

## FEATURES

## BENEFITS

**UL**  
UL Recognized  
File No. E43641 (782)  
E209950 (782H)

**SE**  
168986



COMPLIES WITH REQUIREMENTS OF

- \* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
- \* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
- \* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT



LISTED 367G  
IND. CONT. EQ.

WHEN USED WITH  
SOCKETS:  
782: 70-461-1

CURRENT LIMITED  
TO RATING OF  
RELAY OR SOCKET  
WHICHEVER IS LESS

### FLAG INDICATOR:

SHOWS RELAY STATUS IN MANUAL OR POWERED CONDITION.

### BI - POLAR L.E.D. STATUS LAMP:

ALLOWS FOR REVERSE POLARITY APPLICATIONS, SHOWS COIL "ON" OR "OFF" STATUS. IDEAL IN LOW LIGHT CONDITIONS.

### COLOR CODED PUSH BUTTON:

IDENTIFIES AC COILS WITH RED OR DC COILS WITH BLUE PUSH BUTTONS. ALLOWS FOR MANUAL OPERATION OF RELAY WITHOUT THE NEED FOR COIL POWER. IDEAL FOR FIELD SERVICE PERSONNEL TO TEST CONTROL CIRCUITS.

### LOCK-DOWN DOOR:

WHEN ACTIVATED, HOLDS PUSH BUTTON AND CONTACTS IN THE OPERATE POSITION. EXCELLENT FOR ANALYZING CIRCUIT PROBLEMS.

### FINGER - GRIP COVER:

ALLOWS OPERATOR TO REMOVE RELAYS FROM SOCKETS MORE EASILY THAN CONVENTIONAL RELAYS.

### WHITE PLASTIC I.D. TAG/WRITE LABEL:

USED FOR IDENTIFICATION OF RELAYS IN MULTI-RELAY CIRCUITS.

### COVER ADAPTERS:

DIN RAIL ADAPTER OR TOP/BOTTOM FLANGE ADAPTER, ALLOWS THE 700 RELAYS TO BE DIRECT MOUNTED TO A DIN RAIL OR PANEL.

### VACUUM BAKED & DRY NITROGEN FILLED (782H):

REMOVES CONTAMINANTS AND PROVIDES A CLEAN & DRY ATMOSPHERE FOR CONTACTS.

### HERMETICALLY SEALED METAL ENCLOSURE (782H):

IDEAL FOR USE IN HAZARDOUS LOCATIONS. UL CERTIFIED FOR CLASS 1 DIVISION 2 GROUP A, B, C & D HAZARDS. WHEN RELAY IS USED WITH 70-461-1 SOCKET, THE HOLD-DOWN CLIP 16-1328 IS REQUIRED.

### PLUG-IN STYLE OR SIDE MOUNTING STUD WITH ANTI- ROTATION TAB:

WHEN USED WITH 70-461-1 SOCKET THE 782H CAN BE DIN RAIL MOUNTED OR PANEL MOUNTED. THE SIDE STUD PROVIDES FOR DIRECT MOUNT & SOLDERED WIRE APPLICATIONS.

MANUFACTURED  
UNDER  
ISO 9002  
& QS 9000

## UL RATINGS FOR 782 HERMETICALLY SEALED

| CONTACT CONFIGURATION | CURRENT OR HORSE POWER | LOAD VOLTAGE | LOAD VOLTAGE FREQUENCY | TYPE OF LOAD | MINIMUM LOAD  |
|-----------------------|------------------------|--------------|------------------------|--------------|---------------|
| 4PDT                  | 1 AMP                  | 120/240      | 50/60 Hz               | RESISTIVE    | DRY CIRCUIT   |
|                       | 3 AMP                  | 120/240      | 50/60 Hz               | RESISTIVE    | 100 mA 12 VAC |
|                       | 5 AMP                  | 120/240      | 50/60 Hz               | RESISTIVE    | 500 mA 12 VAC |
|                       | 1 AMP                  | 30           | DC                     | RESISTIVE    | 50 mA 5 VAC   |
|                       | 3 AMP                  | 30           | DC                     | RESISTIVE    | 100 mA 12 VDC |
|                       | 5 AMP                  | 30           | DC                     | RESISTIVE    | 500 mA 12 VDC |





## GENERAL SPECIFICATIONS (@ 25°C)

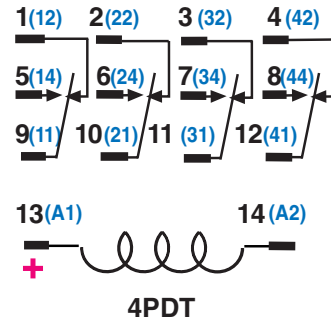
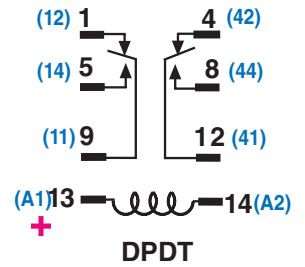
|                                         | UNITS                | 782XBX1/782XDX1                        | 782XBX2/782XDX2                        | 782XBX3/782XDX3                        | 782H                                                                                         |
|-----------------------------------------|----------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------|
| <b>COIL</b>                             |                      |                                        |                                        |                                        |                                                                                              |
| Pull-in Voltage AC (50/60 Hz):≤         | % of nominal         | 85                                     | 85                                     | 85                                     | 85                                                                                           |
| Pull-in Voltage DC:≤                    | % of nominal         | 80                                     | 80                                     | 80                                     | 80                                                                                           |
| Dropout Voltage AC (50/60 Hz):≥         | % of nominal         | 10                                     | 10                                     | 10                                     | 10                                                                                           |
| Dropout Voltage DC:≥                    | % of nominal         | 10                                     | 10                                     | 10                                     | 10                                                                                           |
| Maximum Voltage:                        | % of nominal         | 110                                    | 110                                    | 110                                    | 110                                                                                          |
| Resistance:                             | % ±                  | 15                                     | 15                                     | 15                                     | 15                                                                                           |
| Coil Power AC (60 Hz):                  | VA                   | 1.2                                    | 1.2                                    | 1.2                                    | 1.2                                                                                          |
| Coil Power DC:                          | W                    | 0.9                                    | 0.9                                    | 0.9                                    | 0.9                                                                                          |
| Insulation System Per UL Standard 1446: |                      | Class B (130 °C)                       | Class B (130 °C)                       | Class B (130°C)                        | Class B (130°C)                                                                              |
| Maximum Coil Dissipation, AC (60 Hz):   | VA                   | 2.55                                   | 2.55                                   | 2.55                                   | 2.5                                                                                          |
| Maximum Coil Dissipation, DC:           | W                    | 2.3                                    | 2.3                                    | 2.3                                    | 2                                                                                            |
| Duty:                                   |                      | Continuous                             | Continuous                             | Continuous                             | Continuous                                                                                   |
| <b>CONTACTS</b>                         |                      |                                        |                                        |                                        |                                                                                              |
| Contact Material:                       |                      | Silver alloy, gold flashed             | Silver alloy, gold flashed             | Silver alloy, gold flashed             | Silver, gold plated, silver, gold flashed, silver alloy, gold, flashed, gold, silver, nickel |
| Contact Rating AC Amperes (AC1):        | A                    | 3                                      | 10 / 8.0                               | 3                                      | 1.0 / 3.0 / 5.0                                                                              |
| Contact Rating AC Voltage:              | V                    | 120 / 240                              | 110/120 - 220/277                      | 120 / 240                              | 120 / 240                                                                                    |
| Contact Rating DC Amperes (DC1):        | A                    | 3 / 0.25                               | 8 / 0.25                               | 3 / 0.25                               | 1.0 / 3.0 / 5.0                                                                              |
| Contact Rating DC Voltage:              | V                    | 28 / 220                               | 28 / 220                               | 28 / 220                               | 28                                                                                           |
| Horse Power (AC):                       | HP                   | 1/10 @ 120 V                           | 1/3 @ 120 V                            | 1/16 @ 120 V                           |                                                                                              |
| Horse Power (AC):                       | HP                   | 1/10 @ 240 V                           | 1 @ 277 V                              |                                        |                                                                                              |
| Pilot Duty (60 Hz):                     |                      | B300                                   | B300                                   | B300                                   |                                                                                              |
| Utilization Category:                   | IEC                  | AC15                                   | AC15                                   | AC15                                   | AC15                                                                                         |
| VA Rating Make:                         | VA                   | 1800                                   | 3600                                   | 1800                                   | 1800                                                                                         |
| VA Rating Break:                        | VA                   | 180                                    | 360                                    | 180                                    | 180                                                                                          |
| Minimum Recommended Load:               | ma                   | 100 @ 5 VDC or 0.5 W                   | 100 @ 5 VDC or 0.5 W                   | 50 @ 5 VDC or 0.5 W                    | 50/100 @ 5 VDC or 50 mw / 0.5 W                                                              |
| <b>TIMING</b>                           |                      |                                        |                                        |                                        |                                                                                              |
| Operate Time:                           | ms                   | 20                                     | 20                                     | 20                                     | 13                                                                                           |
| Release Time:                           | ms                   | 20                                     | 20                                     | 20                                     | 6                                                                                            |
| <b>DIELECTRIC STRENGTH</b>              |                      |                                        |                                        |                                        |                                                                                              |
| Coil to Contacts:                       | V rms                | 1500                                   | 1500                                   | 1500                                   | 1240                                                                                         |
| Across Open Contacts:                   | V rms                | 1000                                   | 1000                                   | 1000                                   | 500                                                                                          |
| Pole to Pole:                           | V rms                | 1500                                   | 1500                                   | 1500                                   | 1240                                                                                         |
| Contacts to Frame:                      | V rms                |                                        |                                        |                                        | 1240                                                                                         |
| Insulation Resistance:                  | megohms minimum @VDC | 100 @ 500                              | 100 @ 500                              | 100 @ 500                              | 100 @ 500                                                                                    |
| <b>VIBRATION RESISTANCE</b>             |                      |                                        |                                        |                                        |                                                                                              |
| Functional:                             | g's                  | 10-55 Hz, 6 g's, 1 mm double amplitude | 10-55 Hz, 6 g's, 1 mm double amplitude | 10-55 Hz, 6 g's, 1 mm double amplitude | 10-55 Hz, 6 g's, 1 mm double amplitude                                                       |
| <b>SHOCK RESISTANCE</b>                 |                      |                                        |                                        |                                        |                                                                                              |
| Functional:                             | g's                  | 10                                     | 10                                     | 10                                     | 10                                                                                           |
| <b>TEMPERATURE</b>                      |                      |                                        |                                        |                                        |                                                                                              |
| Operating, AC Lower:                    | °C                   | -40                                    | -40                                    | -40                                    | -40                                                                                          |
| Operating, AC Upper:                    | °C                   | +70                                    | +70                                    | +70                                    | +70                                                                                          |
| Operating, DC Lower:                    | °C                   | -40                                    | -40                                    | -40                                    | -40                                                                                          |
| Operating, DC Upper:                    | °C                   | +70                                    | +70                                    | +70                                    | +70                                                                                          |
| Storage, Lower:                         | °C                   | -40                                    | -40                                    | -40                                    | -40                                                                                          |
| Storage, Upper:                         | °C                   | +105                                   | +105                                   | +105                                   | +105                                                                                         |
| <b>LIFE EXPECTANCY</b>                  |                      |                                        |                                        |                                        |                                                                                              |
| Electrical @ Rated Load (AC1):          | operations           | 200,000                                | 200,000                                | 200,000                                | 100,000                                                                                      |
| Mechanical @ no Load :                  | operations           | 10,000,000                             | 10,000,000                             | 10,000,000                             | 10,000,000                                                                                   |
| <b>MISCELLANEOUS</b>                    |                      |                                        |                                        |                                        |                                                                                              |
| Operating Position:                     |                      | Any                                    | Any                                    | Any                                    | Any                                                                                          |
| Insulation Material:                    | 94V-0                | Molded plastic                         | Molded plastic                         | Molded plastic                         | Molded plastic                                                                               |
| Enclosure Material:                     | 94V-0                | Polycarbonate                          | Polycarbonate                          | Polycarbonate                          | Steel                                                                                        |
| Cover Protection Category:              | IP                   | 40                                     | 40                                     | 40                                     | 67                                                                                           |
| Terminals:                              | Inch (mm)            | 0.10 x 0.020 (2.54 x 0.508)            | 0.10 x 0.020 (2.54 x 0.508)            | 0.10 x 0.020 (2.54 x 0.508)            | 0.10 x 0.020 (2.54 x 0.508)                                                                  |
|                                         |                      | 0.040 x 0.020 (1.016 x 0.508)          | 0.040 x 0.020 (1.016 x 0.508)          | 0.040 x 0.020 (1.016 x 0.508)          |                                                                                              |
| Weight:                                 | grams                | 36                                     | 36                                     | 36                                     | 45                                                                                           |

# 782 - 2 & 4 POLE "ICE CUBE" CONTROL RELAYS



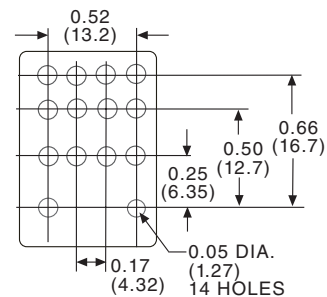
## DPDT & 4PDT 1, 3, 5 & 10 AMPS

### WIRING DIAGRAM (VIEWED FROM PIN END)

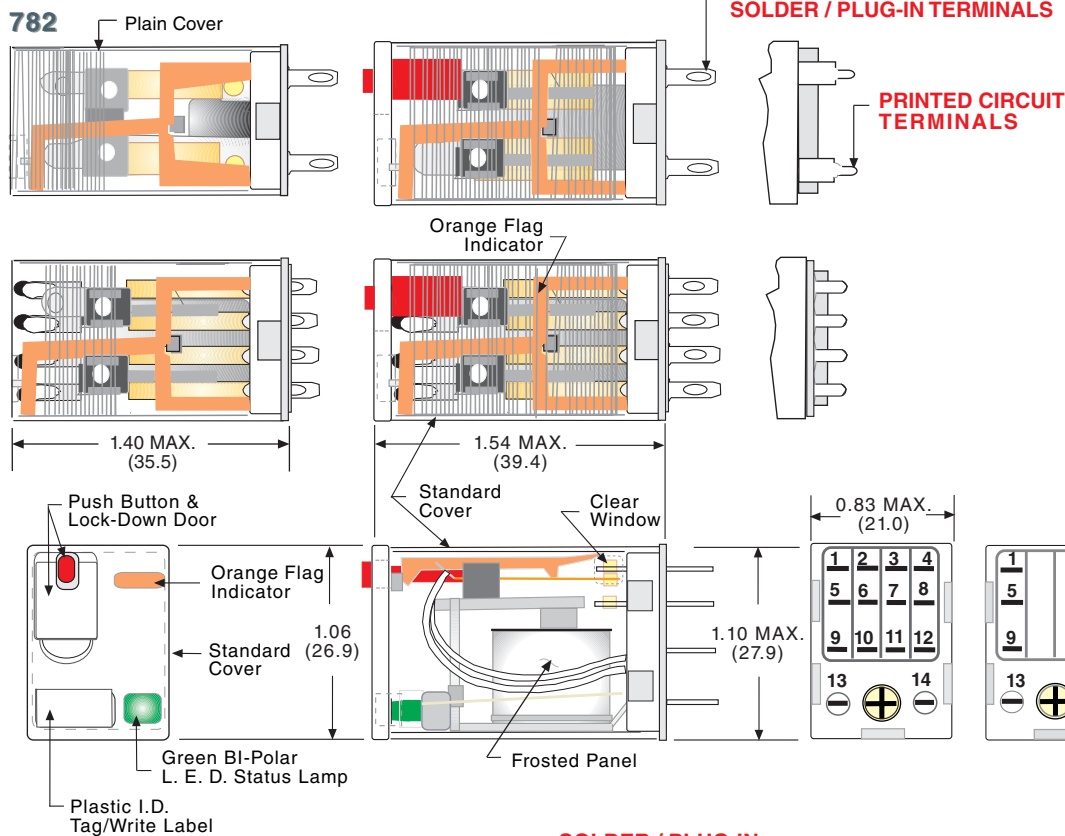


ALTERNATE NEMA  
OR IEC ( ) NUMBERS  
VIEWED FROM  
PIN SIDE

### PRINTED CIRCUIT MOUNTING HOLE LAYOUT (TOP VIEW)

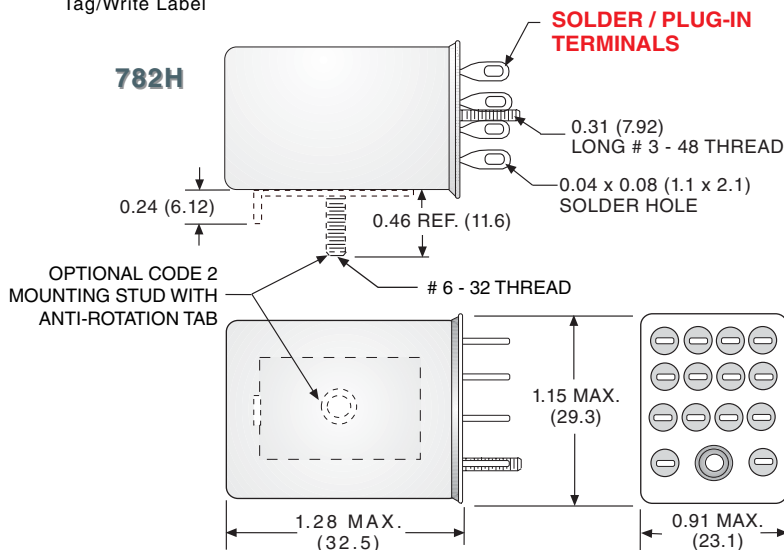


### OUTLINE DIMENSIONS DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



### SOLDER / PLUG-IN TERMINALS

CERTIFIED CLASS 1  
DIVISION 2 FOR  
HAZARDOUS  
LOCATIONS



# 782 - 2 & 4 POLE "ICE CUBE" CONTROL RELAYS



## DPDT & 4PDT, 1, 3, 5 & 10 AMPS



### ORDERING CODE

782

XDX

2

M4L

-120A

CLASS:

CONTACT CONFIGURATION:

DPDT: **XBX**, 4PDT: **XD**

CONTACT RATING (EXCEPT 782H):

3 AMP: **CODE 1**

10 AMP: **CODE 2**

3 AMP BIFURCATED CONTACT: **CODE 3**

HERMETICALLY SEALED (782H):

**CODE H**

OPTIONAL PLAIN COVER (EXCEPT 782H):

**CODE C**

TERMINALS STYLE (EXCEPT 782H):

QUICK CONNECT SOLDER/PLUG-IN TERMINALS: **NO CODE**

PRINTED CIRCUIT TERMINALS: **CODE T**

CONTACT RATING (782H ONLY):

1 AMP BIFURCATED CONTACT: **CODE 32**

(SILVER CROSS BAR WITH GOLD OVERLAY)

3 AMP: **CODE 10** (SILVER GOLD FLASHED)

5 AMP: **CODE 21** (SILVER ALLOY)

TERMINALS & MOUNTING STYLE (782H ONLY):

SOLDER/PLUG-IN: **NO CODE**

STUD ON BROAD SIDE: **CODE 2**

STUD ON NARROW SIDE: **CODE 3**

STUD ON TOP SIDE: **CODE 4**

FULL FEATURED VERSION:

PUSH BUTTON & LOCK-DOWN DOOR: **CODE M4**

BI - POLAR L.E.D. STATUS LAMP: **CODE L**

OPTIONAL FULL FEATURED DELETION:

PUSH BUTTON WITHOUT LOCK-DOWN DOOR: **CODE M**

OPTIONAL PLAIN COVER FEATURES:

PUSH BUTTON WITHOUT LOCK-DOWN DOOR: **CODE M**

POLARIZED L.E.D. STATUS LAMP: **CODE L** (OBSERVE POLARITY+)

COIL VOLTAGE:

6, 12, 24, 120, 220/230, 240 **ADD "A" FOR AC COILS**

6, 12, 24, 48, 110 **ADD "D" FOR DC COILS**

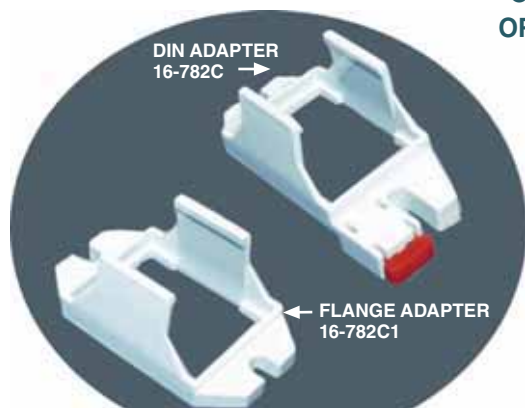


# 782 - 2 & 4 POLE "ICE CUBE" CONTROL RELAY



## DPDT & 4PDT, 1, 3, 5 & 10 AMPS

OPTIONAL ADAPTERS  
ORDERED SEPARATELY



**Mating Sockets**  
70-461-1, SCREW/DIN  
70-378-1: SOLDER  
70-379-1: PRINTED CIRCUIT  
See section 7

| STANDARD PART NUMBERS                      |                       |                     |                     | COIL MEASURED @ 25 °C |                           |
|--------------------------------------------|-----------------------|---------------------|---------------------|-----------------------|---------------------------|
| FULL FEATURED                              | PLAIN COVER WITH FLAG | HERMETICALLY SEALED | FULL FEATURED       | NOMINAL INPUT VOLTAGE | NOMINAL RESISTANCE (OHMS) |
| 4PDT                                       |                       |                     |                     |                       |                           |
| SOLDER/PLUG -IN, BIFURCATED CONTACTS 3 AMP |                       |                     |                     |                       |                           |
|                                            | DUAL MARKED           |                     |                     |                       |                           |
|                                            | NEW PART NUMBER       | SUPERCEDES          |                     |                       |                           |
|                                            | 782XDX3C-12A          | W78ATCSX-2          |                     | 12 VAC, 50/60 Hz      | 46 Ω                      |
| 782XDX3M4L-24A                             | 782XDX3C-24A          | W78ATCSX-3          | 782XBX3M4L-24A      | 24 VAC, 50/60 Hz      | 180 Ω                     |
| 782XDX3M4L-120A                            | 782XDX3C-120A         | W78ATCSX-5          | 782XBX3M4L-120A     | 110/120 VAC, 50/60 Hz | 4,430 Ω                   |
| 782XDX3M4L-220/230A                        | 782XDX3C-220/230A     |                     | 782XBX3M4L-220/230A | 220/230 VAC, 50/60 Hz | 15,000 Ω                  |
| 782XDX3M4L-240A                            | 782XDX3C-240A         | W78ATCSX-6          | 782XBX3M4L-240A     | 240 VAC, 50/60 Hz     | 15,700 Ω                  |
|                                            | 782XDX3C-6D           | W78TCSX-1           |                     | 6 VDC                 |                           |
| 782XDX3M4L-12D                             | 782XDX3C-12D          | W78TCSX-2           | 782XBX3M4L-12D      | 12 VDC                | 160 Ω                     |
| 782XDX3M4L-24D                             | 782XDX3C-24D          | W78TCSX-3           | 782XBX3M4L-24D      | 24 VDC                | 650 Ω                     |
| 782XDX3M4L-110D                            | 782XDX3C-110D         | W78TCSX-5           | 782XBX3M4L-110D     | 110/125 VDC           | 11,000 Ω                  |
| SOLDER/PLUG -IN, CONTACTS 3 AMP            |                       |                     |                     |                       |                           |
|                                            | 782XDX1C-12A          | W78ACSX-2           |                     | 12 VAC, 50/60 Hz      | 46 Ω                      |
| 782XDX1M4L-24A                             | 782XDX1C-24A          | W78ACSX-3           | 782XDXH10-24A       | 24 VAC, 50/60 Hz      | 180 Ω                     |
| 782XDX1M4L-120A                            | 782XDX1C-120A         | W78ACSX-5           | 782XDXH10-120A      | 110/120 VAC, 50/60 Hz | 4,430 Ω                   |
| 782XDX1M4L-220/230A                        | 782XDX1C-220/230A     |                     |                     | 220/230 VAC, 50/60 Hz | 15,000 Ω                  |
| 782XDX1M4L-240A                            | 782XDX1C-240A         | W78ACSX-6           |                     | 240 VAC, 50/60 Hz     | 15,700 Ω                  |
|                                            | 782XDX1C-6D           | W78CSX-1            |                     | 6 VDC                 |                           |
| 782XDX1M4L-12D                             | 782XDX1C-12D          | W78CSX-2            | 782XDXH10-12D       | 12 VDC                | 160 Ω                     |
| 782XDX1M4L-24D                             | 782XDX1C-24D          | W78CSX-3            | 782XDXH10-24D       | 24 VDC                | 650 Ω                     |
| 782XDX1M4L-110D                            | 782XDX1C-110D         | W78CSX-6            | 782XDXH10-110D      | 110/125 VDC           | 11,000 Ω                  |
| SOLDER/PLUG -IN, CONTACTS 10 AMP           |                       |                     |                     |                       |                           |
| 782XDX2M4L-24A                             | 782XDX2C-24A          | W78KACSX-15         |                     | 24 VAC, 50/60 Hz      | 180 Ω                     |
| 782XDX2M4L-120A                            | 782XDX2C-120A         | W78KACSX-17         | 782XDXH21-120A      | 110/120 VAC, 50/60 Hz | 4,430 Ω                   |
| 782XDX2M4L-220/230A                        | 782XDX2C-220/230A     |                     |                     | 220/230 VAC, 50/60 Hz | 15,000 Ω                  |
| 782XDX2M4L-240A                            | 782XDX2C-240A         | W78KACSX-18         |                     | 240 VAC, 50/60 Hz     | 15,700 Ω                  |
| 782XDX2M4L-12D                             | 782XDX2C-12D          | W78KCSX-12          | 782XDXH21-12D       | 12 VDC                | 160 Ω                     |
| 782XDX2M4L-24D                             | 782XDX2C-24D          | W78KCSX-13          | 782XDXH21-24D       | 24 VDC                | 650 Ω                     |
| 782XDX2M4L-110D                            | 782XDX2C-110D         |                     |                     | 110/125 VDC           | 11,000 Ω                  |
| PRINTED CIRCUIT BIFURCATED CONTACTS 3 AMP  |                       |                     |                     |                       |                           |
|                                            | 782XDX3CT-24A         | W78APCX-3           |                     | 24 VAC, 50/60 Hz      | 180 Ω                     |
|                                            | 782XDX3CT-120A        | W78APCX-5           |                     | 110/120 VAC, 50/60 Hz | 4430 Ω                    |
|                                            | 782XDX3CT-12D         | W78PCX-2            |                     | 12 VDC                | 15700 Ω                   |
|                                            | 782XDX3CT-24D         | W78PCX-3            |                     | 24 VDC                | 160 Ω                     |
|                                            | 782XDX3CT-110D        | W78PCX-6            |                     | 110/125 VDC           | 11,000 Ω                  |

NOTE: CLASS 782C IS AN ENHANCED VERSION OF THE 78, IT HAS SUPERIOR RATINGS, A FLAG INDICATOR, & DISPLAYS BOTH PART NUMBERS.