

## FEATURES

## BENEFITS

**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.



UL Recognized  
File No. E43641



40787



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:

781:70-781D-1

782:70-782D-1

70-459-1

70-461-1

783:70-783D-1

784:70-784D-1

CURRENT LIMITED TO RATING OF RELAY OR SOCKET WHICHEVER IS LESS

**MANUFACTURED UNDER ISO 9002 & QS 9000**

**781**  
SPDT  
15 AMPS



**782**  
SPDT  
20 AMPS  
DPDT  
15 AMPS



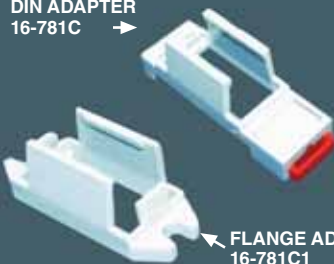
**783**  
3PDT  
15 AMPS



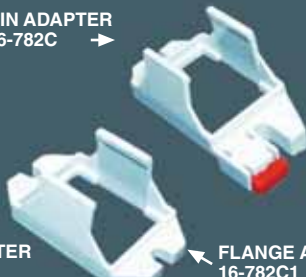
**784**  
4PDT  
15 AMPS



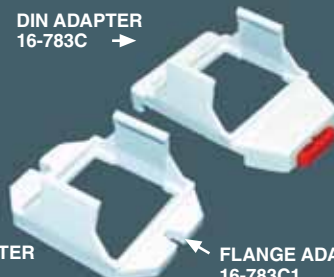
DIN ADAPTER  
16-781C



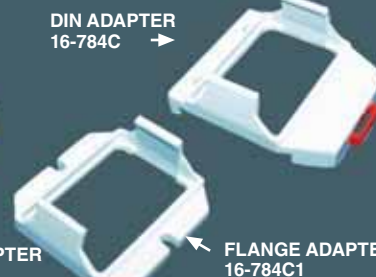
DIN ADAPTER  
16-782C



DIN ADAPTER  
16-783C



DIN ADAPTER  
16-784C



FLANGE ADAPTER  
16-781C1

FLANGE ADAPTER  
16-782C1

FLANGE ADAPTER  
16-783C1

FLANGE ADAPTER  
16-784C1

OPTIONAL ADAPTERS ORDERED SEPARATELY





## GENERAL SPECIFICATIONS (@ 25°C)

|   | UNITS                 | 781XAX   | 782XAX                                      | 782XBX                                      | 783   | 784   |
|---|-----------------------|--|---|---|---|---|
| <b>COIL</b>                             |                       |  |   |   |   |   |
| Pull-in Voltage AC (50/60 Hz):≤         | % of nominal          | 85   | 85  | 85  | 85  | 85  |
| Pull-in Voltage DC:≤                    | % of nominal          | 80   | 80  | 80  | 80  | 80  |
| Dropout Voltage AC (50/60 Hz):≥         | % of nominal          | 10   | 10  | 10  | 10  | 10  |
| Dropout Voltage DC:≥                    | % of nominal          | 10   | 10  | 10  | 10  | 10  |
| Maximum Voltage:                        | % of nominal          | 110  | 110   | 110   | 110   | 110   |
| Resistance:                             | % ±                   | 15   | 15  | 15  | 15  | 15  |
| Coil Power AC (60 Hz):                  | VA                    | 0.9  | 1.2   | 1.2   | 1.5   | 1.5   |
| Coil Power DC:                          | W                     | 0.7  | 0.9   | 0.9   | 1.7   | 2   |
| Insulation System Per UL Standard 1446: |                       | Class B (130 °C)                                       | 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  | 3   | 3   |
| Maximum Coil Dissipation, DC:           | W                     | 2.3  | 2.3   | 2.3   | 3.4   | 2.3   |
| Duty:                                   |                       | Continuous   | Continuous                                  | Continuous                                  | Continuous                                  | Continuous                                  |
| <b>CONTACTS</b>                         |                       |  |   |   |   |   |
| Contact Material:                       |                       | Silver alloy, gold flashed                             | Silver alloy, gold flashed                  | Silver alloy, gold flashed                  | Silver alloy, gold flashed                  | Silver alloy, gold flashed                  |
| Contact Rating AC Amperes (AC1):        | A                     | 15   | 20  | 15 / 12                                     | 15 / 12                                     | 15 / 12                                     |
| Contact Rating AC Voltage:              | V                     | 277  | 277   | 120 / 277                                   | 120 / 277                                   | 120 / 277                                   |
| Contact Rating DC Amperes (DC1):        | A                     | 15 / 0.5   | 20 / 0.5                                    | 12 / 0.5                                    | 15 / 0.5                                    | 15 / 0.5                                    |
| Contact Rating DC Voltage:              | V                     | 28 / 220   | 28 / 220                                    | 28 / 220                                    | 28 / 220                                    | 28 / 220                                    |
| General Purpose Rating (75%-80% pf):    | A @ V                 | 10 @ 240   |   |   |   |   |
| Horse Power (AC):                       | HP                    | 1/2 @ 120 V  | 1/2 @ 120 V                                 | 1/2 @ 120 V                                 | 1/2 @ 120 V                                 | 1/2 @ 120 V                                 |
| Horse Power (AC):                       | HP                    | 1 @ 250 V  | 1 @ 250 V                                   | 1 @ 250 V                                   | 3/4 @ 250 V                                 | 3/4 @ 250 V                                 |
| Pilot Duty (60 Hz):                     |                       | B300   | B300  | B300  | B300  | B300  |
| Utilization Category:                   | IEC                   | AC15   | AC15  | AC15  | AC15  | AC15  |
| VA Rating Make:                         | VA                    | 3600   | 3600  | 3600  | 3600  | 3600  |
| VA Rating Break:                        | VA                    | 360  | 360   | 360   | 360   | 360   |
| Minimum Recommended Load:               | ma                    | 100 @ 5 VDC or 0.5 W                                   | 100 @ 5 VDC or 0.5 W                        | 100 @ 5 VDC or 0.5 W                        | 100 @ 5 VDC or 0.5 W                        | 100 @ 5 VDC or 0.5 W                        |
| <b>TIMING</b>                           |                       |  |   |   |   |   |
| Operate Time:                           | ms                    | 20   | 20  | 25  | 25  | 20  |
| Release Time:                           | ms                    | 20   | 20  | 20  | 20  | 20  |
| <b>DIELECTRIC STRENGTH</b>              |                       |  |   |   |   |   |
| Coil to Contacts:                       | V rms                 | 2500   | 2500  | 2500  | 2500  | 2500  |
| Across Open Contacts:                   | V rms                 | 1500   | 1500  | 1000  | 1000  | 1000  |
| Pole to Pole:                           | V rms                 |  |   | 2500  | 2500  | 2500  |
| Insulation Resistance:                  | megohms minimum @ VDC | 100 @ 500  | 100 @ 500                                   | 100 @ 500                                   | 100 @ 500                                   | 100 @ 500                                   |
| <b>VIBRATION RESISTANCE</b>             |                       |  |   |   |   |   |
| Functional:                             | g's                   | 10-55 Hz, 6 g's, 1mm double amplitude                  | 10-55 Hz, 6g's 1mm double amplitude         | 10-55 Hz, 6g's 1mm double amplitude         | 10-55 Hz, 6g's 1mm double amplitude         | 10-55 Hz, 6g's 1mm double amplitude         |
| <b>SHOCK RESISTANCE</b>                 |                       |  |   |   |   |   |
| Functional:                             | g's                   | 10   | 10  | 10  | 10  | 10  |
| <b>TEMPERATURE</b>                      |                       |  |   |   |   |   |
| Operating, AC Lower:                    | °C                    | -40  | -40   | -40   | -40   | -40   |
| Operating, AC Upper:                    | °C                    | +70  | +70   | +70   | +70   | +70   |
| Operating, DC Lower:                    | °C                    | -40  | -40   | -40   | -40   | -40   |
| Operating, DC Upper:                    | °C                    | +70  | +70   | +70   | +70   | +70   |
| Storage, Lower:                         | °C                    | -40  | -40   | -40   | -40   | -40   |
| Storage, Upper:                         | °C                    | +105   | +105  | +105  | +105  | +105  |
| <b>LIFE EXPECTANCY</b>                  |                       |  |   |   |   |   |
| Electrical @ Rated Load (AC1):          | operations            | 15 A: 100,000<br>20 A: 50,000                          | 100,000                                     | 200,000                                     | 150,000                                     | 150,000                                     |
| Mechanical @ no Load :                  | operations            | 10,000,000   | 10,000,000                                  | 10,000,000                                  | 10,000,000                                  | 10,000,000                                  |
| <b>MISCELLANEOUS</b>                    |                       |  |   |   |   |   |
| Operating Position:                     |                       | Any  | Any   | Any   | Any   | Any   |
| Insulation Material:                    | 94V-0                 | Molded plastic   | Molded plastic                              | Molded plastic                              | Molded plastic                              | Molded plastic                              |
| Enclosure Material:                     | 94V-0                 | Polycarbonate  | Polycarbonate                               | Polycarbonate                               | Polycarbonate                               | Polycarbonate                               |
| Cover Protection Category:              | IP                    | 40   | 40  | 40  | 40  | 40  |
| Terminals:                              | Inch (mm)             | 0.187, 0.1, 0.08 x 0.020<br>(4.47, 2.54, 2.03 x 0.508) | 0.187, 0.08 x 0.020<br>(4.47, 2.03 x 0.508) | 0.187, 0.08 x 0.020<br>(4.47, 2.03 x 0.508) | 0.187, 0.08 x 0.020<br>(4.47, 2.03 x 0.508) | 0.187, 0.08 x 0.020<br>(4.47, 2.03 x 0.508) |
| Weight:                                 | grams                 | 29   | 36  | 36  | 60  | 80  |

# 782/78 - 2 POLE "ICE CUBE" POWER RELAYS

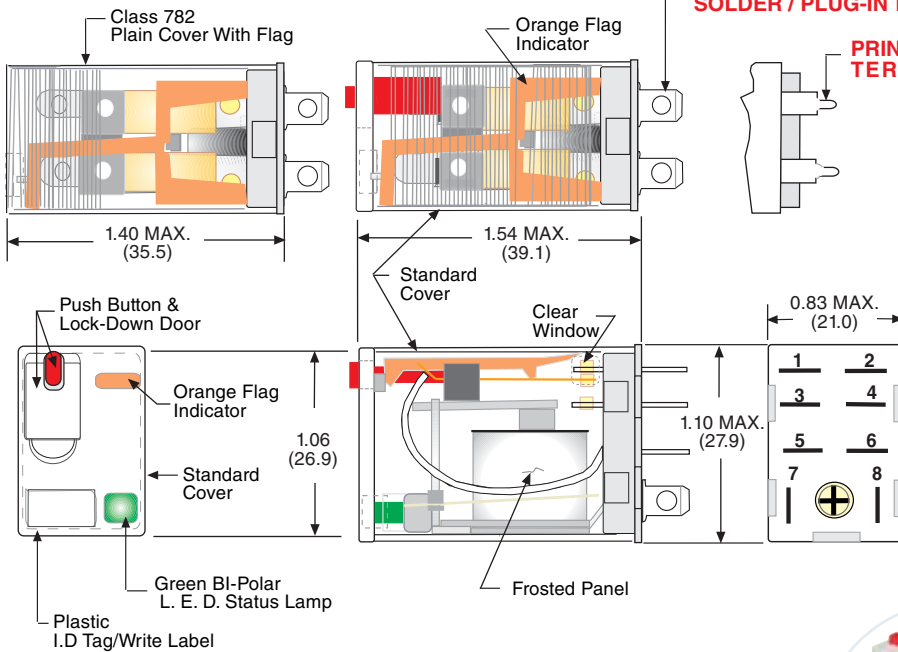


## DPDT, 15 AMPS

### WIRING DIAGRAM (VIEWED FROM PIN END)



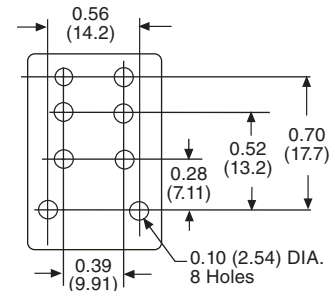
### OUTLINE DIMENSIONS DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



### QUICK CONNECT SOLDER / PLUG-IN TERMINALS

### PRINTED CIRCUIT TERMINALS

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



ALTERNATE NEMA  
OR IEC ( ) NUMBERS  
VIEWED FROM  
PIN SIDE

### ORDERING CODE

**782** **XBX** **M4L** **-120A**

**CLASS:** \_\_\_\_\_  
**CONTACT CONFIGURATION:**  
 DPDT: **XBX**  
**OPTIONAL PLAIN COVER:**  
 CODE **C**  
**TERMINAL STYLE:**  
 QUICK CONNECTSOLDER/  
 PLUG-IN TERMINALS: **NO CODE**  
 PRINTED CIRCUIT TERMINALS:  
 CODE **T**

**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**



**Mating Sockets**  
**70-782D-1, 70-459-1: SCREW/DIN**  
**70-402-1: PRINTED CIRCUIT**  
**70-401-1: SOLDER TERMINAL**  
 See section 7

| STANDARD PART NUMBERS          |                       |                        | COIL MEASURED @ 25°C  |                           |
|--------------------------------|-----------------------|------------------------|-----------------------|---------------------------|
| FULL FEATURED                  | PLAIN COVER WITH FLAG |                        | NOMINAL INPUT VOLTAGE | NOMINAL RESISTANCE (OHMS) |
| <b>SOLDER/PLUG-IN, 15 AMP</b>  |                       |                        |                       |                           |
|                                |                       | <b>DUAL MARKED</b>     |                       |                           |
|                                |                       | <b>NEW PART NUMBER</b> | <b>SUPERCEDES</b>     |                           |
|                                |                       | 782XBXC-6A             | W78ARCSX-7            | 6 VAC, 50/60Hz            |
| 782XBXM4L-24A                  | 782XBXC-24A           | W78ARCSX-9             | 24 VAC, 50/60Hz       | 180 Ω                     |
| 782XBXM4L-120A                 | 782XBXC-120A          | W78ARCSX-11            | 110/120 VAC, 50/60Hz  | 4,430 Ω                   |
| 782XBXM4L-220/230A             |                       |                        | 220/230 VAC, 50/60Hz  | 15,000 Ω                  |
| 782XBXM4L-240A                 | 782XBXC-240A          | W78ARCSX-12            | 240 VAC, 50/60Hz      | 15,700 Ω                  |
|                                | 782XBXC-6D            | W78RCSX-6              | 6 VDC                 | 40 Ω                      |
| 782XBXM4L-12D                  | 782XBXC-12D           | W78RCSX-7              | 12 VDC                | 160 Ω                     |
| 782XBXM4L-24D                  | 782XBXC-24D           | W78RCSX-8              | 24 VDC                | 650 Ω                     |
|                                | 782XBXC-48D           | W78RCSX-9              | 48 VDC                | 2600 Ω                    |
| 782XBXM4L-110D                 | 782XBXC-110D          | W78RCSX-10             | 110/125 VDC           | 11,000 Ω                  |
| <b>PRINTED CIRCUIT, 15 AMP</b> |                       |                        |                       |                           |
|                                | 782XBXC-24A           | W78ARPCX-3             | 24 VAC, 50/60Hz       | 180 Ω                     |
|                                | 782XBXC-120A          | W78ARPCX-6             | 110/120 VAC, 50/60Hz  | 4,430 Ω                   |
|                                | 782XBXC-6D            | W78RPCX-1              | 6 VDC                 | 40 Ω                      |
|                                | 782XBXC-12D           | W78RPCX-2              | 12 VDC                | 160 Ω                     |
|                                | 782XBXC-24D           | W78RPCX-3              | 24 VDC                | 650 Ω                     |

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

# 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  |                       |                     |                     | DPDT                  |                           |
| <b>SOLDER/PLUG -IN, BIFURCATED CONTACTS 3 AMP</b> |                       |                     |                     |                       |                           |
|   | DUAL MARKED           |                     |                     |                       |                           |
|   | NEW PART NUMBER       | SUPERCEDES          |                     |                       |                           |
| 782XDX3M4L-24A                                    | 782XDX3C-12A          | W78ATCSX-2          |                     | 12 VAC, 50/60 Hz      | 46 Ω                      |
| 782XDX3M4L-120A                                   | 782XDX3C-24A          | W78ATCSX-3          | 782XBX3M4L-24A      | 24 VAC, 50/60 Hz      | 180 Ω                     |
| 782XDX3M4L-220/230A                               | 782XDX3C-120A         | W78ATCSX-5          | 782XBX3M4L-120A     | 110/120 VAC, 50/60 Hz | 4,430 Ω                   |
| 782XDX3M4L-240A                                   | 782XDX3C-220/230A     |                     | 782XBX3M4L-220/230A | 220/230 VAC, 50/60 Hz | 15,000 Ω                  |
|   | 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                  |
| <b>SOLDER/PLUG -IN, CONTACTS 3 AMP</b>            |                       |                     |                     |                       |                           |
|   | 782XDX1C-12A          | W78ACXSX-2          |                     | 12 VAC, 50/60 Hz      | 46 Ω                      |
| 782XDX1M4L-24A                                    | 782XDX1C-24A          | W78ACXSX-3          | 782XDXH10-24A       | 24 VAC, 50/60 Hz      | 180 Ω                     |
| 782XDX1M4L-120A                                   | 782XDX1C-120A         | W78ACXSX-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         | W78ACXSX-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                  |
| <b>SOLDER/PLUG -IN, CONTACTS 10 AMP</b>           |                       |                     |                     |                       |                           |
| 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                  |
| <b>PRINTED CIRCUIT BIFURCATED CONTACTS 3 AMP</b>  |                       |                     |                     |                       |                           |
|   | 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                  |

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