

# PROXIMITY SENSORS & CONNECTORS

## CATALOGUE



**SENSOR SOLUTIONS**

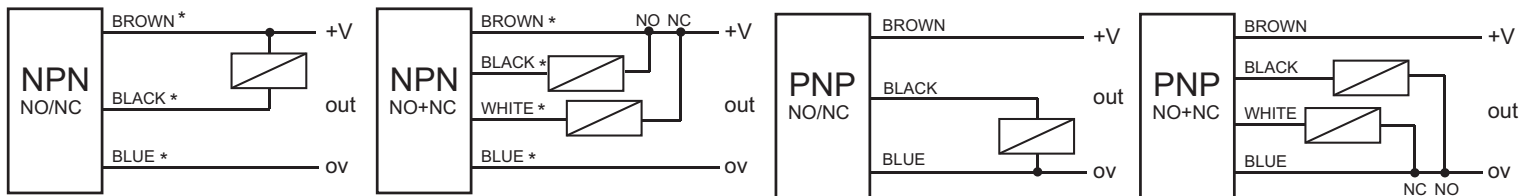
[www.googolplex.com.au](http://www.googolplex.com.au)

## FEATURES

Inductive Proximity Sensor  
 Style: Cylinder Shape (M12, M18, M30)  
 Easily identifiable with LED Indicator  
 Brass nickel plated, oil, water acid & alkaline proof  
 Standard sensing object: inductive sensor: ferrous metals  
 Overload and short circuit protection; polarity reversal protection

RPM Measuring in mechanism  
 IP67 Moisture Rating  
 Shielded  
 Connection Mode: M12  
 DC 3-Wire (10-30VDC)

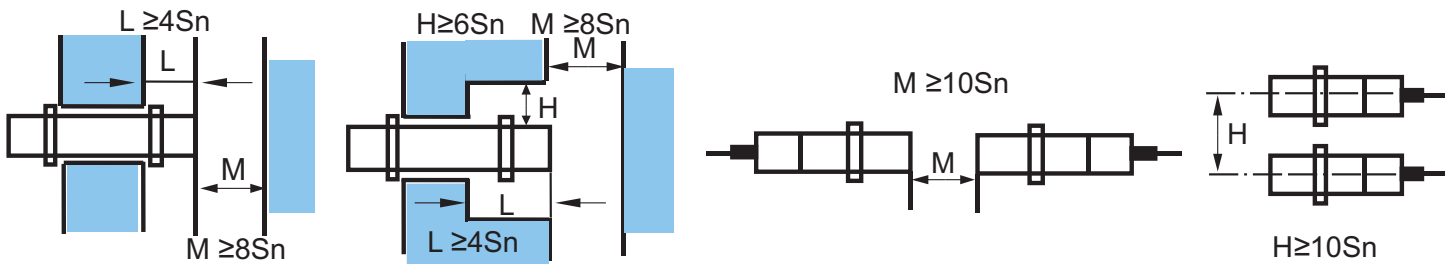
## CONNECTIONS



|   |       |                            |       |                            |
|---|-------|----------------------------|-------|----------------------------|
| * | Brown | Power Wire                 | White | Switching/Signal Wire (NC) |
|   | Black | Switching/Signal Wire (NO) | Blue  | Ground Wire                |

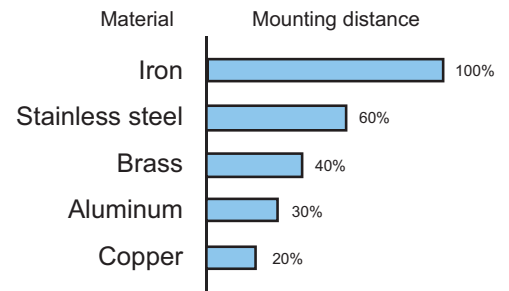
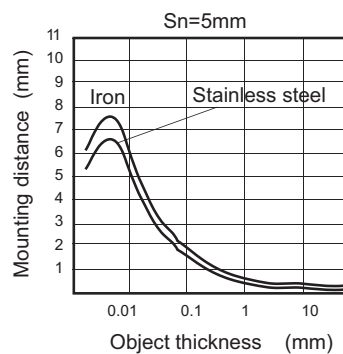
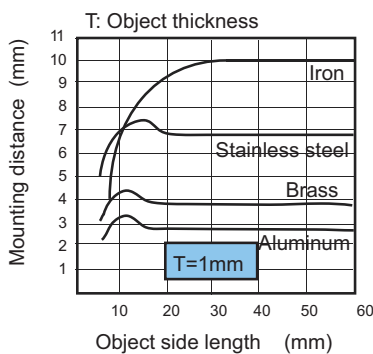
## INSTALLATION

When used in an area surrounded by metal or juxtaposed, install the sensor as follows. (Sn Sensing distance)

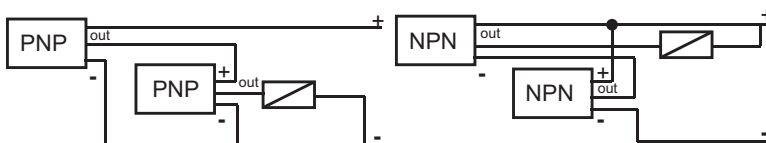


## INDUCTIVE PROXIMITY APPLICATION DIRECTION

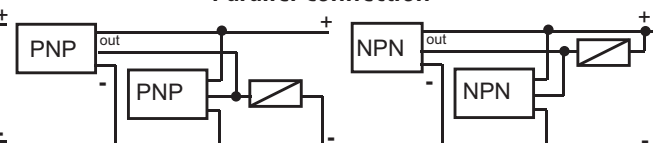
- Mounting distance should be set equal 80% Sn.
- Set mounting distance equals 50% Sn, when sensor applies in measuring mounting frequency or operating in high speed circumstances.
- Mounting distance varies with measuring object (iron, stainless steel, brass, copper and aluminum).



### Series Connection

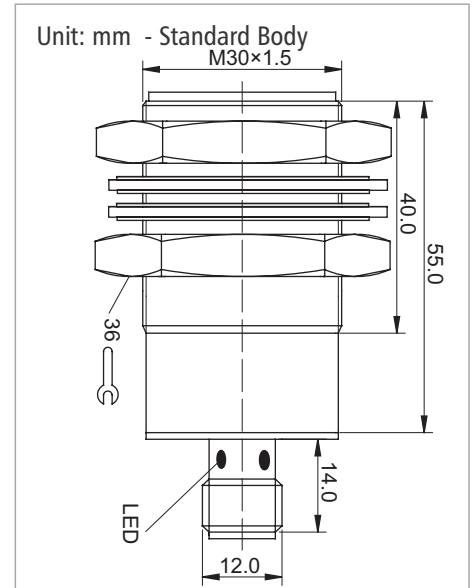
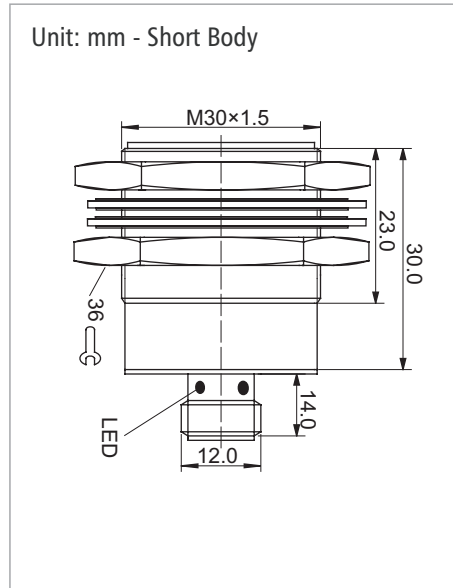


### Parallel Connection



# M30 Series

|                             |                         |                         |
|-----------------------------|-------------------------|-------------------------|
| <b>Dimension</b>            | <b>M30 x1.5</b>         | <b>M30 x1.5</b>         |
| <b>Installation</b>         | <b>Flush (shielded)</b> | <b>Flush (shielded)</b> |
| <b>Mounting distance Sn</b> | <b>10.0mm</b>           | <b>10.0mm</b>           |
| <b>Detect distance Sn</b>   | <b>0...9.0mm</b>        | <b>0...9.0mm</b>        |



|            |            |           |                             |                             |
|------------|------------|-----------|-----------------------------|-----------------------------|
| <b>PNP</b> | DC 3 wires | <b>NO</b> | <b>DSS-CPS-POM30SB-10FM</b> | <b>DSS-CPS-POM30LB-10FM</b> |
|            |            | <b>NC</b> | <b>DSS-CPS-PCM30SB-10FM</b> | <b>DSS-CPS-PCM30LB-10FM</b> |
| <b>NPN</b> | DC 3 wires | <b>NO</b> | <b>DSS-CPS-NOM30SB-10FM</b> | <b>DSS-CPS-NOM30LB-10FM</b> |
|            |            | <b>NC</b> | <b>DSS-CPS-NCM30SB-10FM</b> | <b>DSS-CPS-NCM30LB-10FM</b> |

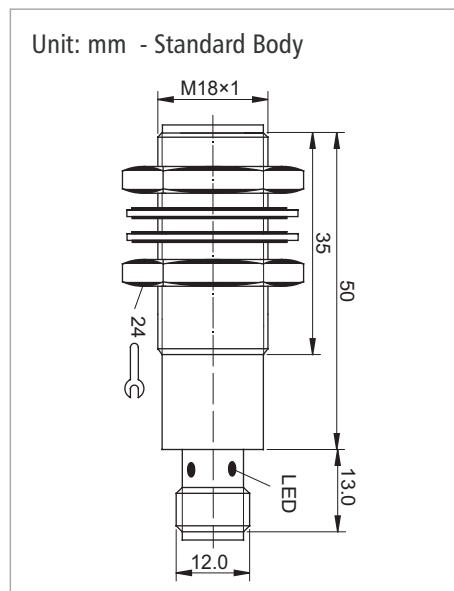
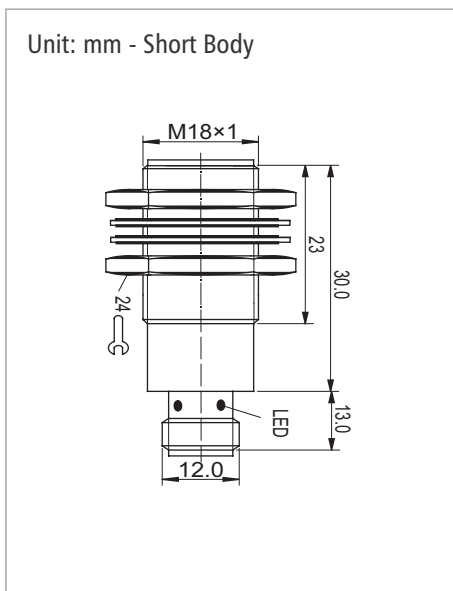
|                                   |           |           |
|-----------------------------------|-----------|-----------|
| Rated operational voltage (DC/AC) | 24V DC    | 24V DC    |
| Supply voltage (DC/AC)            | 10-30V DC | 10-30V DC |
| Voltage drop                      | ≤ 2.0V    | ≤ 2.0V    |
| Rated insulation voltage          | ≥ 20MΩ    | ≥ 20MΩ    |
| Load current capacity (DC/AC)     | 200mA     | 200mA     |
| Off-state current (NPN/PNP)       | ≤ 15mA    | ≤ 15mA    |
| Leak current                      | ≤ 20 μA   | ≤ 20 μA   |
| Against polarity reversal         | YES       | YES       |
| Short circuit protected           | YES       | YES       |
| Load capacity                     | ≤ 1μF     | ≤ 1μF     |

|                                      |                   |                   |
|--------------------------------------|-------------------|-------------------|
| Repeated accuracy                    | ≤ 5%              | ≤ 5%              |
| Ambient temperature range            | -25...+70°C       | -25...+70°C       |
| Frequency (DC 3/2wires / AC 2 wires) | 500Hz/400Hz       | 500Hz/400Hz       |
| Function indication                  | Red LED Indicator | Red LED Indicator |

|                          |                    |                    |
|--------------------------|--------------------|--------------------|
| IP ratings               | IP67               | IP67               |
| Housing material         | Nickle plate brass | Nickle plate brass |
| Material of sensing face | ABS                | ABS                |
| Plug-in connector        | M12 3/4 Wire       | M12 3/4 Wire       |
| Approvals                | CE                 | CE                 |

# M18 Series

|                             |                         |                         |
|-----------------------------|-------------------------|-------------------------|
| <b>Dimension</b>            | <b>M18 x1</b>           | <b>M18 x1</b>           |
| <b>Installation</b>         | <b>Flush (shielded)</b> | <b>Flush (shielded)</b> |
| <b>Mounting distance Sn</b> | <b>5.0mm</b>            | <b>5.0mm</b>            |
| <b>Detect distance Sn</b>   | <b>0...4.0mm</b>        | <b>0...4.0mm</b>        |



|            |            |           |                            |                            |
|------------|------------|-----------|----------------------------|----------------------------|
| <b>PNP</b> | DC 3 wires | <b>NO</b> | <b>DSS-CPS-POM18SB-5FM</b> | <b>DSS-CPS-POM18LB-5FM</b> |
|            |            | <b>NC</b> | <b>DSS-CPS-PCM18SB-5FM</b> | <b>DSS-CPS-PCM18LB-5FM</b> |
| <b>NPN</b> | DC 3 wires | <b>NO</b> | <b>DSS-CPS-NOM18SB-5FM</b> | <b>DSS-CPS-NOM18LB-5FM</b> |
|            |            | <b>NC</b> | <b>DSS-CPS-NCM18SB-5FM</b> | <b>DSS-CPS-NCM18LB-5FM</b> |

|                                   |           |           |
|-----------------------------------|-----------|-----------|
| Rated operational voltage (DC/AC) | 24V DC    | 24V DC    |
| Supply voltage (DC/AC)            | 10-30V DC | 10-30V DC |
| Voltage drop                      | ≤ 2.0V    | ≤ 2.0V    |
| Rated insulation voltage          | ≥ 20M Ω   | ≥ 20M Ω   |
| Load current capacity (DC/AC)     | 200mA     | 200mA     |
| Off-state current (NPN/PNP)       | ≤ 15mA    | ≤ 10mA    |
| Leak current                      | ≤ 20 μA   | ≤ 20 μA   |
| Against polarity reversal         | YES       | YES       |
| Short circuit protected           | YES       | YES       |
| Load capacity                     | ≤ 1μF     | ≤ 1μF     |

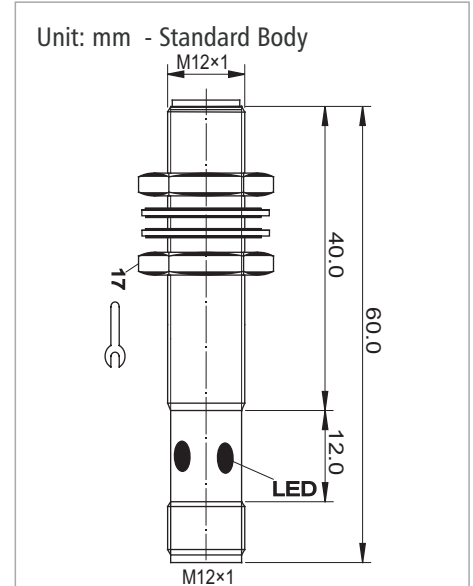
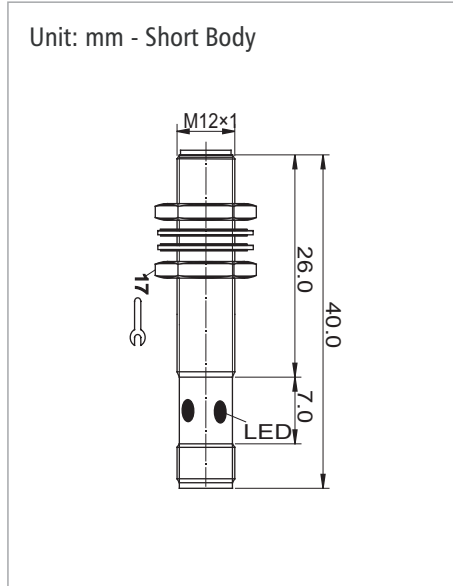
|                                      |                   |                   |
|--------------------------------------|-------------------|-------------------|
| Repeated accuracy                    | ≤ 5%              | ≤ 5%              |
| Ambient temperature range            | -25...+70°C       | -25...+70°C       |
| Frequency (DC 3/2wires / AC 2 wires) | 700Hz/400Hz       | 700Hz/400Hz       |
| Function indication                  | Red LED Indicator | Red LED Indicator |

|                          |                    |                    |
|--------------------------|--------------------|--------------------|
| IP ratings               | IP67               | IP67               |
| Housing material         | Nickle plate brass | Nickle plate brass |
| Material of sensing face | ABS                | ABS                |
| Plug-in connector        | M12 3/4 Wire       | M12 3/4 Wire       |
| Approvals                | CE                 | CE                 |



# M12 Series

|                             |                         |                         |
|-----------------------------|-------------------------|-------------------------|
| <b>Dimension</b>            | <b>M12 x1</b>           | <b>M12 x1</b>           |
| <b>Installation</b>         | <b>Flush (shielded)</b> | <b>Flush (shielded)</b> |
| <b>Mounting distance Sn</b> | <b>4.0mm</b>            | <b>4.0mm</b>            |
| <b>Detect distance Sn</b>   | <b>0...3.6mm</b>        | <b>0...3.6mm</b>        |



|            |            |           |                            |                            |
|------------|------------|-----------|----------------------------|----------------------------|
| <b>PNP</b> | DC 3 wires | <b>NO</b> | <b>DSS-CPS-POM12SB-4FM</b> | <b>DSS-CPS-POM12LB-4FM</b> |
|            |            | <b>NC</b> | <b>DSS-CPS-PCM12SB-4FM</b> | <b>DSS-CPS-PCM12LB-4FM</b> |
| <b>NPN</b> | DC 3 wires | <b>NO</b> | <b>DSS-CPS-NOM12SB-4FM</b> | <b>DSS-CPS-NOM12LB-4FM</b> |
|            |            | <b>NC</b> | <b>DSS-CPS-NCM12SB-4FM</b> | <b>DSS-CPS-NCM12LB-4FM</b> |

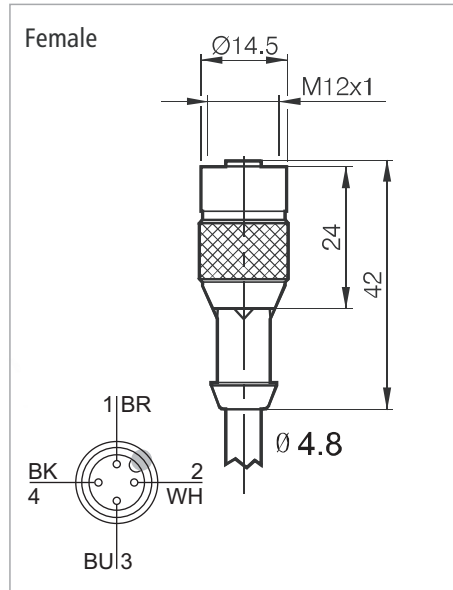
|                                      |                    |                    |
|--------------------------------------|--------------------|--------------------|
| Rated operational voltage (DC/AC)    | 24V DC             | 24V DC             |
| Supply voltage (DC/AC)               | 10-30V DC          | 10-30V DC          |
| Voltage drop                         | ≤ 2.0V             | ≤ 2.0V             |
| Rated insulation voltage             | ≥ 20M $\Omega$     | ≥ 20M $\Omega$     |
| Load current capacity (DC/AC)        | 100mA              | 200mA              |
| Off-state current (NPN/PNP)          | ≤ 15mA             | ≤ 15mA             |
| Leak current                         | ≤ 20 $\mu$ A       | ≤ 20 $\mu$ A       |
| Against polarity reversal            | YES                | YES                |
| Short circuit protected              | YES                | YES                |
| Load capacity                        | ≤ 1 $\mu$ F        | ≤ 1 $\mu$ F        |
| Repeated accuracy                    | ≤ 5%               | ≤ 5%               |
| Ambient temperature range            | -25...+70°C        | -25...+70°C        |
| Frequency (DC 3/2wires / AC 2 wires) | 800Hz/400Hz        | 800Hz/400Hz        |
| Function indication                  | Red LED Indicator  | Red LED Indicator  |
| IP ratings                           | IP67               | IP67               |
| Housing material                     | Nickle plate brass | Nickle plate brass |
| Material of sensing face             | ABS                | ABS                |
| Plug-in connector                    | M12 3/4 Wire       | M12 3/4 Wire       |
| Approvals                            | CE                 | CE                 |

# PLUG-IN Cables

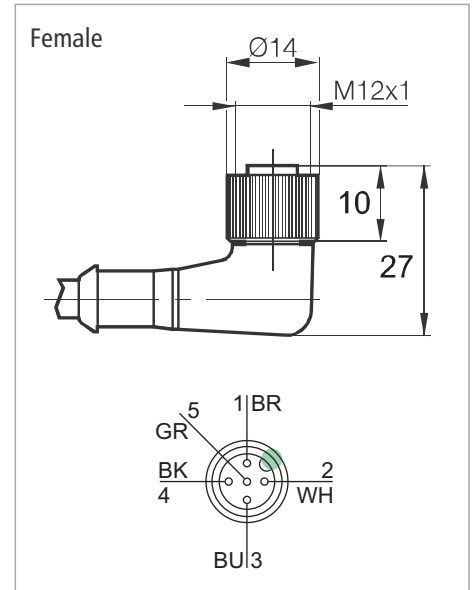
## Connector



### M12 Straight 3/4 Pole (Pin)



### M12 90° Angled 3/4 Pole (Pin)



**DSS-CCS-M12-F4A-3M**

**DSS-CCS-M12-F4A-5M**

**DSS-CCS-M12-F4A-10M**

**DSS-CCA-M12-F4A-3M**

**DSS-CCA-M12-F4A-5M**

**DSS-CCA-M12-F4A-10M**

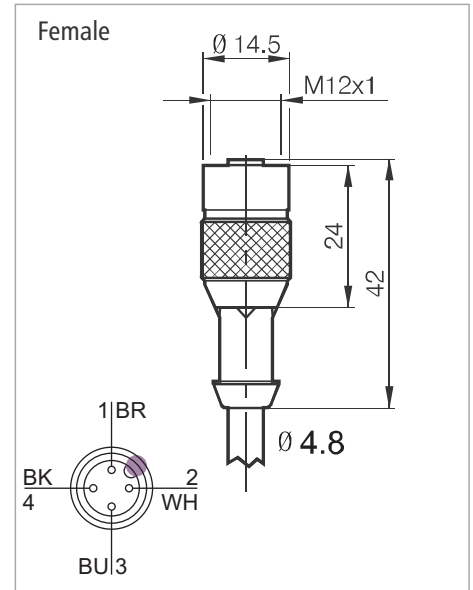
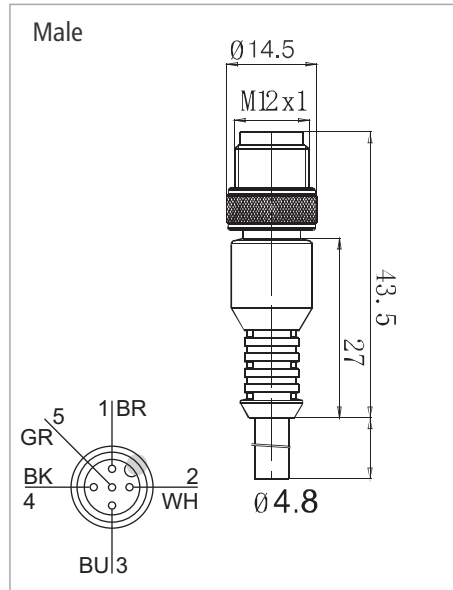
|                             |                            |                            |
|-----------------------------|----------------------------|----------------------------|
| Cable Lengths Available     | 3 Meter, 5 Meter, 10 Meter | 3 Meter, 5 Meter, 10 Meter |
| No. of Cores                | 16X0.15                    | 16X0.15                    |
| Section of Each Core        | 3(4) X 0.3mm <sup>2</sup>  | 3(4) X 0.3mm <sup>2</sup>  |
| Material (Cable/Injection)  | PVC                        | PVC                        |
| Material (Pole/Pin)         | Copper                     | Copper                     |
| LED Lamp                    | NO                         | NO                         |
| Rated Voltage               | DC 12~220V                 | DC 12~220V                 |
| Resistance of Each Core     | 17.24 X 10 <sup>-3</sup> Ω | 17.24 X 10 <sup>-3</sup> Ω |
| Installation Strength       | >200 MΩ                    | >200 MΩ                    |
| IP Rating (Cable/Injection) | IP67/IP65                  | IP67/IP65                  |

# INTERCONNECTING Cables

## Connector

### M12 Male 3/4 Pole (Pin)


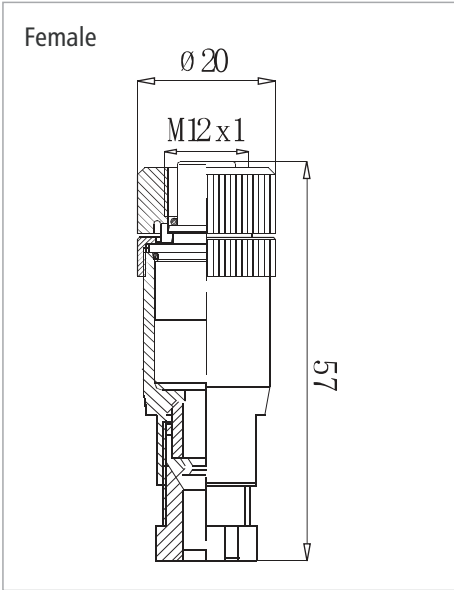
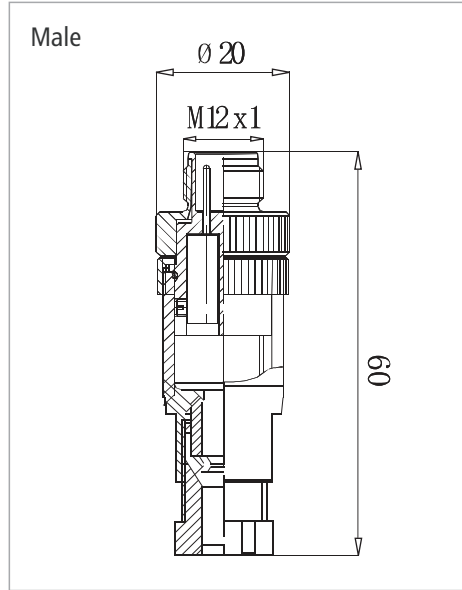
### M12 Female 3/4 Pole (Pin)



- DSS-CCS-FM12-F4A-3M
- DSS-CCS-FM12-F4A-5M
- DSS-CCS-FM12-F4A-10M

|                             |                            |
|-----------------------------|----------------------------|
| Cable Lengths Available     | 3 Meter, 5 Meter, 10 Meter |
| No. of Cores                | 16X0.15                    |
| Section of Each Core        | 3(4) X 0.3mm <sup>2</sup>  |
| Material (Cable/Injection)  | PVC                        |
| Material (Pole/Pin)         | Copper                     |
| LED Lamp                    | NO                         |
| Rated Voltage               | DC 12~220V                 |
| Resistance of Each Core     | 17.24 X 10 <sup>-3</sup> Ω |
| Installation Strength       | >200 MΩ                    |
| IP Rating (Cable/Injection) | IP67/IP65                  |
| Connection                  | Male - Female              |

# JOINING Connectors

| Connector   | M12 Female<br>4 Poles (Pins)   | M12 Male<br>4 Poles (Pins)  |
|---|--|---|
|  |  |  |
|   | <b>DSS-CCS-F-4A</b>  | <b>DSS-CCS-M-4A</b>   |
| Cable   | User Connect   | User Connect  |
| No. of Poles/Pins   | 3 or 4   | 3 or 4  |
| Material of Housing   | ABS  | ABS   |
| Material (Pole/Pin)   | Nickle Plated Brass  | Nickle Plated Brass   |
| LED Lamp  | NO   | NO  |
| Rated Voltage   | AC/DC 12~250V  | AC/DC 12~250V   |
| Rated Current   | AC 3A  | AC 3A   |
| Connection Method   | Terminals  | Terminals   |
| Installation Strength   | >200 M $\Omega$  | >200 M $\Omega$   |
| IP Rating (Housing)   | IP67   | IP67  |