**Installation Guide**

**BELDEN 110 Cross-Connect System**

**4-Pair Cable**

**Version 02.00 2007**

**BELDEN 110 Wiring Block Kits-4-Pair Cable**

**BELDEN 110 System - Basic Components**

**BELDEN 110 System - Accessories**

<table>
<thead>
<tr>
<th>Kit Configurations</th>
<th>AX100693</th>
<th>AX100694</th>
<th>AX100695</th>
<th>AX100696</th>
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<tbody>
<tr>
<td>Wiring Block, 100-Pair</td>
<td>1</td>
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<tr>
<td>Wiring Block, 300-Pair</td>
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<tr>
<td>Connecting Block, 4-Pair</td>
<td>20</td>
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<td>60</td>
<td>-</td>
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<tr>
<td>Connecting Block, 5-Pair</td>
<td>4</td>
<td>20</td>
<td>12</td>
<td>60</td>
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<tr>
<td>Designation Strip</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

**Installating Wiring Blocks with Legs**

**Marking Wall/Mounting Surface**

Measure, and using a level, mark wall or mounting surface.

Draw a vertical line (8" or more from the wall plus half the frame width).

Draw a horizontal line 76" maximum from the floor.

**Attaching 300-Pair Wiring Block**

![Image of 300-Pair Wiring Block]

Orient trough vertically on lines and using #12 x 3/4" wood screws, fasten to wall. Orient 300-Pair wiring block on lines and using #12 x 3/4" wood screws, fasten to wall.

**Attaching 100-Pair Wiring Block**

![Image of 100-Pair Wiring Block]

Orient trough horizontally on lines and using #12 x 3/4" wood screws, fasten to wall. Position 100-Pair wiring block below trough and using #12 x 3/4" wood screws, fasten to wall.
Preparing 4-Pair Cables

2. To minimize cable congestion when routing, work cables into a parallel form before bundling. Secure bundle every 6" with cable ties.

Caution: Do not over tighten ties! Ties should rotate freely.

3. Identify cable positions on wall next to corresponding slots in block.

Installer's Tip!:
When routing, always select an outer cable (at random), from the rear of the bundle and route to its slot. This sequence will decrease overlaps and help produce an aesthetic dressing!

4. Following cable I.D. numbers, route cables through appropriate slots in channel.

Wiring the Block

5. Select appropriate cable and strip end to expose rip-cord.

6. Slit cable #3 to just past the mark for cable #2.

 Installer's Tip! Using a 4-pair connecting block as a guide, with a felt pen, mark block in 4-pair increments.

6. Following color code (below), untwist furthest pair and position conductors over pair splitter into slots.

Color Code

- Pr. #1
- Pr. #2
- Pr. #3
- Pr. #4

8. After setting the four pairs according to color code, dress cable neatly in channel.

Cable #3

9. Install cable #9 in the same way as cable #3.

Cable #9
Select and set cables #2 and #8.
Cable #2  Cable #3
Cable #8  Cable #9

Select and set cables #1 and #7.
Cable #1  Cable #2  Cable #3
Cable #7  Cable #8  Cable #9

Select and set cables in the sequence #4, #10, #5, #11, #6, #12.
Cable #4  Cable #5  Cable #6
Cable #10  Cable #11  Cable #12

**Important!**: Before terminating, visually check wiring to color code!

**The top two rows are now ready for terminating!**

**Note**: After termination, subsequent upper and lower rows are wired in the same sequence.

**Note**: Unused pair position.

**Terminating 4-Pair Cables**

**13**
Using the *BELDEN 110 Connecting Tool*, terminate the top row.

AX100749 Tool
Cutting blade on top

**14**
Terminate bottom row in the same sequence as the top row.
Cutting blade on bottom!

**Important!**: Before terminating, again visually check wiring to color code!

**Terminate subsequent cables repeating all previous steps!**

**4-Pair Connecting Blocks**

**15**
Position 4-Pair connecting blocks and seat with Multi-Pair Impact Tool.

4-Pair connecting block

**Note**: Care must be taken to align all connecting blocks with the blue color code on the left!

**Caution**: The blocks can be accidentally installed upside-down!

Position and seat one block at a time.

**Note**: Be sure blocks are completely seated!!

Repeat procedure for remaining blocks in frame. The block is now ready for cross-connect wiring or patch cords.

3 of 4 pages
**Preparing Labels**

17. Slide pre-printed or hand written I.D. strips into clear protective covers.

18. Snap designation strips into channels between upper and lower rows.

**Terminating Jumper Wires**

19. Run jumper wires through slots to connecting blocks. Position jumpers in slots according to color code/wiring plan marked on block.  

   - Do NOT use Multi-Pair Impact Tool to terminate cross-connect wires in connecting blocks.
   - NOTE: Only 22 to 26 AWG insulated wire should be terminated to the connecting block. (Maximum diameter over insulation is 1.3 mm (.050 in.).

20. Connect jumpers using the Belden 110 Connecting Tool.

21. AX100749 Tool Bottom Row: Cutting blade on top!

22. Using finger, form approx. 1.5" of slack at each end of the jumper wire connection.

**Field Connection: Jumper Wires**

Typical Belden 110 System: 300-Pair Blocks, Jumper Wires, Small Distribution Rings

<table>
<thead>
<tr>
<th>Distribution Field (or Equipment Field)</th>
<th>6&quot; minimum from ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

7/8" from floor to highest block

8" from wall or equipment

**Field Connection: Patch Cords**

Typical Belden 110 System: 100-Pair Blocks, Patch Cords, Small Distribution Rings

<table>
<thead>
<tr>
<th>Distribution Rings (2)</th>
<th>8&quot; minimum from ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
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<tr>
<td>2</td>
<td>8</td>
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<tr>
<td>3</td>
<td>9</td>
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<td>4</td>
<td>10</td>
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<tr>
<td>5</td>
<td>11</td>
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<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

7/8" from floor to highest block

Maximum: 8 blocks in vertical stack

8" minimum from wall or equipment

Capacity: 3,600 Pairs (for larger installations up to 7200 pairs, use Large Distribution Ring).

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For additional technical information on our connecting products, call 1-800-858-7954  
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This Installation Guide is available in the “Document Center” of the Belden Networking website - www.belden.com