



# Highland™ Electrical Spring Connectors



## Data Sheet

### 1.0 Application

Use the 3M™ Highland™ Electrical Spring Connectors to electrically connect two or more wire ends in a pigtail application and insulate the connection. The wire range shall be 22 thru 10 AWG solid or stranded copper wire.

#### Construction:

Spring—Steel, plated  
Insulator—Vinyl

### 2. Engineering Specification

The Highland Electrical Spring Connectors shall be capable of connecting two or more wires in a pigtail application, in the wire range of No. 22 thru No. 10 solid or stranded copper conductors. The connectors shall be constructed of a plated steel spring, covered by a vinyl insulator. The connectors shall be UL Listed and CSA Certified.

### 3. Regulatory Agencies

**UL Listed** as a Pressure Cable Connector  
Tested per UL Standard 486C  
UL File No. E84147

**CSA Certified** as a Pressure Cable Connector  
Tested to CSA Standard C22.2  
No. 0,188-M1983  
CSA File No. 58960

#### Specifications:

**MAX. VOLTAGE RATING:** 300V or 600V Building  
Wire 1000V Signs,  
Lighting Fixtures and  
Luminaries

**MAX TEMPERATURE  
RATING:** 105°C (221°F)-UL  
90°C (194°F)-CSA

#### Wire Combinations:

Solid or stranded copper conductors only

#### H-29 (Gray)

(300 Volts)

3 to 5 No. 22

2 to 4 No. 20

2 or 3 No. 18

2 No. 16

1 No. 20 w/ 1 to 4 No. 22

2 No. 20 w/ 1 to 3 No. 22

3 No. 20 w/ 1 or 2 No. 22

1 No. 18 w/ 1 No. 20 w/ 1 No. 22

1 No. 18 w/ 1 to 4 No. 22

1 No. 18 w/ 1 or 2 No. 20

2 No. 18 w/ 1 No. 20 or No. 22

1 No. 16 w/ 1 No. 18 or No. 22

#### H-30 (Blue)

(300 Volts)

5 No. 22

3 to 5 No. 20

2 to 4 No. 18

2 or 3 No. 16

1 No. 20 w/ 4 No. 22

2 No. 20 w/ 2 or 3 No. 22

3 No. 20 w/ 1 or 2 No. 22

4 No. 20 w/ 1 No. 22

1 No. 18 w/ 2 to 4 No. 20

1 No. 18 w/ 3 or 4 No. 22

1 or 2 No. 18 w/ 1 No. 20 w/ 1 No. 22

2 No. 18 w/ 1 to 3 No. 20

2 No. 18 w/ 1 to 3 No. 22

3 No. 18 w/ 1 or 2 No. 20 or No. 22

4 No. 18 w/ 1 No. 22

1 No. 16 w/ 1 to 4 No. 20

1 No. 16 w/ 1 to 4 No. 22

1 No. 16 w/ 1 or 2 No. 18

2 No. 16 w/ 1 to 3 No. 22

2 No. 16 w/ 1 or 2 No. 20

2 No. 16 w/ 1 No. 18

1 No. 14 w/ 1 to 4 No. 22

1 No. 14 w/ 1 to 3 No. 20

1 No. 14 w/ 1 No. 16

1 No. 14 w/ 1 No. 18

**H-31 (Orange)**

(600 Volts)

5 No. 22  
 3 to 5 No. 20  
 2 to 5 No. 18  
 2 to 3 No. 16  
 2 No. 14  
 1 No. 16 w/ 1 to 4 No. 18  
 2 No. 16 w/ 1 or 2 No. 18  
 1 No. 14 w/ 1 to 3 No. 18  
 1 No. 14 w/ 1 or 2 No. 16  
 2 No. 14 w/ 1 to 3 No. 20 or No. 22

**H-33 (Yellow)**

(600 Volts)

4 or 5 No. 22  
 3 to 5 No. 20  
 2 to 7 No. 18  
 2 to 4 No. 16  
 2 to 3 No. 14  
 2 No. 12  
 2 No. 18 w/ 2 to 4 No. 16  
 1 or 2 No. 16 w/ 1 to 3 No. 18  
 1 No. 14 w/ 1 to 4 No. 16  
 1 No. 14 w/ 1 to 3 No. 18  
 2 No. 14 w/ 1 to 2 No. 16  
 2 No. 14 w/ 1 to 2 No. 18

**H-35 (Red)**

(600 Volts)

3 to 9 No. 18  
 2 to 6 No. 14  
 2 to 4 No. 12  
 2 to 3 No. 10  
 2 No. 14 w/ 1 to 4 No. 18  
 2 No. 14 w/ 1 to 4 No. 16  
 3 No. 14 w/ 1 to 3 No. 16  
 3 No. 14 w/ 1 to 3 No. 18  
 4 No. 14 w/ 1 to 2 No. 16  
 4 No. 14 w/ 1 to 2 No. 18

5 No. 14 w/ 1 No. 16  
 5 No. 14 w/ 1 No. 18  
 1 No. 12 w/ 1 to 4 No. 18  
 1 No. 12 w/ 1 to 4 No. 16  
 1 No. 12 w/ 1 to 5 No. 14  
 2 No. 12 w/ 1 to 3 No. 16  
 2 No. 12 w/ 1 to 3 No. 18  
 2 No. 12 w/ 1 to 4 No. 14  
 3 No. 12 w/ 1 to 2 No. 16  
 3 No. 12 w/ 1 to 2 No. 18  
 3 No. 12 w/ 2 or 3 No. 14  
 4 No. 12 w/ 1 No. 14  
 4 No. 12 w/ 1 No. 16  
 4 No. 12 w/ 1 No. 18  
 1 No. 10 w/ 1 to 3 No. 12  
 1 No. 10 w/ 1 to 3 No. 14  
 2 No. 10 w/ 1 to 3 No. 18  
 2 No. 10 w/ 1 to 3 No. 16  
 2 No. 10 w/ 1 or 2 No. 14  
 2 No. 10 w/ 1 or 2 No. 12

**Metric wire combinations (copper only) not UL Listed or CSA Certified.**

**H-29 (Gray)**  
 0,50 mm<sup>2</sup> (3 to 5)  
 0,75 mm<sup>2</sup> (2 to 3)  
 1,0 mm<sup>2</sup> (2)

**H-30 (Blue)**  
 0,50 mm<sup>2</sup> (3 to 5)  
 0,75 mm<sup>2</sup> (2 to 4)  
 1,0 mm<sup>2</sup> (2 to 3)  
 1,5 mm<sup>2</sup> (2)

**H-31 (Orange)**  
 0,75 mm<sup>2</sup> (3 to 5)  
 1,0 mm<sup>2</sup> (2 to 4)  
 1,5 mm<sup>2</sup> (2 to 3)

**H-33 (Yellow)**  
 0,75 mm<sup>2</sup> (3 to 6)  
 1,0 mm<sup>2</sup> (2 to 5)  
 1,5 mm<sup>2</sup> (3 to 4)  
 2,5 mm<sup>2</sup> (2 to 3)

**H-35 (Red)**  
 1,0 mm<sup>2</sup> (5 to 6)  
 1,5 mm<sup>2</sup> (3 to 6)  
 2,5 mm<sup>2</sup> (2 to 5)  
 4 mm<sup>2</sup> (2 to 4)

3M and Highland are trademarks of 3M.

**IMPORTANT NOTICE**

All statements, technical information and recommendations related to the Seller's products are based on information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before utilizing the product, the user should determine the suitability of the product for its intended use. The user assumes all risks and liability whatsoever in connection with such use.

Any statements or recommendations of the Seller which are not contained in the Seller's current publications shall have no force or effect unless contained in an agreement signed by an authorized office of the Seller. The statements contained herein are made in lieu of all warranties, expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose which warranties are hereby expressly disclaimed.

SELLER SHALL NOT BE LIABLE TO THE USER OR ANY OTHER PERSON UNDER ANY LEGAL THEORY, INCLUDING BUT NOT LIMITED TO NEGLIGENCE OR STRICT LIABILITY, FOR ANY INJURY OR FOR ANY DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES SUSTAINED OR INCURRED BY REASON OF THE USE OF ANY OF THE SELLER'S PRODUCTS.

**Electrical Products Division**

6801 River Place Blvd.  
 Austin, TX 78726-9000  
 800/245-3573  
 www.3M.com/elpd



Printed on 50% recycled paper  
 with 10% post-consumer

Litho in USA  
 ©3M 1999 80-6108-5288-3-A



# Highland™ Electrical Spring Connectors



## Data Sheet

### 1.0 Application

Use the 3M™ Highland™ Electrical Spring Connectors to electrically connect two or more wire ends in a pigtail application and insulate the connection. The wire range shall be 22 thru 10 AWG solid or stranded copper wire.

#### Construction:

Spring—Steel, plated  
Insulator—Vinyl

### 2. Engineering Specification

The Highland Electrical Spring Connectors shall be capable of connecting two or more wires in a pigtail application, in the wire range of No. 22 thru No. 10 solid or stranded copper conductors. The connectors shall be constructed of a plated steel spring, covered by a vinyl insulator. The connectors shall be UL Listed and CSA Certified.

### 3. Regulatory Agencies

**UL Listed** as a Pressure Cable Connector  
Tested per UL Standard 486C  
UL File No. E84147

**CSA Certified** as a Pressure Cable Connector  
Tested to CSA Standard C22.2  
No. 0,188-M1983  
CSA File No. 58960

#### Specifications:

**MAX. VOLTAGE RATING:** 300V or 600V Building  
Wire 1000V Signs,  
Lighting Fixtures and  
Luminaries

**MAX TEMPERATURE  
RATING:** 105°C (221°F)-UL  
90°C (194°F)-CSA

#### Wire Combinations:

Solid or stranded copper conductors only

#### H-29 (Gray) (300 Volts)

3 to 5 No. 22

2 to 4 No. 20

2 or 3 No. 18

2 No. 16

1 No. 20 w/ 1 to 4 No. 22

2 No. 20 w/ 1 to 3 No. 22

3 No. 20 w/ 1 or 2 No. 22

1 No. 18 w/ 1 No. 20 w/ 1 No. 22

1 No. 18 w/ 1 to 4 No. 22

1 No. 18 w/ 1 or 2 No. 20

2 No. 18 w/ 1 No. 20 or No. 22

1 No. 16 w/ 1 No. 18 or No. 22

#### H-30 (Blue)

(300 Volts)

5 No. 22

3 to 5 No. 20

2 to 4 No. 18

2 or 3 No. 16

1 No. 20 w/ 4 No. 22

2 No. 20 w/ 2 or 3 No. 22

3 No. 20 w/ 1 or 2 No. 22

4 No. 20 w/ 1 No. 22

1 No. 18 w/ 2 to 4 No. 20

1 No. 18 w/ 3 or 4 No. 22

1 or 2 No. 18 w/ 1 No. 20 w/ 1 No. 22

2 No. 18 w/ 1 to 3 No. 20

2 No. 18 w/ 1 to 3 No. 22

3 No. 18 w/ 1 or 2 No. 20 or No. 22

4 No. 18 w/ 1 No. 22

1 No. 16 w/ 1 to 4 No. 20

1 No. 16 w/ 1 to 4 No. 22

1 No. 16 w/ 1 or 2 No. 18

2 No. 16 w/ 1 to 3 No. 22

2 No. 16 w/ 1 or 2 No. 20

2 No. 16 w/ 1 No. 18

1 No. 14 w/ 1 to 4 No. 22

1 No. 14 w/ 1 to 3 No. 20

1 No. 14 w/ 1 No. 16

1 No. 14 w/ 1 No. 18

**H-31 (Orange)**

(600 Volts)

5 No. 22  
 3 to 5 No. 20  
 2 to 5 No. 18  
 2 to 3 No. 16  
 2 No. 14  
 1 No. 16 w/ 1 to 4 No. 18  
 2 No. 16 w/ 1 or 2 No. 18  
 1 No. 14 w/ 1 to 3 No. 18  
 1 No. 14 w/ 1 or 2 No. 16  
 2 No. 14 w/ 1 to 3 No. 20 or No. 22

**H-33 (Yellow)**

(600 Volts)

4 or 5 No. 22  
 3 to 5 No. 20  
 2 to 7 No. 18  
 2 to 4 No. 16  
 2 to 3 No. 14  
 2 No. 12  
 2 No. 18 w/ 2 to 4 No. 16  
 1 or 2 No. 16 w/ 1 to 3 No. 18  
 1 No. 14 w/ 1 to 4 No. 16  
 1 No. 14 w/ 1 to 3 No. 18  
 2 No. 14 w/ 1 to 2 No. 16  
 2 No. 14 w/ 1 to 2 No. 18

**H-35 (Red)**

(600 Volts)

3 to 9 No. 18  
 2 to 6 No. 14  
 2 to 4 No. 12  
 2 to 3 No. 10  
 2 No. 14 w/ 1 to 4 No. 18  
 2 No. 14 w/ 1 to 4 No. 16  
 3 No. 14 w/ 1 to 3 No. 16  
 3 No. 14 w/ 1 to 3 No. 18  
 4 No. 14 w/ 1 to 2 No. 16  
 4 No. 14 w/ 1 to 2 No. 18

5 No. 14 w/ 1 No. 16  
 5 No. 14 w/ 1 No. 18  
 1 No. 12 w/ 1 to 4 No. 18  
 1 No. 12 w/ 1 to 4 No. 16  
 1 No. 12 w/ 1 to 5 No. 14  
 2 No. 12 w/ 1 to 3 No. 16  
 2 No. 12 w/ 1 to 3 No. 18  
 2 No. 12 w/ 1 to 4 No. 14  
 3 No. 12 w/ 1 to 2 No. 16  
 3 No. 12 w/ 1 to 2 No. 18  
 3 No. 12 w/ 2 or 3 No. 14  
 4 No. 12 w/ 1 No. 14  
 4 No. 12 w/ 1 No. 16  
 4 No. 12 w/ 1 No. 18  
 1 No. 10 w/ 1 to 3 No. 12  
 1 No. 10 w/ 1 to 3 No. 14  
 2 No. 10 w/ 1 to 3 No. 18  
 2 No. 10 w/ 1 to 3 No. 16  
 2 No. 10 w/ 1 or 2 No. 14  
 2 No. 10 w/ 1 or 2 No. 12

**Metric wire combinations (copper only) not UL Listed or CSA Certified.**

**H-29 (Gray)**  
 0,50 mm<sup>2</sup> (3 to 5)  
 0,75 mm<sup>2</sup> (2 to 3)  
 1,0 mm<sup>2</sup> (2)

**H-30 (Blue)**  
 0,50 mm<sup>2</sup> (3 to 5)  
 0,75 mm<sup>2</sup> (2 to 4)  
 1,0 mm<sup>2</sup> (2 to 3)  
 1,5 mm<sup>2</sup> (2)

**H-31 (Orange)**  
 0,75 mm<sup>2</sup> (3 to 5)  
 1,0 mm<sup>2</sup> (2 to 4)  
 1,5 mm<sup>2</sup> (2 to 3)

**H-33 (Yellow)**  
 0,75 mm<sup>2</sup> (3 to 6)  
 1,0 mm<sup>2</sup> (2 to 5)  
 1,5 mm<sup>2</sup> (3 to 4)  
 2,5 mm<sup>2</sup> (2 to 3)

**H-35 (Red)**  
 1,0 mm<sup>2</sup> (5 to 6)  
 1,5 mm<sup>2</sup> (3 to 6)  
 2,5 mm<sup>2</sup> (2 to 5)  
 4 mm<sup>2</sup> (2 to 4)

3M and Highland are trademarks of 3M.

**IMPORTANT NOTICE**

All statements, technical information and recommendations related to the Seller's products are based on information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before utilizing the product, the user should determine the suitability of the product for its intended use. The user assumes all risks and liability whatsoever in connection with such use.

Any statements or recommendations of the Seller which are not contained in the Seller's current publications shall have no force or effect unless contained in an agreement signed by an authorized office of the Seller. The statements contained herein are made in lieu of all warranties, expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose which warranties are hereby expressly disclaimed.

SELLER SHALL NOT BE LIABLE TO THE USER OR ANY OTHER PERSON UNDER ANY LEGAL THEORY, INCLUDING BUT NOT LIMITED TO NEGLIGENCE OR STRICT LIABILITY, FOR ANY INJURY OR FOR ANY DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES SUSTAINED OR INCURRED BY REASON OF THE USE OF ANY OF THE SELLER'S PRODUCTS.

**Electrical Products Division**

6801 River Place Blvd.  
 Austin, TX 78726-9000  
 800/245-3573  
 www.3M.com/elpd



Printed on 50% recycled paper  
 with 10% post-consumer

Litho in USA  
 ©3M 1999 80-6108-5288-3-A