

D-Series  
High Reliability  
Circular Connectors

integra  
**Mate**<sup>®</sup>



**QA Technology integraMate® D-Series Connectors** are high quality, plastic circular connectors featuring the reliability of integraMate® hyperboloid contacts. They are designed to be used in applications where low mating force, resistance to vibration and reliability over a high number of mating cycles is essential. Featuring a low profile, easy to actuate latch mechanism and ergonomic shell design, they are perfect for a wide range of instrumentation applications. Made of impact resistant polycarbonate, they are able to survive rough handling. The latch mechanism provides an audible click when locked, and is resistant to accidental disconnection. D-Series connectors use easily installed and removable solder cup or crimp contacts. D-Series plugs have robust cable clamping systems and offer optional bend reliefs that make fabricating custom cable assemblies a snap.

## Features

- All the benefits of integraMate® IC Series hyperboloid contacts
- Multiple contact configurations available
- Removable contacts feature solder cup or crimp termination options
- The pin and socket contacts are interchangeable within the plug and receptacle assemblies
- High-strength polycarbonate shell & polyethersulfone (PES) cable clamp
- Low mating/de-mating force
- Resistant to shock & vibration
- Long cycle life, over 10,000 connector mating cycles
- Robust cable clamp system and bend relief option for 5.0 mm to 8.0 mm diameter cables.

## Applications

- Medical & Dental Equipment
- Scientific Instruments
- Military & Aerospace
- Industrial Equipment

## Competitive Advantages

integraMate® D-Series Connectors provide clear advantages over competing hyperboloid contact, circular connectors:

- Attractive design with improved ergonomics
- Improved latching system
- Robust cable clamping and strain relief
- Easily removable contacts cut down on waste during assembly
- Higher density contact patterns

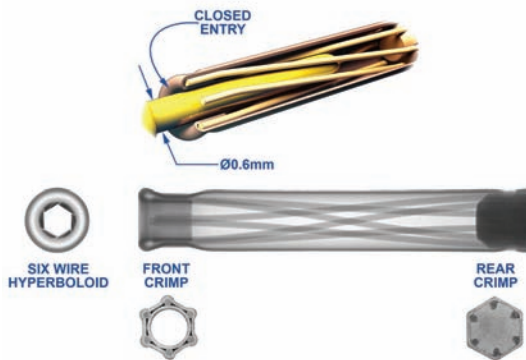


## About integraMate® Hyperboloid Contacts

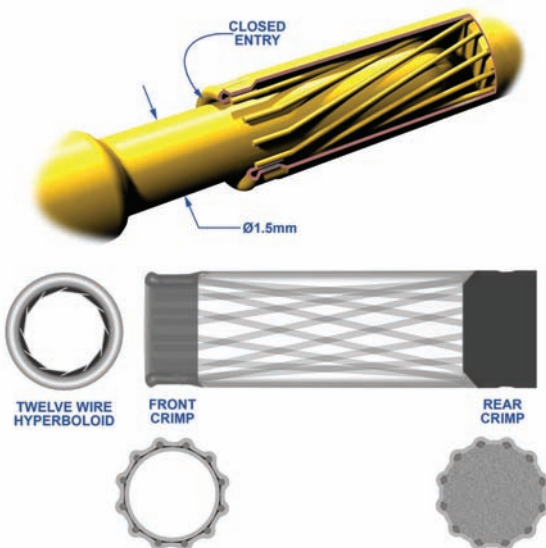
**D-Series Connectors** feature integraMate® contacts, QA's new hyperboloid contact system. Since integraMate® has a smaller diameter than competitive designs, higher contact densities are possible. Hyperboloid contacts are known for their reliability because of multiple contact points and the superior wiping provided by the wire cage within the socket. The unique contact geometry and smooth contact surfaces reduce the need for high normal forces. Long life (discrete contacts are rated for a minimum of 100,000 cycles), low insertion force and resistance to vibration are assured.

### integramate® Contact Details

#### Ø0.6mm Signal Contacts



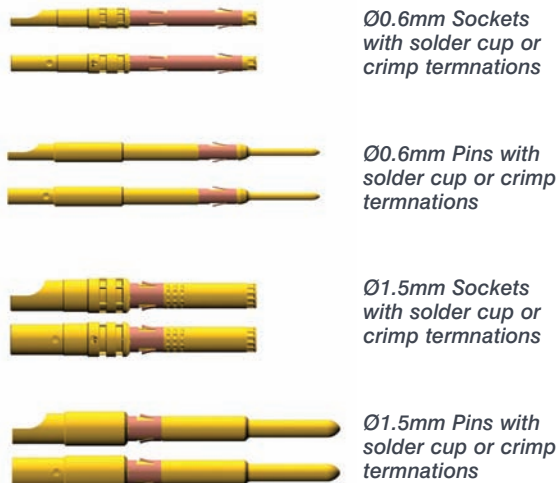
#### Ø1.5mm Power Contacts



### Features

- Low insertion/extraction force
- Low contact resistance
- Long cycle life
- Immune to shock and vibration
- Positive wiping action
- Easy contact removal using available extraction tools
- Small external contact diameter compared to other hyperboloid contacts allowing closer spacing
- Tubular entrance to protect spring wire cage and guide mating
- Intermates with other hyperboloid contacts known in the industry

### integramate® Contacts used in D-Series Connectors

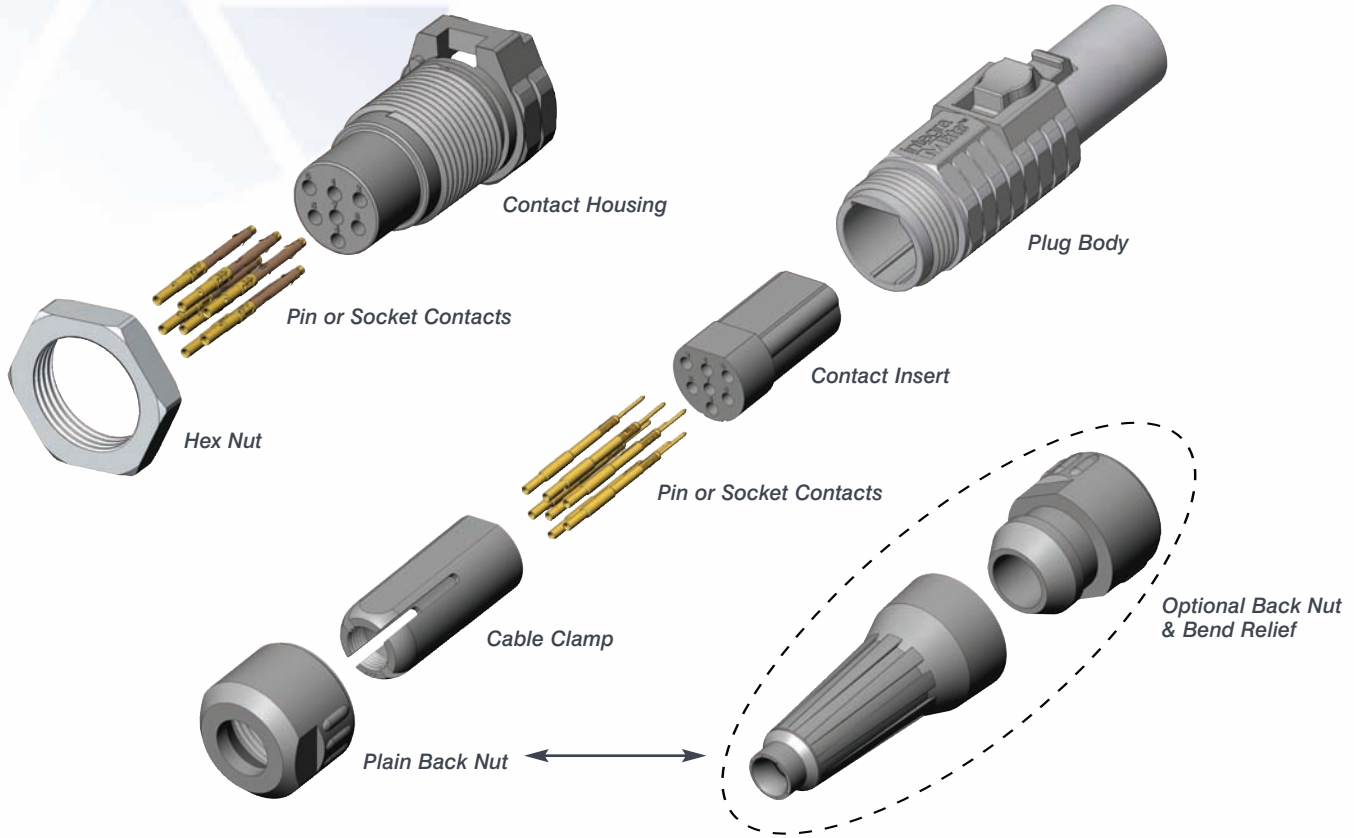


# integraMate® D-Series Circular Connectors

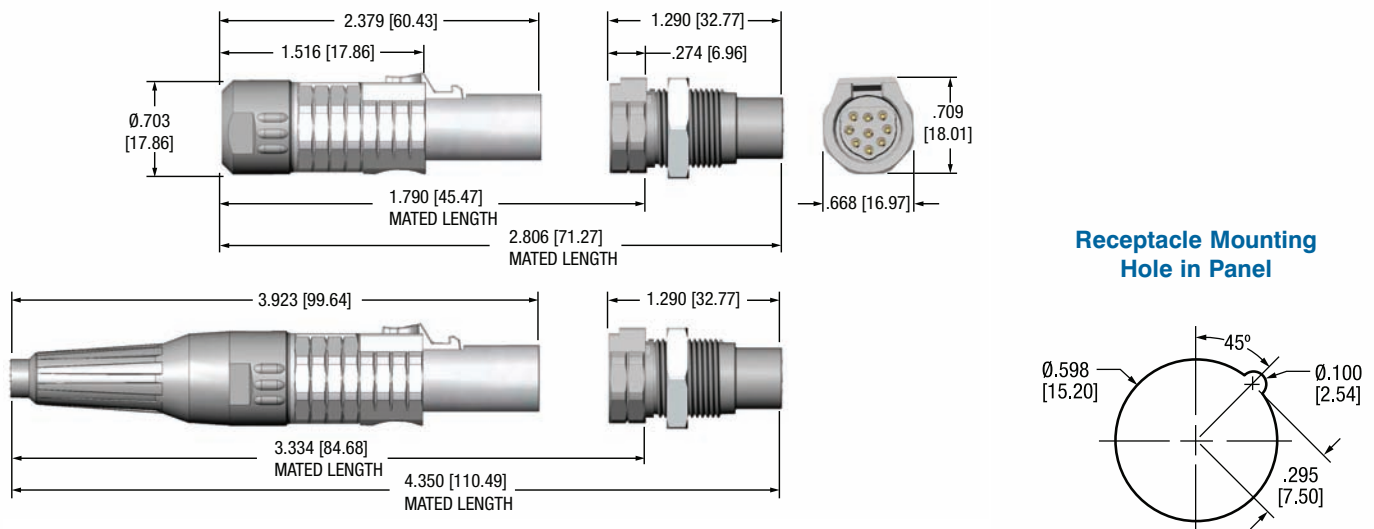
## Construction Details

### Receptacle Components

### Plug Components



## integraMate® DO2-Series Circular Connectors

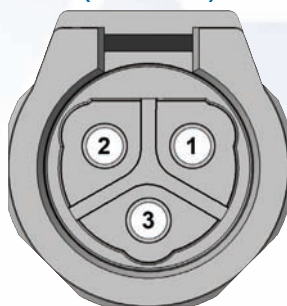


## Specifications

Mechanical	DO2 Specifications	Test Procedure
Connector Mating Force	3.5 lbs. max.	EIA-364, TP 13
Connector Retention Force	20.0 lbs. min.	EIA-364, TP 90
Contact Retention Force	5.0 lbs. min. per contact	EIA-364, TP 29
Connector Mating Cycles	10,000 min.	EIA-364, TP 9
Random Vibration	19.64 G (root mean square)	EIA-364, TP 28; Test Condition V; Mil-Std-1344, Method 2005
Mechanical Shock	50 G	EIA-364, TP 27; Mil-Std-1344, Method 2004
Electrical		
Current Rating	See contact pattern	EIA-364, TP 70
Low Level Contact Resistance	See contact pattern	EIA-364, TP 23; Mil-Std-1344, Method 3002
Insulation Resistance	>10,000 MΩ	EIA-364, TP 21; Mil-Std-1344, Method 3003
Dielectric Withstanding Voltage	See contact pattern	EIA-364, TP 20; Mil-Std-1344, Method 3001
Environment		
Protection Index	IP50	IEC 60529
Operating Temperature	-40°C to 85°C	
Materials		
Connector		
Molded Parts <i>(except as indicated below)</i>	Polycarbonate (PC)	
Cable Clamp	Polyethersulfone (PES)	
Bend Relief	Thermoplastic Elastomer (TPE)	
Mounting Nut	Die Cast Zinc with Nickel Plating	
Contacts		
Contact Wires & Spring Clips	Beryllium Copper	
All other parts	High Conductivity Copper Alloys	
Contact Plating	<ul style="list-style-type: none"> <li>• 50 μ-inch of gold plating over nickel on all sliding contact surfaces</li> <li>• 10 μ-inch of gold plating on all other surfaces</li> </ul> <i>(note the ends of contact wires and mounting clips are not plated)</i>	

## Contact Patterns

**Pattern – 3  
(3 contacts)**



<b>Pattern 3 Specifications (3 Contacts)</b>	
Contact size (pin diameter)	.059 [1.50]
Dielectric Withstanding Voltage	3500 VAC
Current Rating (all circuits energized at rated current, 30°C rise)	12 A
Low Level Contact Resistance	< 2 mΩ
<b>Tools</b>	
Crimp tool per M22520/1-01	ITC-200
Contact positioner for 1.5 mm contacts	ITP-OA5
Contact removal tool for 1.5 mm contacts	ITE-OA5

*Mates with similar connectors by other manufacturers*

**Pattern – 7  
(7 contacts)**



<b>Pattern 7 Specifications (7 Contacts)</b>	
Contact size (pin diameter)	.0236 [0.60]
Dielectric Withstanding Voltage	2500 VAC
Current Rating (all circuits energized at rated current, 30°C rise)	4 A
Low Level Contact Resistance	< 4 mΩ (3 mΩ typ.)
<b>Tools</b>	
Crimp tool per M22520/2-01	ITC-100
Contact positioner for 0.6 mm contacts	ITP-060
Contact removal tool for 0.6 mm contacts	ITE-060

*Mates with similar connectors by other manufacturers*

**Pattern – 9  
(9 contacts)**



<b>Pattern 9 Specifications (9 Contacts)</b>	
Contact size (pin diameter)	.0236 [0.60]
Dielectric Withstanding Voltage	2000 VAC
Current Rating (all circuits energized at rated current, 30°C rise)	3.5 A
Low Level Contact Resistance	< 4 mΩ (3 mΩ typ.)
<b>Tools</b>	
Crimp tool per M22520/2-01	ITC-100
Contact positioner for 0.6 mm contacts	ITP-060
Contact removal tool for 0.6 mm contacts	ITE-060

*Mates with similar connectors by other manufacturers*

**Pattern – A  
(14 contacts)**

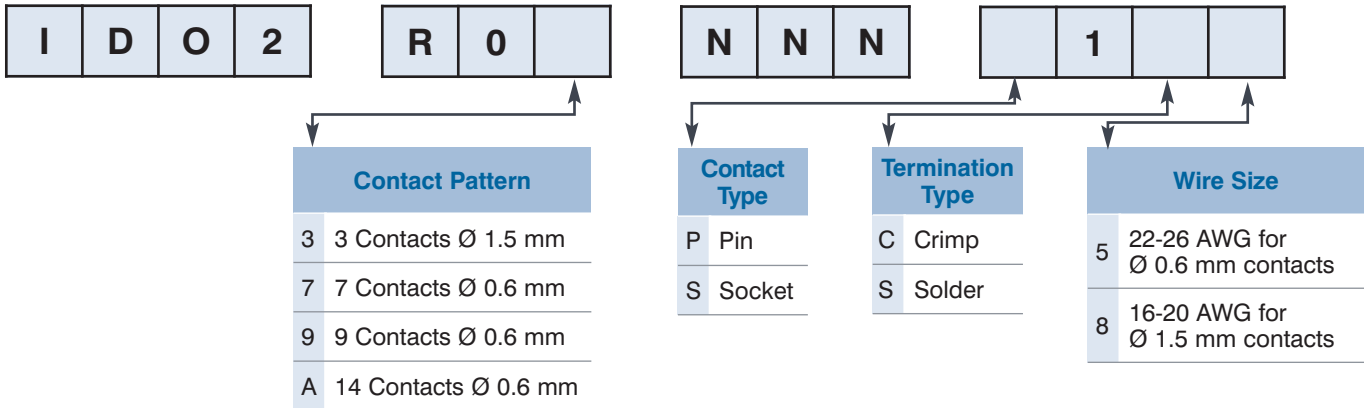


<b>Pattern A Specifications (14 Contacts)</b>	
Contact size (pin diameter)	.0236 [0.60]
Dielectric Withstanding Voltage	1800 VAC
Current Rating (all circuits energized at rated current, 30°C rise)	3 A
Low Level Contact Resistance	< 4 mΩ (3 mΩ typ.)
<b>Tools</b>	
Crimp tool per M22520/2-01	ITC-100
Contact positioner for 0.6 mm contacts	ITP-060
Contact removal tool for 0.6 mm contacts	ITE-060

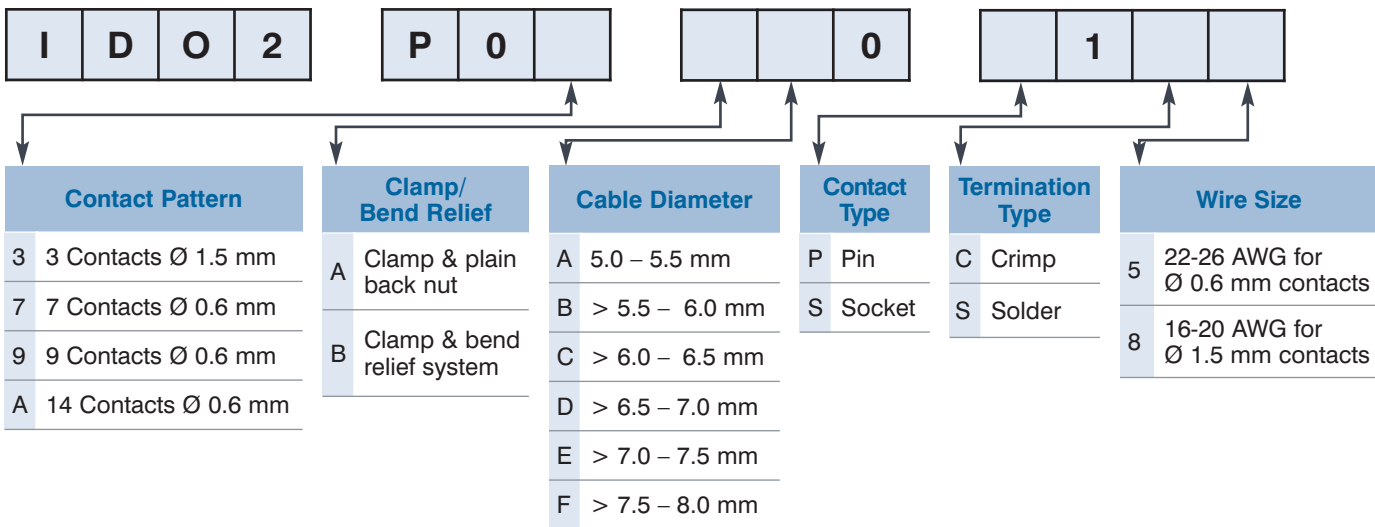
*Unique to integraMate® D-Series*

## integramate® Connector Part Numbering

### Receptacle (Panel Mount) Order Code:



### Plug (Cable Mount) Order Code:



## Accessories and Tools



ITC-100 Crimping Tools  
for Ø 0.6 mm Contacts



ITP-O60 Positioner  
for Ø 0.6 mm Contacts



ITE-O60 Extraction Tool for Ø 0.6 mm Contacts



ITE-OA5 Extraction Tool for Ø 1.5 mm Contacts



ITC-200 Crimping Tools  
for Ø 1.5 mm Contacts



ITP-OA5 Positioner  
for Ø 1.5 mm Contacts




ITW-D2 Back Nut Wrench  
Fits both plain and bend relief back nuts

## About QA Technology

QA Technology was founded in 1981 and has since been recognized as a worldwide leader in the manufacture of high quality spring contact test probes. QA designs and builds its own flexible, high-speed automatic assembly equipment, which allows us to typically ship orders within 24-48 hours. Now QA Technology brings the same high quality and manufacturing speed to the hyperboloid contact market.



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