



aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



204 / 209 & 304 / 309 Series

High performance direct acting valves for Food,
Beverage & Vending Machines,
Medical & Instrumentation markets



ENGINEERING YOUR SUCCESS.

204 / 209 & 304 / 309 Series

2 Way and 3 Way Small Direct Acting Solenoid Valves and Cartridge Valves



The new Series 204 and 304 offers customers solenoid valves to meet the most demanding applications. This new product line is a series of direct acting solenoid valves for most gas and liquid (including light oils) application requirements.

These Parker valves readily meet application system needs in today's **commercial, industrial, medical and instrumentation markets**.

Product Features:

- State of the art operator performance = long life and maximized pressure ratings
- Patent pending NEMA 4X coil with rotating hub for easier conduit assembly
- Standard with FKM* elastomer seals
- High temperature watertight coil designs are offered
- AC & DC coils are interchangeable on all pressure vessels
- Service without the need for special tools
- Economy models available for less demanding applications
- Certified agency approvals at high ambient and media temperatures

* FKM is the ASTM designation for fluoroelastomer.



Series 209 and 309 are cartridge versions of the Series 204 and 304 intended for manifold installations.

Unlike typical solenoid operators used with manifolds, the cartridge approach simplifies manifold machining. There are less parts to handle, and assembly time is less. These benefits combined add up to lower installed cost when considering the manifold approach.

Product Features:

- Space saving approach
- Less manifold machining equals lower manifold cost
- No manifold orifices to machine or press in
- Cartridge valves are 100% tested
- No loose parts: sleeve, plunger, spring and orifice are pressed together as one unit
- Available with all 204 and 304 coils



Medical and Instrumentation Markets



Industrial Markets



Beverage dispensing Markets

204 / 209 & 304 / 309 Technical Specifications

Mechanical Characteristics

Body: 303 Stainless Steel
Sleeve: Stainless Steel
Plunger: Stainless Steel
Seals: FKM*
Shading Ring: Copper
Spring: Stainless Steel

Mounting

Any orientation is permissible

Operating Characteristics

ΔP minimum 0 psid
 ΔP maximum see tables
Max. Fluid Viscosity (300 SSU)

Environmental Temp. Ranges

AC Ambient Temperature Range
*32°F (0°C) to 135°F (57°C)

DC Ambient Temperature Range
* 32°F (0°C) to 125°F (52°C)

AC Media Temperature Range
* 32°F (0°C) to 240°F (116°C)

DC Media Temperature Range
* 32°F (0°C) to 240°F (116°C)

* In the absence of moisture, applications as low as -20°F (-29°C) are possible.

Compatible Fluids

Lubricated Air, Non-Lubricated Air, Inert Gases, Water, Petroleum Products and additional fluids compatible with the materials of construction. Pressure ratings apply to all compatible fluids within stated temperature ranges.

Agency Approvals/Compliance



Port Size NPT	METRIC UNITS					Pressure Vessel Number	ENGLISH UNITS				
	Orifice Size (mm)	Kv Factor (m ³ /h)	Operating Pressure Differential (bar)				Orifice Size (in.)	Cv Factor	Operating Pressure Differential (psi)		
			Min.	Max. AC	Max. DC				Min.	Max. AC	Max. DC
2 Way Direct Acting Valves (NC)											
1/8	1.2	0.05	0	65	27	20CC02EV4	3/64	0.06	0	950	390
1/8	1.6	0.09	0	43	17.5	20CC02GV4	1/16	0.10	0	625	255
1/8	2.0	0.13	0	31	12.5	20CC02JV4	5/64	0.15	0	450	180
1/8	2.4	0.19	0	22	9	20CC02LV4	3/32	0.22	0	320	130
1/8	2.7	0.24	0	17	7	20CC02MV4	7/64	0.28	0	245	100
1/8	3.2	0.28	0	12	4	20CC02PV4	1/8	0.32	0	175	60
1/8	4.0	0.33	0	7	2	20CC02QV4	5/32	0.38	0	100	30
2 Way Direct Acting Valves (NO)											
1/8	0.8	0.02	0	26	26	20CF02AV4	1/32	0.02	0	375	375
1/8	1.2	0.05	0	16	16	20CF02EV4	3/64	0.06	0	230	230
1/8	1.6	0.09	0	10	10	20CF02GV4	1/16	0.10	0	150	150
1/8	2.0	0.12	0	7	7	20CF02JV4	5/64	0.14	0	105	105
1/8	2.4	0.17	0	5.5	5.5	20CF02LV4	3/32	0.20	0	80	80
2 Way Cartridge Valves (NC)											
N/A	1.2	0.05	0	65	27	209CL5EV4	3/64	0.06	0	950	390
N/A	1.6	0.09	0	43	17.5	209CL5GV4	1/16	0.10	0	625	255
N/A	2.0	0.13	0	31	12.5	209CL5JV4	5/64	0.15	0	450	180
N/A	2.4	0.19	0	22	9	209CL5LV4	3/32	0.22	0	320	130
N/A	2.7	0.24	0	17	7	209CL5MV4	7/64	0.28	0	245	100
N/A	3.2	0.28	0	12	4	209CL5PV4	1/8	0.32	0	175	60
N/A	4.0	0.33	0	7	2	209CL5QV4	5/32	0.38	0	100	30
2 Way Cartridge Valves (NO)											
N/A	0.8	0.02	0	26	26	209FL5AV4	1/32	0.02	0	375	375
N/A	1.2	0.05	0	16	16	209FL5EV4	3/64	0.06	0	230	230
N/A	1.6	0.09	0	10	10	209FL5GV4	1/16	0.10	0	150	150
N/A	2.0	0.12	0	7	7	209FL5JV4	5/64	0.13	0	105	105
N/A	2.4	0.17	0	5.5	5.5	209FL5LV4	3/32	0.17	0	80	80

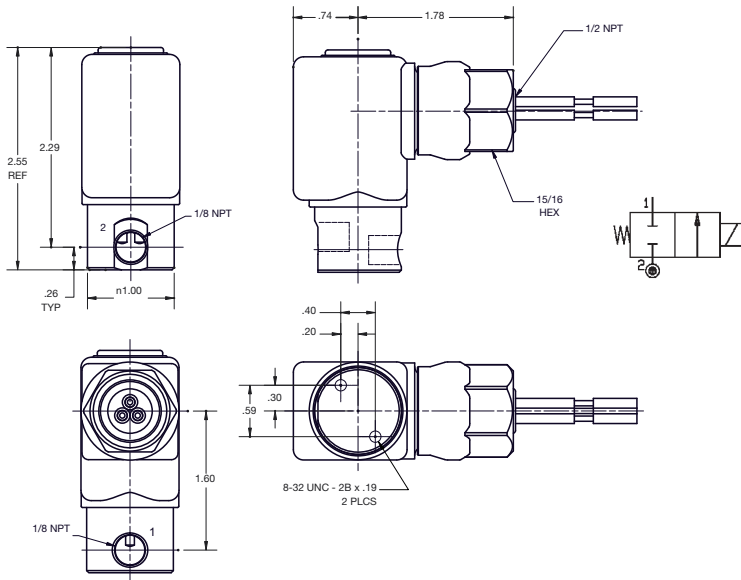
* FKM is the ASTM designation for fluoroelastomer.

304 and 309 Technical Specifications

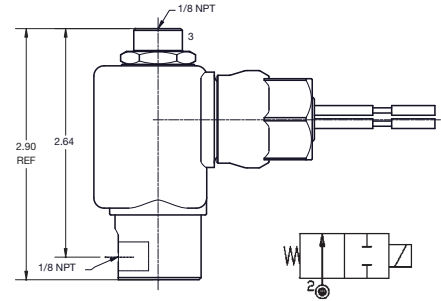
Port Size NPT	METRIC UNITS								ENGLISH UNITS							
	BODY		SLEEVE		Operating Pressure Differential (psi)			Pressure Vessel Number	BODY		SLEEVE		Operating Pressure Differential (psi)			
	Orifice Size (mm)	Kv Factor (m ³ /h)	Orifice Size (mm)	Kv Factor (m ³ /h)	Min.	Max. AC	Max. DC		Orifice Size (in.)	Cv Factor	Orifice Size (in.)	Cv Factor	Min.	Max. AC	Max. DC	
3 Way Direct Acting Valves (NC)																
1/8	0.8	0.02	0.8	0.02	0	17	17	30CC02AV4	1/32	0.02	1/32	0.02	0	250	250	
1/8	1.2	0.04	1.2	0.04	0	14	14	30CC02EV4	3/64	0.05	3/64	0.05	0	200	200	
1/8	1.6	0.08	1.6	0.08	0	9	9	30CC02GV4	1/16	0.09	1/16	0.10	0	130	130	
1/8	2.0	0.13	2.0	0.12	0	6	6	30CC02JV4	5/64	0.15	5/64	0.14	0	90	90	
1/8	2.4	0.16	2.4	0.17	0	5	5	30CC02LV4	3/32	0.19	3/32	0.20	0	75	75	
1/8	2.7	0.22	2.4	0.17	0	3.5	3.5	30CC02MV4	7/64	0.25	3/32	0.20	0	50	50	
1/8	3.2	0.28	2.4	0.17	0	3	3	30CC02PV4	1/8	0.32	3/32	0.20	0	40	40	
1/8	4.0	0.33	2.4	0.17	0	1.5	1.5	30CC02QV4	5/32	0.38	3/32	0.20	0	25	25	
3 Way Direct Acting Valves (NO)																
1/8	0.8	0.02	0.8	0.02	0	26	26	30CF02AV4	1/32	0.02	1/32	0.02	0	375	375	
1/8	1.2	0.04	1.2	0.04	0	16	16	30CF02EV4	3/64	0.05	3/64	0.05	0	230	230	
1/8	1.6	0.08	1.6	0.08	0	10	10	30CF02GV4	1/16	0.09	1/16	0.10	0	150	150	
1/8	2.0	0.13	2.0	0.12	0	7	7	30CF02JV4	5/64	0.15	5/64	0.14	0	105	105	
1/8	2.4	0.16	2.4	0.17	0	5.5	5.5	30CF02LV4	3/32	0.19	3/32	0.20	0	80	80	
3 Way Direct Acting Valves (U)																
1/8	0.8	0.02	0.8	0.02	0	14	14	30CU02AV4	1/32	0.02	1/32	0.02	0	200	200	
1/8	1.2	0.05	1.2	0.04	0	10	10	30CU02EV4	3/64	0.05	3/64	0.05	0	150	150	
1/8	1.6	0.08	1.6	0.08	0	7	7	30CU02GV4	1/16	0.09	1/16	0.10	0	100	100	
1/8	2.0	0.13	2.0	0.12	0	5	5	30CU02JV4	5/64	0.15	5/64	0.14	0	70	70	
1/8	2.4	0.16	2.4	0.17	0	3.5	3.5	30CU02LV4	3/32	0.19	3/32	0.20	0	50	50	
1/8	2.7	0.22	2.4	0.17	0	3	3	30CU02MV4	7/64	0.25	3/32	0.20	0	40	40	
1/8	3.2	0.28	2.4	0.17	0	2	2	30CU02PV4	1/8	0.32	3/32	0.20	0	30	30	
1/8	4.0	0.33	2.4	0.17	0	1.5	1.5	30CU02QV4	5/32	0.38	3/32	0.20	0	20	20	
3 Way Cartridge Valves (NC)																
N/A	0.8	0.02	0.8	0.02	0	17	17	309CL5AV4	1/32	0.02	1/32	0.02	0	250	250	
N/A	1.2	0.04	1.2	0.04	0	14	14	309CL5EV4	3/64	0.05	3/64	0.05	0	200	200	
N/A	1.6	0.08	1.6	0.08	0	9	9	309CL5GV4	1/16	0.09	1/16	0.10	0	130	130	
N/A	2.0	0.13	2.0	0.12	0	6	6	309CL5JV4	5/64	0.15	5/64	0.14	0	90	90	
N/A	2.4	0.16	2.4	0.17	0	5	5	309CL5LV4	3/32	0.19	3/32	0.20	0	75	75	
N/A	2.7	0.22	2.4	0.17	0	3.5	3.5	309CL5MV4	7/64	0.25	3/32	0.20	0	50	50	
N/A	3.2	0.28	2.4	0.17	0	3	3	309CL5PV4	1/8	0.32	3/32	0.20	0	40	40	
N/A	4.0	0.33	2.4	0.17	0	1.5	1.5	309CL5QV4	5/32	0.38	3/32	0.20	0	25	25	
3 Way Cartridge Valves (NO)																
N/A	0.8	0.02	0.8	0.02	0	26	26	309FL5AV4	1/32	0.02	1/32	0.02	0	375	375	
N/A	1.2	0.04	1.2	0.04	0	16	16	309FL5EV4	3/64	0.05	3/64	0.05	0	230	230	
N/A	1.6	0.08	1.6	0.08	0	10	10	309FL5GV4	1/16	0.10	1/16	0.10	0	150	150	
N/A	2.0	0.13	2.0	0.12	0	7	7	309FL5JV4	5/64	0.13	5/64	0.14	0	105	105	
N/A	2.7	0.16	2.4	0.17	0	5.5	5.5	309FL5LV4	3/32	0.19	3/32	0.20	0	80	80	
3 Way Cartridge Valves (U)																
N/A	0.8	0.02	0.8	0.02	0	14	14	309UL5AV4	1/32	0.02	1/32	0.02	0	200	200	
N/A	1.2	0.04	1.2	0.04	0	10	10	309UL5EV4	3/64	0.05	3/64	0.05	0	150	150	
N/A	1.6	0.08	1.6	0.08	0	7	7	309UL5GV4	1/16	0.10	1/16	0.10	0	100	100	
N/A	2.0	0.13	2.0	0.12	0	5	5	309UL5JV4	5/64	0.13	5/64	0.14	0	70	70	
N/A	2.4	0.16	2.4	0.17	0	3.5	3.5	309UL5LV4	3/32	0.19	3/32	0.20	0	50	50	
N/A	2.7	0.22	2.4	0.17	0	3	3	309UL5MV4	7/64	0.25	3/32	0.20	0	40	40	
N/A	3.2	0.28	2.4	0.17	0	2	2	309UL5PV4	1/8	0.31	3/32	0.20	0	30	30	
N/A	4.0	0.33	2.4	0.17	0	1.5	1.5	309UL5QV4	5/32	0.36	3/32	0.20	0	20	20	

Dimensional Drawings for the Series 204 / 209 & 304 / 309

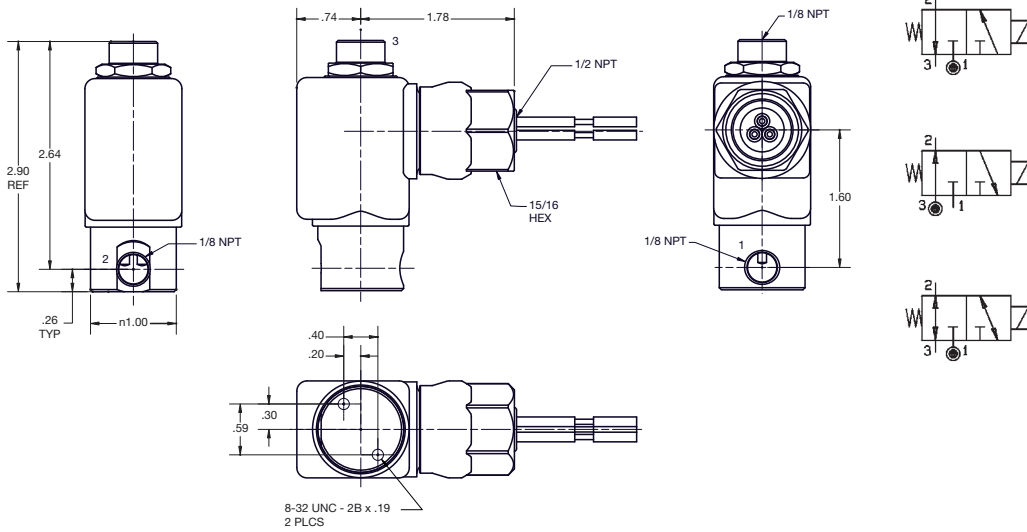
204 2 Way Normally Closed



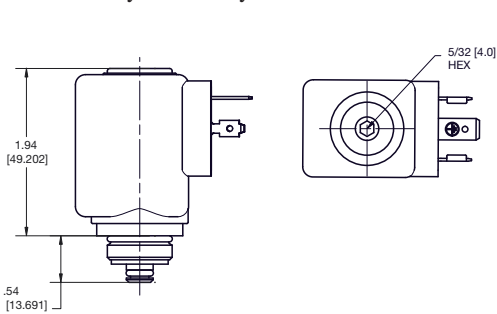
204 2 Way Normally Open



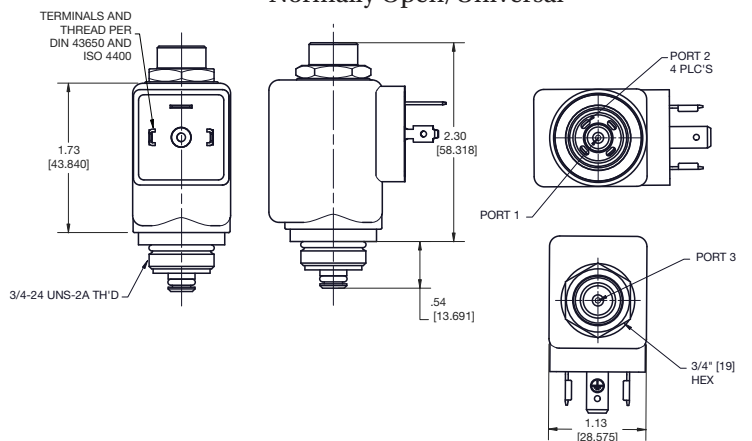
304 3 Way Normally Closed/Normally Open/Universal



209 2 Way Normally Closed



309 3 Way Normally Closed/ Normally Open/Universal



How to Order

Modular Units: Our solenoid valves can be ordered in two parts: pressure vessel and solenoid coil.

To order modular units, order the pressure vessel and mix and match 3 different coil styles to match your application requirement.

The available modular coils consist of the following coils displayed on the next page:

- C4 conduit coil
- B4 leaded coil
- D6 DIN coil

TO ORDER PRESSURE VESSEL

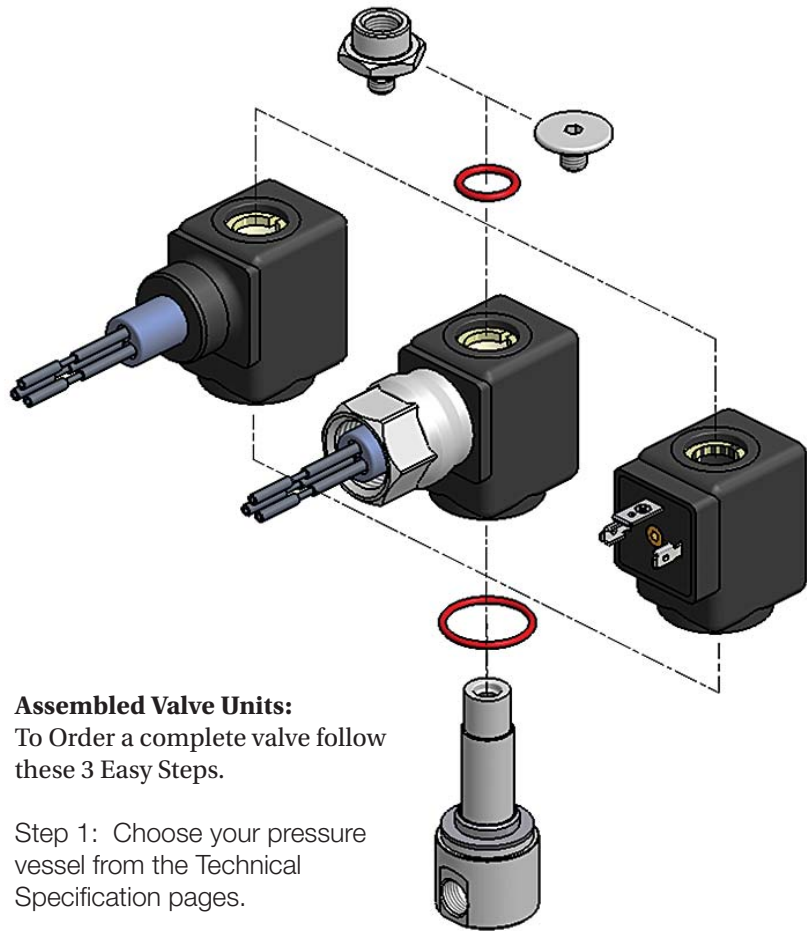
- Choose your pressure vessel from the Technical Specification pages. The pressure vessel will contain the required coil retaining nut.

TO ORDER COIL

- Go to the Encapsulated Watertight Coil Design section on the opposite page in the brochure.
- Go to Voltage Code chart on the same page and select voltage
- Add Voltage Code to end of Coil Code

* The coil assembly will contain the O-ring seals.

* Coils carry the following approval:



Assembled Valve Units:

To Order a complete valve follow these 3 Easy Steps.

Step 1: Choose your pressure vessel from the Technical Specification pages.

Step 2: Go to the Coil page in the brochure.

Look at either the Encapsulated or Conventional Coil sections. Choose your coil and apply the 2 digit code to the end of the pressure vessel number.

Step 3: Lastly, go to the Voltage Code chart located on the coil page and select the one digit voltage code, add the code to the end of the coil code.



Medical and Instrumentation Markets



Industrial Equipment Markets

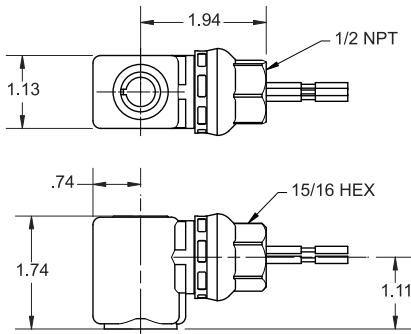
Coils

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

Conduit Coil
Coil Code: C4



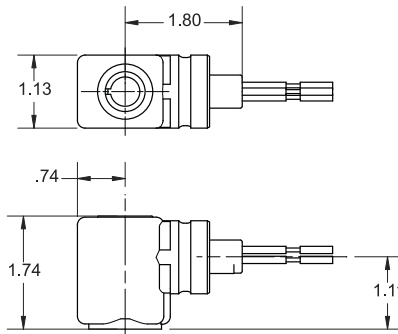
- Construction:
- Class F
 - 18" lead wires
 - Ground wire
 - 1/2" NPT conduit hub
 - NEMA 4X, IP65 protection
 - AC: 10 Watts except 2 Way
 - Normally Closed is 8.5 Watts
 - DC: 8 Watts



Leaded Coil
Coil Code: B4



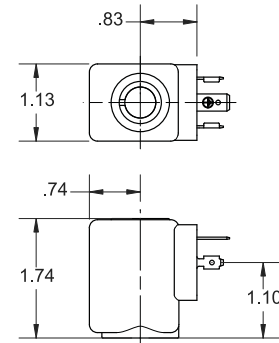
- Construction:
- Class F
 - 18" lead wires
 - Ground wire
 - AC: 10 Watts except 2 Way
 - Normally Closed is 8.5 Watts
 - DC: 8 Watts



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

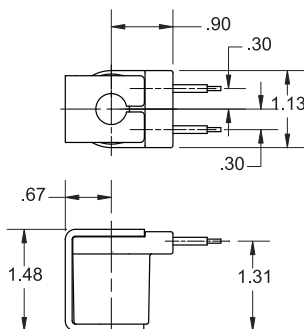


Conventional Coil & Enclosures for Fully Assembled Valves Only

Leaded Coil
Coil Code: L2



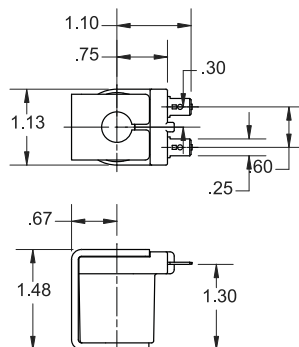
- Construction:
- Open frame enclosure
 - Molded leaded coil
 - Class F
 - 18" leads- 2 wire
 - AC: 10 Watts except 2 Way
 - Normally Closed is 8.5 Watts
 - DC: 8 Watts



Tab Coil
Coil Code: T22



- 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



Voltage Codes:

- A = 12VDC
- B = 24VDC
- E = 24/60
- F = 120/60, 110/50
- G = 240/60, 220/50

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