**Jumpers for digital mounting boards**

1781-STRAPxx series of jumpers for digital mounting boards are tin plated copper. They are used to connect the common terminals of digital mounting boards. All jumpers are made from 0.031 ±0.002" thick copper and plated with bright tin.

1781-STRAP8M is used with the standard-size series of mounting boards including the 1771-JMB, 1771-JMBH, 1771-JMB8, 1781-AVR, the 1781-AFT and the 1781-JMBX.

1781-STRAP8S is used with the Slim Line series of single point I/O mounting boards, 1781-A8A and up.

1781-STRAP4Q is used with the quad point I/O mounting boards.

**Fuses**

Fuses are provided in packages of 10 fuses for the rating specified.

1781-FUSE1 is a one-amp, very quick blow fuse used with mounting boards and various adapters. Littlefuse type 251001 or equivalent.

1781-FUSE3 is a three-amp, very quick blow fuse used with SmartMux. Littlefuse type 251003 or equivalent.

1781-FUSE4 is a four-amp, very quick blow fuse used with analog mounting boards. Littlefuse type 251004 or equivalent.

1781-FUSE5 is a five-amp, very quick blow fuse used with 1781 I/O module mounting boards. Littlefuse type 251005 or equivalent.

WRC4-FUSE1 is a one-amp, very quick blow round fuse used with WRC4 mounting boards and various adapters. Wickman 19373K.1A or equivalent.

WRC4-FUSE4 is a four-amp, very quick blow fuse used with WRC4 I/O modules and some 1781 mounting boards. Wickman 19373K.4A or equivalent.

WRC4-FUSE5 is a five-amp, very quick blow fuse used with WRC4 I/O modules and some 1781 mounting boards. Wickman 19373K.5A or equivalent.
WRC1361 Cold Junction Temperature Sensor

The WRC1361 is an integrated hybrid component used to sense ambient temperature. It is the component used in WRC 1781 and 1782 Series 5Bxx analog mounting boards to provide cold-junction compensation for the 1781-5B37 and 1781-5B47 thermocouple input modules. When connected in a mounting board with the above 1781-5B thermocouple modules, the voltage output of the sensor is: \( V_{1-2} = 0.510 - 0.0025 \times (T - 25) \) volts

\( V_{1-2} \) is the voltage measured from pin 1 to pin 2 and \( T \) is the ambient temperature in Centigrade.

The accuracy of the WRC1361 is:
- at 25°C: 0.3°C
- +5°C to +45°C: 0.7°C
- +0°C to +60°C: 1.0°C

WRC50022 DIN mounting rail

- Symmetrical Rail
- 35 mm x 7.5 mm
- 3.28' (1m long)
- Zinc Plated, Yellow Chromated Steel

#10-32 or M5 Recommended Maximum Mounting Screw Size
The 1781-PSx series of power supplies accept ac main power to supply the necessary regulated dc power to the SmartMux adapters and I/O. Select the power supply appropriate for the SmartMux adapter.

**1781-PS1**

- **1781-PS1** Single Output Linear Power Supply:
  - 5 V dc @ 3 A
  - For use with 1781-JxB adapters.

**1781-PS2**

- **1781-PS2** Triple Output Linear Power Supply:
  - 5 V dc 6 A and ±12 V dc @ 1 A
  - For use with 1781-JxA adapters.
### Power Supplies

**1781-PS4**
- **Single Output Linear Power Supply:**
  - 24 V dc @ 1.2 A
- For use with 1781-7B series analog I/O and 1781-JPA7 SmartPMux adapter, as well as all DeviceNet applications.

**1781-PS7-55**
- **Quad Output Switcher Power Supply:**
  - +5 V dc @ 6 A
  - ±12 V dc @ 5 A
  - +24 V dc @ 2.5 A
- For use with 1781-JxA7 SmartPMux adapters.

### Common Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC input voltage</td>
<td>Automatically adjusts from 90-264 Vac</td>
</tr>
<tr>
<td>Line regulation</td>
<td>±0.2% for a 10% line change</td>
</tr>
<tr>
<td>Load regulation</td>
<td>2% for a 50% load change</td>
</tr>
<tr>
<td>Output ripple</td>
<td>5 V dc: 3.0 mV peak-to-peak</td>
</tr>
<tr>
<td>Short circuit &amp; overload protection</td>
<td>Automatic current limit/foldback with automatic recovery. Internal ac fuse provided.</td>
</tr>
<tr>
<td>Overvoltage</td>
<td>6.2 V ±0.4 V (on 5 V outputs only protection)</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>0°C to 50°C full-rated, derated linearly to 50% from 50°C to 70°C</td>
</tr>
<tr>
<td>Storage temp.</td>
<td>-55°C</td>
</tr>
<tr>
<td>Temperature coefficient</td>
<td>0.03%/°C typical, 0.03%/°C maximum</td>
</tr>
<tr>
<td>Efficiency</td>
<td>75%</td>
</tr>
<tr>
<td>Shock &amp; vibration</td>
<td>2 g peak acceleration, 10 Hz to 2 KHz, 6.15 grms (3 axis)</td>
</tr>
<tr>
<td>Approvals</td>
<td>CE, CSA, cUL, EN, IEC, TUV, UL</td>
</tr>
</tbody>
</table>
Ribbon cables are used to connect analog and discrete mounting boards to SmartMux, SmartMux-Plus, SmartPMux, 1781-PXBxxx, Data acquisition boards and other devices. Select the cable from the choices below.

<table>
<thead>
<tr>
<th>CABLE P/N</th>
<th>NUMBER OF</th>
<th>CONNECTOR</th>
<th>CONNECTOR</th>
<th>COMMENT</th>
<th>TYPICAL USES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1781-CxEE</td>
<td>50</td>
<td>Edge – F</td>
<td>Edge – F</td>
<td>Non-Polarized</td>
<td>Digital I/O board to controller</td>
</tr>
<tr>
<td>1781-CxEH</td>
<td>50</td>
<td>Edge – F</td>
<td>Header – F</td>
<td>Polarized</td>
<td>Digital I/O board to SmartMux, 1781-PxBxxx</td>
</tr>
<tr>
<td>1781-CxED</td>
<td>50</td>
<td>Edge – F</td>
<td>D-shell</td>
<td>Polarized</td>
<td>Digital I/O board to controller</td>
</tr>
<tr>
<td>1781-CxHH</td>
<td>50</td>
<td>Header – F</td>
<td>Header – F</td>
<td>Polarized</td>
<td>Digital I/O board to controller</td>
</tr>
<tr>
<td>1781-CxDD</td>
<td>50</td>
<td>D-shell</td>
<td>D-shell</td>
<td>Polarized</td>
<td>Digital I/O board to controller</td>
</tr>
<tr>
<td>1781-CxHD</td>
<td>50</td>
<td>Header – F</td>
<td>D-shell</td>
<td>Polarized</td>
<td>Digital I/O board to controller</td>
</tr>
<tr>
<td>1781-5Cx(y)*</td>
<td>26</td>
<td>Header – F</td>
<td>Header – F</td>
<td>(2) Analog I/O board to SmartMux</td>
<td></td>
</tr>
<tr>
<td>1781-C7x</td>
<td>26</td>
<td>Header – F</td>
<td>25 D-shell (P)</td>
<td>Polarized – used with 1781-17B I/O</td>
<td>Analog I/O board to SmartMux</td>
</tr>
<tr>
<td>1781-C7xDD</td>
<td>25</td>
<td>25 D-shell (P)</td>
<td>25 D-shell (P) Use with WRC1</td>
<td>Analog I/O board to SmartMux-Plus</td>
<td></td>
</tr>
<tr>
<td>1781-CSD</td>
<td>6</td>
<td>RJ11</td>
<td>25 D-shell (P) Use with WRC1</td>
<td>ASCII port for SmartMux-Plus, 6-foot long</td>
<td></td>
</tr>
</tbody>
</table>

NOTES:
(1) x = cable length (default = 1)
(2) 1781-5Cx(y) is a 26-conductor ribbon cable, each end equipped with a non-polarized, female header connector. Used with WRC’s SmartMux analog adapters and analog mounting boards. A single 1781-5Cx(y) cable is required when only a single 1781-5B08 or 1781-5B16 mounting board is required. Specify connector location for each connector from the SmartMux end using suffixes as needed. x,y = cable length, default is 1 foot (for example, a 1781-5C3,2 is 3 feet long with an additional connector 2 feet from the SmartMux end.)
* Previously supplied as 1781-5B01-Cx(y).

DIN-Rail mounted termination assemblies provide a convenient way to terminate ribbon cables using a screw termination for each conductor.

1782-fbk26
1782-FBK26 is used with a 26-conductor ribbon cable for applications such as 1781-5B08T, 1781-5B16T, or 1781-JxA7 SmartMux adapters.

1782-fbk50
1782-FBK50 is used with a 50 conductor ribbon cable such as used with any of the digital I/O mounting boards or to connect panel mount solid state relays to SmartMux adapters.
D-93-S12 is a steel mounting bracket designed to fit a standard 19” rack and to facilitate easy assembly and mounting of WRC products. Provision is made for attaching one of the following WRC discrete I/O mounting boards:

- 1771-JMB
- 1771-JMBJ
- 1771-JMBH
- 1771-JMBHJ
- 1781-A24A
- 1781-A16A
- 1781-A16AJ
- 1781-A8A

In addition, provision is made for mounting a 1781-PS1 power supply.

**MOUNTING DIMENSIONS**