

ZCS1-120

WATER RESISTANT SOLENOID

FEATURES

- Water resistant
- Capable of handling low and high current requirements
- Versatile mounting and termination



ORDERING INFORMATION

ZCS1-120 **A** **1** **DC6V** **C** **1** **1** **1**
 1 **2** **3** **4** **5** **6** **7** **8**

- Part number:** ZCS1-120
- Contact arrangement:** A: 1A (SPNO)
- Coil termination** (15in - lb torque spec.)
 - 1: Isolated w/#10-32 terminal (0.22 min. length)
 - 2: Grounded w/#10-32 terminal (0.22 min. length)
 - 3: Isolated w/1/4" Q.C terminal
 - 4: Grounded w/1/4" Q.C terminal
 - 6: Grounded w/#8-32 tapered terminal
 - 7: iSOLATED w/#10-32 terminal (0.45 min. length)
 - 8: Grounded w/#10-32 terminal (0.45 min. length)
- Coil Voltage:** 6,12,14,15, 24, 36, 48
- Coil Type:**
 - C: Continuous
 - I: Intermittent
- Contact Material and termination (55 in-lb torque spec.):**
 - 1: AgCdO with 5/16" -24 terminal (0.38" min. length)
 - 3: Cu with 5/16" -24 terminal (0.38" min. length)
 - 4: Cu with 1/4" -20 terminal (0.50" min length)
 - 5: AgCdO with 5/16" -24 terminal (0.50" min. length)
- Mounting Bracket:** 1: Standard
2: "L" shaped bracket
- Factory Assigned Special's:** (where undefined contact factory)
 - 1: Without hardware
 - 2: Extra hardware loosely mounted to solenoid
 - 5: Zinc plated mounting bracket
 - 7: No hardware, zinc plated mounting bracket

COIL PARAMETERS

- Termination; #8 -32 UNC 2A, #10-32 UNF-2A thread or 1/4" quick connect
- Connections:
 1. Coil isolated (two terminals)
 2. One coil lead grounded to bracket (one terminal)
- Coil data:

| Coil Voltage (VDC) | | Coil Resistance (ohm) | | Must-Operate Voltage (VDC) | | Coil Power (W) | |
|--------------------|------|-----------------------|-------|----------------------------|-------|----------------|-------|
| Rated | Max | Int. | Cont. | Int. | Cont. | Int. | Cont. |
| 6 | 6.6 | * | 4.0 | * | 4.5 | 24.0 | 9.0 |
| 12 | 13.2 | 6.0 | 16.0 | 8.04 | 9.0 | | |
| 14 | 15.4 | * | 26.0 | * | 10.5 | | |
| 15 | 16.5 | 9.4 | 23.0 | 10.05 | 11.3 | | |
| 24 | 26.4 | 24.0 | 64.0 | 16.08 | 18.0 | | |
| 36 | 39.6 | 54.0 | 160.0 | 24.12 | 27.0 | | |
| 48 | 52.8 | * | 256.0 | * | 26.0 | | |

*Special coils available upon request

CONTACT DATA

- Contact Arrangement: 1A (SPNO)
- Contact Material: AgCdO, or Copper
- Termination; 5/16" -24 UNF-2A thread or 1/4" -20 UNC-2A thread

| Coil Voltage (VDC) | Ratings | | | |
|--------------------|-----------|-------------|------------|------------------|
| | Cont. (A) | In-rush (A) | Elec. Life | Contact Material |
| 12 | 80 | 400 | 10000* | Copper |
| 12 | 100 | 400 | 50,000* | AgCdO |
| 36 | 100 | 400 | 25,000* | AgCdO |

*Number of operations



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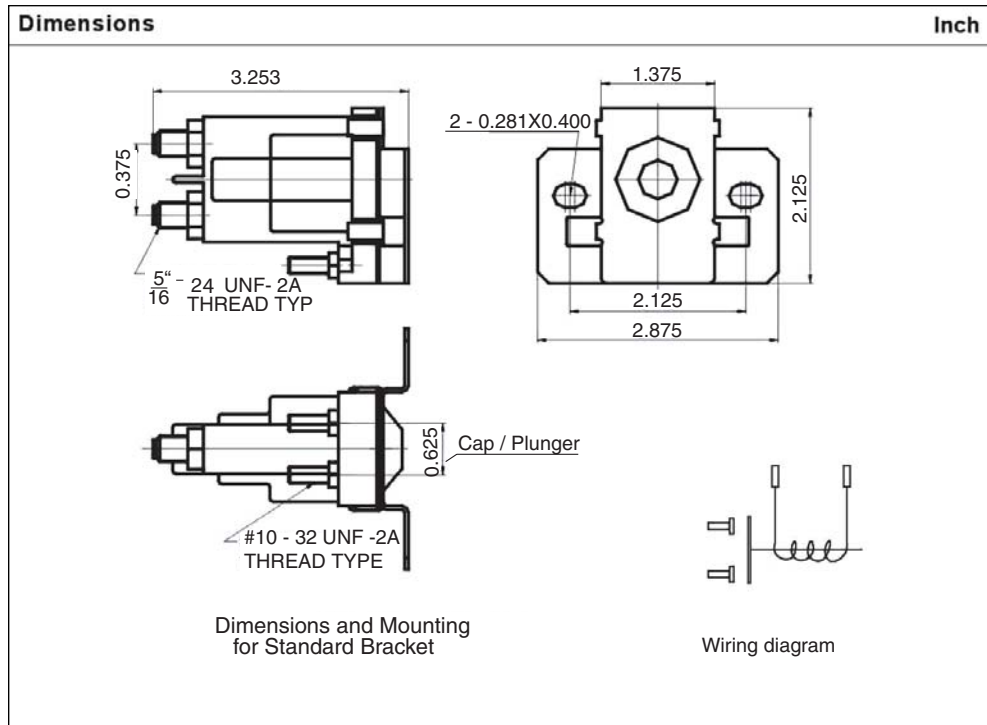
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ZCS1-120

GENERAL DATA

| | |
|---------------------------------|--|
| Dielectric Strength | 500 Volts |
| Temperature Range | -20°F~150°F (-28.9°C~65.6°C) - Intermittent |
| | -20°F~120°F (-28.9°C~48.9°C) - Continuous |
| Mechanical Life (no load) | 250,000 cycles |
| Mounting position (Recommended) | Plunger vertical with cap down |
| Duty Cycle | Continuous; Intermittent: 10sec "on" maximum and minimum 60sec "off", 60sec "on" max and minimum 6min "off." |
| Hardward Torque specification | 44-55 in*lbs (Contact terminal); 12-18 in*lbs (Coil terminal) |
| Weight | 170.5 grams |

MECHANICAL DATA



APPLICATION NOTES:

- 1.) Not all number combinations are available. Please contact your Sales Representative for available part numbers.
- 2.) Solenoid applied in battery charging circuits should be protected from higher than rated voltage during charging. The service life may be affected by this condition and the solenoid may or may not operate the circuit as intended.
- 3.) Circuits should be designed to provide safe operation should the solenoid fail in either the open or closed position.
- 4.) A back-up wrench must be used to hold the bottom nut stationary during installation.



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ZCS1-70/71

HIGH CURRENT SOLENOIDS

FEATURES

- High current handling capability
- Isolated or grounded coils
- Enclosed in dust-resistant case



ORDERING INFORMATION

ZCS1-70 **A** **1** **DC6V** **C** **2**
1 **2** **3** **4** **5** **6**

- Series Number:** ZCS1-70, ZCS1-71
- Contact Form:** A = 1A (SPNO); C = 1C (SPDT)
- Coil Termination:**
 1. = Isolated coil, Ag contacts
 2. = Coil grounded to case, all Ag contacts
 3. = Isolated coil, Cu NO & Ag NC contacts
 4. = Coil grounded to case, Cu NO & Ag NC contacts
 5. = Coil common to NO, Cu NO & Ag NC contacts
- Coil Voltage:** DC6V; DC12V; DC18V; DC24V; DC36V
- Coil Type:** C = Continuous
I = Intermittent
- Hardware:**
 2. Hardware loosely assembled
 5. Hardware bulk packed
 7. No Hardware included

COIL PARAMETERS

- Termination; #10-32 UNF - 2A thread
- Connections:
 1. Coil isolated (two terminals)
 2. One coil lead grounded to case (one terminal)
 3. One coil lead common to NO terminal marked "BAT" (one terminal)
- Coil data:

| Part | Coil Voltage (VDC) | | Coil Resistance (ohm) | | Must-Operate Voltage (VDC) | | Coil Power (W) | |
|---------|--------------------|------|-----------------------|-------|----------------------------|-------|----------------|-------|
| | Rated | Max | Int. | Cont. | Int. | Cont. | Int. | Cont. |
| ZCS1-70 | 6 | 6.6 | 1.5 | 4.0 | 4.02 | 4.5 | 23 | 9 |
| | 12 | 13.2 | 6.2 | 16.0 | 8.04 | 9.0 | | |
| | 18 | 19.8 | 20.3 | 37.4 | 12.06 | 13.5 | | |
| | 24 | 26.4 | 23.9 | 60.4 | 16.08 | 18.0 | | |
| | 36 | 39.5 | 60.4 | 114.0 | 24.12 | 27.0 | | |
| ZCS1-71 | 6 | 6.6 | 1.4 | 3.5 | 4.02 | 4.5 | 25 | 10 |
| | 12 | 13.2 | 4.9 | 13.5 | 8.04 | 9.0 | | |
| | 18 | 19.8 | 13.5 | 38.0 | 12.06 | 13.5 | | |
| | 24 | 26.4 | 20.1 | 57.1 | 16.08 | 18.0 | | |
| | 36 | 39.8 | 57.1 | 131.0 | 24.12 | 27.0 | | |

CONTACT DATA

- Contact Arrangement: 1A (SPNO), 1C (SPDT)
- Contact Material: 1A- Cu or Ag; 1C- Cu and Ag, or all Ag
- UL Pending

| Part | Coil Voltage (VDC) | Normally Open Contact | | Normally Closed Contact | |
|---------|--------------------|-----------------------|-------------|-------------------------|-------------|
| | | Cont. (A) | In-rush (A) | Cont. (A) | In-rush (A) |
| ZCS1-70 | 6 | 80 | 800 | 60 | 100 |
| | 12 | 80 | 400 | 60 | 60 |
| | 18, 24 & 36 | 50 | 200 | 30 | 30 |
| ZCS1-71 | 6 | 80 | 1000 | 60 | 100 |
| | 12 | 80 | 500 | 60 | 60 |
| | 18, 24 & 36 | 50 | 250 | 30 | 30 |



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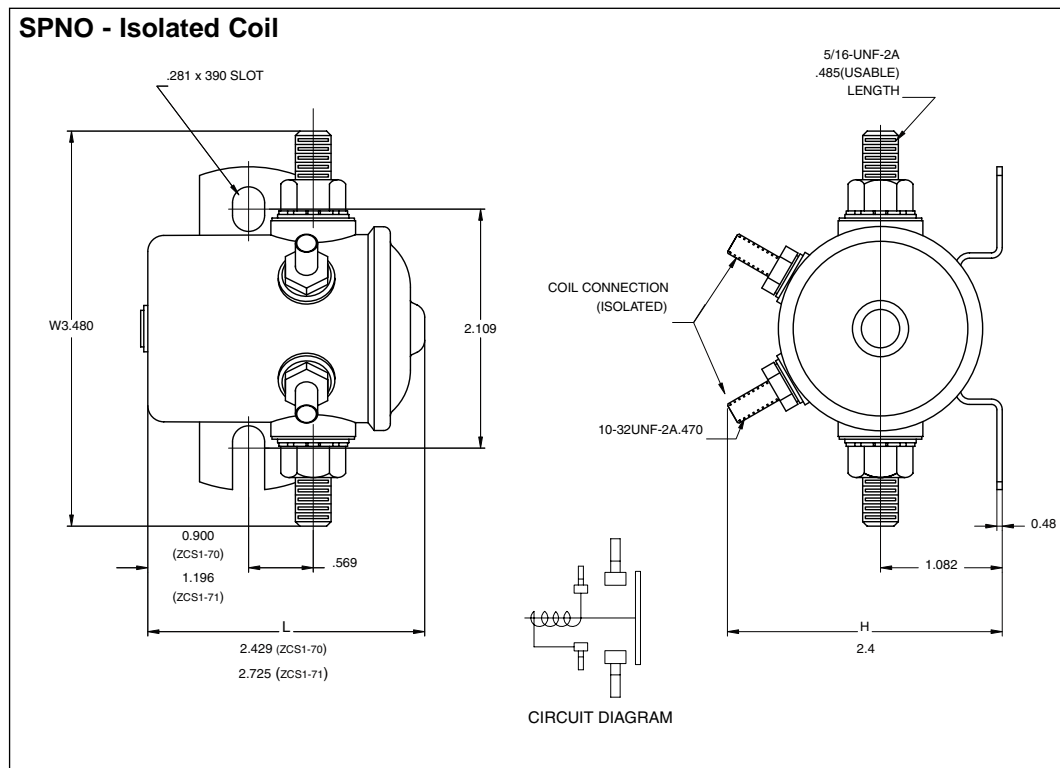
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ZCS1-70/71

GENERAL DATA

| | |
|--|---|
| Dielectric Strength | 500 Volts |
| Temperature Range | -40°F~-122°F (-40°C~50°C) |
| Mechanical Life (no load) | 250,000 cycles |
| Electrical Life (rated load) | 100,000 cycles |
| Mounting position (Recommended) | Plunger vertical with cap down |
| Duty Cycle | Continuous; |
| | Intermittent: At 10 sec "on" maximum requires minimum of 60 sec "off". With a 60 sec "on" max there is a minimum of 6 min "off." |
| Hardward Torque specification | 44-55 in-lbs (Contact terminal); 12-18 in-lbs (Coil terminal) |
| Weight | 398g (ZCS1-70); 483g (ZCS1-71) |

MECHANICAL DATA



APPLICATION NOTES:

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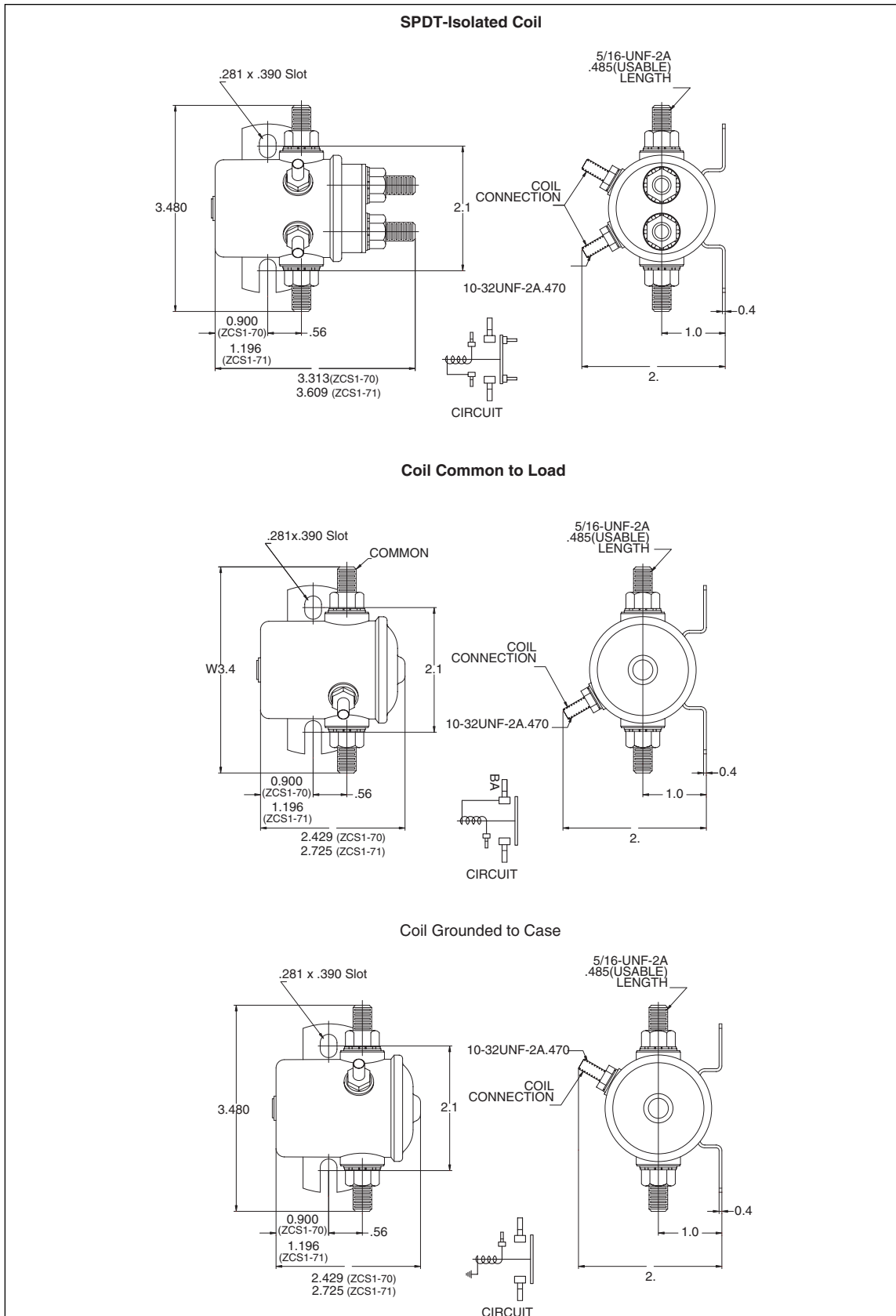


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