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General Purpose Solenoid Valves Skinner™ and Gold Ring™ Valves

Effective September 2011



ENGINEERING YOUR SUCCESS.

About Fluid Control Division

Parker Fluid Control Division (FCD) is a world-wide industry leader of solenoid valves that control motion, flow and pressure in a wide variety of applications in all markets. Since 1947, it has built a strong reputation as a recognized leader in solenoid valve technology and design—first as Skinner Valve Division, then with the addition of Lucifer Division (Geneva) in 1984, Gold Ring (Fluidex Division) in 1986 and SCEM (Italy) in 1989.

With manufacturing facilities strategically placed around the world, FCD is prepared to meet your global needs. Facilities located in the United States, Brazil, Italy, Switzerland, China, South Korea and India are equipped with a complete staff of experienced design engineers—among the best in the business—that are capable of rapidly completing customized valve designs for specific user requirements. Each facility has well equipped evaluation and testing laboratories to ensure proper valve operation, long cycle life, and optimum reliability.

With sales affiliates worldwide, an extensive distribution network and broad product breadth, FCD is in a unique position to service the world's requirements for solenoid valves.

Together we can control a wide variety of media, in hundreds of markets, under all conditions with thousands of designs that have been qualified to the most rigorous industry standards.

You'll find our products in OEM equipment for markets such as transportation, food & beverage, medical &



Fluid Control Division Headquarters, New Britain, CT.



Fluid Control Division Facility, Madison, MS.



instrumentation, fuel dispensing, refrigeration and air conditioning, industrial dishwashing and laundry equipment, as well as being specified on applications in process markets such as oil & gas, food processing, pharmaceutical, pulp & paper, tire & rubber, etc.

Together we can work with you to cross over most all major competitive products to our wide variety of standard valves or work with your application specifications to select one of our unique product solutions.

All FCD valves come with an industry leading two year warranty against defects in workmanship.

Distribution

Our distribution network stocks 2-way, 3-way and 4-way valves that are engineered to control virtually any media over a wide range of applications. For a complete listing of our distribution network, please visit www.parker.com/fcd and select "where to buy."

FCD partners with our extensive distribution network and their end-users to ensure that their needs are met and all systems kept up and running!

System Solutions: Engineering Your Success

Besides offering superior products through our distribution network, FCD also works with distribution and OEMs to find value added solutions to satisfy your application's unmet needs.

Together we can partner with you and utilize the power of Parker's expertise in technology and innovation to create a world class system solution just for you.

FCD has cutting edge design and prototyping capabilities along with a staff of the industry's top engineers that will assist you with creating your next generation of solenoid valve solutions.

Combine all that with Parker's Premier Customer Service, and you've got a real winning team to partner with.

ISO 9001:2008



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How to order (see coil section for part numbering charts)

Valves using Coil Charts 1-6 (Gold Ring Series Valves)

Step 1: Select the pressure vessel catalog number based on the application requirements. The catalog number is specified in the individual catalog sections.

Step 2: Select one enclosure code, one coil termination code and one voltage code. Standard leads are 18-inches long with all enclosures, except splice box where six-inch leads are standard.

Step 3: When separate valve and solenoid, the last two digits of the valve must match the first two digits of the solenoid. **Example:** Valve: 04F20C1103AAF Solenoid: AF4C05

Step 4: Valves with enclosure Types 7 & 9 must be ordered factory assembled and not as modular.

Valves using Coil Charts 7, 8, 10, 11 & 12 (Skinner 7000 Series Valves)

Ordering items 1 and 2, fully assembled valves

Step 1: Select the pressure vessel catalog number based on the application requirements. The catalog number is specified in the individual catalog sections.

Step 3: Select the appropriate integrated coil, and enter (NO=Nut & Washer as the 13th/14th digits), or enclosure and conventional coil.

| Item | Description |
|------|---|
| 1 | Fully assembled valves with integrated coils |
| 2 | Fully assembled valves with conventional coils and enclosures |

Step 2: Use the mechanical options table, if required, to write the option code in place of the last two pressure vessel digits - "00."

Step 4: Use the electrical options table, if required, to write the option code in place of the last two coil digits.

| Pressure Vessels | Enclosure | Coil | Voltage Code |
|------------------|-----------|----------|--------------|
| 7121KBN2NV00 + | N0 | + C111 + | P3 |

Step 5: Use the voltage code to specify the correct voltage for the valve.

Example: 7121KBN2NV00N0C111P3

Valves using Coil Chart 9 (Miniature 2-way/3-way valves and Miniature Manifold Mounted Cartridge Valves)

These valves can be ordered in two parts: pressure vessel and solenoid coil.

To order modular units, select the pressure vessel, then mix and match one of the three different coil styles to meet your application requirement.

The available modular coils consist of the following coils:

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

To order pressure vessel:

Choose your pressure vessel from the the technical specification pages. The pressure vessel will contain the required coil retaining nut.

To order coil:

- Select either the C4 (Conduit), B4 (leaded) or D6 (DIN) coil required.
- Select voltage code
- Add voltage code to end of the coil number
- The coil assembly will contain the O-ring seals.

Assembled Valve Units:

To order a complete valve follow these three easy steps:

Step 1: Choose your pressure vessel from the technical specification pages.

Step 2: Select either the encapsulated (Integrated) or conventional coil. Apply that two-digit code to the end of the pressure vessel part number.

Step 3: Lastly, go to the voltage code chart and select the one digit voltage code and add the code to the end of the coil code to create the final complete assembled valve part number.



2-Way Miniature

Direct Acting Valves

1/8" NPT



2-Way

General Description:

2-way Miniature Direct Acting valves are available in Normally Closed and Normally Open constructions with interchangeable AC/DC coils. Valves are standard with 303 stainless steel bodies and FKM seals. These compact valves are durable with the potential for long life. Under lab conditions, these valves have survived 20 million cycles.

Installation

Valves can be mounted in any position. The preferred orientation is with the coil vertical and upright.

Standard Materials of Construction

Please refer to page A4

Compatible Fluids

Lubricated Air, Inert Gases, Water, Light Oil (300SSU) and additional fluids compatible with materials of construction.

Use of non-lubricated gaseous media can affect valve life.

Electrical Characteristics:

Standard Voltages:

AC – 24/60

120/60 – 110/50

240/60 – 220/50

DC – 12, 24

For other voltages – consult factory



Coil Classification:

Class F standard/Class H available
AC & DC coils are interchangeable on the same pressure vessel.

Agency Approvals:

Standard valves with NEMA 4X are C-UL-US Listed or Recognized. For additional details, consult factory.

NSF Certification available on 2-way Normally Closed Valves. (Consult Factory)

Maximum Ambient Temperature

135°F (AC)/125°F (DC)

In absence of moisture, applications at temps as low as -20°F are possible. Please refer to page A4 for details.

Applications:

- Instrumentation equipment
- Analyzers and diagnostic equipment
- Gas analyzers
- Medical and dental equipment
- Portable welding equipment
- Spraying equipment
- Lubrication equipment
- Beverage dispensing & vending machines
- Oil burners
- Humidification and misting equipment
- Mobile fuel shut off
- Textile and dry cleaning equipment
- Air horns
- Pneumatic fan clutch
- Irrigation equipment



2-Way Miniature Direct Acting - Normally Closed - Stainless Steel

| Port Size NPT | Orifice Size in. | Flow Factor Cv | Operating Pressure Differential (MOPD) PSI | | | | Watt | Max. Media Temp. °F | Seal | Pressure Vessel Number | Reference | |
|------------------|---------------------|-------------------|--|----------------|-------|-----------|------|------------------------|------|------------------------|-----------|-------|
| | | | Min. | Air, Inert Gas | Water | Light Oil | | | | | Coil | Valve |

AC TECHNICAL SPECIFICATIONS

| | | | | | | | | | | | | |
|-----|------|------|---|-----|-----|-----|-----|-----|-----|-----------|---|----|
| 1/8 | 3/64 | 0.06 | 0 | 950 | 950 | 950 | 8.5 | 240 | FKM | 20CC02EV4 | 9 | A1 |
| 1/8 | 1/16 | 0.10 | 0 | 625 | 625 | 625 | 8.5 | 240 | FKM | 20CC02GV4 | 9 | A1 |
| 1/8 | 5/64 | 0.15 | 0 | 450 | 450 | 450 | 8.5 | 240 | FKM | 20CC02JV4 | 9 | A1 |
| 1/8 | 3/32 | 0.22 | 0 | 320 | 320 | 320 | 8.5 | 240 | FKM | 20CC02LV4 | 9 | A1 |
| 1/8 | 7/64 | 0.28 | 0 | 245 | 245 | 245 | 8.5 | 240 | FKM | 20CC02MV4 | 9 | A1 |
| 1/8 | 1/8 | 0.32 | 0 | 175 | 175 | 175 | 8.5 | 240 | FKM | 20CC02PV4 | 9 | A1 |
| 1/8 | 5/32 | 0.38 | 0 | 100 | 100 | 100 | 8.5 | 240 | FKM | 20CC02QV4 | 9 | A1 |

DC TECHNICAL SPECIFICATIONS

| | | | | | | | | | | | | |
|-----|------|------|---|-----|-----|-----|---|-----|-----|-----------|---|----|
| 1/8 | 3/64 | 0.06 | 0 | 390 | 390 | 390 | 8 | 240 | FKM | 20CC02EV4 | 9 | A1 |
| 1/8 | 1/16 | 0.10 | 0 | 255 | 255 | 255 | 8 | 240 | FKM | 20CC02GV4 | 9 | A1 |
| 1/8 | 5/64 | 0.15 | 0 | 180 | 180 | 180 | 8 | 240 | FKM | 20CC02JV4 | 9 | A1 |
| 1/8 | 3/32 | 0.22 | 0 | 130 | 130 | 130 | 8 | 240 | FKM | 20CC02LV4 | 9 | A1 |
| 1/8 | 7/64 | 0.28 | 0 | 100 | 100 | 100 | 8 | 240 | FKM | 20CC02MV4 | 9 | A1 |
| 1/8 | 1/8 | 0.32 | 0 | 60 | 60 | 60 | 8 | 240 | FKM | 20CC02PV4 | 9 | A1 |
| 1/8 | 5/32 | 0.38 | 0 | 30 | 30 | 30 | 8 | 240 | FKM | 20CC02QV4 | 9 | A1 |

2-Way Miniature Direct Acting - Normally Open - Stainless Steel

| Port Size NPT | Orifice Size in. | Flow Factor Cv | Operating Pressure Differential (MOPD) PSI | | | | Watt | Max. Media Temp. °F | Seal | Pressure Vessel Number | Reference | |
|------------------|---------------------|-------------------|--|----------------|-------|-----------|------|------------------------|------|------------------------|-----------|-------|
| | | | Min. | Air, Inert Gas | Water | Light Oil | | | | | Coil | Valve |

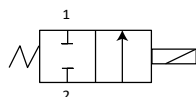
AC TECHNICAL SPECIFICATIONS

| | | | | | | | | | | | | |
|-----|------|------|---|-----|-----|-----|----|-----|-----|-----------|---|----|
| 1/8 | 1/32 | 0.02 | 0 | 375 | 375 | 375 | 10 | 240 | FKM | 20CF02AV4 | 9 | A2 |
| 1/8 | 3/64 | 0.06 | 0 | 230 | 230 | 230 | 10 | 240 | FKM | 20CF02EV4 | 9 | A2 |
| 1/8 | 1/16 | 0.10 | 0 | 150 | 150 | 150 | 10 | 240 | FKM | 20CF02GV4 | 9 | A2 |
| 1/8 | 5/64 | 0.14 | 0 | 105 | 105 | 105 | 10 | 240 | FKM | 20CF02JV4 | 9 | A2 |
| 1/8 | 3/32 | 0.20 | 0 | 80 | 80 | 80 | 10 | 240 | FKM | 20CF02LV4 | 9 | A2 |

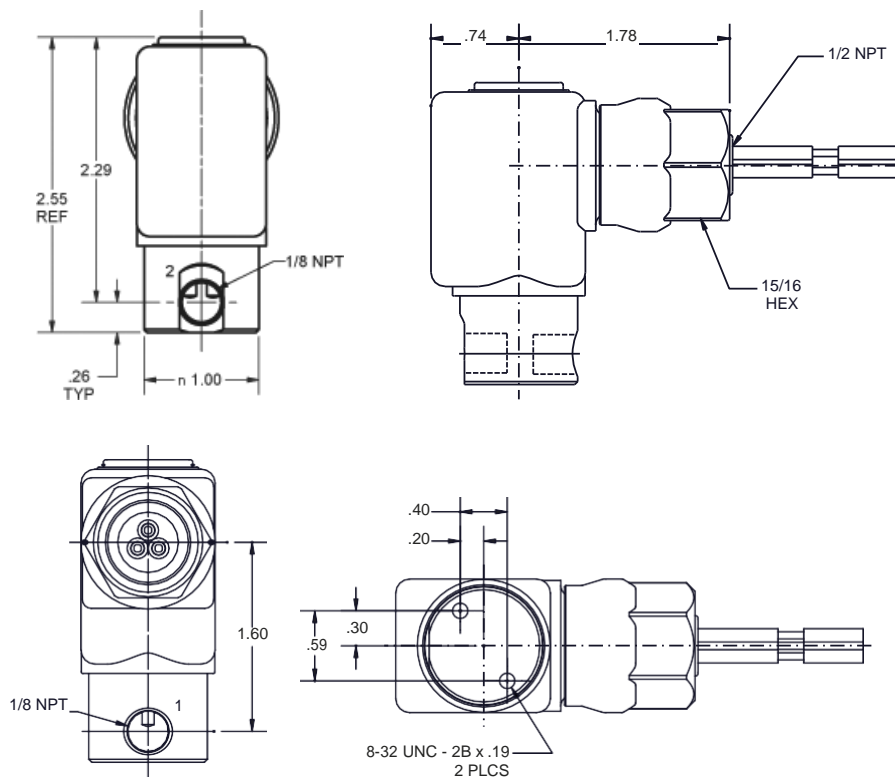
DC TECHNICAL SPECIFICATIONS

| | | | | | | | | | | | | |
|-----|------|------|---|-----|-----|-----|---|-----|-----|-----------|---|----|
| 1/8 | 1/32 | 0.02 | 0 | 375 | 375 | 375 | 8 | 240 | FKM | 20CF02AV4 | 9 | A2 |
| 1/8 | 3/64 | 0.06 | 0 | 230 | 230 | 230 | 8 | 240 | FKM | 20CF02EV4 | 9 | A2 |
| 1/8 | 1/16 | 0.10 | 0 | 150 | 150 | 150 | 8 | 240 | FKM | 20CF02GV4 | 9 | A2 |
| 1/8 | 5/64 | 0.14 | 0 | 105 | 105 | 105 | 8 | 240 | FKM | 20CF02JV4 | 9 | A2 |
| 1/8 | 3/32 | 0.20 | 0 | 80 | 80 | 80 | 8 | 240 | FKM | 20CF02LV4 | 9 | A2 |

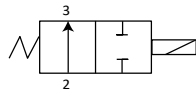
Valve Reference A1



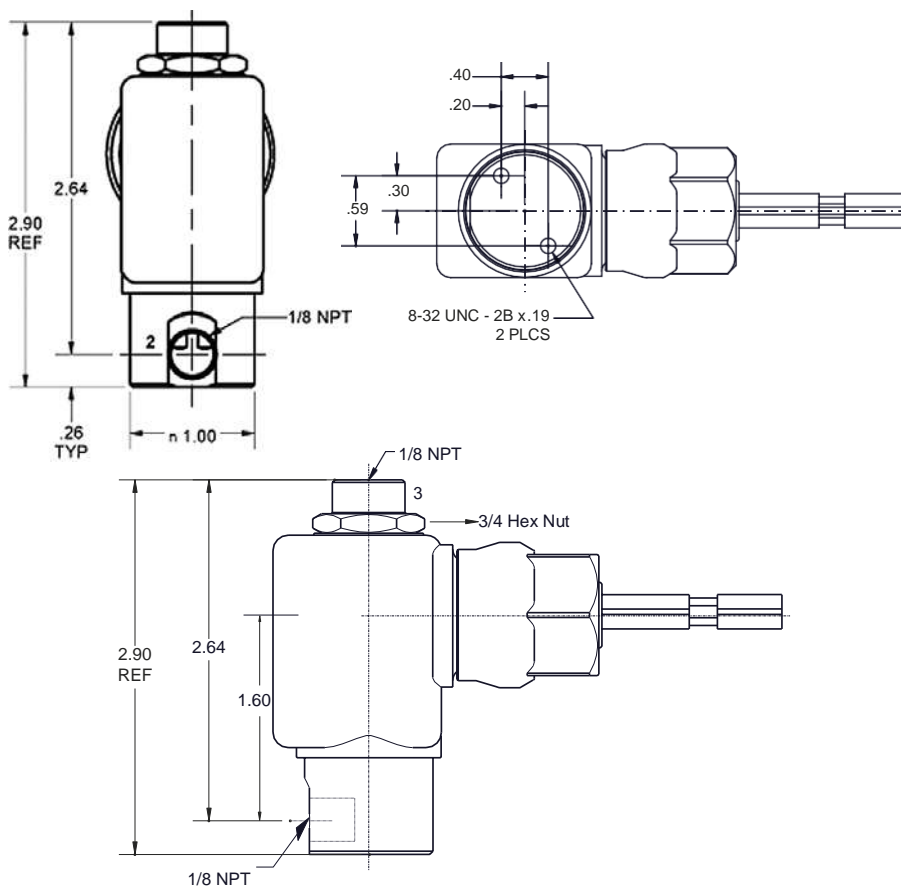
2-Way Normally Closed:
20CCxx
Port Identification:
2-In/1-Out



Valve Reference A2



2-Way Normally Open:
20CFxx
Port Identification:
2-In/3-Out



2-Way Miniature Direct Acting Materials of Construction**

| Product* | Wattage | Type | Port Size | Body | Sleeve Tube | Sleeve Stop | Sleeve Flange | "Plunger Blank" | Plunger Spring | Shading Ring | Max. Ambient Temp. |
|----------|----------|------|-----------|-------|-------------|-------------|---------------|-----------------|----------------|--------------|--------------------|
| 20CC02 | 8.5 (AC) | 2WNC | 1/8 | 303SS | 304SS | 430FR | 430FR | 430FR | 18-8SS | Copper | 135°F |
| 20CC02 | 8 (DC) | 2WNC | 1/8 | 303SS | 304SS | 430FR | 430FR | 430FR | 18-8SS | Copper | 125°F |
| 20CF02 | 10 (AC) | 2WNC | 1/8 | 303SS | 304SS | 430FR | 430FR | 430FR | 18-8SS | Copper | 135°F |
| 20CF02 | 8 (DC) | 2WNC | 1/8 | 303SS | 304SS | 430FR | 430FR | 430FR | 18-8SS | Copper | 125°F |

* Shows the first 6 digits of the pressure vessel part number.

** Maximum ambient temperature shown is the rating when valve is operating at the maximum fluid temperature as shown in the product sections for each of the valves in this catalog.

Checkout 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 overall manifold cost
- No manifold orifices to machine or press in
- Cartridge valves are 100% tested
- Easy to assemble & disassemble with a 5/32" hex wrench. (Torque = 25-35 in-lbs).
- No loose parts: sleeve, plunger, spring and orifice are pressed together as one unit
- Available with all coils and enclosures shown on Chart 9 in Coil Section of this catalog.

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