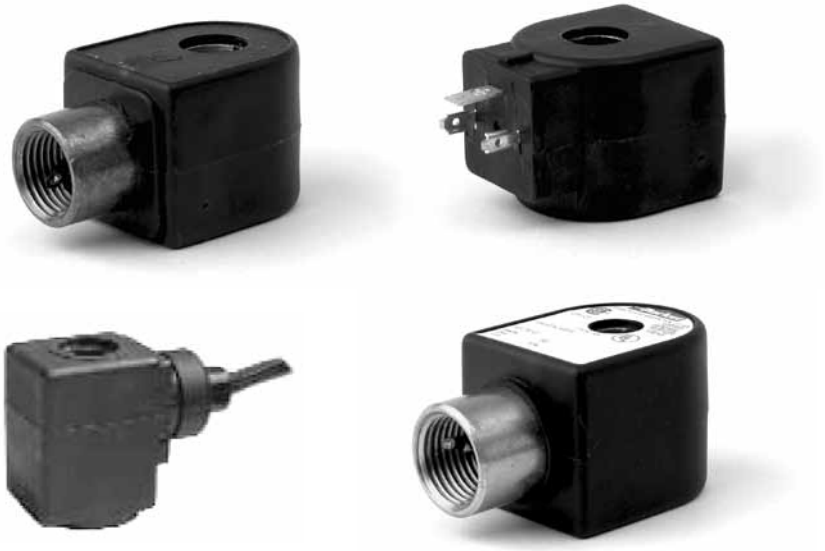
Solenoid Enclosure and Coil Information

Coils are electrical devices that produce magnetic flux when electrical power is applied to the windings. Surrounding the coil is the metal solenoid enclosure and frame. Together with the plunger and stop, it forms the magnetic circuit that operates the valve. Without the enclosure, the magnetic circuit is not complete. Without a complete magnetic circuit, the magnetic field is reduced and valve performance suffers. Depending on the coil voltage and power rating, the pressure rating of the valve can vary.

Solenoid enclosures come in a variety of constructions offering varying levels of protection against the elements and other forces. NEMA identifies the different enclosures as “Types” and NEC sets standards for their safety and performance.

Integrated coils have an epoxy or thermoplastic "over-molding" creating a one-piece coil/enclosure for modularity and protection from the environment.

The National Electrical Manufacturers Association (NEMA) recommends suitable materials and components to meet each enclosure type. The enclosures listed here will only meet the applicable NEMA recommendations when properly installed and operated to NEMA specifications and in accordance with the NEC.



Electrical Characteristics:

Standard Voltages:

AC –24/60
120/60 110/50
240/60 220/50
DC –12, 24 &120
For other Voltages – Consult Factory

Coil Classification:

Class F Standard
Class H Available

Agency Approvals:

Standard valves with NEMA Type 4X or Explosion Proof solenoid enclosures are UL Listed and CSA Certified. DIN coils are UL Recognized. For additional details, consult factory.

Optional coils feature ATEX and IECEx Approvals.

Ultra Low Power Coils (Coil Chart 12) are used on valves with a unique solenoid operator designed to keep current draw to a minimum, thus achieving the extremely low power consumption of 0.6 watts with no refresh time required for subsequent energization. These valves are ideally suited for use in automated control systems, applications where minimizing energy consumption is critical or where heat rise in the coil must be kept to a minimum. Due to the low power consumption, an increased number of solenoid valves can be driven from the same power source, reducing the overall installation cost.

Integrated Coil Offering

	Part Number	Type of Termination*	Voltage	Wattage	Class
CHART 1					
	AF4C01	1/2" NPT Conduit/18" Leads	24/60	6	F
	AF4C05		120/60, 110/50	6	F
	AF4C15		240/60, 220/50	6	F
	AH4C01	1/2" NPT Conduit/18" Leads	24/60	6	H
	AH4C05		120/60, 110/50	6	H
	AH4C15**		240/60, 220/50	6	H
	AFPH01	DIN 43650A/ISO 4400	24/60	6	F
	AFPH05		120/60, 110/50	6	F
	AFPH15**		240/60, 220/50	6	F
CHART 2					
	BF4C01	1/2" NPT Conduit/18" Leads	24/60	10.2	F
	BF4C05		120/60, 110/50	10.2	F
	BF4C15		240/60, 220/50	10.2	F
	BH4C01**	1/2" NPT Conduit/18" Leads	24/60	10.2	H
	BH4C05		120/60, 110/50	10.2	H
	BH4C15**		240/60, 220/50	10.2	H
	BFPH01**	DIN 43650A/ISO 4400	24/60	10.2	F
	BFPH05		120/60, 110/50	10.2	F
	BFPH15		240/60, 220/50	10.2	F
	BHPH01**	DIN 43650A/ISO 4400	24/60	10.2	H
	BHPH05		120/60, 110/50	10.2	H
	BHPH15		240/60, 220/50	10.2	H
CHART 3					
	1F4C75	1/2" NPT Conduit/18" Leads	12VDC	9.5	F
	1F4C80		24VDC	9.5	F
	1H4C75**	1/2" NPT Conduit/18" Leads	12VDC	9.5	H
	1H4C80**		24VDC	9.5	H
	1FPH75	DIN 43650A/ISO 4400	12VDC	9.5	F
	1FPH80		24VDC	9.5	F
	1HPH75**	DIN 43650A/ISO 4400	12VDC	9.5	H
	1HPH80		24VDC	9.5	H

* 1/2" NPT conduit and DIN coils offer NEMA Types 1, 2, 3, 4 and 4X protection with a suitable conduit installation or mating DIN connector and gasket.

** Not in list price book. Minimum order quantities may apply. Consult factory.

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Integrated Coil Offering

	Part Number	Type of Termination*	Voltage	Wattage	Class
CHART 4					
	CF4C01	1/2" NPT Conduit/18" Leads	24/60	11	F
	CF4C05		120/60, 110/50	11	F
	CF4C15		240/60, 220/50	11	F
	CH4C01	1/2" NPT Conduit/18" Leads	24/60	11	H
	CH4C05		120/60, 110/50	11	H
	CH4C15		240/60, 220/50	11	H
	CFPH01	DIN 43650A/ISO 4400	24/60	11	F
	CFPH05		120/60, 110/50	11	F
	CFPH15		240/60, 220/50	11	F
	CHPH01	DIN 43650A/ISO 4400	24/60	11	H
	CHPH05		120/60, 110/50	11	H
	CHPH15		240/60, 220/50	11	H
CHART 5					
	DF4C01	1/2" NPT Conduit/18" Leads	24/60	16	F
	DF4C05		120/60, 110/50	16	F
	DF4C15		240/60, 220/50	16	F
	DH4C01**	1/2" NPT Conduit/18" Leads	24/60	16	H
	DH4C05		120/60, 110/50	16	H
	DH4C15**		240/60, 220/50	16	H
	DFPH01	DIN 43650A/ISO 4400	24/60	16	F
	DFPH05		120/60, 110/50	16	F
	DFPH15		240/60, 220/50	16	F
	DHPH01**	DIN 43650A/ISO 4400	24/60	16	H
	DHPH05		120/60, 110/50	16	H
	DHPH15		240/60, 220/50	16	H

* 1/2" NPT conduit and DIN coils offer NEMA Types 1, 2, 3, 4 and 4X protection with a suitable conduit installation or mating DIN connector and gasket.

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Integrated Coil Offering

	Part Number	Type of Termination*	Voltage	Wattage	Class
CHART 6					
	3F4C75	1/2" NPT Conduit / 18" Leads	12VDC	11.5	F
	3F4C80		24VDC	11.5	F
	3H4C75**	1/2" NPT Conduit / 18" Leads	12VDC	11.5	H
	3H4C80		24VDC	11.5	H
	3FPH75	DIN 43650A/ISO 4400	12VDC	11.5	F
	3FPH80		24VDC	11.5	F
	3HPH75**	DIN 43650A/ISO 4400	12VDC	11.5	H
	3HPH80		24VDC	11.5	H

* 1/2" NPT conduit and DIN coils offer NEMA Types 1, 2, 3, 4 and 4X protection with a suitable conduit installation or mating DIN connector and gasket.
** Not in list price book. Minimum order quantities may apply. Consult factory.

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Additional Coil Options for Charts 1-6 (Below are replacement coils only; no enclosures except as noted)

	Part Number	Type of Termination	Voltage	Wattage	Class
	AFSB01	NEMA 1 Splice Box w/ 6" Leaded Coil	24/60	6	F
	AFSB05		120/60, 110/50	6	F
	AFSB15		240/60, 220/50	6	F
	BFSB01*	NEMA 1 Splice Box w/ 6" Leaded Coil	24/60	10.2	F
	BFSB05*		120/60, 110/50	10.2	F
	BFSB15*		240/60, 220/50	10.2	F
	CFSB01	NEMA 1 Splice Box w/ 6" Leaded Coil	24/60	11	F
	CFSB05		120/60, 110/50	11	F
	CFSB15		240/60, 220/50	11	F
	DFSB01*	NEMA 1 Splice Box w/ 6" Leaded Coil	24/60	16	F
	DFSB05		120/60, 110/50	16	F
	DFSB15*		240/60, 220/50	16	F
	1FSB75**	NEMA 1 Splice Box w/ 6" Leaded Coil	12 VDC	9.5	F
	1FSB80		24 VDC	9.5	F
	3FSB75	NEMA 1 Splice Box w/ 6" Leaded Coil	12 VDC	11.5	F
	3FSB80		24 VDC	11.5	F
	AFEC01*	18" Leaded Coil for NEMA 7/9 hazardous location enclosure	24/60	6	F
	AFEC05		120/60, 110/50	6	F
	AFEC15		240/60, 220/50	6	F
	BFEC01	18" Leaded Coil for NEMA 7/9 hazardous location enclosure	24/60	10.2	F
	BFEC05		120/60, 110/50	10.2	F
	BFEC15		240/60, 220/50	10.2	F
	CFEC01*	18" Leaded Coil for NEMA 7/9 hazardous location enclosure	24/60	11	F
	CFEC05		120/60, 110/50	11	F
	CFEC15		240/60, 220/50	11	F
	DFEC01*	18" Leaded Coil for NEMA 7/9 hazardous location enclosure	24/60	16	F
	DFEC05		120/60, 110/50	16	F
	DFEC15		240/60, 220/50	16	F
	1FEC75*	18" Leaded Coil for NEMA 7/9 hazardous location enclosure	12 VDC	9.5	F
	1FEC80		24 VDC	9.5	F
	3FEC75	18" Leaded Coil for NEMA 7/9 hazardous location enclosure	12 VDC	11.5	F
	3FEC80		24 VDC	11.5	F

* Not in list price book. Minimum order quantities may apply. Consult factory.

Additional Coil Options for Charts 1-6 Cont. (Below replacement coils only, no enclosures)

Part Number	Type of Termination	Voltage	Wattage	Class
AHEC01* AHEC05* AHEC15*	18" Leaded Coil for NEMA 7/9 hazardous location enclosure	24/60 120/60, 110/50 240/60, 220/50	6	H
BHEC01* BHEC05* BHEC15*	18" Leaded Coil for NEMA 7/9 hazardous location enclosure	24/60 120/60, 110/50 240/60, 220/50	10.2	H
CHEC01 CHEC05 CHEC15	18" Leaded Coil for NEMA 7/9 hazardous location enclosure	24/60 120/60, 110/50 240/60, 220/50	11	H
DHEC01 DHEC05 DHEC15	18" Leaded Coil for NEMA 7/9 hazardous location enclosure	24/60 120/60, 110/50 240/60, 220/50	16	H
IHEC75 IHEC80	18" Leaded Coil for NEMA 7/9 hazardous location enclosure	12 VDC 24 VDC	9.5	H
3HEC75 3HEC80	18" Leaded Coil for NEMA 7/9 hazardous location enclosure	12 VDC 24 VDC	11.5	H

* Not in list price book. Minimum order quantities may apply. Consult factory.

DIN Electrical Accessories for Charts 1-6

Part Number	Description
ELECD1	Cable Gland DIN Plug

Part Number	Description
ELECD2	1/2" Conduit DIN Plug

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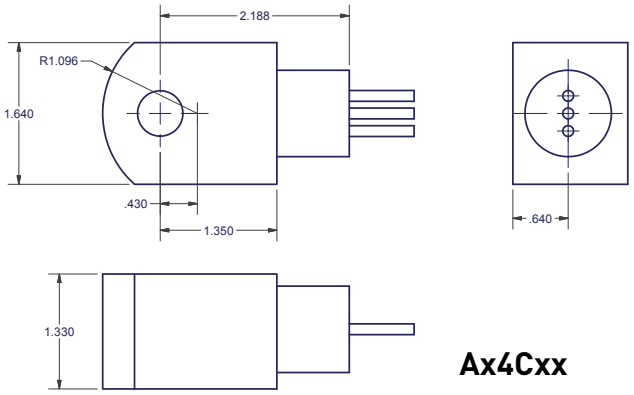
Coil Charts 1-6 Integrated Coil Dimensional Values



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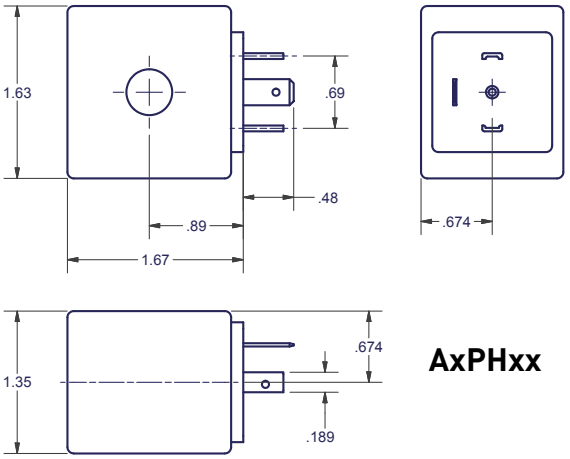

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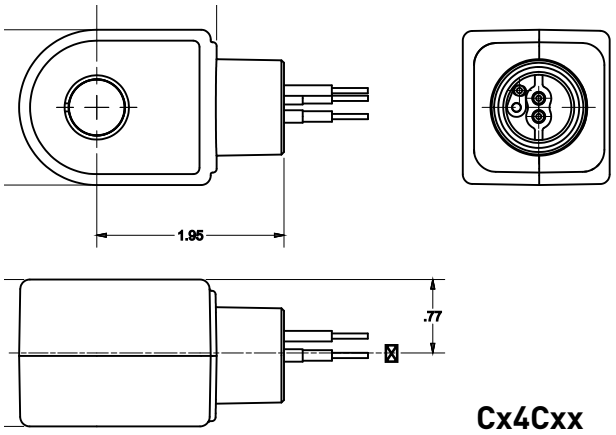

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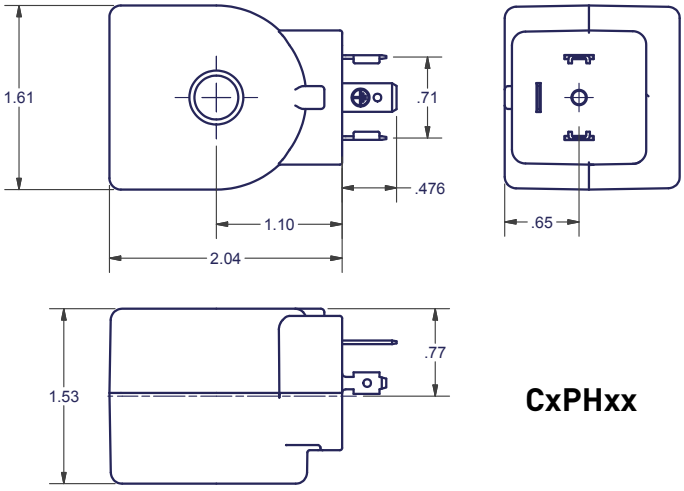

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Valves using coil charts 1-6 (Gold Ring™ brand)
Part Numbering Information: Reference ONLY

1 & 2 Connection Size	3 Connection Type	4 Construction	5 Construction	6 Operation	7 Body Material	8 Trim	9 & 10 Orifice Size	11 Current Design Series Designations
02 1/8"	F Female Pipe Thread NPT	2 2-way	0 Direct Acting	C Normally Closed	1 Brass (Bar Stock)	1 NBR	Valve orifice diameter in 1/64-inch increments. Example: a 1/2-inch orifice diameter has an orifice size designation of 32.	
04 1/4"		3 3-way	2 Diaphragm Center pilot	O Normally Open	2 Brass (Forging)	2 FKM		
06 3/8"		4 4-way	3 Diaphragm Hung	U Universal	3 303 Stainless Steel (Bar)	3 EPDM		
08 1/2"		H Diaphragm, Hung	4 Diaphragm Offset pilot	S 4-Way Single Solenoid	5 Brass Nickel Plate	4 PTFE		
12 3/4"		5 Diaphragm, Pivoted Edge	5 Diaphragm Pivoted Edge		6 316 Stainless Steel (Cast)	5 Urethane		
16 1"		S Steam	6 Piston		7 Aluminum (Bar Stock)	6 CR		
20 1 1/4"			8 Piston piloted		8 316 Stainless Steel (Bar)	8 FDA EPR		
24 1 1/2"					9 Bronze (Cast)	9 Kalrez		
32 2"						D Delrin		
48 3"						K KEL F		

ALERT: Table is for interpreting product specifications only. Consult Parker Fluid Control Division for available combinations not shown in catalog.

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Valves using coil charts 1-6 (Gold Ring™ brand)

12 Coil Wattage AC (nominal)		12 Coil Wattage DC (normal)		13 Coil Class		14 Solenoid Enclosure		15 Coil Termination		16 & 17 Coil Voltage AC		16 & 17 Coil Voltage DC	
A	6 Watts	1	9.5 Watts	F	Standard (Class 155)	E	Explosion-Proof/ Watertight	C	18" Leads (Standard)	01	24/60	70	6
B	10.2 Watts	3	11.5 Watts	H	High Temperature (Class 180)	G	Type 1 Gen. Purpose	H	DIN	02	24/50	75	12
C	11 Watts					M	316 SS Explosion-Proof/ Watertight	K	Screw	05	110/50 120/60	80	24
D	16 Watts					O	Open Frame	S	Spade	10	208/60	90	120
						P	Epoxy Encapsulated			15	220/50 240/60	95	125
						S	Type 1 Splice Box			20	440/50 480/60		
						U	316 SS Explosion-Proof/ Watertight			41	24/60 rectified		
						W	Submersible Splice Box			42	120/60 rectified		
						Y	Explosion-Proof/ Watertight with Ground Lead			44	240/60 rectified		
						Z	Grounded M			51	120-240/60		
						4	Type 4, 4X			53	240-480/60		

ALERT: Table is for interpreting product specifications only. Consult Parker Fluid Control Division for available combinations not shown in this catalog.

Integrated Coil Offering

	Part Number	Type of Termination*	Voltage	Wattage	Class
CHART 7					
	C111B2	1/2" NPT Conduit / 18" Leads	24/60	10	F
	C111P3		120/60, 110/50		
	C111Q3		240/60, 220/50		
	C111C1		12VDC		
	C111C2		24VDC		
	C111C6		120VDC		
	C222B2	1/2" NPT Conduit / 18" Leads	24/60	10	H
	C222P3		120/60, 110/50		
	C222Q3		240/60, 220/50		
	C222C1		12VDC		
	C222C2		24VDC		
	C222C6		120VDC		
	D100B2	DIN 43650A/ISO 4400	24/60	10	F
	D100P3		120/60, 110/50		
	D100Q3		240/60, 220/50		
	D100C1		12VDC		
	D100C2		24VDC		
	D100C6**		120VDC		
	D200B2	DIN 43650A/ISO 4400	24/60	10	H
	D200P3		120/60, 110/50		
	D200Q3		240/60, 220/50		
	D200C1		12VDC		
	D200C2		24VDC		
	D200C6**		120VDC		

* 1/2" NPT conduit and DIN coils offer NEMA Types 1, 2, 3, 4 and 4X protection with a suitable conduit installation or mating DIN connector and gasket.
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Integrated Coil Offering

	Part Number	Type of Termination	Voltage	Wattage	Class
CHART 7 (Continued)					
	L111B2	18" Leads	24/60	10	F
	L111P3		120/60, 110/50		
	L111Q3		240/60, 220/50		
	L111C1		12VDC		
	L111C2		24VDC		
	L111C6*		120VDC		
	L222B2*	18" Leads	24/60	10	H
	L222P3		120/60, 110/50		
	L222Q3		240/60, 220/50		
	L222C1		12VDC		
	L222C2		24VDC		
	L222C6		120VDC		
	T100B2*	1/4" Tab (spade)	24/60	10	F
	T100P3		120/60, 110/50		
	T100Q3		240/60, 220/50		
	T100C1		12VDC		
	T100C2*		24VDC		
	T100C6*		120VDC		
	S100B2*	Screw Terminal	24/60	10	F
	S100P3		120/60, 110/50		
	S100Q3		220/50, 240/60		
	S100C1*		12VDC		
	S100C2		24VDC		
	S100C6		120VDC		
	S200B2	Screw Terminal	24/60	10	H
	S200P3		120/60, 110/50		
	S200Q3*		240/60, 220/50		
	S200C1*		12VDC		
	S200C2*		24VDC		
	S200C6*		120VDC		

* Not in list price book. Minimum order quantities may apply. Consult factory

Integrated Coil Offering

	Part Number	Type of Termination*	Voltage	Wattage	Class
CHART 7 (Continued)					
	H111B2**	UL Hazardous Locations NEMA Type 7/9 w/ 18" Leaded Coil	24/60	10	F
	H111P3		120/160, 110/50		
	H111Q3		240/60, 220/50		
	H111C1		12VDC		
	H111C2		24VDC		
	H111C6**		120VDC		
	H222B2**	UL Hazardous Locations NEMA Type 7/9 w/ 18" Leaded Coil	24/60	10	H
	H222P3		120/60, 110/50		
	H222Q3		240/60, 220/50		
	H222C1**		12VDC		
	H222C2		24VDC		
	H222C6		120VDC		

* Hazardous location coil approvals: Class I, Div 1 & 2, Groups A, B, C, D; Class II, Div 1 & 2, Groups E,F,G; Class III, Div 1.

Additional Coil Options for Chart 7 (Below are replacement coils only, no enclosures)

	Part Number	Type of Termination	Voltage	Wattage	Class
	J111B2	Molded coil w/ 18" Leads	24/60	10	F
	J111P3		120/60, 110/50		
	J111Q3		240/60, 220/50		
	J111C1		12VDC		
	J111C2		24VDC		
	J111C6**		120VDC		
	J222B2**	Molded coil w/ 18" Leads	24/60	10	H
	J222P3		120/60, 220/50		
	J222Q3**		240/60, 220/50		
	J222C1		12VDC		
	J222C2**		24VDC		
	J222C6**		120VDC		

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Integrated Coil Offering

	Part Number	Type of Termination*	Voltage	Wattage	Class
CHART 8					
	C322B2	1/2" NPT Conduit /18" Leads	24/60	22	H
	C322P3		120/60, 110/50		
	C322Q3		240/60, 220/50		
	C322C1		12VDC		
	C322C2		24VDC		
	C322C6**		120VDC		
	D300B2**	DIN 43650A/ISO 4400	24/60	22	H
	D300P3		120/60, 110/50		
	D300Q3		240/60, 220/50		
	D300C1		12VDC		
	D300C2		24VDC		
	D300C6**		120VDC		
	L322B2**	1/2" NPT Conduit /18" Leads	24/60	22	H
	L322P3		110/50, 120/60		
	L322Q3		220/50, 240/60		
	L322C1		12VDC		
	L322C2		24VDC		
	L322C6**		120VDC		
	S300B2**	Screw Terminal	24/60	22	H
	S300P3		120/60, 110/50		
	S300Q3**		240/60, 220/50		
	S300C1**		12VDC		
	S300C2**		24VDC		
	S300C6**		120VDC		

* 1/2" NPT conduit and DIN coils offer NEMA Types 1, 2, 3, 4 and 4X protection with a suitable conduit installation or mating DIN connector and gasket.

** Not in list price book. Minimum order quantities may apply. Consult factory.

Coil Options for Chart 8 cont. (Below replacement coils only, no enclosures)

Part Number	Type of Termination*	Voltage	Wattage	Class
H322B2	UL Hazardous Locations NEMA Type 7 & 9 w/ 18" Leaded Coil	24/60	22	H
H322P3		120/60, 110/50		
H322Q3		240/60, 220/50		
H322C1		12VDC		
H322C2		24VDC		
H322C6**		120VDC		

* Hazardous location coil approvals: Class I, Din I & 2, Groups A,B,C,D; Class II, Div 1 & 2, Groups E, F, G; Class IV, Div 1

** Not in list price book. Minimum order quantities may apply. Consult factory.

Additional Coil Options for Chart 8 (Below are replacement coils only, no enclosures)

Part Number	Type of Termination	Voltage	Wattage	Class
J322B2**	Molded coil w/ 18" Leads	24/60	22	H
J322P3		120/60, 110/50		
J322Q3**		240/60, 220/50		
J322C1		12VDC		
J322C2		24VDC		
J322C6**		120VDC		

* Hazardous location coil approvals: Class I, Din I & 2, Groups A,B,C,D; Class II, Div 1 & 2, Groups E, F, G; Class IV, Div 1

** Not in list price book. Minimum order quantities may apply. Consult factory.

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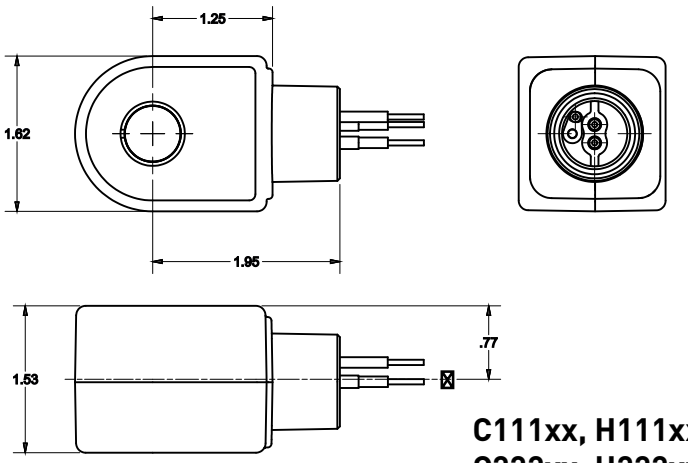
Coil Charts 7, 8, 10 & 11 Integrated Coil Dimensional Values



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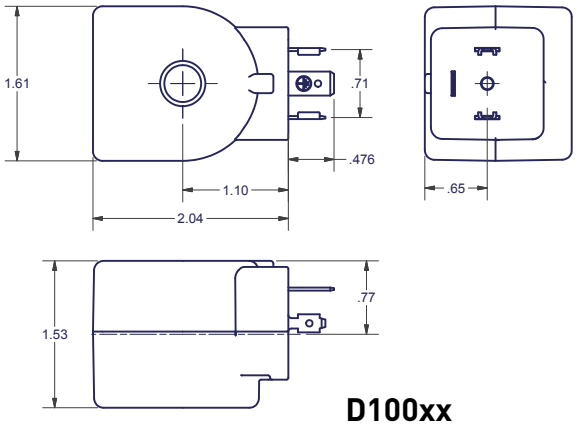
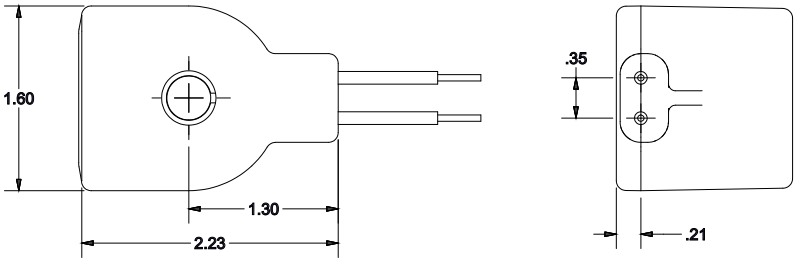
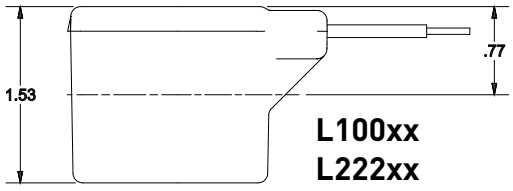
C222xx, H222xx,
C322xx, H322xx

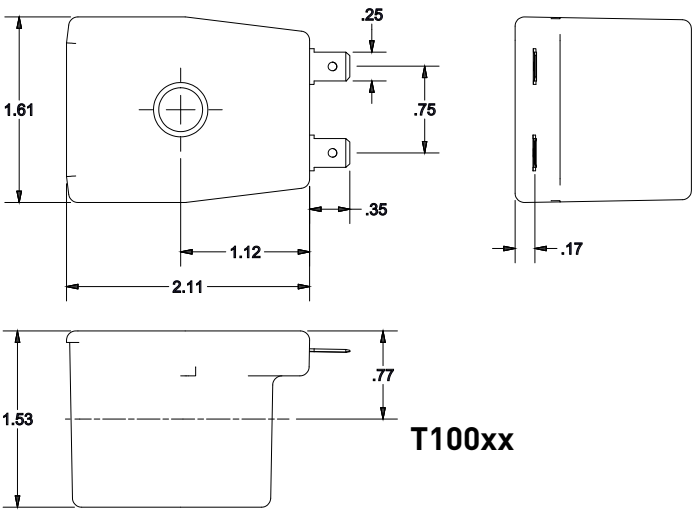


D100xx
D200xx
D300xx

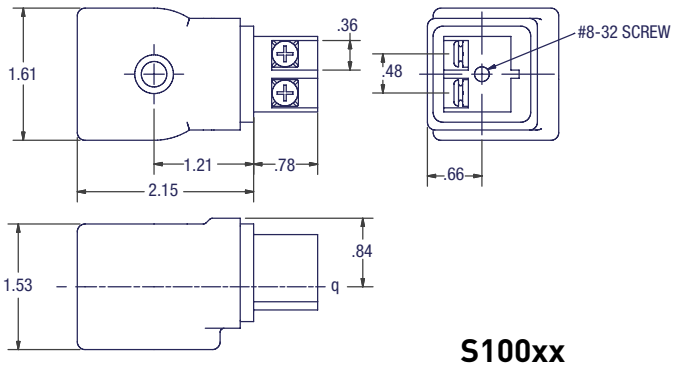




L100xx
L222xx
L322xx



T100xx



S100xx
S200xx
S300xx

Valves using coil charts 7, 8, 10, 11 & 12 (7000 Series Skinner™ Brand)
Part Numbering Information: Reference ONLY

1	2 Actuation	3 Functional Type	4 Flow Pattern	5 Family	6 Body Material	7 Threading Process Connection	8 Port Size (NPT)	9 Orifice Code	10 Seals/ Elastomers	11 & 12 Mechanical Options
7	0 Manual Reset	2 Two-Way	**2-Way Valves**	1	A Aluminum	A SAE	1 1/8"	A	C CR	00 No Option
	1 Direct Acting	3 Three-Way	1 Normally Closed	2	B Brass	E Male NPT	2 1/4"	B	E EPDM	7A Momentary Manual Override
	2 Direct Lift	4 Four-Way	2 Normally Open pressure in/out of body	3	L Noryl	F Flange	3 3/8"	C	F PCTFE	7C 7A + J1
	3 Pilot Operated Internal Pilot Supply		3 Multi/Dual purpose	4	M Zinc Die Cast	G BSP-Parallel	4 1/2"	D	K PFPM	7F Captured Exhaust Pilot
	4 Pilot Operated External Pilot Supply		9 Normally Open pressure in the body, pressure out the sleeve	5	R 316 SS	J Bib Fitting	5 3/4"	E	L Nylon	7G 7F + 7A
	5 Remote Pressure Operated		**3-Way Valves**	6	S 430F SS	K Direct Mount	6 1"	F	M Metal	7H 7F + MO
	6 Manual/Mech. Operated		1 Normally Closed	7	T Teflon	N NPT(Female Nat'l Pipe thread)	7 1 1/4" For K	G	N NBR	7M Plugged Manual Override
			2 Normally Open pressure in/out of body	8	V 303 SS	P NPTF	8 1 1/2"	H	R Ruby	A2 Silver Shading Ring
			3 Multi/Dual Purpose	9		R BSP-Taper	9 2"	J	T PTFE	CB Cylinder "B" normally open to pressure inlet
			8 Diverting	E		S Subbase Mounted	**For K in Pos. 7**	K	U PTFE	C0 4-Step Variable Closing
			9 Normally Open pressure in the sleeve, pressure out the body	F		T Barbed Fitting	D M5	L	V FKM	ET Electrically Tripped / Manual Reset
			4-Way Valves	G			E #10-24	M		J0 Pilot Exhaust Return Pipe
			1 2-position, single operator	K			F #10-32	N		J1 Exhaust Adaptor Nut
			2 3-position, dual operator center closed	L				P		M0 Manual Override
			3 3-position, dual operator center open	T				Q		M5 Manual Override w/Exhaust Adaptor (M0 + J1)
			4 3-position, dual operator center open	X				R		MC Manual Override w/Var. Closing
			6 2-position, dual operator bi-stable					S		MJ Manual Override w/Exhaust Return Pipe
			7 2-position, dual operator bi-stable, with latching					T		MR Manual Override w/Main Stream Metering
								U		N0 Cleaned for oxygen service
								V		R1 Mainstream Metering
								0 thru 9		S0 Steam Service Rated
										VR No Voltage Release / Manual Reset
										W0 Anti-Water Hammer (fixed)

ALERT: Table is for interpreting product specifications only. Consult Parker Fluid Control Division for available combinations not shown in this catalog.

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Valves using coil charts 7, 8, 10, 11 & 12 (7000 Series Skinner™ Brand)
Part Numbering Information: Reference ONLY

13 & 14 Enclosure	15 & 16 Coil Construction and Type	17 & 18 Terminations and Option Codes	19 & 20 Voltage
A0 7/8" Knockout	***Readily Available Integrated Coils***	00 Standard DIN, Screw, Tab Coils (no leads)	B2 24/60
B0 1/2" Conduit	C1 1/2" NPT Conduit, 10 Watt Class F, NEMA 4X	11 Class F Coils with 18" leads	C1 12VDC
F0 Yoke	C2 1/2" NPT Conduit, 10 Watt Class H, NEMA 4X	22 Class H Coils with 18" leads	C2 24VDC
G0 Water Tight	C3 1/2" NPT Conduit, 22 Watt Class H, NEMA 4X	GL C1,C2,C3 & H1,H2, H3 Coils with Ground lead	C4 48VDC
J0 Junction Box	C6 1/2" NPT Conduit, 1.5 Watt, Class F, NEMA 4X	D1 All DIN Coils with Cable Gland Connector	C6 120VDC
M1 Magnelatch 1/2" Conduit	C7 1/2" NPT Conduit, 0.6 Watt, Class F, NEMA 4X	D2 All DIN Coils with 1/2" Conduit Connector	P0* 24,50/60
M2 Magnelatch Grommet	D1 DIN, 10 Watt Class F	D4 D1,D2,D4 coils for timer assembly with fixed-off and adjustable on-time	P3 110/50-120/60
N0 Nut and Washer	D2 DIN, 10 Watt Class H		Q3 220/50-240/60
	D3 DIN, 22 Watt Class H	DB All DIN Coils with Terminal Box	Q8 440/50-480/6
	H1 1/2" NPT Conduit, 10 Watt Class F, NEMA 7, 9	TB S1,S2,S3 Coils with Terminal Box	2K 208/60
	H2 1/2" NPT Conduit, 10 Watt Class H, NEMA 7, 9	S1 Hazardous stainless steel yoke with 18" leads and ground lead	3N 125 VDC
	H3 1/2" NPT Conduit, 22 Watt Class H, NEMA 7, 9		***Fluxtron Coils****
	H7 1/2" NPT Conduit, 0.6 Watt, Class F, NEMA, 7, 9		2W 110-120,50/60
	Non-Integrated Coils		3W 220-240, 50/60
	L1 18" leads, 10 Watt Class F		C1 12 VDC
	L2 18" leads, 10 Watt Class H		C2 24 VDC
	L3 18" leads, 22 Watt Class H		C4 48 VDC
	S1 Screw Terminal, 10 Watt Class F		C6 120 VDC
	S2 Screw Terminal, 10 Watt Class H		P0 24/50-60
	S3 Screw Terminal, 22 Watt Class H		
	T1 1/4" Tab Terminal, 10 Watt Class F		
	Conventional Coils		
	J1 18" leads, 10 Watt Class F		
	J2 18" leads, 10 Watt Class H		
	J3 18" leads, 22 Watt Class H		
	Specialty Coils		
	F6 Fluxtron 4-wire, 1 Watt molded		
	J6 Fluxtron 2-wire, 1 Watt molded		
	J7 Fluxtron 2-wire, 2 watt		
	J0 Magnelatch 2-wire DC only		
	G0 Magnelatch 3-wire AC/DC (DC pulse)		

***Fluxtron Only**

ALERT: Table is for interpreting product specifications only. Consult Parker Fluid Control Division for available combinations not shown in this catalog.

Electrical Accessories for Charts 7-8

Various electrical accessories are available with 7000 series integrated coils. These accessories are available as individual pieces; see chart. To order a coil with the accessory attached, write the electrical option code in place of the last two digits of the coil code.

Coil Option Picture	Accessory Part #	Coil Option Code	Description	Coil Types	Coil Codes
	ELECD1	D1*	Cable Gland DIN Plug	DIN	D1D1, D2D1, D3D1
	ELECD2	D2*	1/2" Conduit DIN Plug	DIN	D1D2, D2D1, D3D2

* The plug comes complete with gasket.

Electrical Accessories for Charts 7-8

Option Picture	Option Code	Description	Coil Codes
	A0	Standard Connection, 7/8" knockout to accommodate strain relief, adapter or fittings for lead wires, NEMA Type 2	J111, J222,J322, F611, J611
	B0	1/2" Conduit Connection for attachment of conduit, 1/2" NPT fittings or BX cable, NEMA Type 2	F611, J611
	F0	Yoke for use where open enclosure is suitable (Does not carry any NEMA Type approvals)	F611, J611
	G0	Watertight, 1/2" conduit hub accommodating 1/2" NPT fittings or BX cable, NEMA Type 4x	F611, J611
	J0	Splice box, 7/8" knockout allowing for internal splice, NEMA Type 2	J111, J222, J322, F611,J611
	N0	Nut and Washer	All Integrated Coils

^ Meets NEMA 4, 4x when connected to a screw terminal or DIN Coil, as applicable. It is provided with a 1/2" NPT conduit thread and ground screw.

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International Electrotechnical Commission

About the IECEx

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

- reduced testing and certification costs to manufacturer
- reduced time to market
- international confidence in the product assessment process
- one international database listing
- maintaining International Confidence in equipment and services covered by IECEx Certification

What is an Ex area?
Ex areas can be known by different names such as “Hazardous Locations”, “Hazardous Areas” “Explosive Atmospheres”, and the like and relate to areas where flammable liquids, vapours, gases or combustible dusts are likely to occur in quantities sufficient to cause a fire or explosion.

The modern day automation of industry has meant an increased need to use equipment in Ex areas. Such equipment is termed “Ex equipment”

1. The IECEx Certified Equipment Scheme
This IECEx Scheme is an International Certification Scheme covering product that meets the requirements of International Standards, e.g. IEC Standards prepared by TC 31.

The IECEx Certified Equipment Scheme provides both:

a) A single International Certificate of Conformity that requires manufacturers to successfully complete:-

- Testing and Assessment of samples for compliance with Standards
- Assessment and auditing of manufacturers premises
- On-going surveillance audits of manufacturers premises

or

b) A “fast-track” process for countries where regulations still require the issuing of national Ex Certificates or approval. This is achieved by way of global acceptance of IECEx equipment Test and Assessment Reports.

3. The Ex Mark of Conformity System
This IECEx System is an International Conformity System where a Mark of Conformity will be granted by approved IECEx certifiers (ExCBs) located in IECEx participating countries for equipment that is covered by an IECEx Certificate of Conformity and hence has been tested and manufactured under systems that are under ongoing surveillance by ExCBs.

It will help governments, safety regulators, and industry to have greater assurance that the equipment being operated or supplied for use in areas where flammable gases and vapours and combustible dusts (termed explosive atmospheres) are present, meet the world’s most respected and vigorous safety standards.

The Mark shall only be placed on products or on packaging and promotional material covered by a valid IECEx Certificate of Conformity issued in accordance with the IECEx System rules.

4. IECEx Certified Persons Scheme
This IECEx Scheme is an International Conformity Scheme that provides the global Ex industries with a single system for the assessment and qualification of persons meeting the competency prerequisites needed to properly implement the safety requirements based on the suite of IEC International Standards covering explosive atmospheres, e.g. the IEC 60079 and IEC 61241 series of standards.

The Certified Persons Scheme provides the international Ex industries with a qualification system that is transportable across borders.

IECEX Worldwide Member Countries

Australia	Brazil	Canada	China	Croatia
Czech Republic	Denmark	Finland	France	Germany
Hungary	India	Italy	Japan	Korea
Malaysia	Netherlands	New Zealand	Norway	Poland
Republic of Serbia	Romania	Russia	Singapore	Slovenia
South Africa	Sweden	Switzerland	Turkey	United Kigndom
United States				

Definitions (ref. IEC 60079-10)

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

2.2 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.

2.3. 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:

- Electrical sparks and arcs produced when circuits are opened and closed (e.g. relay contacts)
- Conductors heated by passage of current or by faulty apparatus.
- Mechanical sparks; moving object hitting stationary object.
- Electrostatic sparks caused by charged components.
- Chemical action.
- Lightning strikes.
- Radio waves

2.4 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

An area in which an explosive gas environment is present continuously or is present for long periods Type of protection: ia - intrinsic Safety

- Zone 1

An area in which an explosive gas environment is likely to occur in normal operations. Type of protection: d - flameproof enclosure, e - increased safety, ib - intrinsic safety, m - encapsulation

- Zone 2

An area in which an explosive gas environment is not likely to occur and if it does occur it will exist for a short period only. Type of protection: n - protection (IEC 60079-15)

ATEX/IECEx General Information

Parker Fluid Control Division is pleased to announce the addition of several new ATEX coils designed for explosive atmospheres to comply with European directive 94/9/EC and standards IEC / EN 60079 for gases and IEC / EN 61241 for dust. Coil marking complies with the updated standards. Declaration of Conformity documents for specific part numbers are provided with the electrical product and also provided upon request.

Background:

The ATEX directive is a European initiative undertaken to ensure the safety of products used in potentially explosive atmospheres. It is a European mandate that all products that could provide ignition to a potentially explosive atmosphere be produced to specific requirements, under controlled conditions, by a manufacturer certified compliant to the directive by an independent notification body. Certification requires approval of the entire quality management system to the requirements of ISO 9001 with additional requirements imposed for product verifications, testing and records thereof.

The International Electrotechnical Commission (IEC) is the global organization overseeing the development of international standards for electrical, electronic & related technologies. The IECEx scheme provides a means of International Certification for manufacturers of electrical equipment intended for explosive atmospheres thereby eliminating the need for multiple national certifications in all participating countries. Any recognized certified body can provide a product Certificate of Conformity stating the product design conforms to the relevant IEC standards and the product is manufactured under a quality plan assessed by an accepted certification body. The IECEx scheme is adopting the ATEX principles and this scheme is becoming internationally accepted.

Within North America, UL is the only U.S. accepted certification body (ACB) and an Ex Assessment & Testing Lab (ExTL) under the IECEx scheme. The United States has recently integrated both the zone and division system requirements into their respective installation codes. Specifically for the U.S., the 1996 National Electric Code Article 505 (NEC).

The Canadian Standards Association (CSA) has implemented the IEC system. All new installations follow the three-zone area classification while following the two-division system for existing facilities. To reflect the new system, CSA E79 covers the IEC based standards.

The introduction of zones area classifications in North America as an accepted alternative to divisions sees the introduction of the IECEx scheme and its continued acceptance on a global basis.

The European ATEX and global IECEx standards apply to hazardous environments from intrinsically safe apparatus to flameproof control systems to increased safety requirements.

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Classification of Hazardous Location

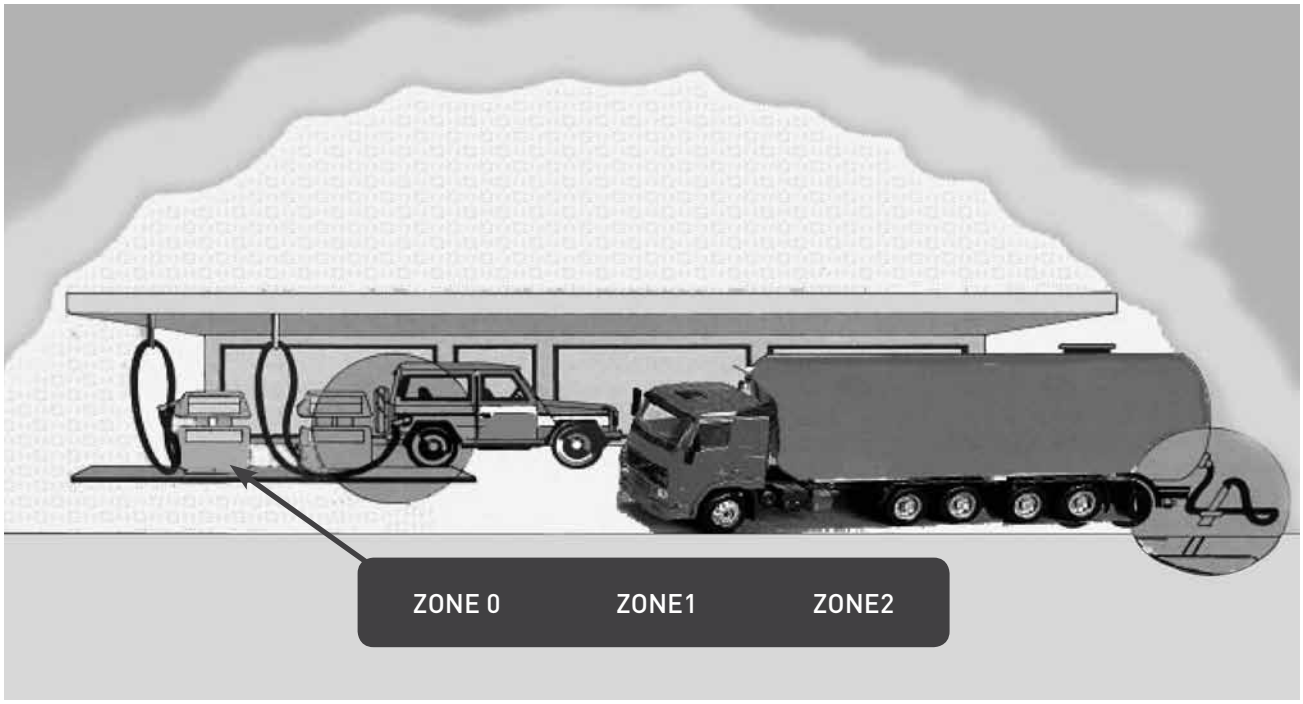
Explosive Environment	Continuos Presence	Intermittent Presence (normal operation conditions)	Occasional Presence (abnormal operation)
IEC	Zone 0 (gas) Zone 20 (dust)	Zone 1 (gas) Zone 21 (dust)	Zone 2 (gas) Zone 22 (dust)
Europe	Zone 0 (gas) Zone 20 (dust)	Zone 1 (gas) Zone 21 (dust)	Zone 2 (gas) Zone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

* (CEC): Code Canadian d'Electricite ** (NEC): National Electrical Code

Zones and Types of Protection (gas applications)

Some additional tests for gas and dust applications are applied to the product according to the new ATEX directive related to the EN 50281-1-1 and EN 50281-1-2 standards:

Example of Zones Division:



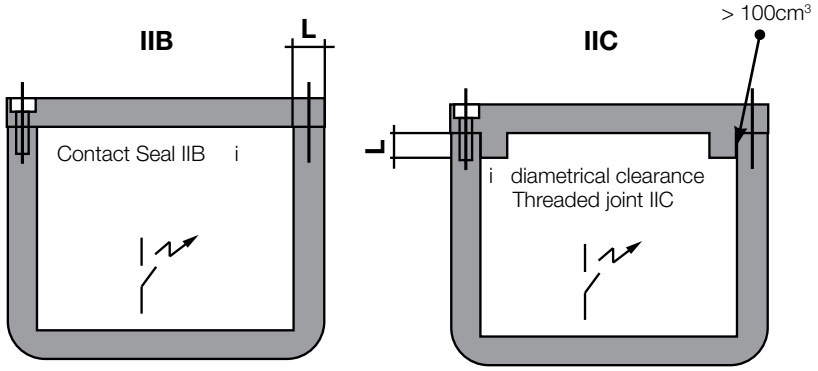
5 Types of Protection used by Parker

5.1 Flameproof enclosure

"d"

A type of protection where the parts that can ignite an explosive environment are placed in an enclosure which can withstand the pressure developed during an internal explosion of an explosive mixture and which prevents the transmission of the explosion to the explosive environment surrounding the enclosure.

Special Enclosure



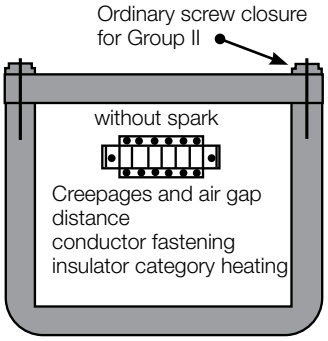
For volume > 2 dm³
Mini lenght L = 12.5 mm
Max gap i = 0.15 mm

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

5.2 Increased Safety

"e"

Type of protection applied to electrical apparatus that does not produce arcs or sparks in normal service, in which additional measures are applied so as to give increased security against the possibility of excessive temperatures and of the occurrence of arcs and sparks.

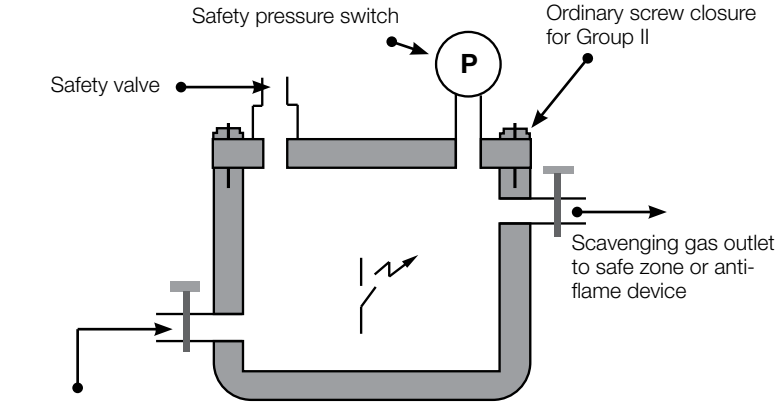


Tight envelope IP54

5.3 Pressurized Apparatus

"p"

A type of protection by which the entry of a surrounding environment into the enclosure of the electrical apparatus, is prevented by maintaining, inside the said enclosure, a protective gas at a higher pressure than that of the surrounding environment. The overpressure is maintained either with or without a continuous flow of the protective gas.



Tight envelope IP40

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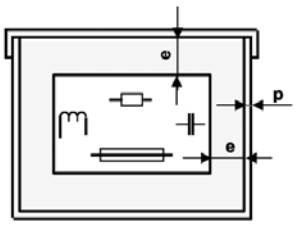
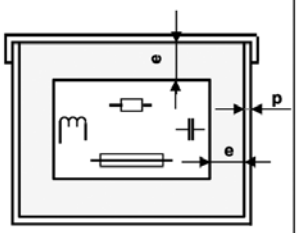
5.4 Encapsulation

"m"

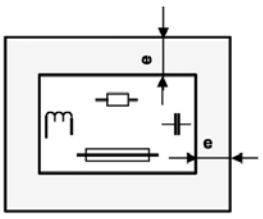
A type of protection in which the parts which could ignite an explosive environment by either sparking or heating are enclosed in a compound in such a way that this explosive environment cannot be ignited. (IEC60079-18)



Potting
Metallic envelope
e > 1 mm



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

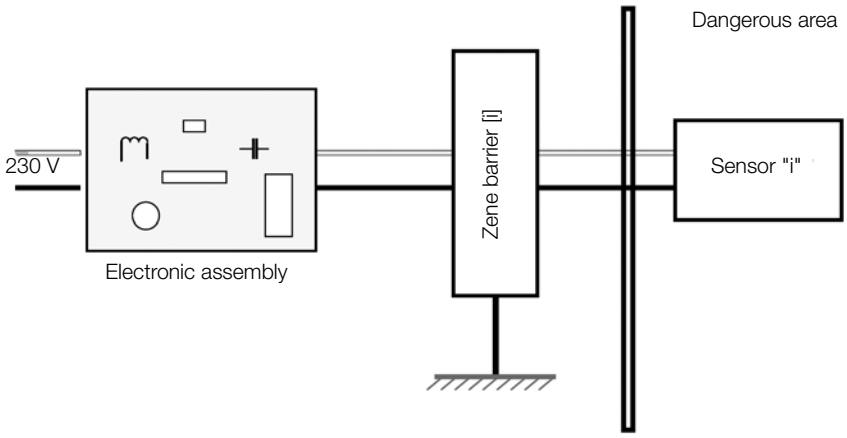


Casing
Without envelope
e > 3mm

5.5 Intrinsic Safety

"i"

A circuit in which no spark or any thermal effect produced in the test conditions prescribed in the standard IEC60079-11 (which include normal operation and specified fault conditions) is capable of causing combustion of a given explosive environment.



Coil "T" Ratings

Temperature Classification	Maximum Allowable Surface Temperature	
	°C	°F
T1	450	842
T2	300	572
T3	200	392
T4	135	257
T5	100	212
T6	85	185

ATEX Explosion Proof Rated Coil Offering

Coil Code*	Wattage/ Cable Length	Protection/Temp. Class	Marking	Certificate of Conformity
HZ04xx	2w/3000mm	Ex mb II T6 tD A21 IP67 T80°C	CE 0344 Ex II 2 G / D	LCIE 02 ATEX 6019 X IECEx LCI 08.0026 X
HZ09xx	10w/3000mm	Ex d mb IIC T4/T5 -40°C +65°C/+40°C tD A21 IP65 T130°C/95 °F	CE 0344 Ex II 2 G / D	LCIE 02 ATEX 6009 X
HZ10xx	10w/3000mm	Ex mb II T4/T5 tD A21 IP65 T130°C / 95°C	CE 0344 Ex II 2 G / D	LCIE 02 ATEX 6020 X IECEx LCI 08.0027 X
HZ11xx	22w/3000mm	Ex mb II T4/T5 tD A21 IP65 T130°C / 95°C	CE 0344 Ex II 2 G / D	LCIE 02 ATEX 6020 X/03 IECEx LCI 08.0027 X
HZ12xx	1.5w/3000mm	Ex mb II T6 tD A21 IP65 T80°C	CE 0344 Ex II 2 G / D	LCIE 02 ATEX 6021 X IECEx LCI 08.0028 X
HZ13xx	0.6w/3000mm	Ex mb II T6 tD A21 IP65 T80°C	CE 0344 Ex II 2 G / D	LCIE 02 ATEX 6021 X IECEx LCI 08.0028 X
VZ03xx (492190)	11w(AC), 9w(DC) / screw terminal	Ex e mb II T3/T4/T5/T6 tD A21 IP66 T195°C / 130°C / 95°C / 80°C	CE 0081 Ex II 2 G / D	LCIE 02 ATEX 6023 X IECEx LCI 06.0011 X
495900 (HZ95xx)	3w/screw terminal	Ex d mb IIC T4 tD A21 IP67 T130°C	CE 0081 Ex II 2 G / D	LCIE 03 ATEX 6451 X IECEx LCI 06.0004X
495905 (HZ96xx)	9w/screw terminal	Ex d mb IIC /T4/T5/T6 tD A21 IP67 T130°C	CE 0081 Ex II 2 G / D	LCIE 03 ATEX 6451 X IECEx LCI 06.0004X
496555	6w/screw terminal	Ex d mb IIC T4 tD A21 IP67 T130°C	CE 0081 Ex II 2 G / D	LCIE 07 ATEX 6075 X IECEx LCI 07.0014 X
496560	9w/screw terminal	Ex d mb IIC T4 tD A21 IP67 T130°C	CE 0081 Ex II 2 G / D	LCIE 07 ATEX 6075 X IECEx LCI 07.0014 X

*For 24VDC use code C2 in place of xx.
For 120/60, use code P3 in place of xx.
For 240/60, 220/50 use code Q3 in place of xx.
For 230/50, use code F4 in place of xx.

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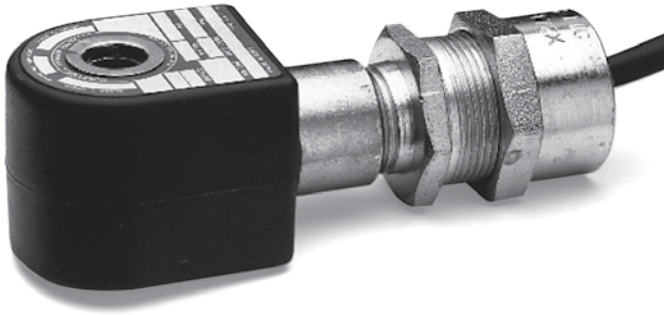
ATEX (IECEx) Coils

HZ04, HZ10, HZ11, HZ12, HZ13



HZ09

HZ95, HZ96

VZ03, 496555, 496560

ATEX Documentation available upon request. Consult Factory'.

Fluid Control Division

Parker Climate & Industrial Controls

CE

DECLARATION OF CONFORMITY
DECLARATION DE CONFORMITE
KONFORMITÄTSERKLÄRUNG

Name: **Parker Hannifin Corporation, Fluid Control Division**
Address: **95 Edgewood Avenue**
City/State: **New Britain, CT 06051**

declare under our sole responsibility that the product:
déclarons sous notre seule responsabilité que le produit:
erkären in alleiniger Verantwortung, daβ das Produkt:

Product Type (1) : …HZ12… or …HZ13

Certified :

CE 0344 Ex II 2 G/ D Ex mb II T6 LCIE 02 ATEX 6021 X
Ex tD A21 IP6X T80°C IECEx LCI 08.0028 X

(1) Name, type or model, lot, batch or serial number, possibly sources and numbers of items or further information.
(1) Nom, type ou modèle, No. de lot, d'échantillon ou de série, éventuellement sources et nombre d'exemplaires ou autres renseignements.
(1) Bezeichnung, Typ oder Modell, Los-, Chargen- oder Seriennummer, möglichst Herkunft und Stückzahl oder sonstige Angaben.

to which this declaration relates is in conformity with the following standard(s) or other normative document(s):
Auquel se réfère cette déclaration est conforme à la (aux) norme(s) ou autre(s) document(s) normatif(s):
auf das sich diese Erklärung bezieht, mit der/den folgenden Norm(en) oder normativen Dokument(en) übereinstimmt:

EN 60079-0 (2006) EN 60079-18 (2004) EN 61241-0 (2006) EN 61241-1 (2004)
IEC 60079-0 (2004) IEC 60079-18 (2004) IEC 61241-0 (2004) IEC 61241-1 (2004)

(if applicable) following the provisions of directive(s):
(le cas échéant) conformément aux dispositions de(s) directive(s):
(falls zutreffend) gemäβ den Bestimmungen der Richtlinie(n):

ATEX 94/9/EC – QA Notification No. KEMA 06ATEXQ0143

Date:

LLOYD'S REGISTER QUALITY ASSURANCE ISO9001

Fluid Control Division
Quality Manager

Les spécifications mentionnées dans les catalogues Parker Skinner ainsi que toutes les mesures de préventions adéquates doivent être observées afin d'éviter tout accident durant la période d'installation et d'utilisation du produit. Cette garantie cesse si le client ou tierce personne entreprend des modifications ou réparation sans autorisation.

The data supplied in the Parker Skinner Catalogs are to be consulted, and pertinent accident prevention regulations are to be followed during product installation and use. Any unauthorized work performed on the product by the purchaser or by third parties can impair its function, and relieves us of all warranty claims and liability for any resulting damage.

Bei Einbau und Anwendung sind die Parker Skinner Katalogangaben sowie die einschlägigen Unfallverhütungsvorschriften zu beachten. Ein unbefugter Eingriff durch den Käufer oder durch Dritte kann die Funktion beeinträchtigen und enthebt uns von jeglicher Gewährleistung und Haftung für jeden entstehenden Schaden.

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Integrated Coil Offering

	Part Number	Type of Termination*	Voltage	Wattage		Class
				AC**	DC	
CHART 9						
	C4E	1/2" NPT Conduit w/ 18" Leads	24/60	10	8	F
	C4F		120/60, 110/50			
	C4G		240/60, 220/50			
	C4A		12VDC			
	C4B		24VDC			
	D6E	DIN 43650A/ISO 4400	24/60	10	8	H
	D6F		120/60, 110/50			
	D6G		240/60, 220/50			
	D6A		12VDC			
	D6B		24VDC			
	B4E	18" Leads	24/60	10	8	F
	B4F		120/60, 110/50			
	B4G		240/60, 220/50			
	B4A		12VDC			
	B4B		24VDC			
	C5E	1/2" NPT Conduit w/ 18" Leads	24/60	10	8	H
	C5F		120/60, 110/50			
	C5G		240/60, 220/50			
	C5A		12VDC			
	C5B		24VDC			

* 1/2" NPT conduit and DIN coils offer NEMA Types 1, 2, 3, 4 and 4X protection with a suitable conduit installation or mating DIN connector and gasket.
** 2-Way Normally Closed AC Valves are 8.5 Watts (20CCxx)

Electrical Accessories for Chart 9

Coil Option Picture	Accessory Part #	Coil Option Code	Description	Coil Types	Coil Codes
	ELECD1	D6x*	Cable Gland DIN Plug	DIN	D6E, D6F, D6G, D6A, D6B
	ELECD2	D6x*	1/2" Conduit DIN Plug	DIN	D6E, D6F, D6G, D6A, D6B

* The plug comes complete with gasket.

2-Way/3-Way Miniature and Manifold Mounted Valves Using Coil Chart 9
Part Numbering Information: Reference ONLY.

1 Service Type		2 Design Style		3 Body Material		4 Function		5 & 6 Port		7 Orifice Size	
2	2 Way	0	Direct Acting	B	Brass	C	Normally Closed	02	1/8" NPT	A	1/32
3	3 Way			C	303 Stainless	F	Normally Open	L5	3/4-24 Manifold Mount Cartridge	E	3/64
				9	Manifold Mount Cartridge	U	Universal	04	1/4" NPT	G	1/16
										J	5/64
										L	3/32
										M	7/64
										P	1/8
										Q	5/32

ALERT: Table is for interpreting product specifications only.

Consult Parker Fluid Control Division for avaliable combinations not shown in this catalog.

Viton™ is a Dupont Co. Trademark.
Teflon™ is a Dupont Co. Trademark.

Additional Coil Options for Charts 9 (Coils ordered will be assembled to the pressure vessel)

	Part Number	Type of Termination	Voltage	Wattage		Class
				AC*	DC	
	B2E	Grommet Housing w/ Taped Coil w/ 18" Leads	24/60	10	8	F
	B2F		120/60, 110/50			
	B2G		240/60, 220/50			
	B2A		12VDC			
	B2B		24VDC			
	L2E	Molded Coil with 18" Leads and Yoke	24/60Hz	10	8	F
	L2F		120/60, 110/50			
	L2G		240/60, 220/50			
	L2A		12VDC			
	L2B		24VDC			
	T2E	Molded Coil with 1/4" Tab and Yoke	24/60	10	8	F
	T2F		120/60, 110/50			
	T2G		240/60, 220/50			
	T2A		12VDC			
	T2B		24VDC			

* Wattage is 8.5 on all 2-Way, Normally Closed (20CCxx) AC valves

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2-Way/3-Way Miniature and Manifold Mounted Valves Using Coil Chart 9

8 Main Seal Material		9 Operator Size	10 & 11 Coil & Enclosure		12 Voltage		13 & 14 Optional & Special Features
V	FKM- Viton™ Fluoroelastomer	4 0.442 Dia.		**1.125" Integrated Modular Coils**	A	12VDC	Consult Factory
E	EPDM		B4	Integrated, class F, 18" leads, 3-wire	B	24VDC	
N	Nitrile NBR		B5	Integrated, class H, 18" leads, 3-wire	E	24/60	
T	Teflon™		C4	Integrated, 1/2" Conduit, class F, 18" leads, 3-wire	F	120/60; 110/50	
C	Neoprene		C5	Integrated, 1/2" Conduit, class H, 18" leads, 3-wire	G	240/60; 220/50	
			D6	Integrated, DIN 43650A class H			
				1.125" Standard Coils			
			B2	Leaded with metal enclosure, class F, 18" leads			
			L2	Molded leaded coil with Yoke,class F, 18" leads			
			T2	Molded 1/4" tab with Yoke, class F			

ALERT: Table is for interpreting product specifications only.

Consult Parker Fluid Control Division for avaliable combinations not shown in this catalog.

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Check out the 2-way and 3-way Manifold Mounted Miniature Cartridge valves in the Specialty section of this catalog.

Product Features

- Space saving approach
- Less manifold machining means lower manifold cost
- Cartridge valves are 100% tested 'C4' and 'C5' 1/2" NPT coils have a rotating conduit hub for easier installation
- No loose parts: sleeve, plunger, spring, orifice are pressed to gether as one unit
- Available with all coils/enclosures from Chart 9 above

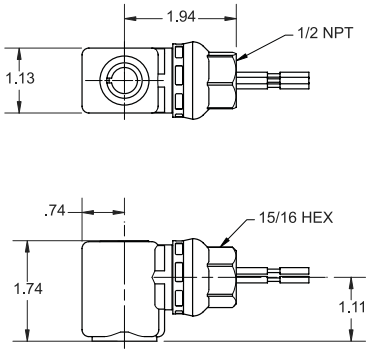
Coil Information

Encapsulated Watertight Designs. Available as Modular Coils or for Fully Assembled Valves.

Conduit Coil
Coil Code: C4*

Construction:
- Class F
- 18" lead wires
- Ground wire
- 1/2" NPT conduit hub
- NEMA 4X, IP65 protection

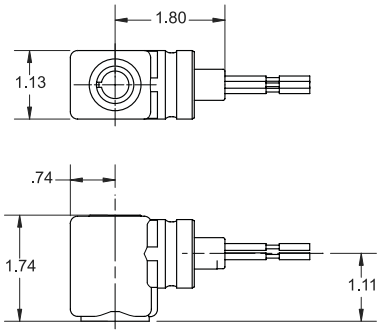
AC: 10 Watts except 2 Way
Normally Closed is 8.5 Watts
DC: 8 Watts



Leaded Coil
Coil Code: B4*

Construction:
- Class F
- 18" lead wires
- Ground wire

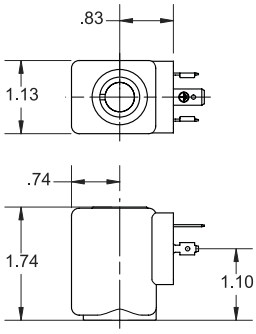
AC: 10 Watts except 2 Way
Normally Closed is 8.5 Watts
DC: 8 Watts



DIN Coil
Coil Code: D6*

Construction:
- Class H
- DIN 43650A/ISO 4400 configuration
- NEMA 4X, IP65 protection with a suitable plug and gasket

AC: 10 Watts except 2 Way
Normally Closed is 8.5 Watts
DC: 8 Watts



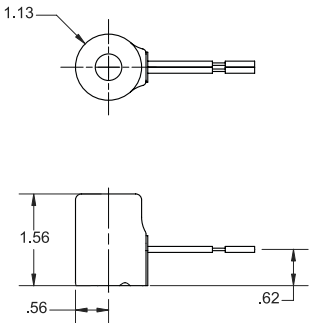
Coil Information

Conventional Coil & Enclosures for Fully Assembled Valves Only

Grommet Coil
Coil Code: B2*

Construction:
- Grommet enclosure
- Taped wrapped coil
- Class F
- 18" leads- 2 wire

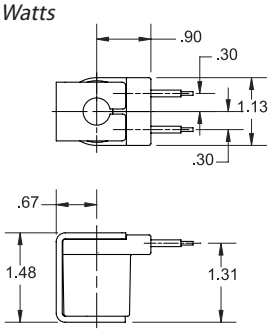
AC: 7 Watts
DC: 8 Watts



Leaded Coil
Coil Code: L2*

Construction:
- Open frame enclosure
- Molded leaded coil
- Class F
- 18" leads- 2 wire

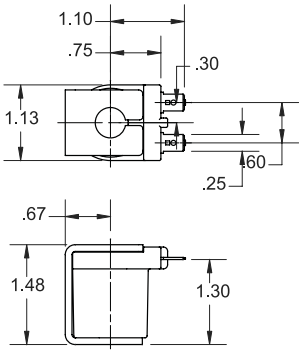
AC: 10 Watts except 2 Way
Normally Closed is 8.5 Watts
DC: 8 Watts



Tab Coil
Coil Code: T2*

Construction:
- Open frame enclosure
- 1/4" tab terminals
- Class F

AC: 10 Watts except 2 Way
Normally Closed is 8.5 Watts
DC: 8 Watts



* ADD VOLTAGE CODE: A= 12VDC B= 24VDC E= 24/60 F= 120/60, 110/50 G= 240/60, 220/50

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Integrated Coil Offering

	Part Number	Type of Termination*	Voltage	Wattage	Class
CHART 10					
	C8GLB2***	1/2" NPT Conduit w/ 18" Leads	24/60	24	H
	C8GLP3		120/60, 110/50		
	C8GLQ3		240/60, 220/50		
	D800B2***	DIN 43650A/ISO 4400	24/60	24	H
	D800P3***		120/60, 110/50		
	D800Q3***		240/60, 220/50		
	H8GLB2	UL Hazardous Locations; NEMA Types 7 & 9 w/ 18" Leads**	24/60	24	H
	H8GLP3		120/60, 110/50		
	H8GLQ3		240/60, 220/50		

LOW POWER COILS

	Part Number	Type of Termination*	Voltage	Wattage	Class
CHART 11					
	H611C2***	UL Hazardous TYPE 7 & 9	24VDC	1.5	F

ULTRA LOW POWER COILS

	Part Number	Type of Termination*	Voltage	Wattage	Class
CHART 12					
	C711C2	1/2" NPT Conduit Type 4X	24VDC	0.6	F
	H711C2	UL Hazardous TYPE 7 & 9	24VDC	0.6	F

* 1/2" NPT conduit and DIN coils offer NEMA Types 1, 2, 3, 4 and 4X protection with a suitable conduit installation or mating DIN connector and gasket.

** Hazardous location coil approvals: Class I, Div 1 & 2, Groups A, B, C, D: Class II, Div 1 & 2, Groups E, F, G: Class III, Div I.

*** Not in list price book. Minimum order quantities may apply. Consult factory.

General Data-Solenoid Coils

Power and Voltage
All coils used in Parker FCD solenoid valves are designed for continuous duty except where noted. On AC, inrush current occurs at the moment the solenoid is energized. The continuous current after inrush is holding current. Typical AC current values are shown to the right. DC solenoids have no inrush. Typical amp ratings for DC are determined by dividing DC watts by DC voltage. All Parker FCD solenoid valves are tested to operate at 15% under-voltage and full pressure ratings. AC and DC voltage ratings (nominal) and normal operating ranges, as shown in the following table, are standard. For special voltages, consult the factory.

AC/DC Voltage Range
All coils used in Parker FCD valves are designed for continuous duty except where noted. They can remain energized continuously without damage from overheating or mechanical failure. AC and DC voltage ratings (nominal) and normal operating ranges, as shown in the following table, are standard.

All coils used in Parker FCD solenoid valves are either Class "F" or Class "H" molded epoxy, and are constructed in accordance with UL, IEEE, NEMA and other accepted standards.

Holding and Inrush Current (Reference coil charts 1-5 in coil section)

Small, Direct-Acting 2-Way, 3-Way and 4-Way Series 20, 30, 35, 38, and 48 (1/8 to 3/8")Watt Rating and Volt Amperage

Standard Coil Insulation Class	AC		
	Watts	VA Holding	VA Inrush
F	6	16	26
F	10.2	23	37
F	11	20	34
F	16	31	50

2-Way, Direct-Acting Series 20 (3/8 to 3/4") Watt Rating and Volt Amperage

Standard Coil Insulation Class	AC		
	Watts	VA Holding	VA Inrush
F	6	16	36
F	11	20	61
F	16	31	88

Pilot 2-Way Series 22, 23, 24, 25, 26, 28, (3/8 to 1-1/2") Watt Rating and Volt Amperage

Standard Coil Insulation Class	AC		
	Watts	VA Holding	VA Inrush
F (Offset Pilot)	6	16	26
F (Center Pilot)	6	16	34
F	11	20	53
F	16	31	76

AC		DC	
Normal Voltage Rating	Normal Operating Range	Normal Voltage Rating	Normal Operating Range
24	20-24	12	10.2-12.6
120	102-120	24	20-25
240	204-240	120	102-126

Current Drain
To determine approximate Holding or Inrush Current for 24/60, 120/60, 240/60 and 480/60 volts in amperes, divide the voltage into the "VA" indicated in the table on this page.

DC Inrush/Holding Current (Amperes)

Coil Type		12 Volt	24 Volt
10 Watt	**Integrated** **Conventional**	**0.81** **0.73**	**0.41** **0.39**
16 Watt	**DIN**	**1.3**	**0.64**
22 Watt	**Integrated**	**1.64** **1.85**	**0.83** **0.86**
8 Watt	**Integrated** **Conventional**	**0.67**	**0.33**
16 Watt	**DIN**	**1.3**	**0.64**

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AC Power Consumption (Reference Coil Charts 7–12 in Coil Section)

Valve Type	AC Power Consumption							
	10 Watt Integrated Coils		10 Watt Conventional Coils		13 Watt Integrated Coils		22 Watt Integrated Coils	
	VA Holding	VA Inrush	VA Holding	VA Inrush	VA Holding	VA Inrush	VA Holding	VA Inrush
71211, 71311, 71321, 71331, 71381, 71221	16	32	13	30	16	32	-	-
71214	16	29	14	27	16	29	-	-
71215 (3/64"-1/8" orifice), 73218	16	31	14	28	16	31	35	54
71215 (5/32"-5/16" orifice)	17	35	14	33	17	35	34	61
71215 (3/8" orifice)	16	36	14	34	16	36	34	63
71216, 73216	17	32	15	31	17	32	-	-
7121F	18	32	16	30	18	32	35	56
7121K (EPDM seals)	19	36	18	34	19	36	-	-
7121K (NBR, FKM seals 1/16"-1/8" orifice)	18	32	16	30	18	32	35	56
7121K (NBR, FKM seals 5/32"-1/4" orifice)	18	36	16	34	18	36	-	-
7121K (NBR, FKM seals 7/16" orifice)	18	37	16	35	18	37	35	65
7121V	19	36	19	36	19	36	39	66
71221	16	32	13	30	16	32	-	-
71225	20	32	18	30	20	32	-	-
7122K	20	32	17	30	20	32	-	-
71235, 71313, 71335, 71385, 71395, 73312	17	27	16	26	17	27	-	-
71295, 71315 (0.19"-0.25" orifice)	16	30	15	29	16	30	-	-
72218	17	41	15	38	17	41	-	-
7221G (NBR, FKM seals)	17	41	16	39	17	41	-	-
7221G (EPDM seals)	19	41	18	39	19	41	-	-
72228	20	46	18	43	20	46	47	80
73212 (1/4" orifice)	16	31	14	28	16	31	35	54
73212 (1/2"-1" orifice), 71315 (0.05"-0.11" orifice)	17	27	16	26	17	27	-	-
73217*, 73477*, 73317*	17	27	-	-	-	-	-	-
73218	16	31	14	28	16	31	35	54
7321G	18	32	16	30	18	32	35	56
7321H	18	32	16	30	18	32	35	56
7321K (EPDM seals)	19	41	18	39	19	41	-	-
7321K (NBR, FKM seals)	17	39	15	36	17	39	-	-
73222	20	32	18	30	20	32	-	-
73228	20	32	18	30	20	32	-	-
7322G	20	32	17	30	20	32	-	-
7322H	20	32	17	30	20	32	-	-
74232, 73322, 73383, 73419, 74332	17	27	16	26	17	27	-	-
7131E, 7341L	17	31	15	29	17	31	-	-
7131F, 7131K, 7133F, 7133K	17	31	15	29	17	31	-	-
7131K	17	31	15	29	17	31	-	-
7131T, 7132T, 7133T	17	35	16	33	17	35	-	-
70312 (N.V.R), 70315 (N.V.R.), 7033T (N.V.R.)	20	32	20	32	-	-	-	-
20CC (These are 8.5 Watt coils)	13	28	13	28	-	-	-	-
20CF, 30CC, 30CF, 30CU	17	25	17	25	-	-	-	-
71417 (These are 24 Watt coils)	38.3	76	-	-	-	-	-	-

* Available with 1.5 Watt coil also (2.1 VA holding and Inrush)

Degrees of Protection "IP" - IEC/EN 60529

Full enclosure protection is often required, either in the standards concerning "potentially explosive environments" or for other specific needs.

First figure indicates protection against dangerous access and foreign objects	Index	IP	Index	Second figure indiciates protection against water penetration
Non-protected	0		0	Non-protected
Protected against solid objects Ø 50 mm or more	1		1	
Protected against solid objects 12.5 mm or more	2		2	
Protected against solid objects 2.5 mm or more	3		3	
Protected against solid objects 1 mm or more	4	5 4	4	
Dust protected	5		5	
Dust-tight	6		6	
			7	Protected against immersion
			8	Protected aganst continuous immersion

Table 1:
Correlation between IP (IEC) and NEMA 250 standards

IP 10	NEMA 1
IP 11	NEMA 2
IP 14	NEMA 3R
IP 52	NEMA 5-12-12K
IP 54	NEMA 3-3S-13
IP 65	NEMA 4-4X
IP 67	NEMA 6- 6P

Note; The above correlation between NEMA Type and IP (IEC) is for REFERENCE ONLY.

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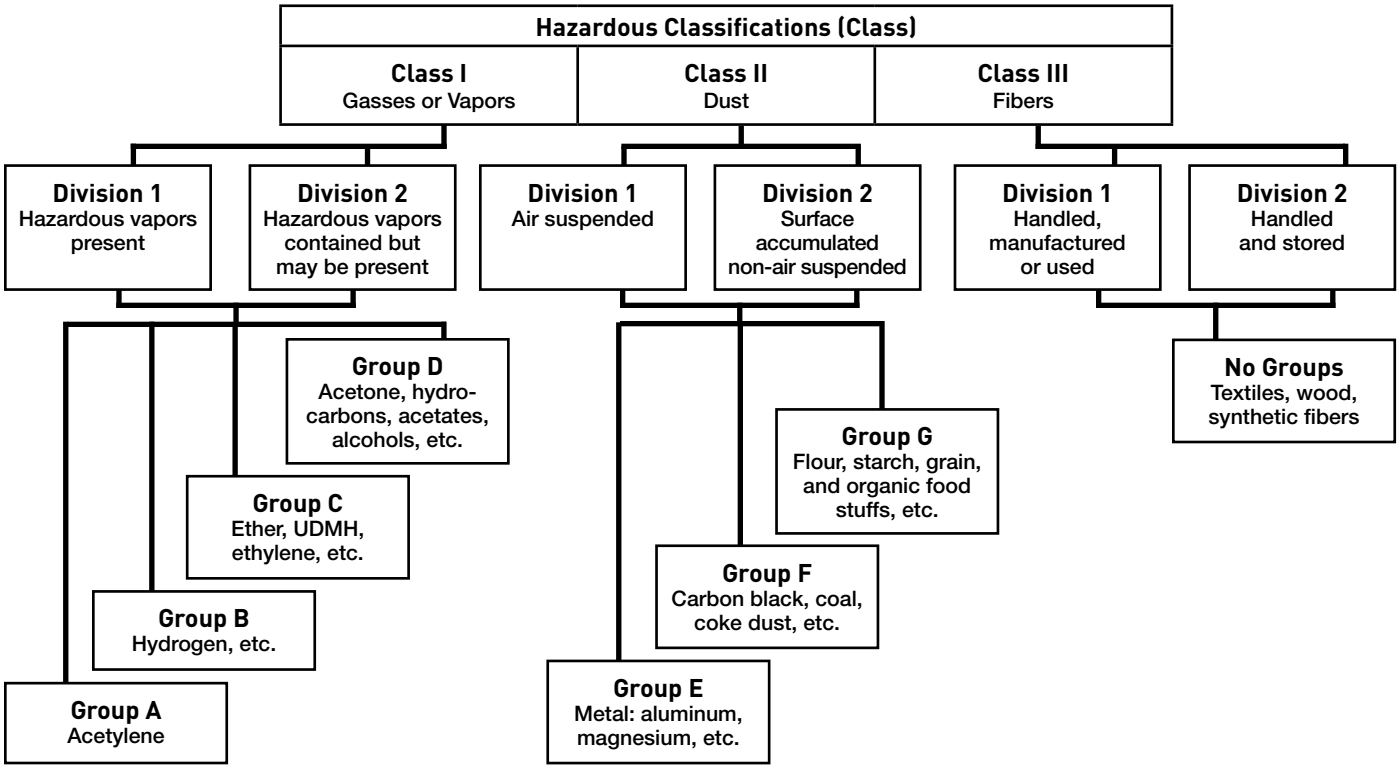
Hazardous (Classified) Locations

(In accordance with Article 500, National Electrical Code-1984)



Industrial Limits	Total Coil Temperatures													
	AC								DC				AC/DC	
NEMA Limits	155°C (311°F)		180°C (356°F)		155°C (311°F)		180°C (356°F)		155°C (311°F)	180°C (356°F)	155°C (311°F)	180°C (356°F)	155°C (311°F)	180°C (356°F)
Class H														
Class F														
Temperature Margin for Higher Fluid or Ambient Temperature					115°C (239°F)				110°C (223°F)		106°C (223°F)		115°C (239°F)	135°C (243°F)
Energized Coil Temperatures in 25°C Ambient Temperatures	85°C (185°F)	90°C (194°F)	85°C (185°F)	90°C (194°F)										
Normal Room Temperature														
Nominal Watt Rating	6	11	6	11	10.2	16	10.2	16	9.5		11.5		10	10
Coil Class	F		H		F		H		F	H	F	H	F	H
Coil Chart	1 – 6												7	