



# 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)

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#### Wire Combinations:

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(300 Volts)

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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)**

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 1,0 mm<sup>2</sup> (2 to 4)  
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**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)  
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**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)

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