



# THE DATASHEET OF H-31-KEG





# 3M™ Highland™ Electrical Spring Connectors

## Data Sheet

### 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

### 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.

### Regulatory Agencies

**UL Listed** as a Pressure Cable Connector

Tested per UL Standard 486C

UL File No. E23438

**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

For Regulatory information including RoHS, REACH, please [www.3m.com/regs](http://www.3m.com/regs)

### Installation Instructions

#### WARNING

Working around energized systems may cause serious injury or death. Installation should be performed by personnel familiar with good safety practice in handling electrical equipment. De-energize and ground all electrical systems before installing product.

**CAUTION:** Turn power off before installing or removing connector. All electrical work should be done according to appropriate electrical codes.

1. Strip the wire insulation according to the strip lengths in the package instructions.
2. Firmly grasp wires, making sure insulation ends are even and tightly bundled. (Wires may be twisted or untwisted.) Lead stranded wires slightly. Slip the connector over wire tips.
3. Turn connector onto wires in clockwise direction until secure. Pull each conductor moderately to confirm that they are firmly secured.


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

Size	H-29 Gray	H-30 Blue	H-31 Orange	H-33 Yellow	H-35 Red
0,50 mm2	3 to 5	3 to 5			
0,75 mm2	2 to 3	2 to 4	3 to 5	3 to 6	-
1,0 mm2	2	2 to 3	2 to 4	2 to 5	5 to 6
1,5 mm2	-	2	2 to 3	3 to 4	3 to 6
2,5 mm2		-		2 to 3	2 to 5
4 mm2		-			2 to 4

## Wire combination

### Solid or stranded copper conductors only

<b>H-29 (Gray) (300 Volts)</b>	<b>H-30 (Blue) (300 Volts)</b>	<b>H-35 (Red) (600 Volts)</b>
3 to 5 No. 22	5 No. 22	3 to 9 No. 18
2 to 4 No. 20	3 to 5 No. 20	2 to 6 No. 14
2 or 3 No. 18	2 to 4 No. 18	2 to 4 No. 12
2 No. 16	2 or 3 No. 16	2 to 3 No. 10
1 No. 20 w/ 1 to 4 No. 22	1 No. 20 w/ 4 No. 22	2 No. 14 w/ 1 to 4 No. 18
2 No. 20 w/ 1 to 3 No. 22	2 No. 20 w/ 2 or 3 No. 22	2 No. 14 w/ 1 to 4 No. 16
3 No. 20 w/ 1 or 2 No. 22	3 No. 20 w/ 1 or 2 No. 22	3 No. 14 w/ 1 to 3 No. 16
1 No. 18 w/ 1 No. 20 w/ 1 No. 22	4 No. 20 w/ 1 No. 22	3 No. 14 w/ 1 to 3 No. 18
1 No. 18 w/ 1 to 4 No. 22	1 No. 18 w/ 2 to 4 No. 20	4 No. 14 w/ 1 to 2 No. 16
1 No. 18 w/ 1 or 2 No. 20	1 No. 18 w/ 3 or 4 No. 22	4 No. 14 w/ 1 to 2 No. 18
2 No. 18 w/ 1 No. 20 or No. 22	1 or 2 No. 18 w/ 1 No. 20 w/ 1 No. 22	5 No. 14 w/ 1 No. 16
1 No. 16 w/ 1 No. 18 or No. 22	2 No. 18 w/ 1 to 3 No. 20	5 No. 14 w/ 1 No. 18
<b>H-31 (Orange)(600 Volts)</b>	2 No. 18 w/ 1 to 3 No. 22	1 No. 12 w/ 1 to 4 No. 18
5 No. 22	3 No. 18 w/ 1 or 2 No. 20 or No. 22	1 No. 12 w/ 1 to 4 No. 16
3 to 5 No. 20	4 No. 18 w/ 1 No. 22	1 No. 12 w/ 1 to 5 No. 14
2 to 5 No. 18	1 No. 16 w/ 1 to 4 No. 20	2 No. 12 w/ 1 to 3 No. 16
2 to 3 No. 16	1 No. 16 w/ 1 to 4 No. 22	2 No. 12 w/1 to 3 No. 18
2 No. 14	1 No. 16 w/ 1 or 2 No. 18	2 No. 12 w/ 1 to 4 No. 14
1 No. 16 w/ 1 to 4 No. 18	2 No. 16 w/ 1 to 3 No. 22	3 No. 12 w/ 1 to 2 No. 16
2 No. 16 w/ 1 or 2 No. 18	2 No. 16 w/ 1 or 2 No. 20	3 No. 12 w/ 1 to 2 No. 18
1 No. 14 w/ 1 to 3 No. 18	2 No. 16 w/ 1 No. 18	3 No. 12 w/ 2 or 3 No. 14
1 No. 14 w/ 1 or 2 No. 16	1 No. 14 w/ 1 to 4 No. 22	4 No. 12 w/ 1 No. 14
2 No. 14 w/ 1 to 3 No. 20 or No. 22	1 No. 14 w/ 1 to 3 No. 20	4 No. 12 w/ 1 No. 16
<b>H-33 (Yellow) (600V)</b>	1 No. 14 w/ 1 No. 16	4 No. 12 w/ 1 No. 18
4 or 5 No. 22	1 No. 14 w/ 1 No. 18	1 No. 10 w/ 1 to 3 No. 12
3 to 5 No. 20		1 No. 10 w/ 1 to 3 No. 14
2 to 7 No. 18		2 No. 10 w/ 1 to 3 No. 18
2 to 4 No. 16		2 No. 10 w/ 1 to 3 No. 16
2 to 3 No. 14		2 No. 10 w/ 1 or 2 No. 14
2 No. 12		2 No. 10 w/ 1 or 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		

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