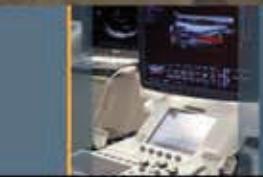




ITT

Interconnect Solutions  
Cannon, VEAM, BIW

Enabling miniaturization of **critical**,  
soldier technology **applications**  
through the fielding of the **industry's most**  
**innovative** mini-circular product lines



*Engineered for life*



<b>Mini Circular</b>			
<b>Series</b>	<b>Nemesis Water Tight</b>	<b>Nemesis Super Clean</b>	<b>Nemesis High Mating</b>
<b>Military Spec Market</b>	Commercial	Commercial	Commercial
<b>Coupling System</b>	Snap-on/Breakaway, Bayonet & Push Pull	Snap-on/Breakaway	Snap-on/Breakaway, Bayonet & Push Pull
<b>Maximum Temperature Range</b>	-40° to +100° C	-55° to +125° C	-55° to +125° C
<b>Hardware</b>	Stainless Steel	Stainless Steel	Stainless Steel
<b>Finishes</b>	Black Zinc Nickel & Electroless Nickel	Black Zinc Nickel & Electroless Nickel	Black Zinc Nickel & Electroless Nickel
<b>Contact Type</b>	Crimp & Straight PCB Tails	Crimp & Straight PCB Tails	Crimp & Straight PCB Tails
<b>Contacts</b>	Twist Pin and Sockets	Pogo Pins and Pads	Pogo Pins and Pads
<b>Contact Plating</b>	Gold over Nickel	Gold over Nickel	Gold over Nickel
<b>Wire Size</b>	24 - 32 AWG	24 - 32 AWG	24 - 32 AWG
<b>Contact Rating</b>	3 Amps	2 Amps continuous 3 Amps Peak	2 Amps continuous 3 Amps Peak
<b>Contact Resistance</b>	8 mOhm	15 mOhm	15 mOhm
<b>Voltage Rating</b>	50 Vdc	50 Vdc	50 Vdc
<b>Dielectric Withstanding Voltage Sea Level</b>	500 Volts	500 Volts	500 Volts
<b>Insulation Resistance</b>	5,000 MOhm	5,000 MOhm	5,000 MOhm
<b>Mating Cycles</b>	2,500 (500 Push Pull)	10,000	10,000
<b>Coding</b>	5 Clocking Positions: N, A, B, C and D	5 Clocking Positions: N, A, B, C and D	5 Clocking Positions: N, A, B, C and D
<b>RoHS Compliance</b>	Yes	Yes	Yes
<b>Sealing</b>	IP68>20m	IP67	IP67
<b>Page No.</b>	B-6	B-16	B-22



<b>Mini Circular</b>			
<b>Series</b>	<b>Single Start Thread MKJ0</b>	<b>Double Start Thread MKJ1</b>	<b>Bayonet Style MKJ3</b>
<b>Military Spec Market</b>	Military/Industrial/Commercial	Military/Industrial/Commercial	Military/Industrial/Commercial
<b>Coupling System</b>	UNC Thread	Double Start	Bayonet
<b>Temperature Range</b>	-55° to +125° C	-55° to +125° C	-55° to +125° C
<b>Hardware</b>	Aluminum	Aluminum/Stainless Steel	Aluminum
<b>Finishes</b>	Cadmium/Zinc Nickel/Nickel	Cadmium/Zinc Nickel/Nickel	Cadmium/Zinc Nickel/Nickel
<b>Contact Termination</b>	Crimp/Solder Cup Straight PCB	Crimp/Solder Cup Straight PCB	Crimp/Solder Cup Straight PCB
<b>PCB Termination</b>	Available	Available	Available
<b>Contact Type</b>	AS39029 Style Machined Pin / Socket	AS39029 Style Machined Pin / Socket	AS39029 Style Machined Pin / Socket
<b>Contact Release</b>	Rear Release	Rear Release	Rear Release
<b>Contact Plating</b>	Gold/Nickel	Gold/Nickel	Gold/Nickel
<b>Contact Sizes</b>	Size 20-16	Size 20-16	Size 20-16
<b>Wire Range AWG</b>	Size #16-28	Size #16-28	Size #16-28
<b>Current Rating</b>	5 Amps (#20) 13 Amps (#16)	5 Amps (#20) 13 Amps (#16)	5 Amps (#20) 13 Amps (#16)
<b>Insulation Resistance Sea Level</b>	500 VAC rms	500 VAC rms	500 VAC rms
<b>Shell Sizes</b>	5 to 18	5 to 18	5 to 18
<b>Mating Cycles</b>	500	500	500
<b>RoHS Compliance</b>	Available	Available	Available
<b>Salt Spray Max</b>	500 Hours	200 Hours	200 Hours
<b>Grommet and Seals</b>	Fluorosilicone	Fluorosilicone	Fluorosilicone
<b>Page No.</b>	B-34	B-40	B-46



<b>Mini Circular</b>		
<b>Series</b>	<b>Breakaway MKJ4</b>	<b>Metr1x</b>
<b>Military Spec Market</b>	Military/ Industrial/Commercial	Military/ Industrial/Commercial
<b>Coupling System</b>	Brekaway	Metrical Thread
<b>Temperature Range</b>	-55° to +125° C -40° to +302° F	-40° to +150° C -40° to +302° F
<b>Hardware</b>	Aluminum	Stainless Steel
<b>Finishes</b>	Cadmium/Zinc Nickel/Nickel	None
<b>Contact Termination</b>	Crimp/Solder Cup Straight PCB	Crimp
<b>PCB Termination</b>	Available	Not Available
<b>Contact Type</b>	AS39029 Style Machined Pin / Socket	Signal
<b>Contact Release</b>	Rear Release	Rear Release
<b>Contact Plating</b>	Gold/Nickel	Gold/Nickel
<b>Contact Sizes</b>	Size 20-16	Size 20
<b>Wire Range AWG</b>	Size #16-28	Size #20-24
<b>Test Current</b>	5 Amps (#20) 13 Amps (#16)	4 Amps
<b>Dielectric Withstanding Voltage Sea Level</b>	500 VAC rms	1400 VAC rms
<b>Shell Sizes</b>	5 to 18	M12
<b>Mating Cycles</b>	500	50
<b>RoHS Compliance</b>	Available	Available
<b>Salt Spray Max</b>	500 Hours	48 Hours
<b>Grommet and Seals</b>	Fluorosilicone	FKM
<b>Sealing</b>		IP69K, IP68 (4m / 2hours)
<b>Page No.</b>	B-52	B-61



B

## Mini Circular

<b>Mini Circular</b>		
<b>Series</b>	MIK	MIKM
<b>Type</b>	Plug and Socket	Plug and Socket
<b>Current Rating</b>	3A Max.	3A Max.
<b>Contact Resistance</b>	8 milliohms max	8 milliohms max
<b>Contact Material</b>	Gold plated copper alloy	Gold plated copper alloy
<b>Shell</b>	Plastic	Plastic
<b>Shell Material</b>	Thermoplastic	Thermoplastic
<b>Available Layouts</b>	7 & 55	7, 55 & 85
<b>Configuration</b>	Circular	Circular
<b>RoHS</b>	Available	Available
<b>Factory Terminated</b>	Yes	Yes
<b>Space Applications</b>	Yes	Yes
<b>Page No.</b>	B-63	B-65



ITT ICS's Water Tight connector is a lightweight, robust and watertight solution designed for military, marine, medical and industrial application. The connector features micro twist pin contact technology and as its name implies the connector is rated for an immersion depth of greater than 20 meters of water.

## Specifications

<b>Contact Type</b>	Cable plug and free receptacle crimp, jam nut receptacle PCB
<b>Contacts</b>	Cable plug and free receptacle micro twist pin, receptacle micro socket
<b>Wire Size</b>	24 - 32 AWG
<b>Contact Rating</b>	3 Amps
<b>Voltage Rating</b>	50 Vdc
<b>Insulation Resistance</b>	5,000 Mohm minimum
<b>Dielectric Withstand Voltage</b>	500 Volts
<b>Operating Temperature</b>	-40°C to +100°C
<b>Contact Resistance</b>	8 mOhm maximum
<b>Vibration</b>	20 g's in accordance with MIL-STD-1344 Method 2005, Condition IV
<b>Shock</b>	50 g's in accordance with MIL-STD-1344 Method 2004, Condition E
<b>Durability</b>	2,500 cycles (500 cycles Push Pull)
<b>Shell Plating</b>	RoHS compliant 500 hour salt spray resistant black zinc nickel or electroless nickel
<b>Receptacle Mounting**</b>	Tamper proof jam nut
<b>Receptacle Sealing</b>	Using a conductive 'O' ring, non-conductive 'O' rings are available
<b>EMI Shielding</b>	50db attenuation 100Mhz to 1000Mhz in terminated condition
<b>Coupling</b>	Snap on/Breakaway, bayonet & push pull
<b>Coding</b>	5 polarizing positions; N, A, B, C, and D
<b>Coding Identification*</b>	Individual colors with colored dot on both parts plus indication on the boot; N=blue, A=red, B=green, C=grey and D=yellow
<b>Boot</b>	Cable dependant, either overmoulded or adhered
<b>Sealing</b>	IP68, >20m
<b>Layouts</b>	6 layouts, 7, 14, 19, 37, 40 & 55 contacts
<b>Shell to Shell Resistance</b>	<10 mOhm
<b>Blind Mate</b>	Yes
<b>Cable</b>	ITT standard or customer specified
<b>Cable Earth Termination</b>	360° cable braid termination to the shell
<b>Snap on/Breakaway Forces</b>	30N
<b>Strain Relief</b>	Designed to withstand a 10Kg pull off force minimum
<b>Materials</b>	Shells - Stainless Steel Insulators - Polyester Seals - Fluorosilicone rubber Contacts - Copper alloy with gold over nickel plating



How to Order

Product	NEM-WT		NEM	-	WTSB	-	7	14	S	N	T	-	XXX	B
	Plug	Receptacle												
Coupling Style:	SB	SB	Snap-on/Breakaway											
	BY	BY	Bayonet (contact sales)											
	PP	PP	Push Pull											
Shell Style:		1	Free Receptacle											
	6		Plug											
		7	Jam Nut Receptacle**											
	8		90° right angle plug (contact sales)											
Contact Arrangement:	7	7												
	14	14												
	19	19												
	37	37	Contact Sales for Availability											
	40	40	Contact Sales for Availability											
	55	55	Contact Sales for Availability											
Contact Type:	P		Pin Contact											
		S	Socket Contact											
Polarising Positions:	N	N	Normal											
	A, B, C & D	A, B, C & D	Alternatives											
Termination Type:	C	C***	Crimp Contacts											
		T	Straight PCB Tails											
Termination Code:	XXX	XXX	Contact Sales for Wire and Cable Options											
Finish Code:	B	B	Black Zinc Nickel											
	N	N	Electroless Nickel											

For the full range of plating options, contact sales.

\* 7, 14 & 19 way connectors use the same colour coding system but have different polarization. Where duplicate contact layouts are required on the same equipment it is recommended different polarization is used.

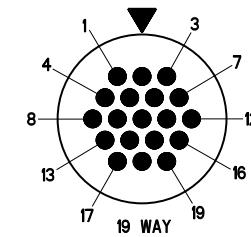
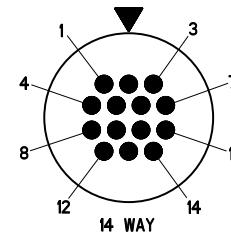
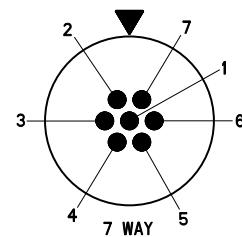
\*\* Requires special tool, part number T4909/01.

\*\*\* Crimp contacts for free receptacle only.

If less contact pins are required than is available it is possible to supply partially populated connectors on large volume requirements, contact sales for availability.



**Face View, Pin Side (Male Twist Pin Contacts)**

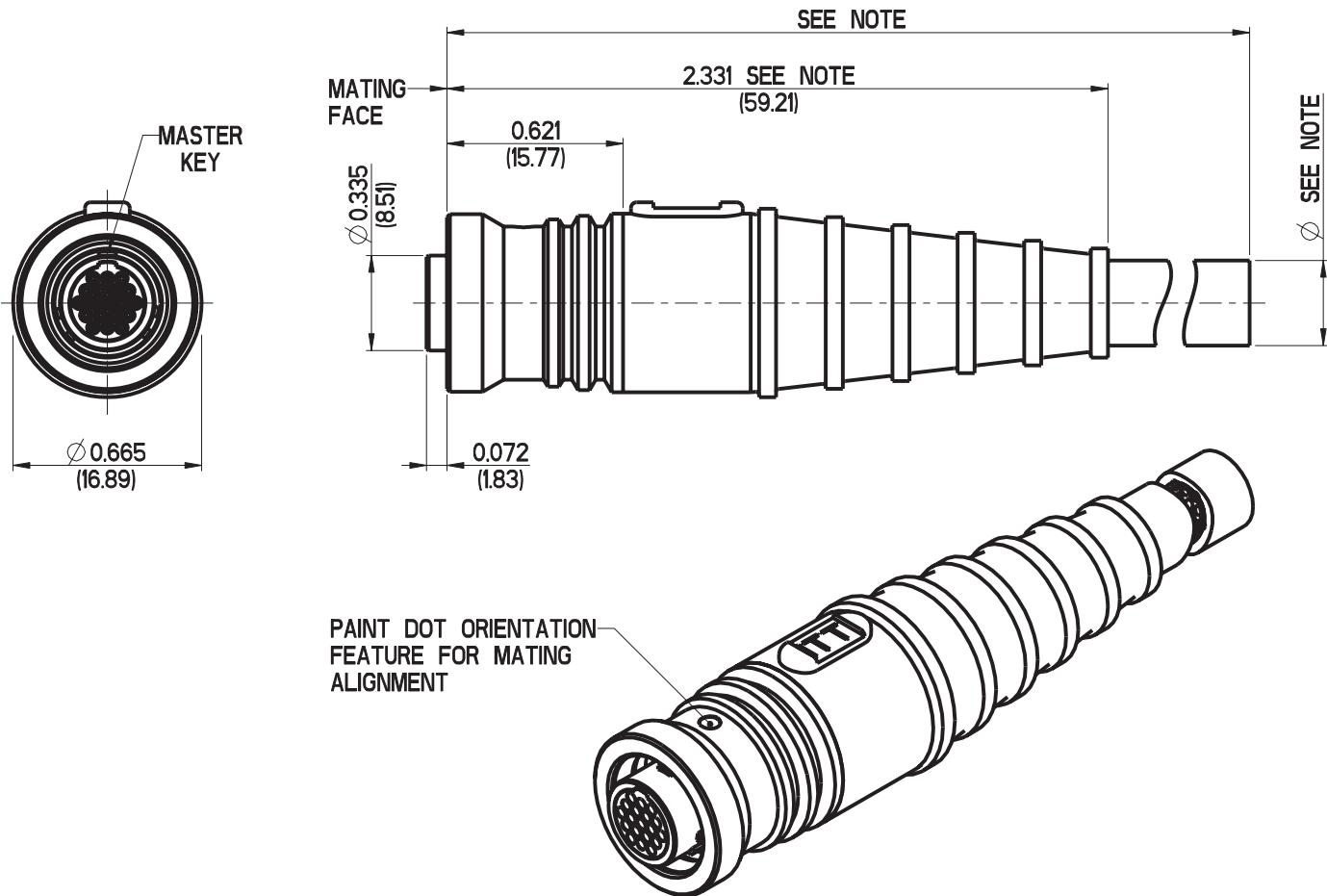


Cavity identification numbers are for reference only; they do not appear on connectors.



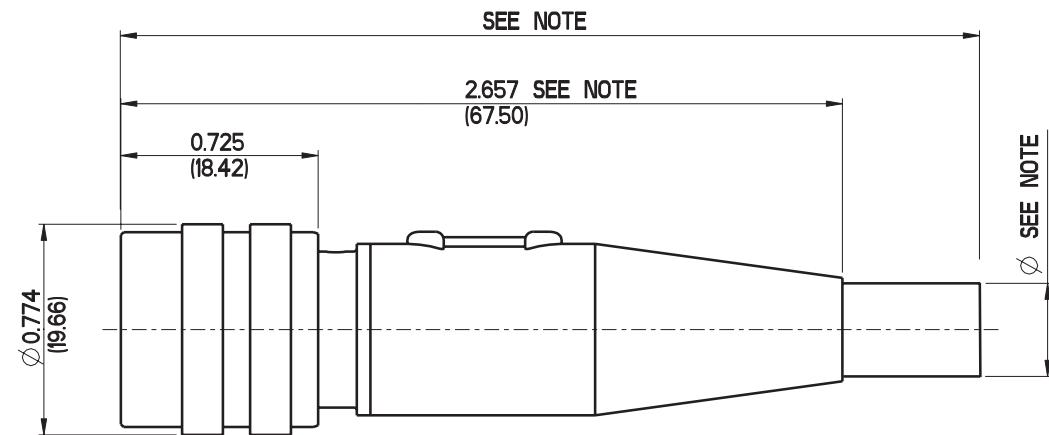
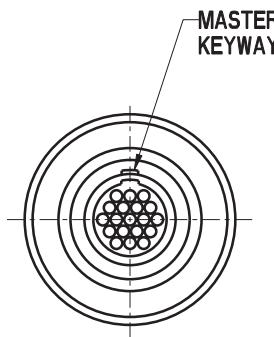
## Plug Dimensions - Snap On/Breakaway

Mini Circular

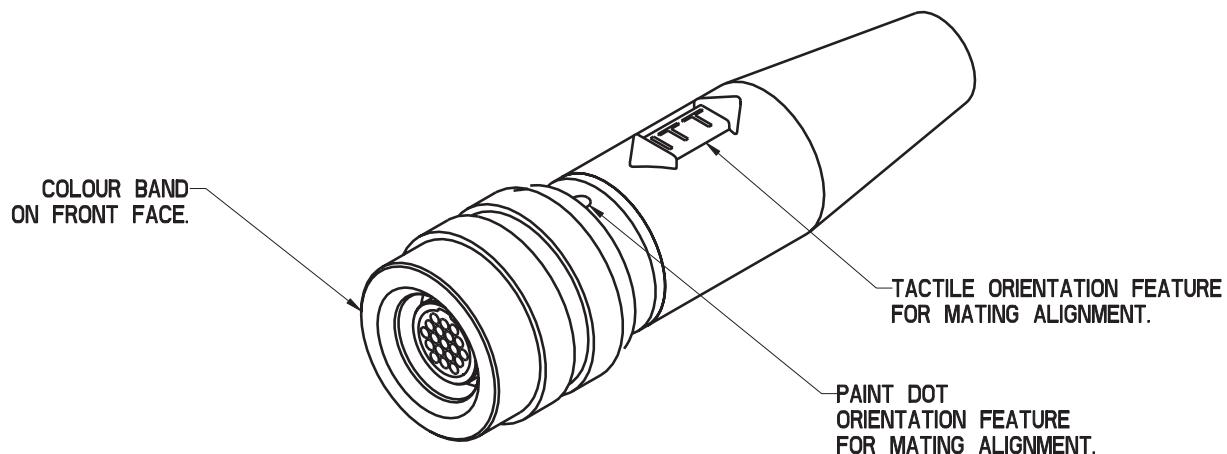


Note: These dimensions to be determined by customer cable requirements.

For 37 & 55 data contact sales.



NOTE: These dimensions to be determined by customer cable requirements.

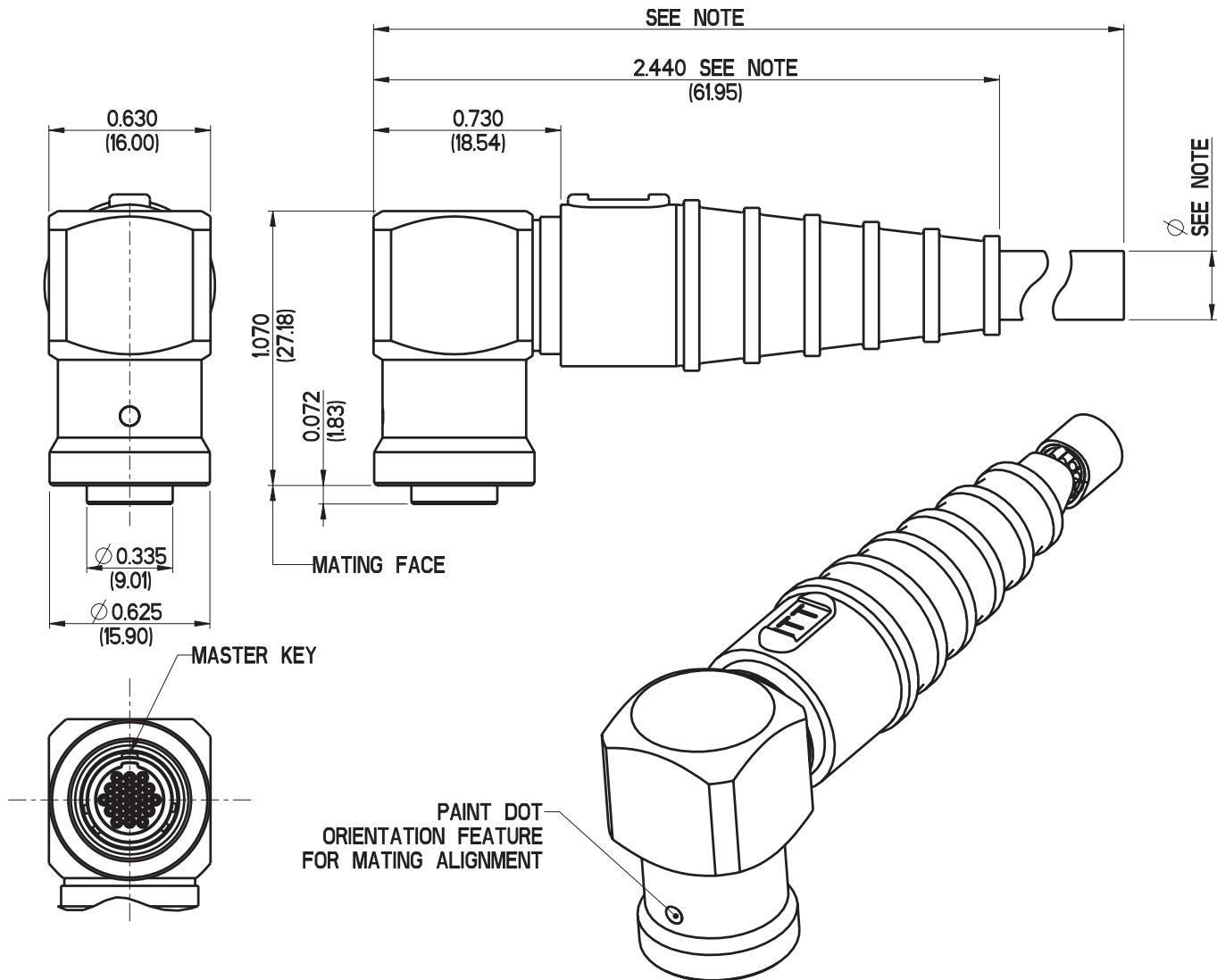


For 37, 40 & 55 data contact sales.



## Plug Dimensions - Right Angle

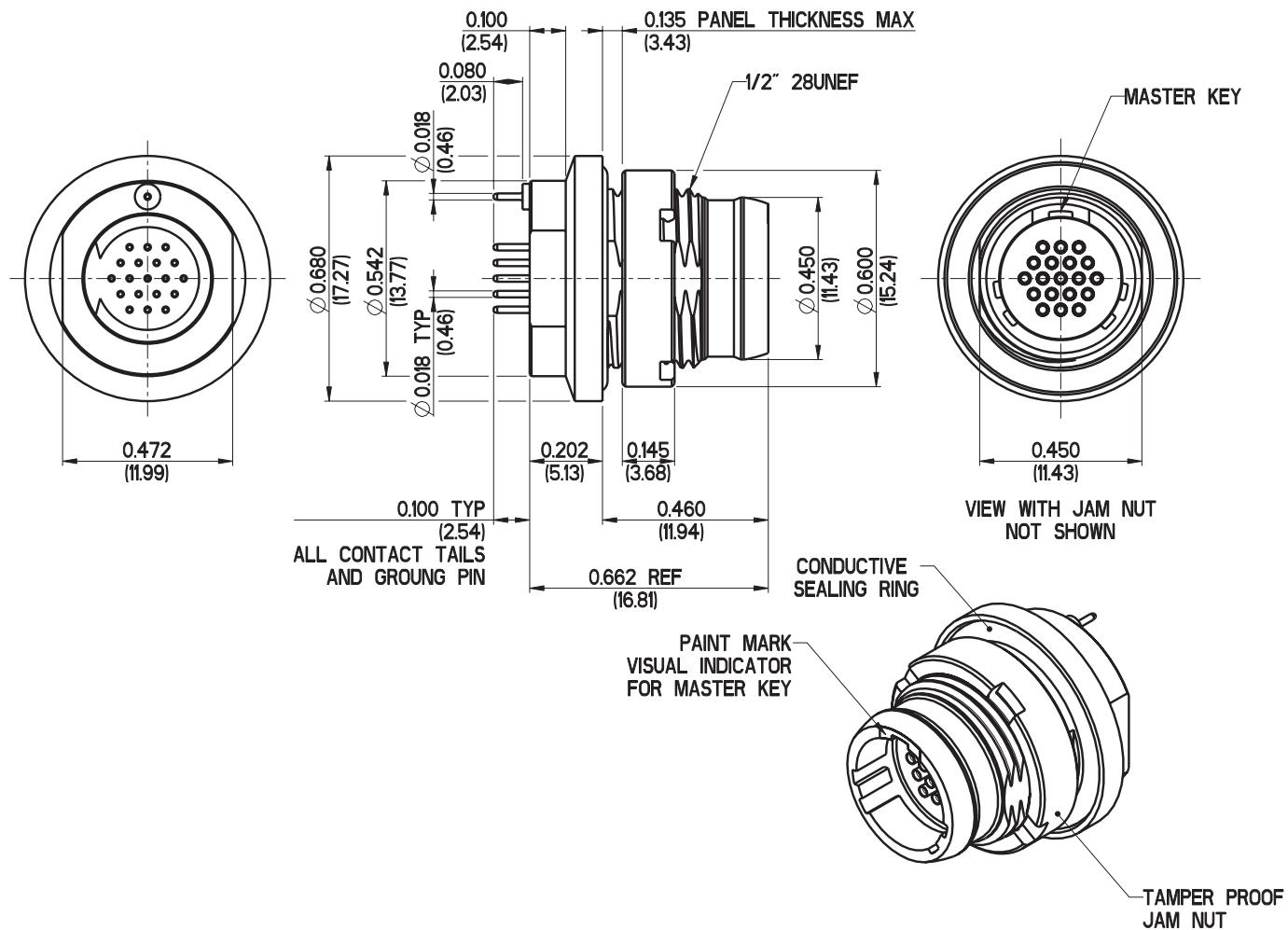
Mini Circular



Note: These dimensions to be determined by customer cable requirements.  
For 37 and 55 data contact sales.



Receptacle Dimensions - Snap On/Breakaway

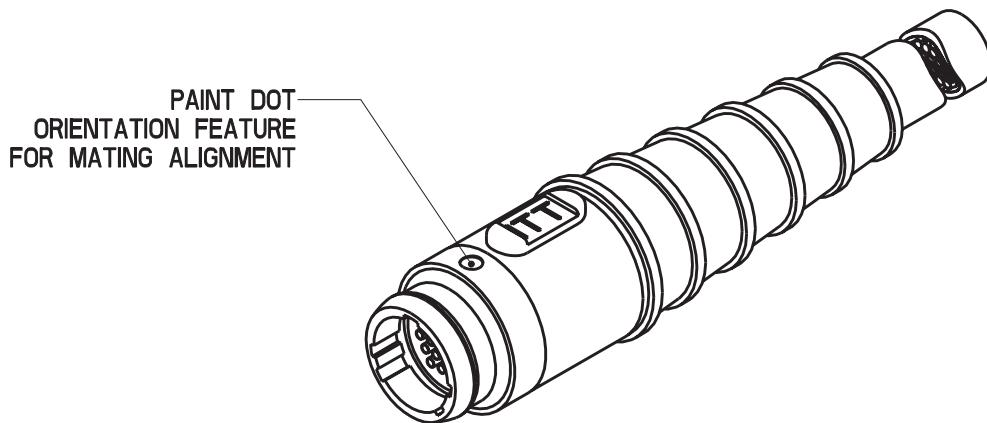
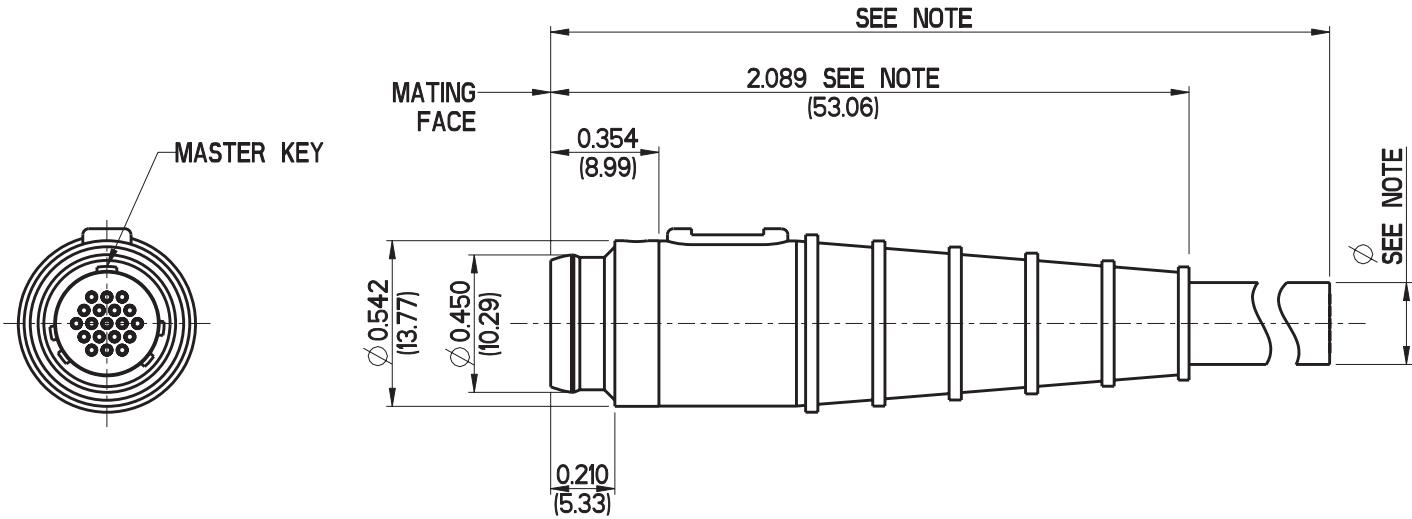


For 37 and 55 data contact sales.



## Receptacle Dimensions - Free Receptacle

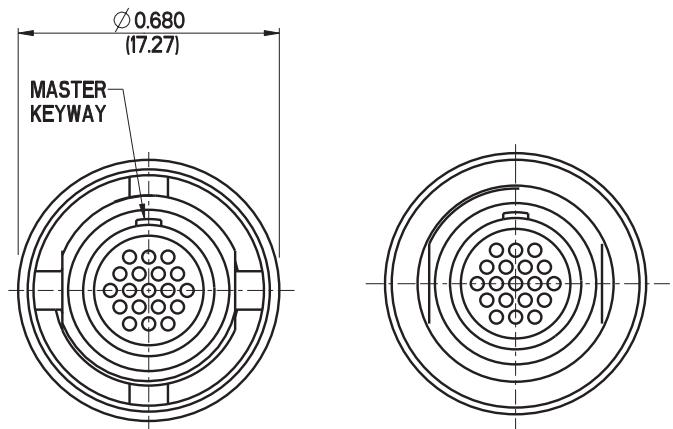
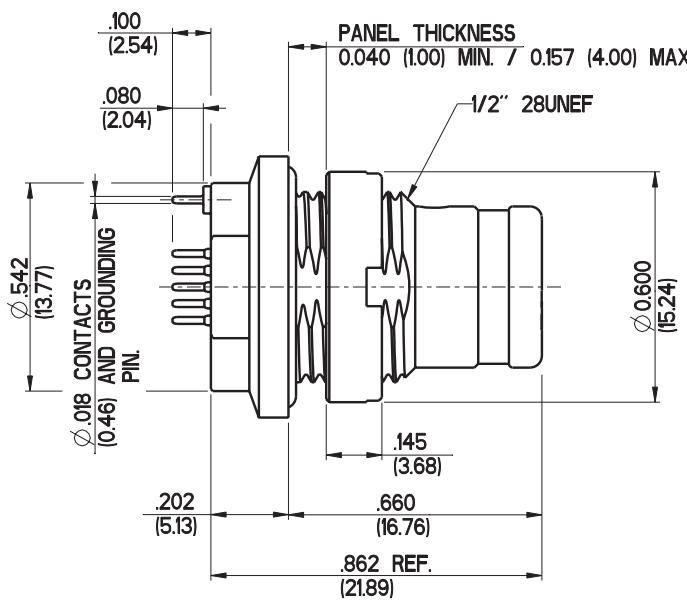
Mini Circular



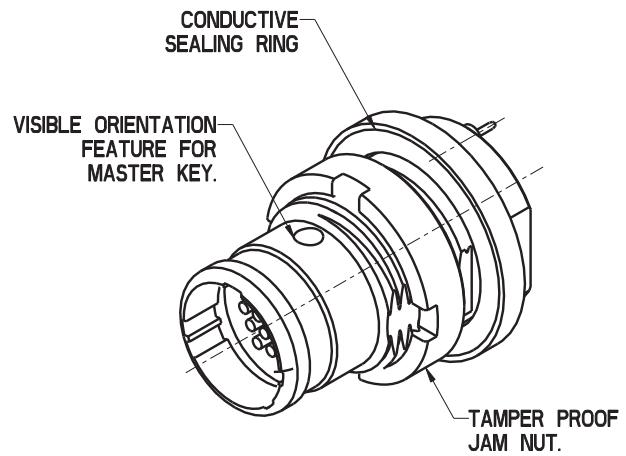
Note: These dimensions to be determined by customer cable requirements.

\For 37 and 55 data contact sales.

Receptacle Dimensions - Push Pull

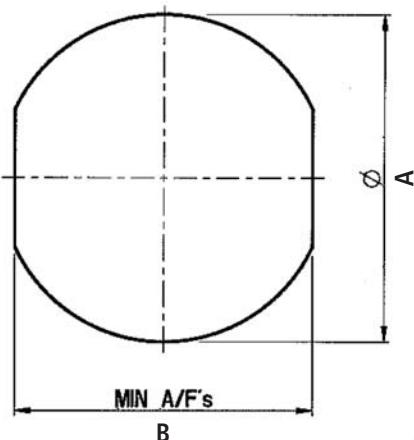


VIEW WITH JAM NUT  
NOT SHOWN.



For 37, 40 & 55 data contact sales.

Panel Cut-outs



Contact  
Arrangements

Dimensions

	A	B
7	0.501 (12.73)	0.455 (11.56)
14	0.501 (12.73)	0.455 (11.56)
19	0.501 (12.73)	0.455 (11.56)

For 37, 40 & 55 data contact sales.

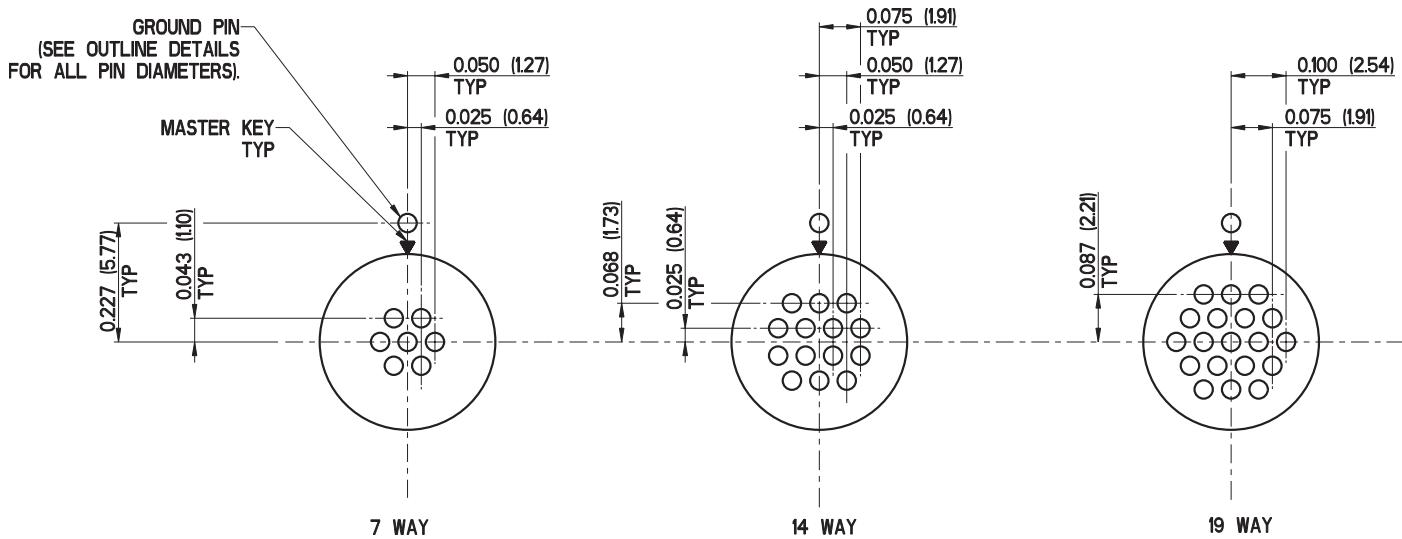


## Color Coding

POLARISATION LETTER	COLOR CODING
N	BLUE
A	RED
B	GREEN
C	GREY
D	YELLOW

## PCB Layout

GENERAL TOLERANCE	
7 and 19 way	$\pm 0.001$ (0.03)
14 way	$\pm 0.0015$ (0.038)
For ground pins	$\pm 0.002$ (0.05)





Overview

ITT ICS's Super Clean Connector is a lightweight, robust, watertight and field cleanable\*\* solution designed for military, commercial and industrial applications. The connector features pogo pin technology utilizing ITT's unique spring probe pin/pad contact system for a durable and long life connection. The cleanable feature allows users to maintain their systems in the field even in the dirtiest of environments.

\*\*Patent applied for.

**Specifications**

<b>Contact Type</b>	Cable receptacle crimp or solder, box plug PCB
<b>Contacts</b>	Plug = pogo pins, receptacle = pogo pads
<b>Wire Size</b>	24 - 32 AWG
<b>Contact Rating</b>	2 Amps continuous, 3 Amps peak
<b>Voltage Rating</b>	50 Vdc
<b>Insulation Resistance</b>	5,000 Mohm minimum
<b>Dielectric Withstand Voltage</b>	500 Volts
<b>Operating Temperature</b>	-55°C to +125°C
<b>Contact Resistance</b>	15 mOhm maximum
<b>Vibration</b>	20 g's in accordance with MIL-STD-1344 Method 2005, Condition IV
<b>Shock</b>	50 g's in accordance with MIL-STD-1344 Method 2004, Condition E
<b>Durability</b>	10,000 cycles
<b>Cleaning Durability</b>	2,500 cycles
<b>Plating</b>	RoHS compliant 500 hour salt spray resistant black zinc nickel or electroless nickel
<b>Receptacle Mounting**</b>	Tamper proof jam nut
<b>Receptacle Sealing</b>	Using a conductive 'O' ring, non-conductive 'O' rings are available
<b>EMI Shielding</b>	50db attenuation 100Mhz to 1000Mhz in terminated condition
<b>Coupling</b>	Snap on/Breakaway
<b>Coding</b>	5 polarizing positions; N, A, B, C, and D
<b>Coding Identification</b>	Individual colors with colored dot on both parts plus indication on the boot; N=blue, A=red, B=green, C=grey and D=yellow
<b>Boot</b>	Cable dependant, either overmoulded or adhered
<b>Sealing</b>	IP67
<b>Layouts</b>	7, 14, 19, 37 & 55
<b>Shell to Shell Resistance</b>	<10 mOhm
<b>Blind Mate</b>	Yes
<b>Cable</b>	ITT standard or customer specified
<b>Cable Earth Termination</b>	360° cable braid termination to the shell
<b>Snap on/Breakaway Forces</b>	30N
<b>Pull Back Barrel Force</b>	To be defined
<b>Strain Relief</b>	Designed to withstand a 10Kg pull off force minimum
<b>Materials</b>	Shells - Stainless Steel Insulators - Polyester Seals - Fluorosilicone rubber Contacts - Copper alloy with gold over nickel plating



## How to Order

Product	NEM-SC		NEM	-	SCSB	-	7	14	PG	N	T	-	XXX	B
Plug	Receptacle													
Coupling Style:	SB	SB	Snap-on/Breakaway											
Shell Style:		1	Free Receptacle (contact sales)											
	6		Plug											
		7	Jam Nut Receptacle**											
Contact Arrangement:	7	7												
	14	14												
	19	19												
	37	37	Contact Sales for Availability											
	55	55	Contact Sales for Availability											
Contact Type:	PG		Pogo Contact											
		PP	Pogo Pad Contact											
Polarising Positions:	N	N	Normal											
	A, B, C & D	A, B, C & D	Alternatives											
Termination Type:	C	C***	Crimp Contacts											
		T	Straight PCB Tails											
Termination Code:	XXX	XXX	Contact Sales for Wire and Cable Options											
Finish Code:	B	B	Black Zinc Nickel											
	N	N	Electroless Nickel											

For the full range of plating options, contact sales.

\*\* Requires special tool, part numbers T4909/02 for 7 way, T4909/03 for 14 way & T4909/04 for 19 way.

\*\*\* Crimp contacts for free receptacle only

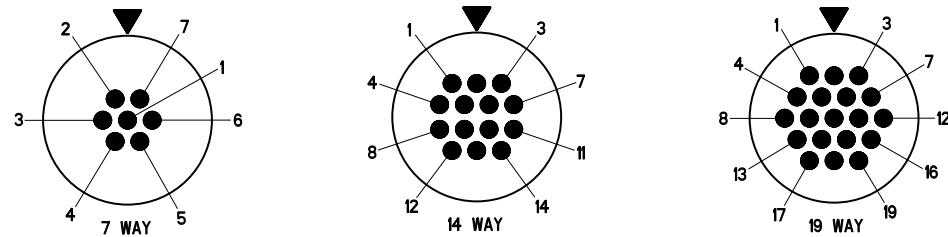
Super Clean plugs are inter-mateable with High Mating receptacles.



## Contact Arrangements

### Mini Circular

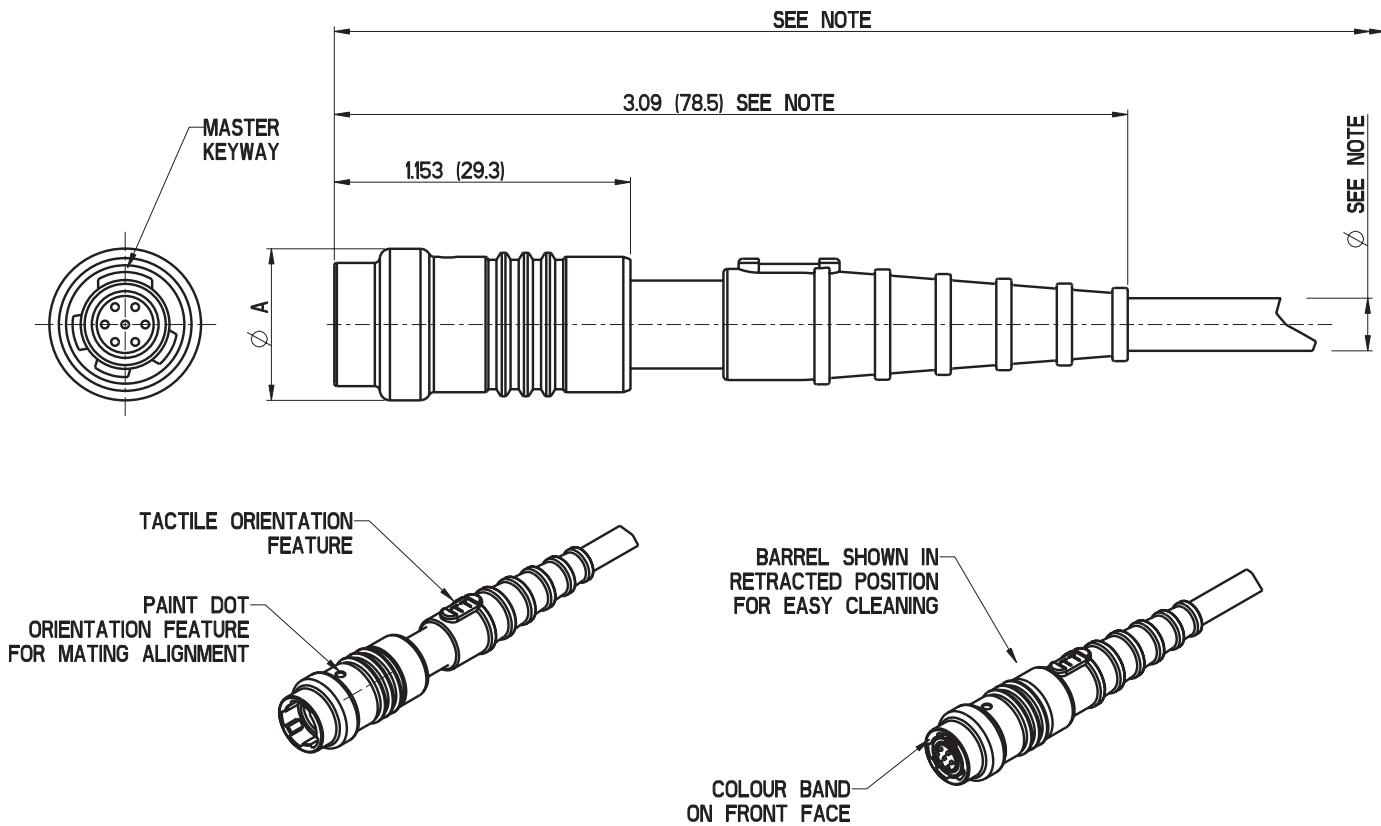
#### Face View Pogo Pin Contacts



Cavity identification numbers are for reference only; they do not appear on connectors.



Plug Dimensions



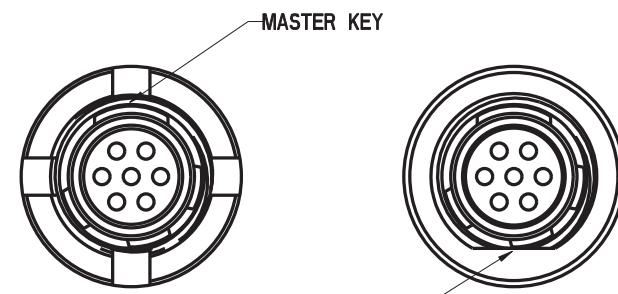
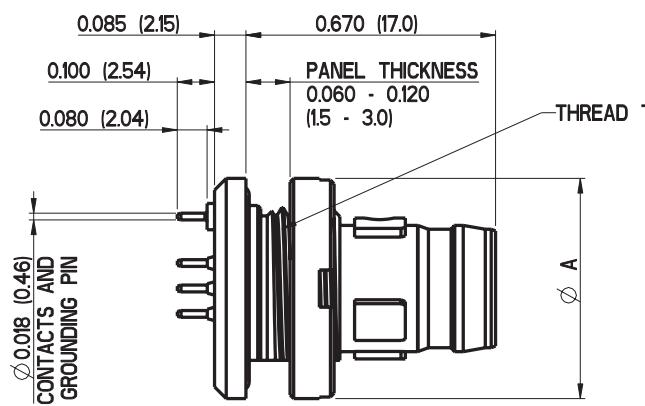
CONTACT ARRANGEMENT	DIMENSION A
7	0.591 (15.00)
14	0.699 (17.75)
19	0.748 (19.00)

For 37 & 55 data contact sales.

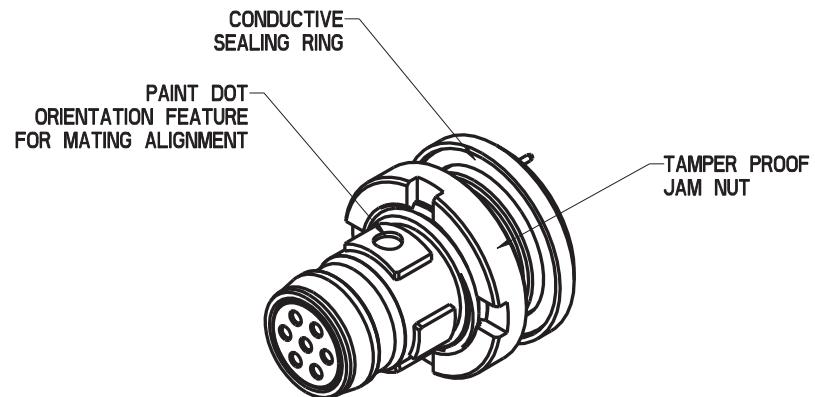
NOTE: These dimensions to be determined by customer cable requirements.

Receptacle Dimensions

Mini Circular



ORIENTATION FLAT  
(OPPOSITE MASTER KEY)



CONTACT ARRANGEMENT	DIMENSION A
7	0.591 (15.00)
14	0.709 (18.00)
19	0.768 (19.50)

For 37 & 55 data contact sales.

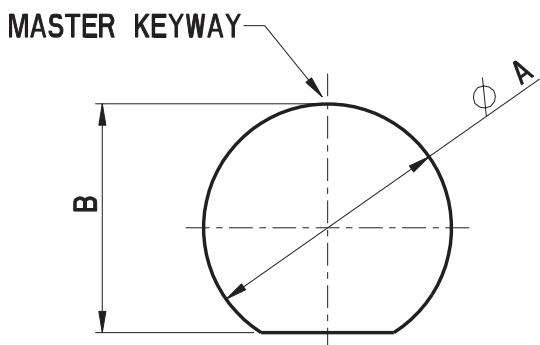
Dimensions shown in inches (mm)  
Specifications and dimensions subject to change



B

Mini Circular

## Panel Cut-out



### Contact Arrangement

### Dimensions

	A	B
7	0.457 (11.60)	0.421 (10.70)
14	0.575 (14.60)	0.539 (13.70)
19	0.634 (16.10)	0.596 (15.15)

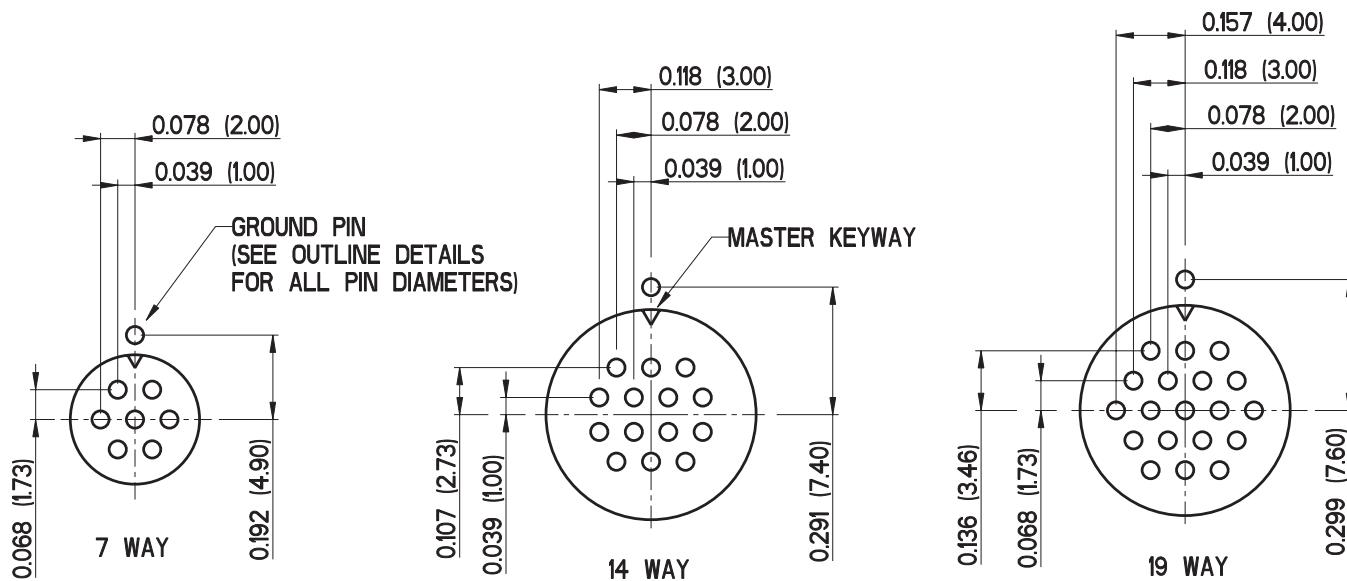
For 37 & 55 data contact sales.

## Color Coding

POLARISATION LETTER	COLOR CODING
N	BLUE
A	RED
B	GREEN
C	GREY
D	YELLOW

## PCB Layout

General tolerance + -0.001 (0.03) TYP, for ground pins + -0.002 (0.05) TYP



Standard contact layouts viewed from the mating face (not to scale)

Dimensions shown in inches (mm)

Specifications and dimensions subject to change

[www.ittcannon.com](http://www.ittcannon.com)



## Overview

ITT ICS's Super Clean Connector is a lightweight, robust, watertight solution designed for military, commercial and industrial applications. The connector features pogo pin technology utilizing ITT's unique spring probe pin/pad contact system for a durable and long life connection.

## Specifications

<b>Contact Type</b>	Cable receptacle crimp or solder, box plug PCB
<b>Contacts</b>	Plugs = pogo pins, receptacles = pogo pads
<b>Wire Size</b>	24 - 32 AWG
<b>Contact Rating</b>	2 Amps continuous, 3 Amps peak
<b>Voltage Rating</b>	50 Vdc
<b>Insulation Resistance</b>	5,000 Mohm minimum
<b>Dielectric Withstand Voltage</b>	500 Volts
<b>Operating Temperature</b>	-55°C to +125°C
<b>Contact Resistance</b>	15 mOhm maximum
<b>Vibration</b>	20 g's in accordance with MIL-STD-1344 Method 2005, Condition IV
<b>Shock</b>	50 g's in accordance with MIL-STD-1344 Method 2004, Condition E
<b>Durability</b>	10,000 cycles
<b>Plating</b>	RoHS compliant 500 hour salt spray resistant black zinc nickel or electroless nickel
<b>Receptacle Mounting**</b>	Tamper proof jam nut
<b>Receptacle Sealing</b>	Using a conductive 'O' ring, non-conductive 'O' rings are available
<b>EMI Shielding</b>	50db attenuation 100Mhz to 1000Mhz in terminated condition
<b>Coupling</b>	Snap on/Breakaway, Bayonet, Push Pull
<b>Coding</b>	5 polarizing positions; N, A, B, C, and D
<b>Coding Identification</b>	Individual colors with colored dot on both parts plus indication on the boot; N=blue, A=red, B=green, C=grey and D=yellow
<b>Boot</b>	Cable dependant, either overmoulded or adhered
<b>Sealing</b>	IP67
<b>Layouts</b>	7, 14, 19, 37 & 55
<b>Shell to Shell Resistance</b>	<10 mOhm
<b>Blind Mate</b>	Yes
<b>Cable</b>	ITT standard or customer specified
<b>Cable Earth Termination</b>	360° cable braid termination to the shell
<b>Snap on/Breakaway Forces</b>	30N
<b>Strain Relief</b>	Designed to withstand a 10Kg pull off force minimum
<b>Materials</b>	Shells - Stainless Steel Insulators - Polyester Seals - Fluorosilicone rubber Contacts - Copper alloy with gold over nickel plating



## How to Order

Product	NEM-HM		NEM	-	HMSB	-	7	14	PG	N	T	-	XXX	B
	Plug	Receptacle												
Coupling Style:	SB	SB	Snap-on/Breakaway											
	BY	BY	Bayonet (contact sales)											
	PP	PP	Push Pull (contact sales)											
Shell Style:		1	Free Receptacle (contact sales)											
	6		Plug											
		7	Jam Nut Receptacle**											
	8		90° right angle plug (contact sales)											
	9		Jam Nut Plug											
Contact Arrangement:	7	7												
	14	14												
	19	19												
	37	37	Contact Sales for Availability											
	55	55	Contact Sales for Availability											
Contact Type:	PG		Pogo Contact											
		PP	Pogo Pad Contact											
Polarising Positions:	N	N	Normal											
	A, B, C & D	A, B, C & D	Alternatives											
Termination Type:	C	C***	Crimp Contacts											
	T****	T	Straight PCB Tails											
Termination Code:	XXX	XXX	Contact Sales for Wire and Cable Options											
Finish Code:	B	B	Black Zinc Nickel											
	N	N	Electroless Nickel											

For the full range of plating options, contact sales.

\*\* Requires special tool, part numbers T4909/02 for 7 way, T4909/03 for 14 way & T4909/04 for 19 way

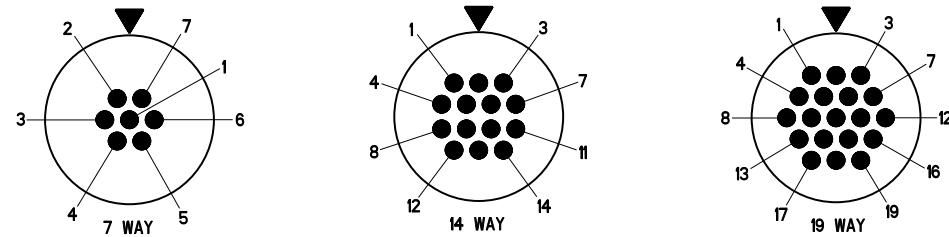
\*\*\* Crimp contacts for free receptacles only

\*\*\*\* Straight PC Tails for jam nut plug only

High Mating plugs are inter-mateable with Super Clean receptacles. If this is not suitable for your application non-preferred V, W, X, Y & Z coding may be used, contact sales for availability



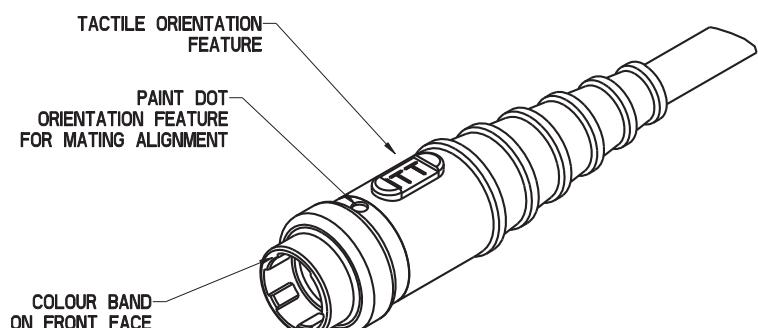
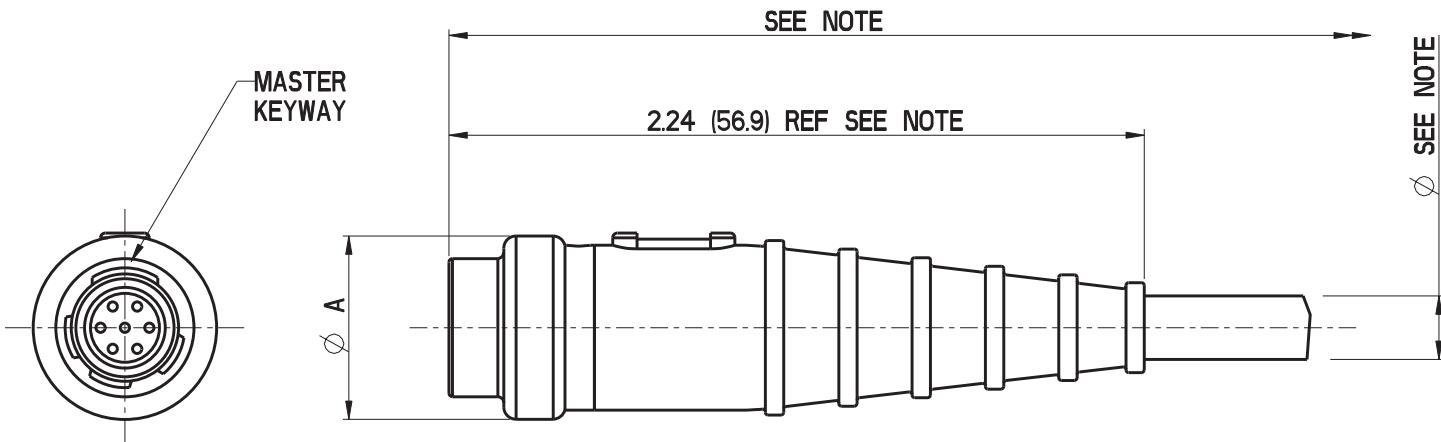
Face View, Pogo Pin Contacts



Cavity identification numbers are for reference only; they do not appear on connectors.



Plug Dimensions



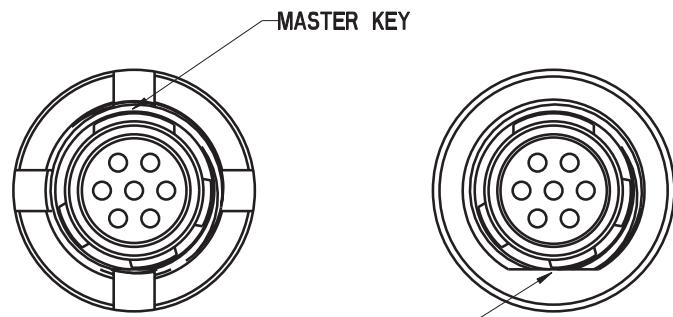
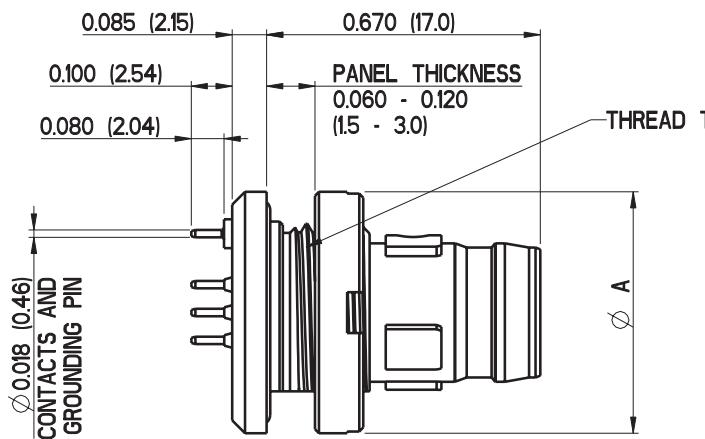
CONTACT ARRANGEMENT	DIMENSION A
7	0.591 (15.00)
14	0.699 (17.75)
19	0.748 (19.00)

For 37 & 55 data contact sales.

NOTE: These dimensions to be determined by customer cable requirements.

Receptacle Dimensions

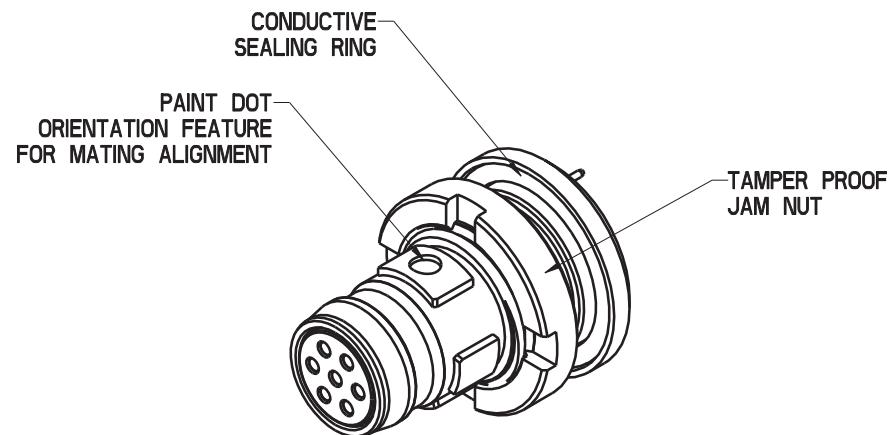
Mini Circular



ORIENTATION FLAT  
(OPPOSITE MASTER KEY)

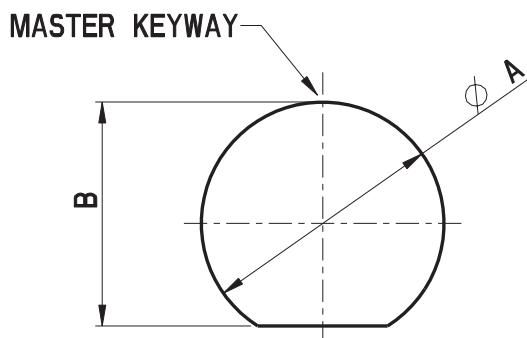
CONTACT ARRANGEMENT	DIMENSION A
7	0.591 (15.00)
14	0.709 (18.00)
19	0.768 (19.50)

For 37 & 55 data contact sales.





B



### Panel Cut-out

#### Contact Arrangement

#### Dimensions

	A	B
7	0.457 (11.60)	0.421 (10.70)
14	0.575 (14.60)	0.539 (13.70)
19	0.634 (16.10)	0.596 (15.15)

For 37 & 55 data contact sales.

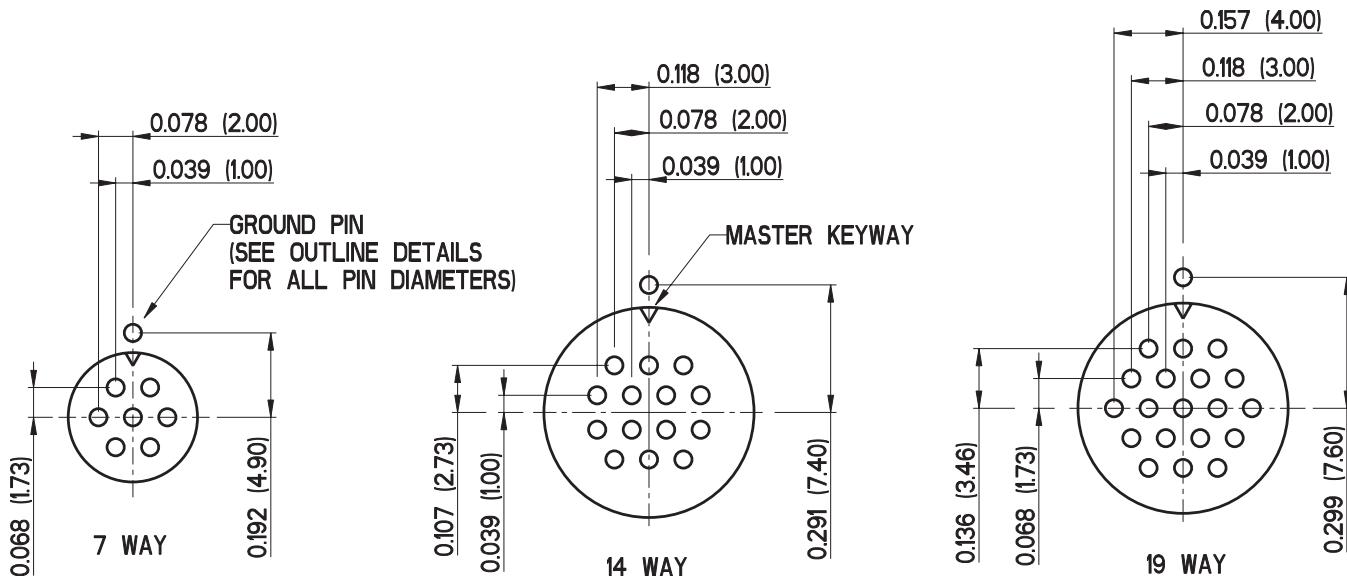
Mini Circular

### Color Coding

POLARISATION LETTER	COLOR CODING
N	BLUE
A	RED
B	GREEN
C	GREY
D	YELLOW

### PCB Layout

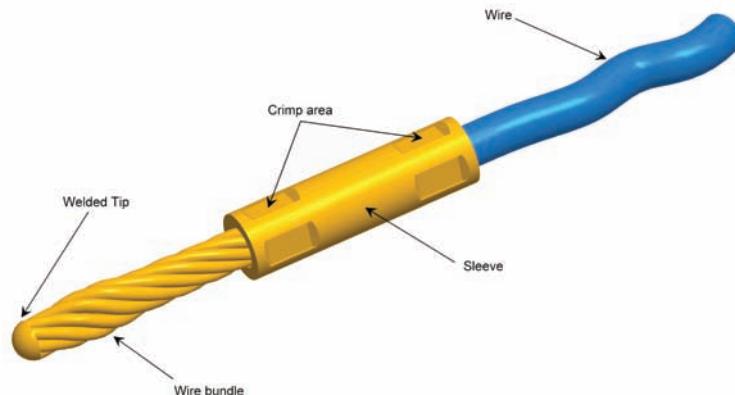
General tolerance + -0.001 (0.03) TYP, for ground pins + -0.002 (0.05) TYP



Standard contact layouts viewed from the mating face (not to scale)



## Twist Pin Contact Technology



### Pos-B-Line Contact Alignment

The flexible twist-pin is recessed into the insulator and the rigid socket is exposed, reversing the traditional positions of pin and socket. During mating, the socket is guided into the pin insulator by the lead-in chamfer. The pin is kept from flexing beyond the socket capture radius by the walls of the cavity. The hemispherical weld of controlled radius at the tip of the pin combines with the lead-in chamfers of the socket contact and the pin insulator to cam the pin into alignment. By controlling the welding process and the dimensions of the socket contact and the insulators, it is impossible for the recessed pin to escape the socket capture radius.

### Twist Pin Contact Technology

The Nemesis Water Tight connector uses the twist pin contact system. This system was originally developed in the early 1960s and ITT was one of the original interconnect companies to license this technology and improve it. Our forty-five years of experience in manufacturing and establishing a fully automated manufacturing system for this contact has truly given ITT the foremost knowledge in twist pin contact technology.

As the core of the Water Tight connector, the twist pin contact offers a superior electrical and mechanical system that outperforms traditional machined or stamped electrical contact systems. ITT's twist pin system consists of the Micro Socket and the Micro Pin or Twist Pin.

### Figure 1

The twist pin contact system consists of several stranded cores making up the wire bundle. The strands are subsequently heat treated and a weld is performed on the tip of each contact. Crimp sleeves are then inserted over the contact and crimp areas are defined to produce a seamless crimp system. The entire twist pin system is referred by ITT as a Pos-A-Line contact alignment system. Our reference to this system identifies that the flexible twist pin is recessed into the insulator and the rigid socket is exposed thus reversing the traditional positions of the pin and socket. During the mating sequence, the socket is guided into the pin insulator by the lead-in chamfer. The pin is kept from flexing beyond the socket capture radius by the walls of the cavity. The hemispherical weld of controlled radius at the tip of the pin combines with the lead-in chamfer of the socket

contact and the pin insulator to cam the pin into alignment. ITT has developed a very robust Six Sigma manufacturing process that controls the welding process as well as the dimensions of the socket contact and insulator material. The net result is a contact system that makes it impossible for the recessed pin to escape the socket capture radius.

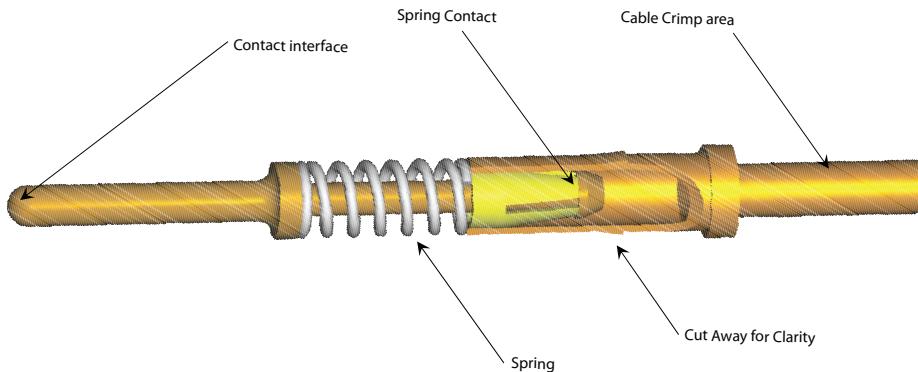
The advantages of ITT's twist pin contact system are many and have been field proven in the most demanding applications and environments for over forty-five years. Some of these advantages include:

- Seven points of electrical contact
- Contact and crimp sleeve materials carefully optimized for extremely reliable crimps—No design tradeoffs
- Seamless crimp sleeves
- Multiple 4-indent wire crimps standard
- High mating cycles
- High current handling capabilities
- System qualifications in numerous Aerospace, Defense Electronic, and high temperature Geophysical applications



## Pogo Contact Technology

The heart of the Nemesis Super Clean & High Mating connector solutions is ITT's unique spring probe pin/pad contact system. ITT's spring probe contact design utilizes an internal clip mechanism that stays in constant contact with the contact itself. This design helps to reduce electrical resistance. In addition, the spring probe contact system accommodates misalignment issues, making the contact system much more forgiving. This feature along with the high durability of mating cycles allows this contact system to offer higher performance in harsh environments.



The unique ITT spring probe system mates with individual touch pad contact areas. This design allows for a very effective electrical engagement point of contact. Further, the spring probe contact system and touch pads allow for ease of cleanability in the field where dirt, moisture, mud, sand, and other contaminants may be present. The individual touch pad contacts incorporate no crevices for contaminants to accumulate, a desirable feature in harsh environment field conditions.

The Nemesis Super Clean & High Mating connectors using spring probe contact technology offer the highest reliability for interconnects meeting the toughest performance standards in harsh environments. They have been tested through extensive Military and customer specific test programs to ensure that their design and manufacturability features have indeed met all reliability and field performance requirements. Because ITT's spring probe contact/connectors have been designed and manufactured to exceed various thermal shock, vibration, random shock, and signal performance spectrums this connector technology is becoming one of the technologies of choice in harsh environment electronic systems.



# MKJ Series Connectors

B

Mini Circular

## The Challenge

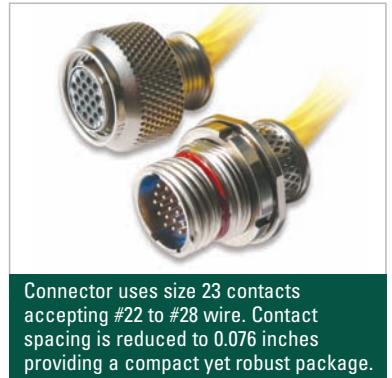
ITT has a long history of providing standard and custom MIL-DTL-38999 connectors which meet the most stringent military requirements. ITT's major military and commercial accounts recently approached us requesting that we take our proven high reliability designs and shrink them to decrease weight and size while maintaining the connectors robust environmental performance and high reliability. Along with these requests, ICS received substantial commentary from other markets including Medical, Industrial, and Space, requesting a similar, miniature circular product.



MKJ connector provides significant size and weight reduction while providing electrical and mechanical characteristics of larger connectors



Split tine contact design provides proven reliability in harsh environments



Connector uses size 23 contacts accepting #22 to #28 wire. Contact spacing is reduced to 0.076 inches providing a compact yet robust package.



Master key and 2 secondary keys allow multiple clocking positions



Pogo pin/pad technology. Touch pad contacts increase ease of cleanability, highly desirable in harsh environments.



Integral band platform allows direct attachment of cable shield to connector.



Double start threads prevent thread damage and allow full connector mating in 1.5 turns. Durable design ideal for harsh shock and vibration environments.



Breakaway design incorporates a simple push/pull mating mechanism allowing quick connector disconnect.

## The ITT Solution ...

ITT took on the challenge, driving innovation in mating capabilities and contacts to reduce size and weight while maintaining the high level of quality customers have come to expect from ITT over 90 years of engineering excellence. ITT collated a substantial amount of industry VOC from top tier military and commercial accounts. This feedback arrived from industry leading ICS customers, pioneering products in their fields including satellites & missiles, test and medical equipment, and tactical battlefield gear. Using this information and leveraging our historical product expertise, ITT engineered a product meeting our customers defined mix of Design, Functionality, and Flexibility. The result of this process represents our innovative new product line, Trinity. Offering three coupling methodologies {threaded, bayonet, and breakaway} and a highly engineered design, this innovative product reduces weight and size without sacrificing robust environmental performance or reliability. ITT ICS is proud to introduce our exciting new Trinity product line, engineered to the stringent quality standards for which ITT is world renown.





## Technical overview

The Trinity MKJ family of mini circular connectors provides approximate electrical and mechanical characteristics of larger and heavier Military Standard Environmental connectors while reducing weight up to 71% and size up to 52%. All MKJ series connector's shells and jam nuts are available in high quality aluminum alloy or corrosion resistant steel per AMS-QQ-S 763. The MKJ series comes with rear accessory thread or integral band platform for direct attachment of cable shield and overmold. The MKJ series of connectors come with a variety of coupling mechanisms: threaded, breakaway, and bayonet. In addition, a Pogo Pin technology utilizing ITT's unique spring probe pin/touch pad contact system is available. The MKJ series receptacle comes with a variety of mounting options for both crimp and PCB contacts including in-line, jam nut, front mount, and square flange mount, and flange mount. The MKJ0, MKJ1, MKJ3, MKJ4, and MKJ5 feature a master key and 2 secondary keys for positive mating with 4 clocking positions available. The MKJ0 connector is ideal for everyday operations where size and weight are at a premium. The MKJ1 connector uses a double start thread coupling with 1 1/2 turns for a full mate and is ideal for harsh shock and vibration environments. The MKJ3 connector can be fully mated in a 1/4 turn. The MKJ4 connector provides a quick push to mate / pull to unmate disconnect mechanism for fast breakaway connections. The MKJ5 connector utilizes a triple start thread and is fully mated in 1 turn, and is an ideal connector for harsh shock and vibration environments and offers an internal coupling ratchet mechanism along with an EMI grounding spring.

## Product Features

- High contact density: size 23 contacts accommodate #22 - #28 wire and allowing 0.076 inch contact spacing
- Available with 3-85 rear release crimp or PCB contacts
- Master key with 2 secondary keys. 4 clocking positions available
- Significant weight and size reduction compared to traditional Mil Standard environmental connectors
- Available in jam nut, in-line, and square flange rear crimp receptacle versions. Jam nut and square flange PCB receptacle versions
- Rear accessory thread or integral band platform for direct attachment of cable shield or overmold
- Wire seal grommet for rear environmental sealing. Pin fluorosilicone interfacial seal provides interface sealing
- Available with double start threads allowing full mating in 1.5 turns
- Available with quick push/pull breakaway mechanism utilizing canted retention spring for quicker mating and demating
- Available with bayonet 1/4 turn locking mechanism
- Available with Pogo Pin technology utilizing ITT's unique spring probe pin/pad contact system

## Applications

- Medical equipment: test and diagnostic
- Industrial equipment
- Commercial and military aircraft electronics
- Unmanned aerial vehicles
- Missile systems
- Avionic systems
- Satellites
- Sensors
- Instrumentation
- Interconnections for helmets, weapons, battery packs, night vision goggles, aircraft headsets, etc.
- Navigation and Telemetry equipment
- Ruggedized computers and hand held communications equipment





## MKJ Connector Styles

MKJ0



UNC Thread Coupling

MKJ3



Bayonet Coupling

MKJ1



Double Start Thread Coupling

MKJ4



Breakaway Coupling

MKJ5



Triple Start Ratchet Locking

Multiple Styles for all applications!

## Series MKJ Performance

Contact size / Spacing	#23 / 0.076 inches (1.9 mm)
Contact Type	Solder Cup, Rear Crimp or PCB Mount
Wire Accommodation	#22 - #28 AWG
Current Rating	5 Amps Maximum
Voltage Rating	500 VAC RMS Sea Level
Insulation Resistance	5000 Megohms Minimum
Operating Temperature	-55 degrees C to +150 degrees C
Contact Resistance	8 Milliohms Maximum
Vibration	20 g's in Accordance with MIL-STD-1344 Method 2005, Condition IV
Shock	300 g's (MKJ1) 50 g's (MKJ0 and MKJ4) in Accordance with MIL-STD-1344 Method 2004, Condition E
EMI Shielding Effectiveness	40dB Attenuation, 100 MHz to 1000 MHz
Coupling	Threaded, Quick Disconnect Pogo Pin
Coding	Master key and 2 secondary keys. 4 clocking positions available
Housing material	Aluminum and Stainless Steel
Layouts	31 layouts holding from 1 size 12 contact to 85 size 23 contacts
Usage	Medical, Military, Commercial, and Industrial
Receptacle Mounting	Jam Nut, Square Flange, In-line, PCB





## Electrical specifications for the connector

The MKJ series of products uses size 23 pin and socket contacts with equivalent electrical performance of size 22 contacts. These smaller contacts accept #22 - #28 AWG wire and allow the contact spacing to be reduced down to 0.076 inches. The connector's Fortron dielectric insulating material can accommodate from 3 to 85 contacts in various shell sizes. This high density packaging, along with a reduced wall thickness and scoop, allows a dramatic decrease in size and weight of the MKJ connector while retaining the approximate mechanical and electrical characteristics of heavier and larger Military Standard Environmental connectors. The connector is capable of operating between -55 degrees Celsius and +150 degrees Celsius and can be mated up to 2,000 cycles. Maximum electrical current is 5 Amps and maximum voltage at sea level is 500 VAC RMS.

Max. Voltage	Max. Current	Operating Temp	Durability
500 VAC RMS Sea Level	5 Amps Maximum	-55 degrees C to +150 degrees C	2,000 mated cycles

### MKJ Product Line Talking Dog



#### MKJ1 SERIES

- MKJ0 - Threaded Coupling, UN Thread
- MKJ1 - Threaded Coupling, Double Start ACME Thread
- MKJ3 - Bayonet Coupling
- MKJ4 - Breakaway/Quick Disconnect
- MKJ5 - Threaded Coupling, Triple start ACME Thread

#### C CLASS

- A - Environmental Plug and Receptacle with Banding/Overmolding Platform
- B - Environmental Plug and Receptacle with Threaded Accessory Attachment
- C - Back- Potted Receptacle

#### 2 SHELL STYLE

- 1 - In-Line Receptacle
- 2 - Square Flange Receptacle
- 6 - Straight Plug
- 7 - Jam Nut Receptacle

#### F MATERIAL/PLATING

- C - Aluminum/Anodize, Black
- F - Aluminum/Electroless Nickel
- W - Aluminum/OD Cad
- Z - Aluminum/Zinc Nickel, Black
- K - SS/Passivated
- Y - SS/Zinc Nickel, Black

#### 9-19 SHELL SIZE/CONTACT ARRANGEMENT

5-3	3 Size 23 Contacts	Series MKJ0, MKJ1, MKJ3, MKJ4
6-1	1 Size 16 Contact	Series MKJ0, MKJ1, MKJ3, MKJ4
6-4	4 Size 23 Contacts	Series MKJ0, MKJ1, MKJ3, MKJ4
6-6	6 Size 23 Contacts	Series MKJ0, MKJ1, MKJ3, MKJ4
6-7	7 Size 23 Contacts	Series MKJ0, MKJ1, MKJ3, MKJ4
7-10	10 Size 23 Contacts	Series MKJ0, MKJ1, MKJ3, MKJ4
8-4	4 Size 23 Contacts	Series MKJ5
8-6	6 Size 23 Contacts	Series MKJ5
8-7	7 Size 23 Contacts	Series MKJ5
8-13	13 Size 23 Contacts	Series MKJ0, MKJ1, MKJ3, MKJ4
9-4	4 Size 16 Contacts	Series MKJ0, MKJ1, MKJ3, MKJ4
9-10	10 Size 23 Contacts	Series MKJ5
9-19	19 Size 23 Contacts	Series MKJ0, MKJ1, MKJ3, MKJ4
10-13	13 Size 23 Contacts	Series MKJ5
10-26	26 Size 23 Contacts	Series MKJ0, MKJ1, MKJ3, MKJ4
11-19	19 23 Contacts	Series MKJ5
12-26	26 Size 23 Contacts	Series MKJ5
12-37	37 Size 23 Contacts	Series MKJ0, MKJ1, MKJ3, MKJ4
13-37	37 Size 23 Contacts	Series MKJ1
14-55	55 Size 23 Contacts	Series MKJ0, MKJ3, MKJ4
15-37	37 Size 23 Contacts	Series MKJ5
15-55	55 Size 23 Contacts	Series MKJ0, MKJ3, MKJ4
16-55	55 Size 23 Contacts	Series MKJ1
17-85	85 Size 23 Contacts	Series MKJ1
18-55	55 Size 23 Contacts	Series MKJ5
19-85	85 Size 23 Contacts	Series MKJ5

#### P CONTACT STYLE

- P - Pin, Crimp, Removable
- S - Socket, Crimp, Removable
- A - Pin, PC Tail, .062 Extension
- B - Pin, PC Tail, 0.109 Extension
- C - Socket, PC Tail, 0.062 Extension
- D - Socket, PC Tail, 0.109 Extension
- G - Pin, Pogo, Crimp, Removable
- O - Pad, Pogo, Crimp, Removable
- L - Pin, Solder Cup
- R - Socket, Solder Cup

#### N SHELL CLOCKING (POSITION)

##### MKJ0 Series

- N - Normal
- X - Clocking Position X
- Y - Clocking Position Y
- Z - Clocking Position Z

##### MKJ1 Series

- A - Normal 150° 210°
- B - Clocking Position B 75° 210°
- C - Clocking Position C 95° 230°
- D - Clocking Position D 140° 275°

##### MKJ3 Series

- N - Normal 150° 210°
- X - Clocking Position X 75° 210°
- Y - Clocking Position Y 95° 230°
- Z - Clocking Position Z 140° 275°

##### MKJ4 Series

- Omit for Single Key/Keyway
- A - Normal 150° 210°
- B - Clocking Position B 75° 210°
- C - Clocking Position C 95° 230°
- D - Clocking Position D 140° 275°

##### MKJ5 Series

- A - Normal 150° 210°
- B - Clocking Position B 75° 210°
- C - Clocking Position C 95° 230°
- D - Clocking Position D 140° 275°

#### \*\* MODIFICATION CODES

- F0 - Less Contacts ("FO" not printed on connector)
- (No modification code required for standard product)
- Consult Factor for other codes



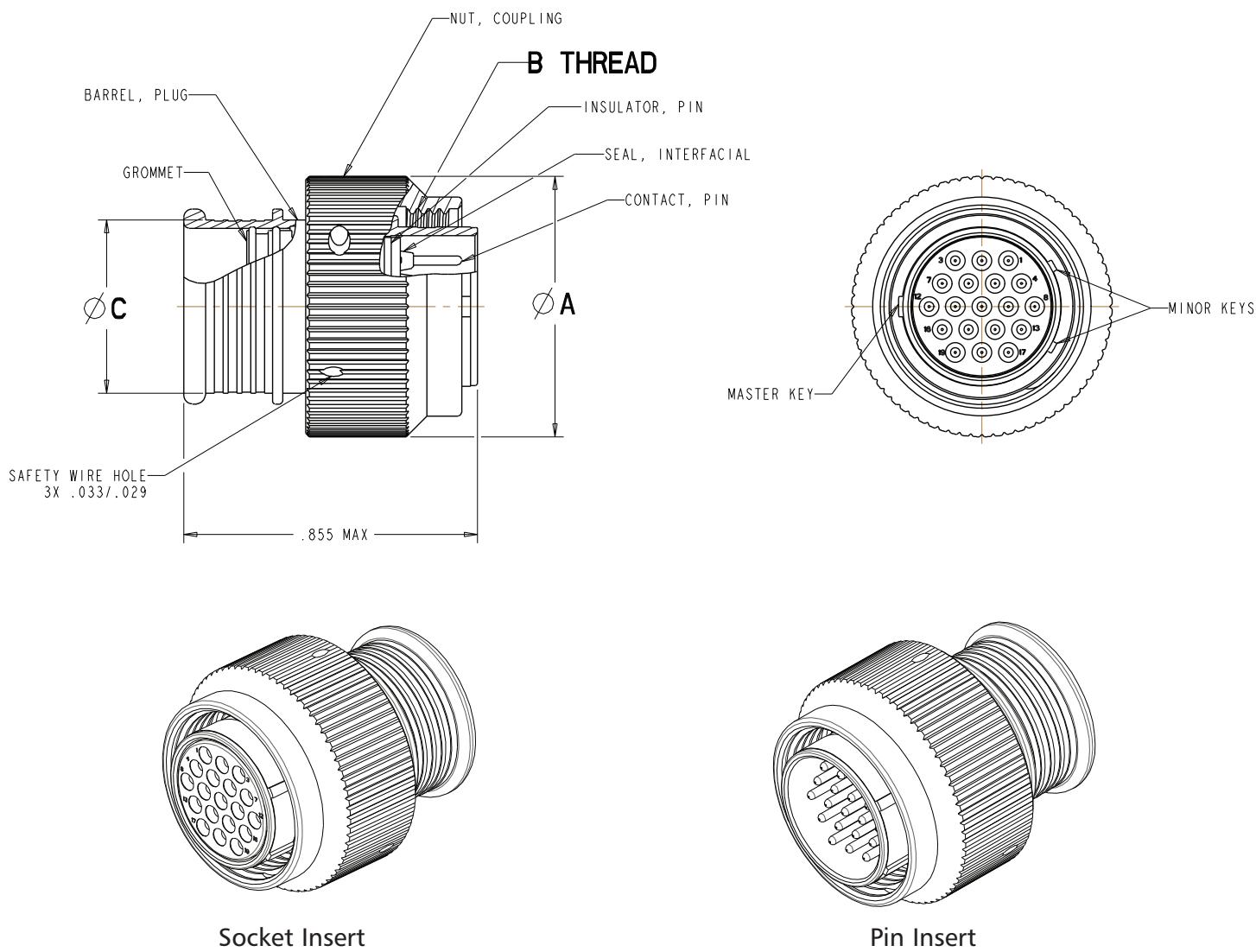
The MKJ0 is ideal for light duty applications where weight and cost take a precedence. The connector comes with 5 high density contact arrangements, multiple clocking positions, a banding platform, and rear grommets and pin interfacial seals. Used in avionics, aerospace, medical, and industrial applications.

## Specifications

<b>Contact Type</b>	Rear crimp or PCB mount
<b>Contacts</b>	Size 23 (0.076" spacing), Size 16 (.177" spacing)
<b>Wire Size</b>	#22 - #28 AWG (Size 23 Contacts), #16 - #20 AWG (Size 16 Contacts)
<b>Contact Rating</b>	5 Amps Maximum
<b>Voltage Rating</b>	500 VAC RMS sea level
<b>Insulation Resistance</b>	5,000 Megohms minimum
<b>Operating Temperature</b>	-55°C to +150°C
<b>Contact Resistance</b>	8 Milliohms maximum
<b>Vibration</b>	20 g's in accordance with MIL-STD-1344 Method 2005, Condition IV
<b>Shock</b>	50 g's in accordance with MIL-STD-1344 Method 2004, Condition E
<b>Durability</b>	2,000 mating cycles
<b>Receptacle Mounting</b>	Jam nut, PCB mount or Wall mount
<b>EMI Shielding</b>	40db attenuation, 100Mhz to 1000Mhz
<b>Coupling</b>	UN Threaded
<b>Materials</b>	Shells - Aluminum Alloy or Stainless Steel Insulators - Thermoplastic Seals - Flurosilicone Contacts - Copper alloy with gold over nickel plating



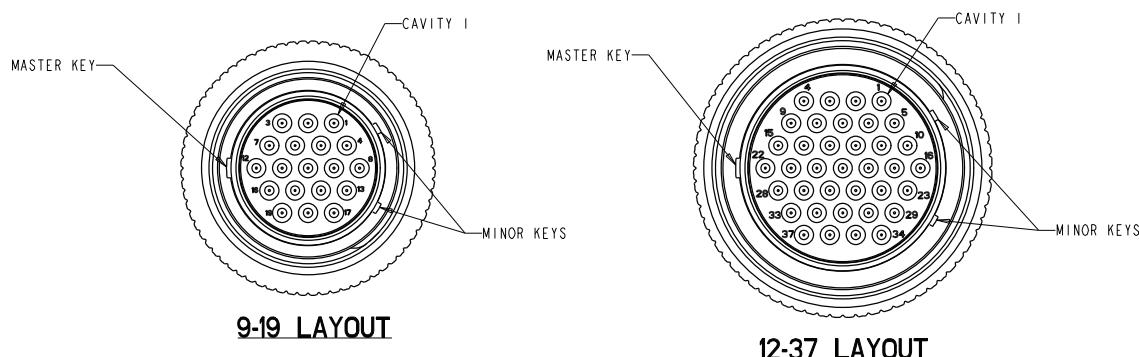
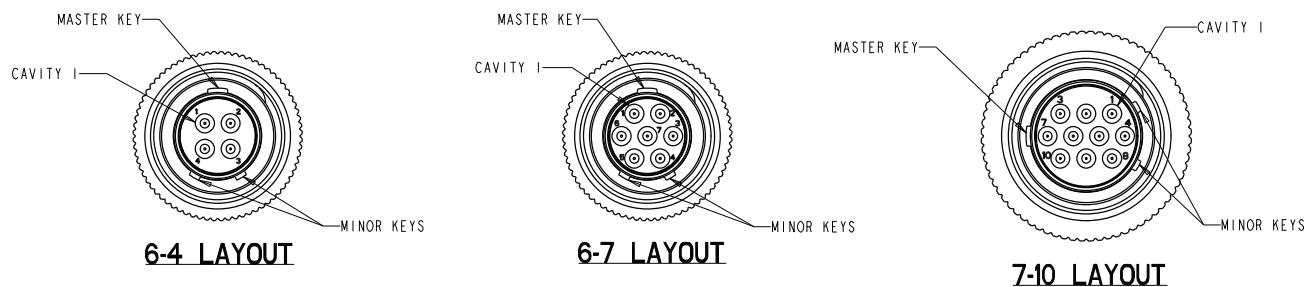
## MKJ0 Plug (Banding Platform)



MKJ0 PLUG DIMENSIONS					
LAYOUT	$\phi$ A	B THREAD UN-2B	$\phi$ C	MAX WEIGHT IN GRAMS	
				PIN	SOCKET
6-4	.500	.3750-28	.290	3.6	4.1
6-7	.500	.3750-28	.290	3.8	4.2
7-10	.620	.4375-28	.390	5.8	6.6
9-19	.750	.5625-32	.500	8.4	9.8
12-37	.880	.7500-28	.650	11.7	14.2

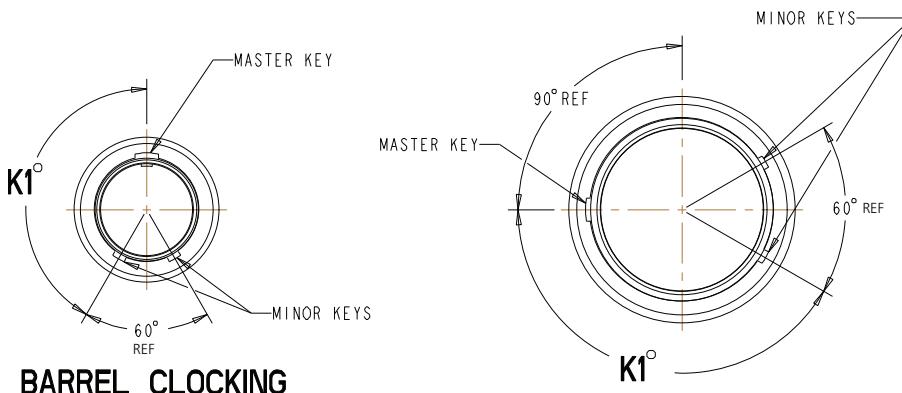


## Plug Connector Orientation Front Side



Note: Pin insert front side shown for reference only. Socket insert is mirror image.

## MKJ0 Plug Barrel Clocking Positions

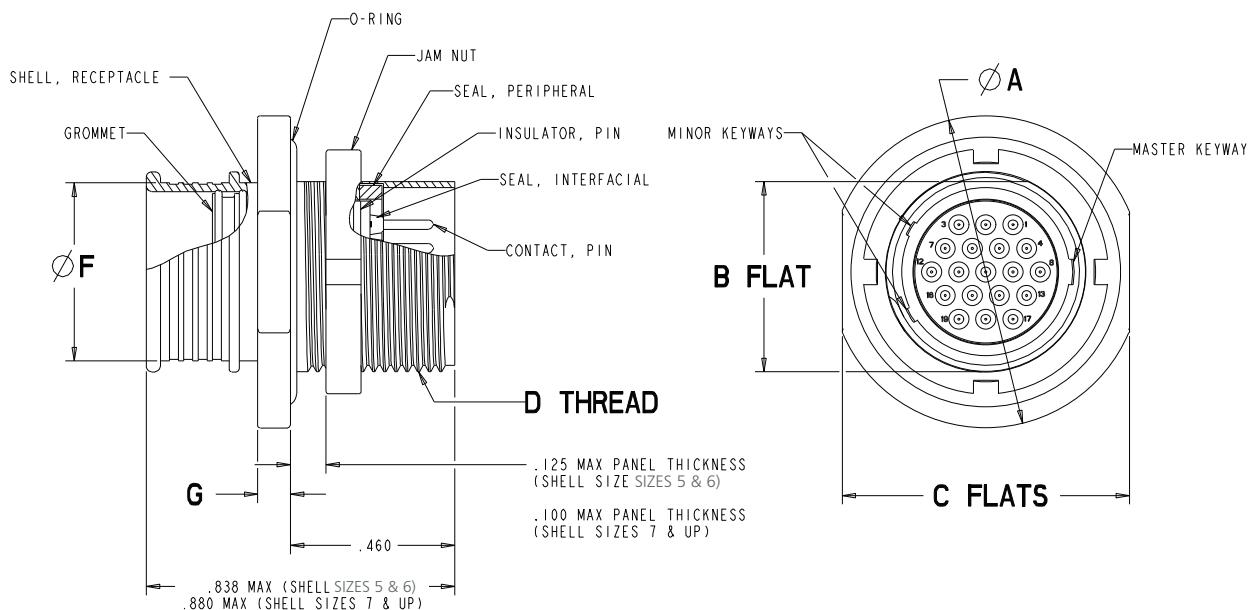


For Shell Sizes 5 and 6, the Master Key is at top dead center. For Shell Sizes 7 and up, the Master and Minor keys are rotated 90° counter-clockwise. Minor keys remain stationary, with the Master key rotating to achieve alternate clocking positions for all Shell Sizes.

BARREL CLOCKING	
POSITION	K1°
N (normal)	150°
X	140°
Y	130°
Z	120°

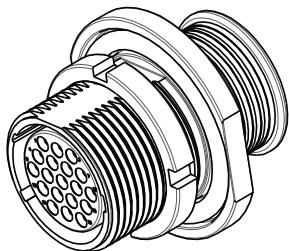


## MKJ0 Jam Nut Receptacle (Banding Platform)

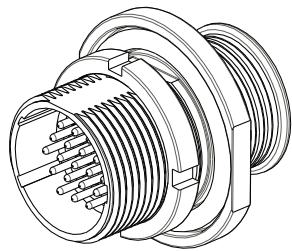


## MKJ0 JAM NUT RECEPTACLE DIMENSIONS

LAYOUT	Ø A FLANGE DIA.	B FLAT	C FLAT	D THREAD UN-2A	Ø F	G	MAX WEIGHT IN GRAMS	
							PIN	SOCKET
6-4	.610	.356	.562	.3750-28	.290	.051	3.3	3.8
6-7	.610	.356	.562	.3750-28	.290	.051	3.4	3.8
7-10	.670	.420	.635	.4375-28	.390	.093	4.9	5.7
9-19	.875	.534	.806	.5625-32	.500	.093	7.3	8.7
12-37	1.062	.714	.986	.7500-28	.650	.093	11.6	14.4

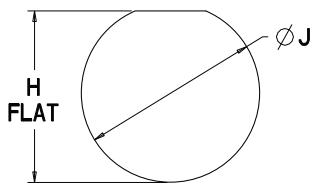


Socket Insert



Pin Insert

## Panel Cutouts

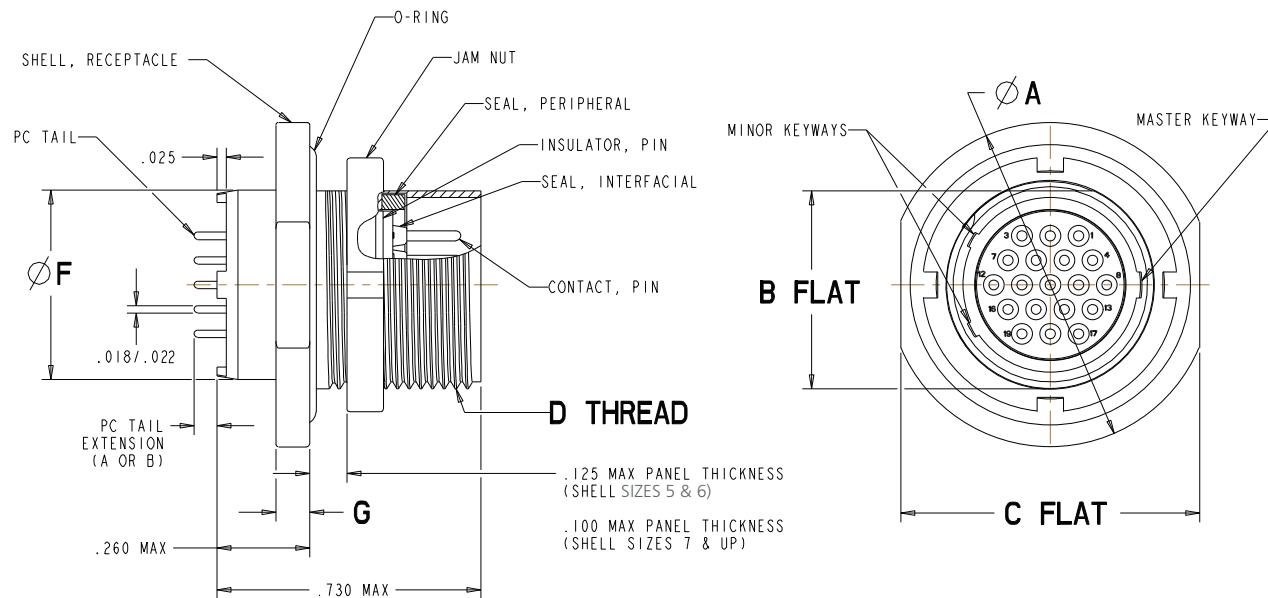


LAYOUT	H FLAT ±.002	Ø J
6 - 4	.363	.386
6 - 7	.363	.386
7 - 10	.426	.449
9 - 19	.540	.574
12 - 37	.722	.760

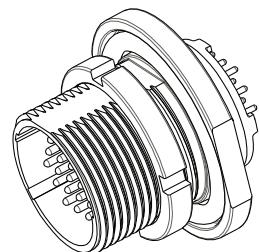
Dimensions shown in inches (mm)  
Specifications and dimensions subject to change



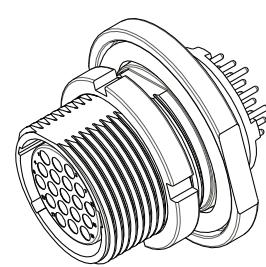
## MKJ0 Jam Nut Receptacle (PCB Mount)



LAYOUT	Ø A FLANGE DIA.	B FLAT	C FLAT	D THREAD UN-2A	Ø F	G	MAX WEIGHT IN GRAMS	
							PIN	SOCKET
6-4	.610	.356	.562	.3750-28	.322	.051	3.5	4.0
6-7	.610	.356	.562	.3750-28	.322	.051	3.8	4.2
7-10	.670	.420	.635	.4375-28	.432	.093	5.3	6.2
9-19	.875	.534	.806	.5625-32	.512	.093	8.1	9.7
12-37	1.062	.714	.986	.7500-28	.677	.093	13.7	16.6

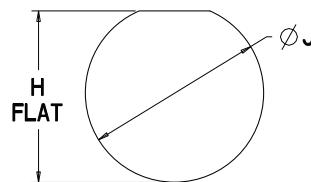


Pin Insert



Socket Insert

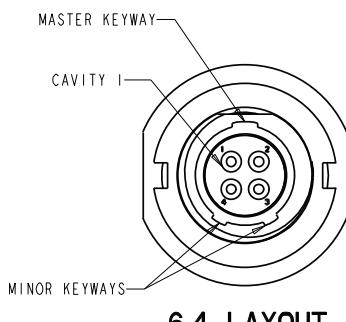
## Panel Cutouts



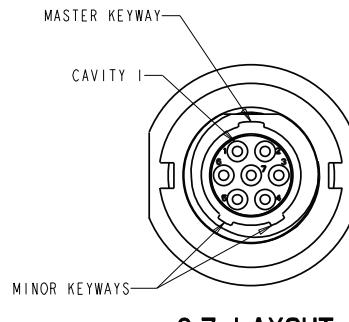
LAYOUT	H FLAT ±.002	Ø J
6 - 4	.363	.386
6 - 7	.363	.386
7 - 10	.426	.449
9 - 19	.540	.574
12 - 37	.722	.760



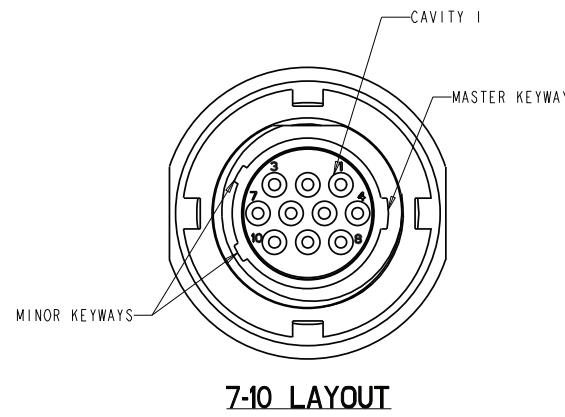
## Receptacle Connector Orientation Front Side



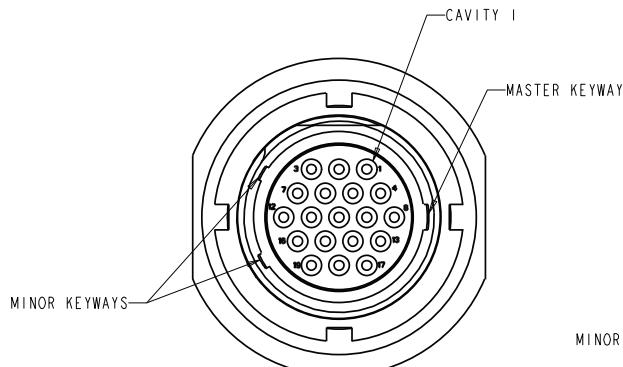
6-4 LAYOUT



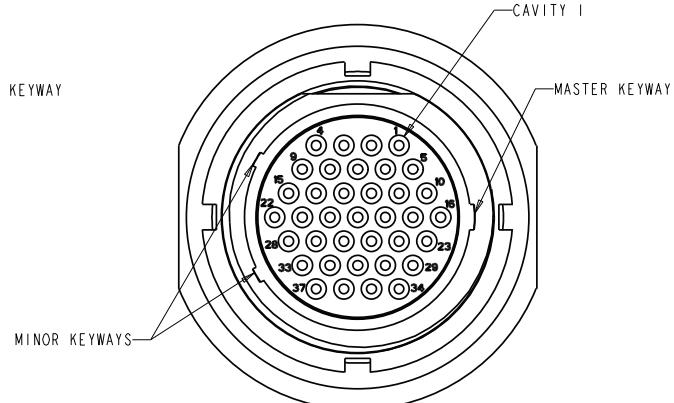
6-7 LAYOUT



7-10 LAYOUT



9-19 LAYOUT



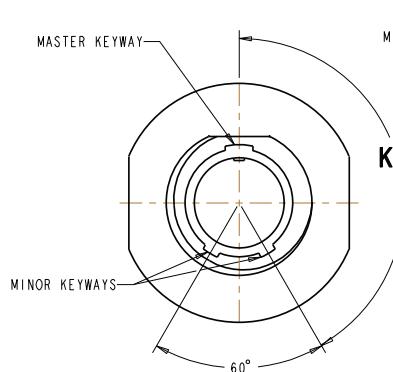
12-37 LAYOUT

Note: Pin insert front side shown for reference only. Socket insert is a mirror image.

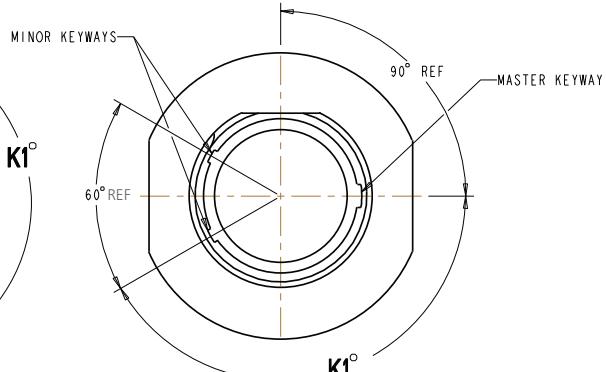
## MKJ0 Receptacle Shell Clocking Positions

For Shell Sizes 5 and 6, the Master Key is at top dead center. For Shell Sizes 7 and up, the Master and Minor keys are rotated 90° clockwise. Minor keys remain stationary, with the Master rotating to achieve alternate clocking positions for all Shell Sizes.

SHELL CLOCKING	
POSITION	K1°
N (normal)	150°
X	140°
Y	130°
Z	120°



**SHELL CLOCKING**  
ORIENTATION FOR SIZES 5 & 6  
(N - CLOCKING SHOWN)



**SHELL CLOCKING**  
ORIENTATION FOR SIZES 7 & UP  
(N - CLOCKING SHOWN)



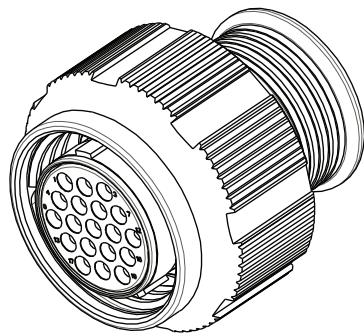
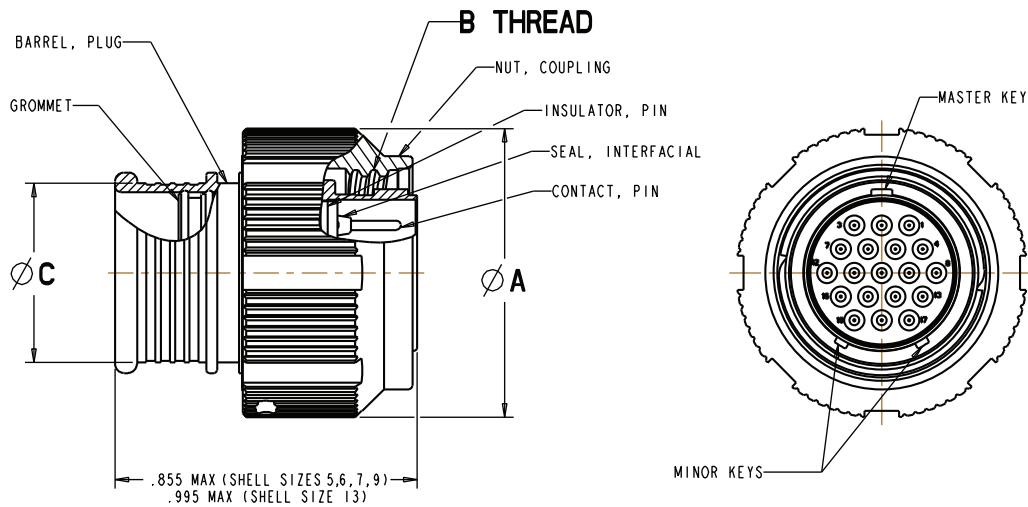
The MKJ1 is a robust connector meeting MIL-DTL-38999 shock and vibration requirements. Plug connector comes with an anti-decoupling spring for vibration resistance. Ideal for harsh environments where a robust electrical connection is required under the most demanding shock and vibration conditions. Proven design for avionics, satellites, and missile systems.

## Specifications

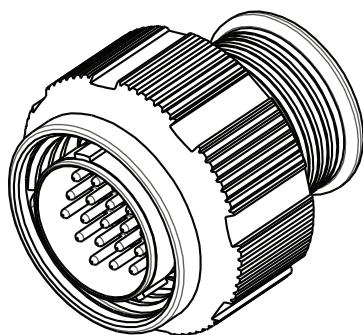
<b>Contact Type</b>	Rear crimp or PCB mount
<b>Contacts</b>	Size 23 (0.076" spacing), Size 16 (.177" spacing)
<b>Wire Size</b>	#22 - #28 AWG (Size 23 Contacts), #16 - #20 AWG (Size 16 Contacts)
<b>Contact Rating</b>	5 Amps Maximum
<b>Voltage Rating</b>	500 VAC RMS sea level
<b>Insulation Resistance</b>	5,000 Megaohms minimum
<b>Operating Temperature</b>	-55°C to +150°C
<b>Contact Resistance</b>	8 Milliohms maximum
<b>Vibration</b>	40 g's in accordance with MIL-STD-1344 Method 2005, Condition IV
<b>Shock</b>	300 g's in accordance with MIL-STD-1344 Method 2004, Condition E
<b>Durability</b>	2,000 mating cycles
<b>Receptacle Mounting</b>	Jam nut or Wall Mount
<b>EMI Shielding</b>	40db attenuation, 100Mhz to 1000Mhz
<b>Coupling</b>	Double Start Threaded
<b>Materials</b>	Shells - Aluminum Alloy or Stainless Steel Insulators - Thermostatic Seals - Flurosilicone Contacts - Copper alloy with gold over nickel plating



## MKJ1 Plug (Banding Platform)



Socket Insert



Pin Insert

MKJ1 PLUG DIMENSIONS					
LAYOUT	Ø A	B THREAD (ACME DOUBLE START)	Ø C	MAX WEIGHT IN GRAMS	
				PIN	SOCKET
6-4	.600	.375-.05P .1L -2B	.290	5.0	5.5
6-7	.600	.375-.05P .1L -2B	.290	5.1	5.5
7-10	.680	.4375-.05P .1L -2B	.390	6.9	7.7
9-19	.810	.5625-.05P .1L -2B	.500	9.4	10.9
13-37	1.050	.8125-.05P .2L -2B	.650	18.9	21.7

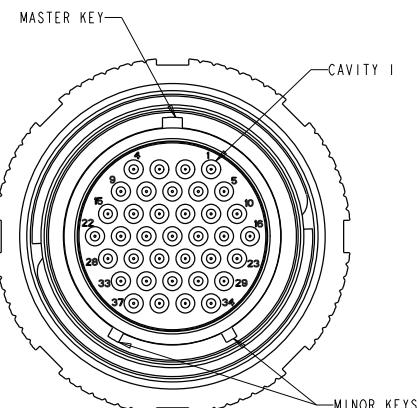
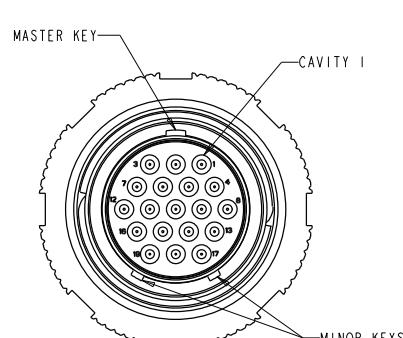
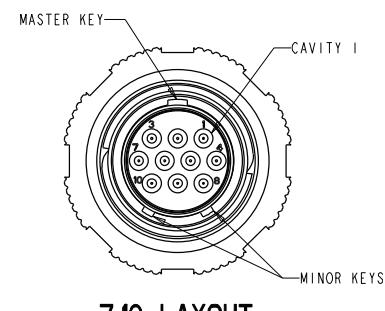
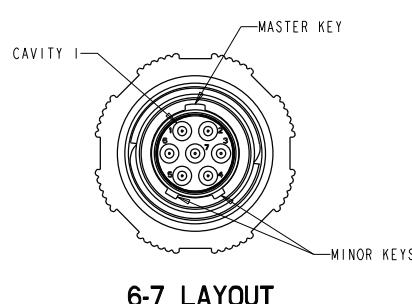
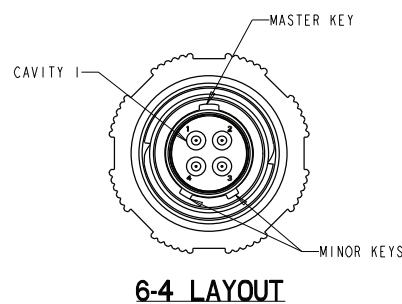
Dimensions shown in inches (mm)

Specifications and dimensions subject to change

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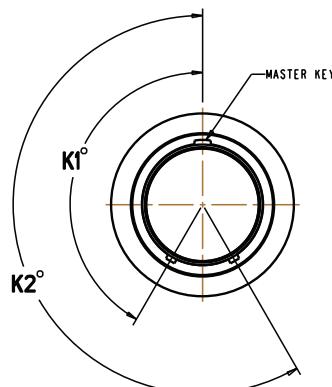


## Plug Connector Orientation Front Side



Note: Pin insert front side shown for reference only. Socket insert is a mirror image.

## MKJ1 Plug Barrel Clocking Positions



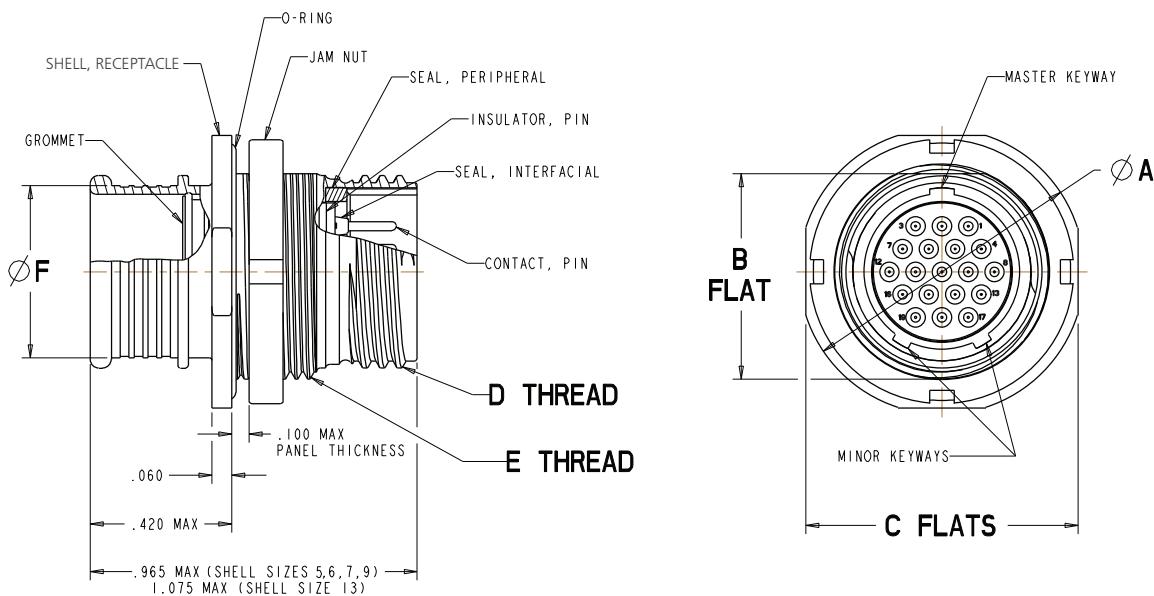
Master keyway remains stationary at top dead center for all sizes and clocking.

BARREL CLOCKING		
POSITION	K1°	K2°
A (NORMAL)	150°	210°
B	75°	210°
C	95°	230°
D	140°	275°

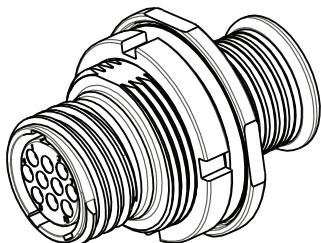
Barrel Clocking  
(A- Clocking Shown)



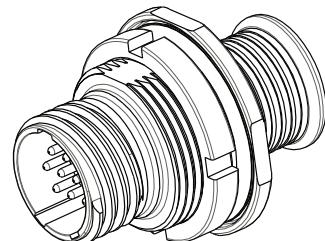
## MKJ1 Jam Nut Receptacle (Banding Platform)



LAYOUT	Ø A FLANGE DIA.	B FLAT	C FLATS	D THREAD (ACME DOUBLE START)	E THREAD UN-2A	Ø F	MAX WEIGHT IN GRAMS	
							PIN	SOCKET
6-4	.635	.410	.595	.375-.05P.1L-2A	.4375-2B	.290	4.1	4.6
6-7	.635	.410	.595	.375-.05P.1L-2A	.4375-2B	.290	4.2	4.6
7-10	.755	.536	.723	.4375-.05P.1L-2A	.5625-2B	.390	6.2	7.0
9-19	.830	.596	.790	.5625-.05P.1L-2A	.625-2B	.500	7.8	9.3
13-37	1.078	.845	1.044	.8125-.1P.2L-2A	.875-2B	.650	14.6	17.3

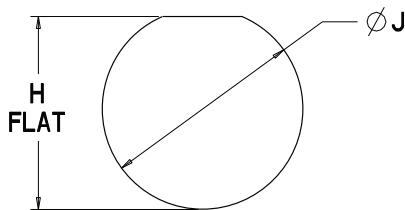


Socket Insert



Pin Insert

## Panel Cutouts



LAYOUT	H FLAT $\pm .002$	Ø J
6 - 4	.420	.448
6 - 7	.420	.448
7 - 10	.551	.573
9 - 19	.609	.635
13 - 37	.859	.885

Dimensions shown in inches (mm)

Specifications and dimensions subject to change

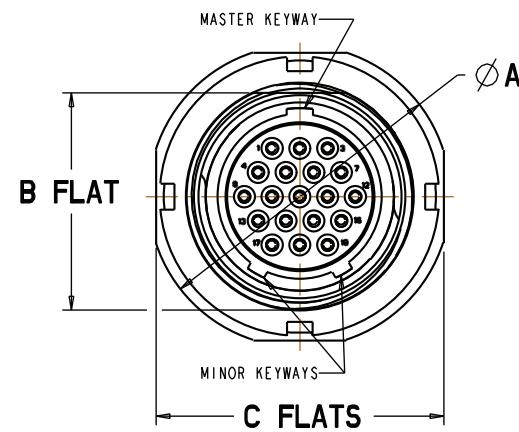
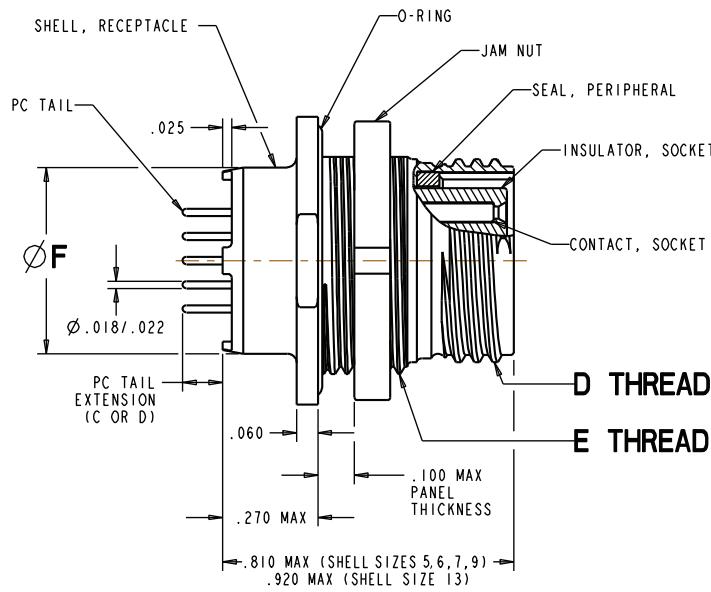


# MKJ1 Connectors

## Mini Circular

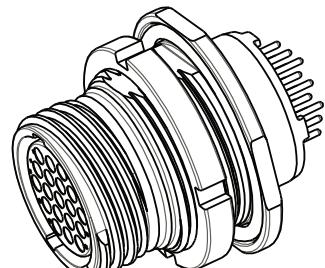
B

### MKJ1 PCB Jam Nut Receptacle (PCB Mount)

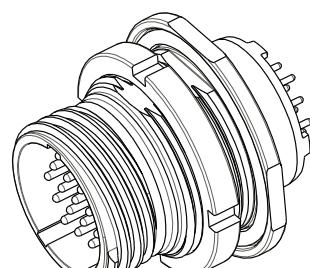


#### MKJ1 JAM NUT RECEPTACLE DIMENSIONS

LAYOUT	Ø A FLANGE DIA.	B FLAT	C FLATS	D THREAD (ACME DOUBLE START)	E THREAD UN-2A	Ø F	MAX WEIGHT IN GRAMS	
							PIN	SOCKET
6-4	.635	.410	.595	.375-.05P .1L -2A	.4375-28	.322	4.4	4.9
6-7	.635	.410	.595	.375-.05P .1L -2A	.4375-28	.322	4.7	5.1
7-10	.755	.536	.723	.4375-.05P .1L -2A	.5625-28	.432	6.9	7.7
9-19	.830	.596	.790	.5625-.05P .1L -2A	.625-28	.512	9.2	10.7
13-37	1.078	.845	1.044	.8125-.1P .2L -2A	.875-28	.677	17.1	19.9

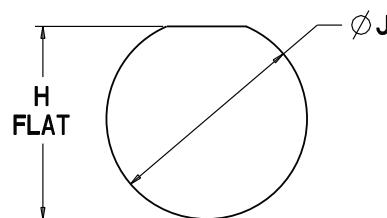


Socket Insert



Pin Insert

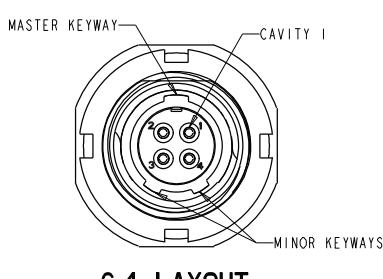
### Panel Cutouts



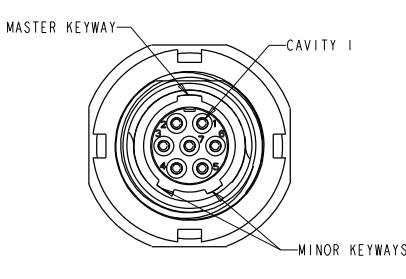
LAYOUT	H FLAT ±.002	Ø J
6 - 4	.420	.448
6 - 7	.420	.448
7 - 10	.551	.573
9 - 19	.609	.635
13 - 37	.859	.885



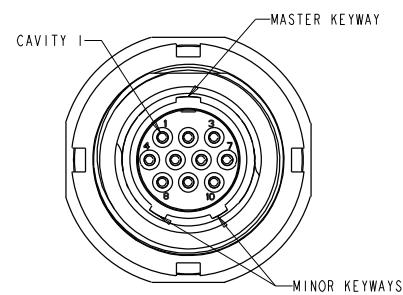
## Receptacle Connector Orientation Front Side



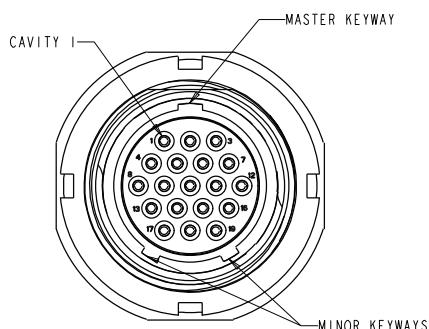
6-4 LAYOUT



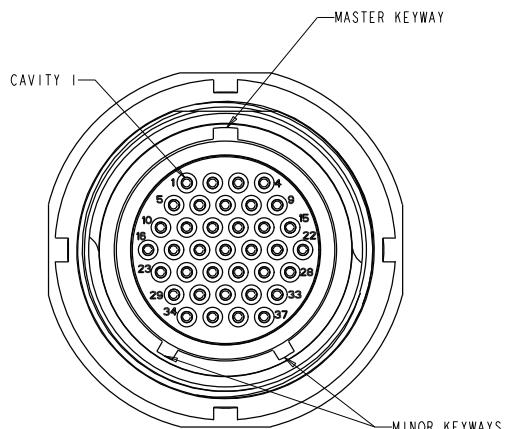
6-7 LAYOUT



7-10 LAYOUT



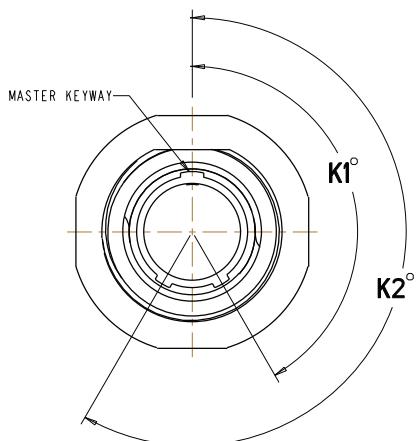
9-19 LAYOUT



13-37 LAYOUT

Note: Socket insert front side shown for reference only. Pin insert is a mirror image.

## MKJ1 Receptacle Shell Clocking Positions

Shell Clocking  
(A- Clocking Shown)

Master keyway is perpendicular with B Flat for all sizes and remains stationary at top dead center for all clockings.

SHELL CLOCKING		
POSITION	K1°	K2°
A (NORMAL)	150°	210°
B	75°	210°
C	95°	230°
D	140°	275°



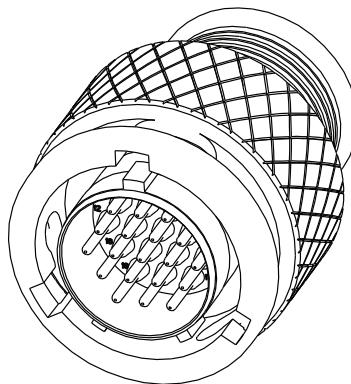
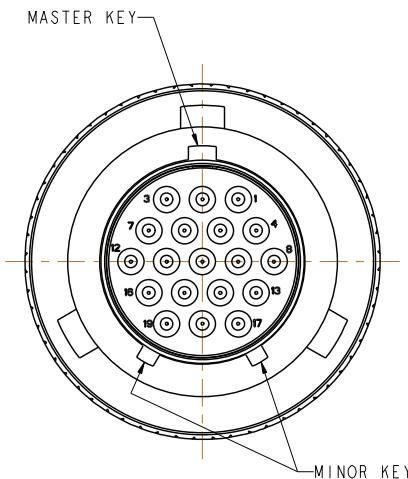
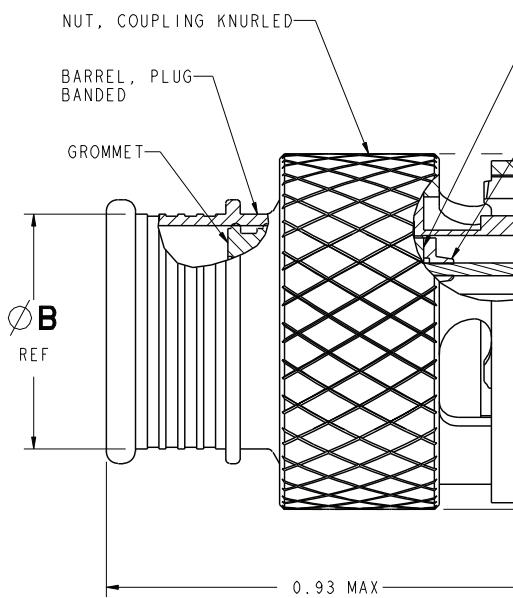
The MKJ3 is ideal for quick mating, light duty applications where weight and cost take a precedence. The connector comes with 7 high density contact arrangements, multiple clocking positions and a rear banding platform or accessory threads for backshell applications, and a rear grommet and pin interfacial seals. Used in avionics, aerospace, medical, and industrial applications.

## Specifications

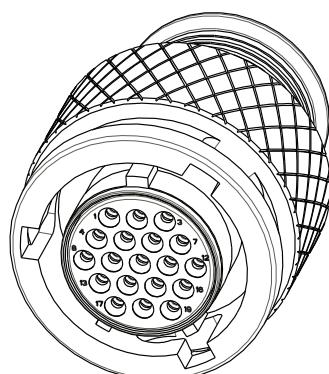
<b>Contact Type</b>	Rear crimp or PCB mount
<b>Contacts</b>	Size 23 (0.076" spacing), Size 16 (.177" spacing)
<b>Wire Size</b>	#22 - #28 AWG (Size 23 Contacts), #16 - #20 AWG (Size 16 Contacts)
<b>Contact Rating</b>	5 Amps Maximum
<b>Voltage Rating</b>	500 VAC RMS sea level
<b>Insulation Resistance</b>	5,000 Megaohms minimum
<b>Operating Temperature</b>	-55°C to +150°C
<b>Contact Resistance</b>	8 Milliohms maximum
<b>Vibration</b>	37 g's in accordance with MIL-STD-1344 Method 2005, Condition IV
<b>Shock</b>	300 g's in accordance with MIL-STD-1344 Method 2004, Condition E
<b>Durability</b>	250 mating cycles (Aluminum) or 2,000 mating cycles (Stainless Steel)
<b>Receptacle Mounting</b>	Jam nut or Wall Mount
<b>EMI Shielding</b>	40db attenuation, 100Mhz to 1000Mhz
<b>Coupling</b>	Bayonet
<b>Materials</b>	Shells - Aluminum Alloy or Stainless Steel Insulators - Thermostatic Seals - Flurosilicone Contacts - Copper alloy with gold over nickel plating



## MKJ3 Plug (Banding Platform)



Socket Insert



Pin Insert

MKJ3 PLUG DIMENSIONS		
LAYOUT	Ø A	Ø B
6-4	.565	.290
6-7	.565	.290
7-10	.650	.390
8-13	.750	.440
9-19	.790	.500
10-26	.875	.562
12-37	.944	.650

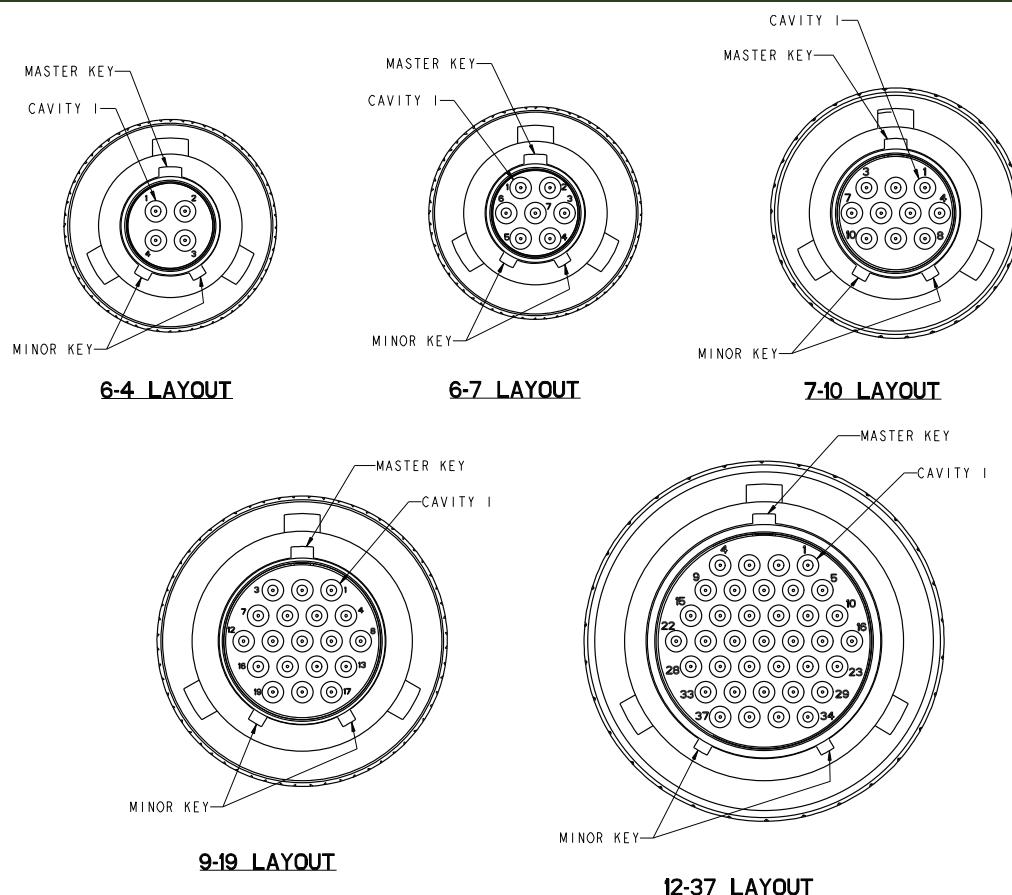


B

Mini Circular

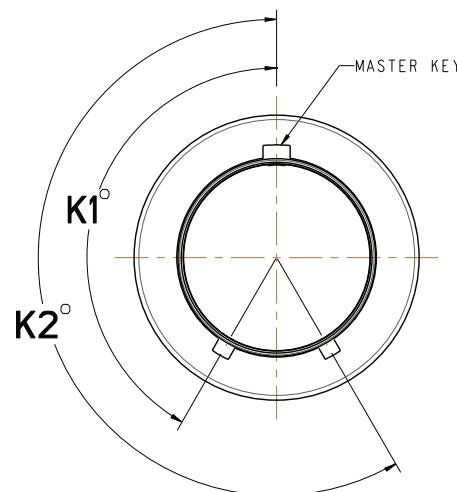
# MKJ3 Connectors

## Connector Orientation Front Side



Note: Pin insert front side shown for reference only. Socket insert is a mirror image.

## MKJ4 Receptacle Shell Clocking Positions



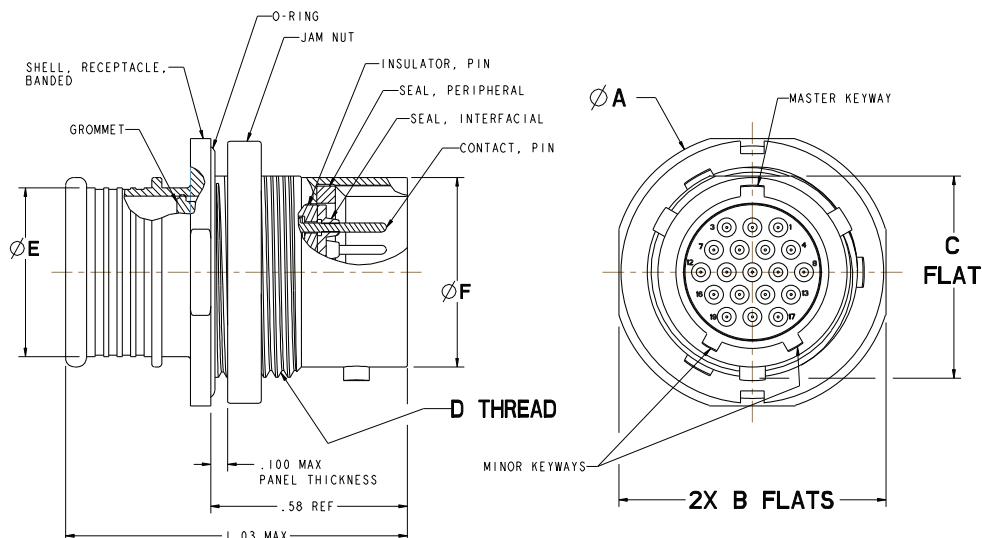
Barrel Clocking  
(N- Clocking Shown)

For all Shell Sizes and Clockings, the Master Keyway remains stationary at top dead center, with minor keys rotating to achieve alternate clocking positions.

SHELL CLOCKING		
POSITION	K1°	K2°
N (NORMAL)	150°	210°
X	75°	210°
Y	95°	230°
Z	140°	275°

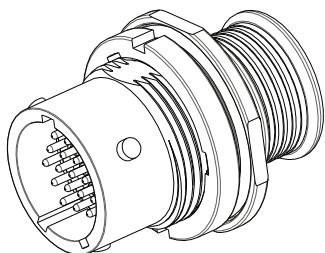


## MKJ3 Jam Nut Receptacle (Banding Platform)

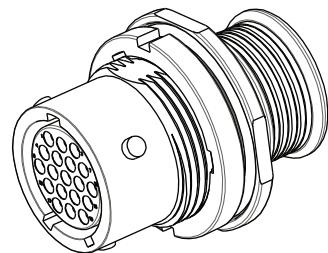


## MKJ0 JAM NUT RECEPTACLE DIMENSIONS

LAYOUT	Ø A FLANGE DIA.	B FLAT	C FLAT	D THREAD UN-2A	Ø E	Ø F	H FLAT	Ø J	MAX WEIGHT IN GRAMS
6-4	.635	.595	.410	.4375-28	.290	.362	.415	.445	TBD
6-7	.635	.595	.410	.4375-28	.290	.362	.415	.445	TBD
7-10	.755	.723	.536	.5625-32	.390	.436	.541	.572	TBD
8-13	.755	.723	.536	.5625-32	.440	.508	.541	.583	TBD
9-19	.830	.790	.596	.6250-28	.500	.561	.601	.643	TBD
10-26	.890	.855	.656	.6875-28	.562	.635	.671	.720	TBD
12-37	1.078	1.044	.845	.8750-28	.650	.714	.850	.885	TBD

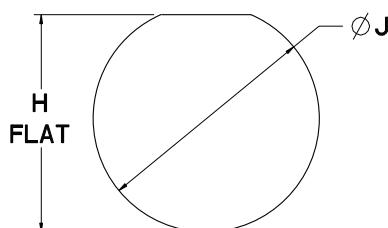


Pin Insert



Socket Insert

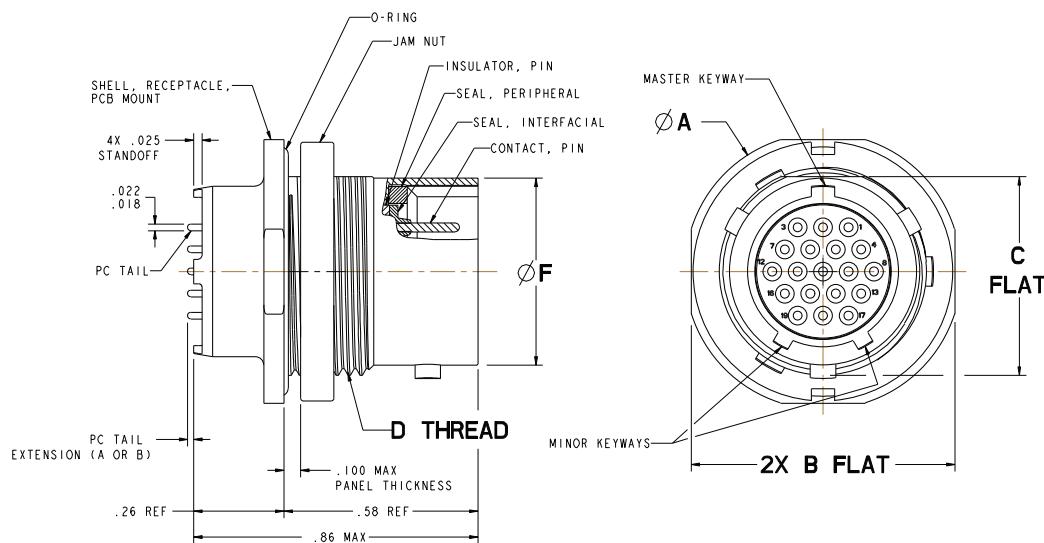
## Panel Cutouts



Dimensions shown in inches (mm)  
Specifications and dimensions subject to change

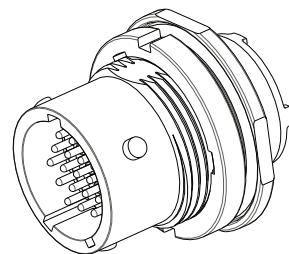
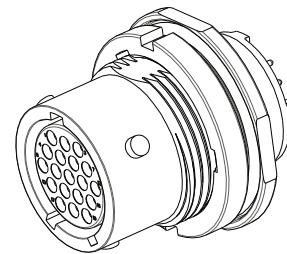


### MKJ3 Jam Nut Receptacle (PCB Mount)

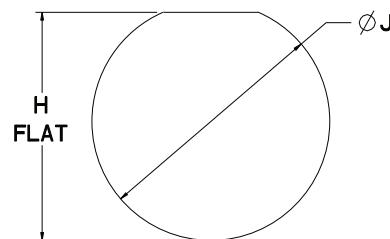


#### MKJ0 JAM NUT RECEPTACLE DIMENSIONS

LAYOUT	Ø A FLANGE DIA.	B FLAT	C FLAT	D THREAD UN-2A	ØF	H FLAT	Ø J	MAX WEIGHT IN GRAMS
6-4	.635	.595	.410	.4375-28	.362	.415	.445	TBD
6-7	.635	.595	.410	.4375-28	.362	.415	.445	TBD
7-10	.755	.723	.536	.5625-32	.436	.541	.572	TBD
8-13	.755	.723	.536	.5625-32	.508	.541	.583	TBD
9-19	.830	.790	.596	.6250-28	.561	.601	.643	TBD
10-26	.890	.855	.656	.6875-28	.635	.671	.720	TBD
12-37	1.078	1.044	.845	.8750-28	.714	.850	.885	TBD

**Pin Insert****Socket Insert**

### Panel Cutouts

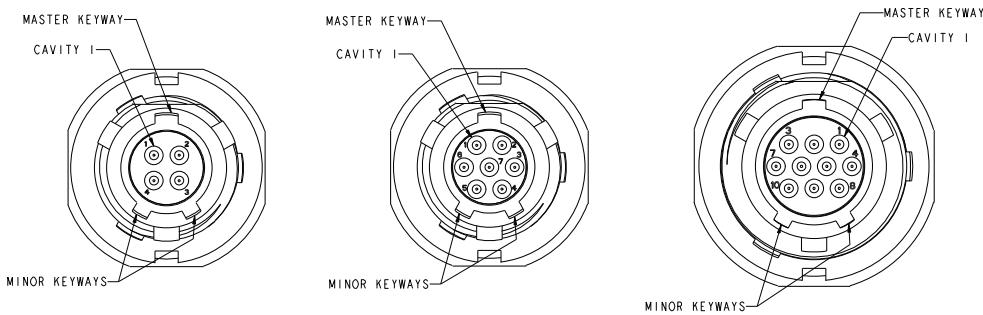


Dimensions shown in inches (mm)  
Specifications and dimensions subject to change



## Connector Orientation Front Side

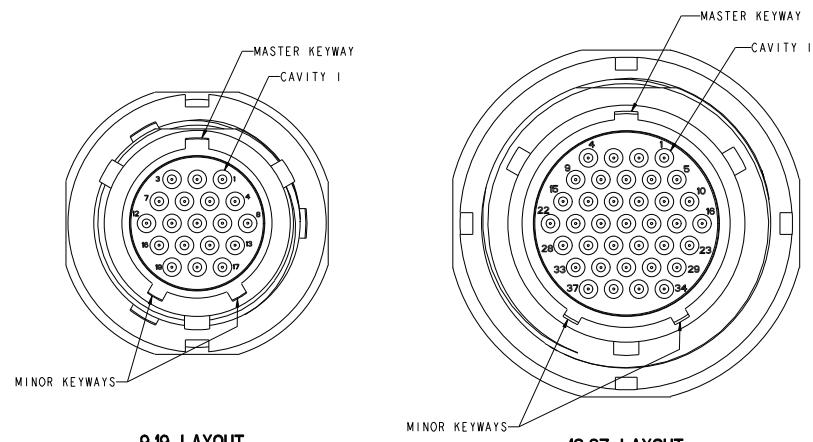
Mini Circular



6-4 LAYOUT

6-7 LAYOUT

7-10 LAYOUT



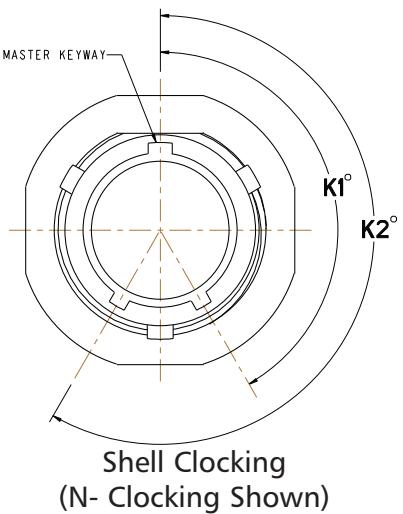
9-19 LAYOUT

12-37 LAYOUT

Note: Pin insert front side shown for reference only. Socket insert is a mirror image.

## MKJ3 Shell Clocking Positions

For all Shell Sizes and Clockings, the Master Keyway remains stationary at top dead center, with minor keys rotating to achieve alternate clocking positions.



SHELL CLOCKING		
POSITION	K1°	K2°
N (NORMAL)	150°	210°
X	75°	210°
Y	95°	230°
X	140°	275°



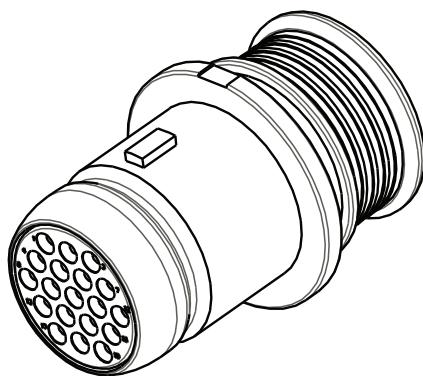
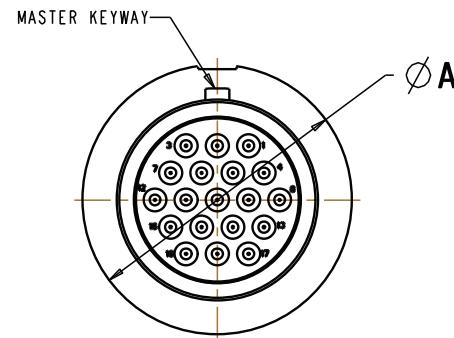
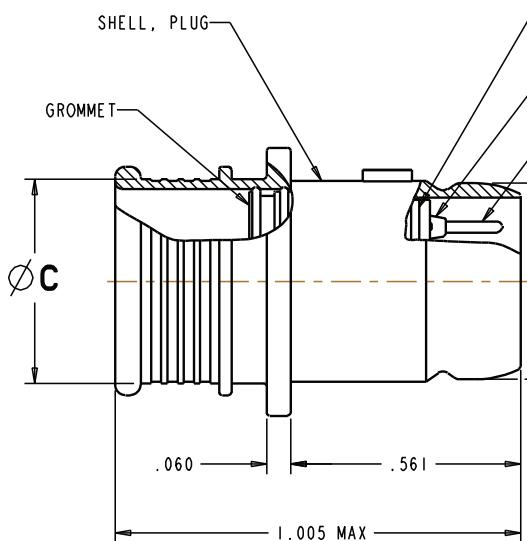
The MKJ4 features a canted retention spring disconnect coupling mechanism. This durable coupling mechanism allows quick and easy mating and demating of the connector. Ideal for battlefield and medical device equipment.

## Specifications

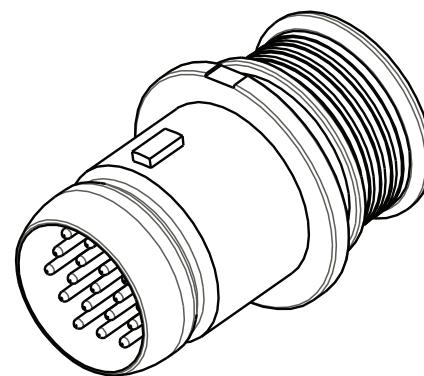
<b>Contact Type</b>	Rear crimp
<b>Contacts</b>	Size 23 (0.076" spacing), Size 16 (.177" spacing)
<b>Wire Size</b>	#22 - #28 AWG (Size 23 Contacts), #16 - #20 AWG (Size 16 Contacts)
<b>Contact Rating</b>	5 Amps Maximum
<b>Voltage Rating</b>	500 VAC RMS sea level
<b>Insulation Resistance</b>	5,000 Megaohms minimum
<b>Operating Temperature</b>	-55°C to +150°C
<b>Contact Resistance</b>	8 Milliohms maximum
<b>Vibration</b>	20 g's in accordance with MIL-STD-1344 Method 2005, Condition IV
<b>Shock</b>	50 g's in accordance with MIL-STD-1344 Method 2004, Condition E
<b>Durability</b>	2,000 mating cycles
<b>Receptacle Mounting</b>	Jam Nut
<b>EMI Shielding</b>	400db attenuation, 100Mhz to 1000Mhz
<b>Coupling</b>	Quick disconnect (Canted Spring)
<b>Materials</b>	Shells - Aluminum Alloy or Stainless Steel Insulators - Thermoplastic Seals - Flurosilicone Contacts - Copper alloy with gold over nickel plating Canted Coil - Stainless Steel



## MKJ4 Plug (Banding Platform)



Socket Insert

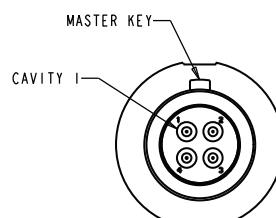


Pin Insert

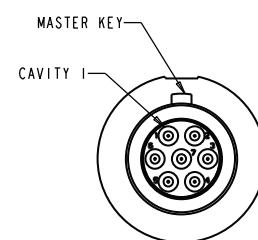
MKJ4 PLUG DIMENSIONS					
LAYOUT	Ø A	Ø B	Ø C	MAX WEIGHT IN GRAMS	
				PIN	SOCKET
6-4	.485	.310	.290	2.5	3.0
6-7	.485	.310	.290	2.6	3.1
7-10	.565	.380	.390	3.7	4.5
9-19	.660	.480	.500	5.1	6.6



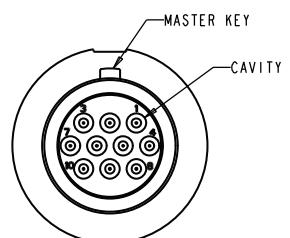
## Connector Orientation Front Side



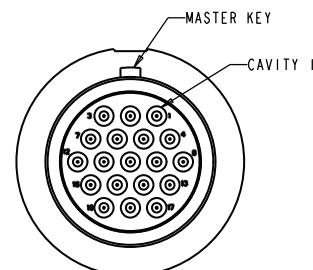
6-4 LAYOUT



6-7 LAYOUT



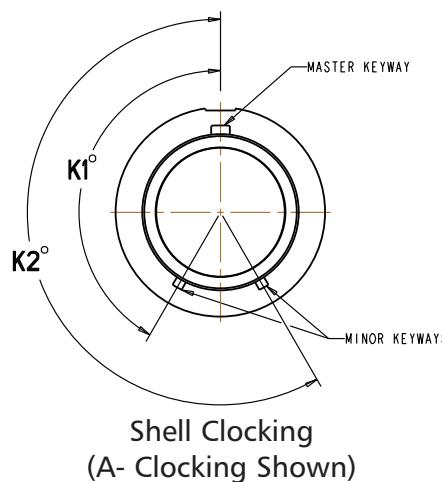
7-10 LAYOUT



9-19 LAYOUT

Note: Pin insert front side shown for reference only. Socket insert is a mirror image.  
Connectors shown without minor keys.

## MKJ4 Receptacle Shell Clocking Positions

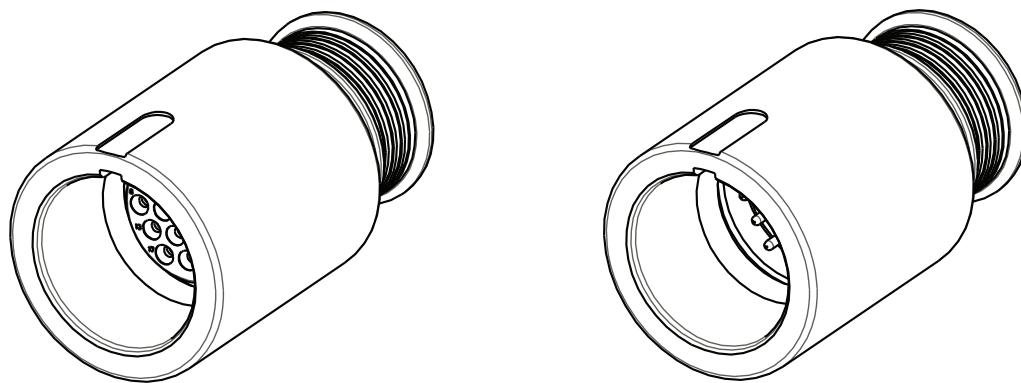
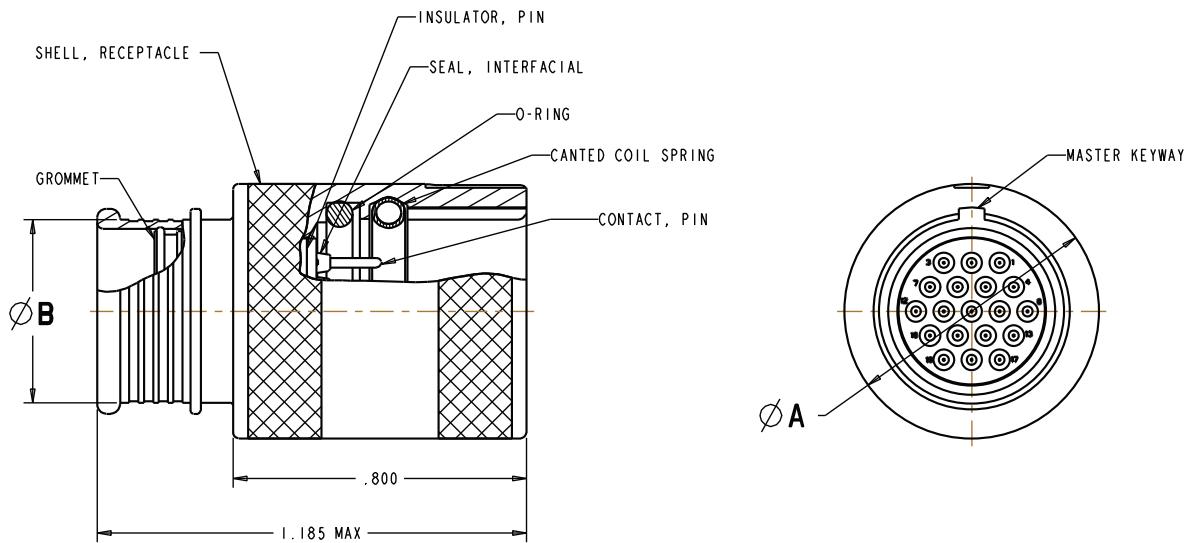


For all Shell Sizes and Clockings, the Master Keyway remains stationary at top dead center, with minor keys rotating to achieve alternate clocking positions.

SHELL CLOCKING		
POSITION	K1°	K2°
A (NORMAL)	150°	210°
B	75°	210°
C	95°	230°
D	140°	275°
NO DESIGNATION	MASTER KEY ONLY NO MINOR KEYS	



## MKJ4 In-Line Receptacle (Banding Platform)



Socket Insert

Pin Insert

MKJ4 RECEPTACLE DIMENSIONS				
LAYOUT	Ø A	Ø B	MAX WEIGHT IN GRAMS	
			PIN	SOCKET
6-4	.520	.290	6.3	6.8
6-7	.520	.290	6.4	6.9
7-10	.580	.390	7.8	8.6
9-19	.695	.500	10.7	12.1

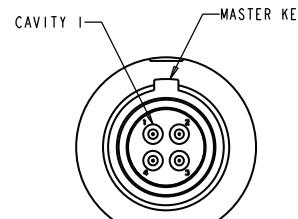
Dimensions shown in inches (mm)

Specifications and dimensions subject to change

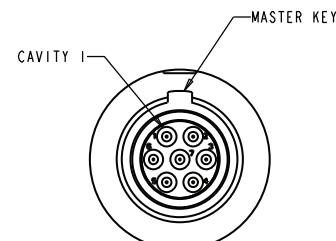
www.ittcannon.com



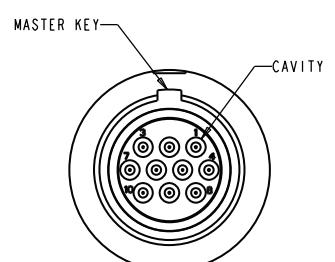
## Receptacle Connector Orientation Front Side



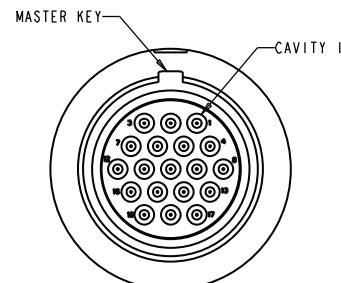
6-4 LAYOUT



6-7 LAYOUT



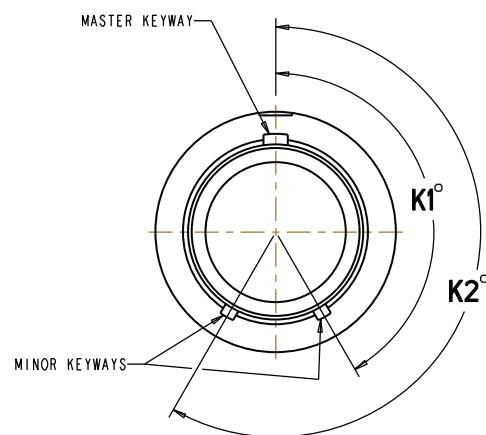
7-10 LAYOUT



9-19 LAYOUT

Note: Pin insert front side shown for reference only. Socket insert is a mirror image.  
 Connectors shown without minor key ways.

## MKJ4 Receptacle Shell Clocking Positions

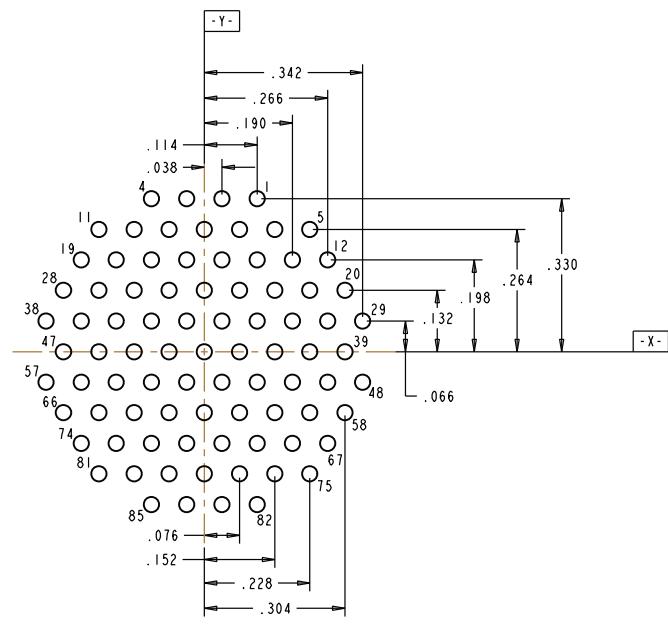
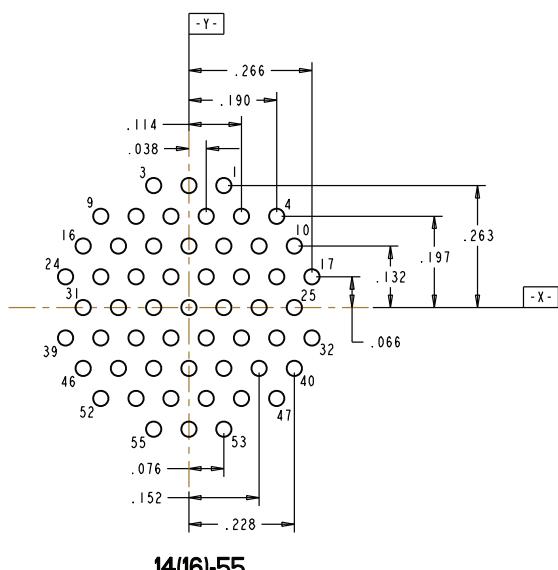
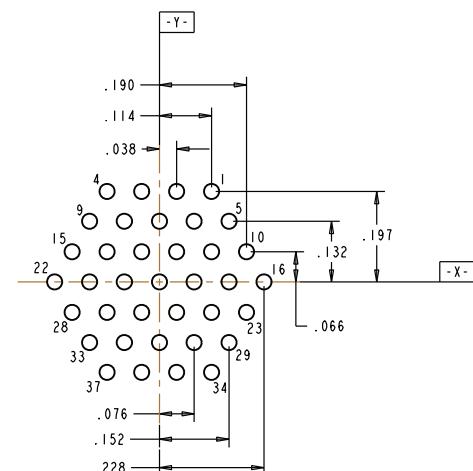
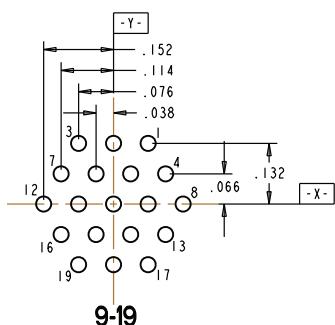
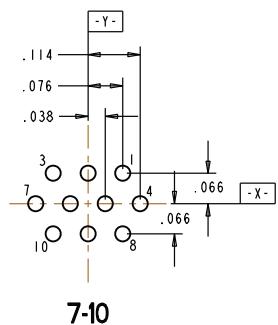
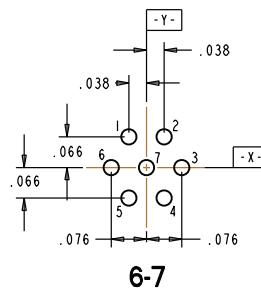
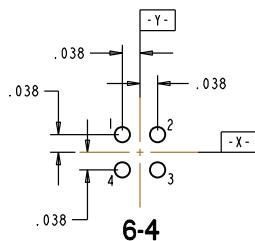
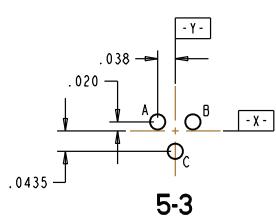
Shell Clocking  
(A- Clocking Shown)

For all Shell Sizes and Clockings, the Master Keyway remains stationary at top dead center, with minor keys rotating to achieve alternate clocking positions.

SHELL CLOCKING		
POSITION	K1°	K2°
A (NORMAL)	150°	210°
B	75°	210°
C	95°	230°
D	140°	275°
NO DESIGNATION	MASTER KEYWAY ONLY NO MINOR KEYWAYS	



## PCB Layout Dimensions



Note: Layouts for pin connectors shown. Socket connectors are a mirror image.

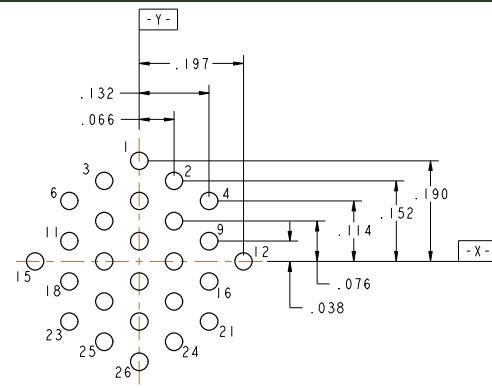
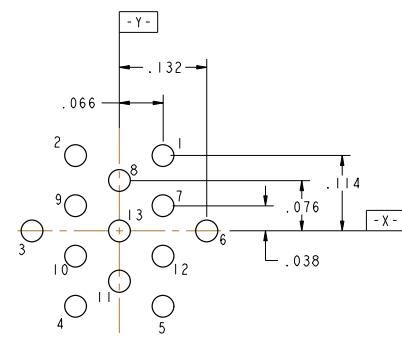
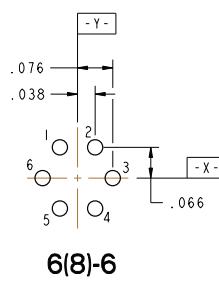
Dimensions shown in inches (mm)

Specifications and dimensions subject to change

[www.ittcannon.com](http://www.ittcannon.com)



## PCB Layout Dimensions



Note: Layouts for pin connectors shown. Socket connectors are a mirror image.



## Format Sheet-Tooling and Contacts MKJ

**Crimp Contacts**

Pin Contacts (Size 23) 030-9649-000  
 Socket contacts (Size 23) 031-9750-000

**Contact Area Plating:**

50 Micro inches Gold over Nickel  
 Accommodates Sizes #22-28 AWG Wire

**Crimp Tool**

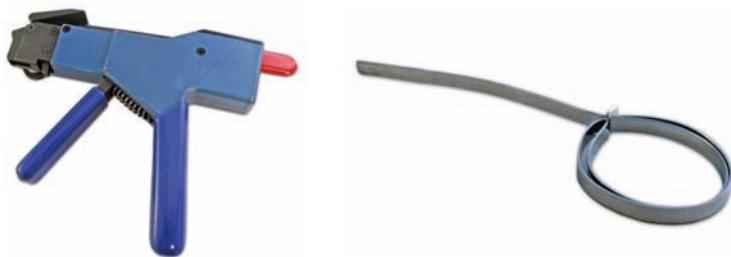
Contact Crimp Tool 995-0002-293  
 Locator 995-0002-297

**Contact Insertion/Extraction Tools**

Insertion Tool 995-0002-295  
 Extraction Tool 995-0002-294

**Banding Tools**

Hand banding Tool 995-0002-298  
 1/8" bands (100 pk) 995-0002-299

**Banding Tools**

PART NUMBER	USE ON JAMNUT SIZE / PN
317-2187-000	MKJ1 (6) MKJ0 (7)
317-2187-001	MKJ1 (7) MKJ0 (9)
317-2187-002	MKJ1 (9)
317-2187-003	MKJ1 (13)
317-2187-006	MKJ0 (6)
317-2187-007	MKJ0 (12)





## Backshells

## MKJ Banding Backshell Designator - Talking Dog



## Heat Shrink Boot

## MKJ Heat Shrink Boot P/N's - Straight

Shell Size	ITT P/N
5, 6, 7	980-2010-017
8, 9	980-2010-018
10, 11, 12, 13	980-2010-019

## MKJ Heat Shrink Boot P/N's - 90°

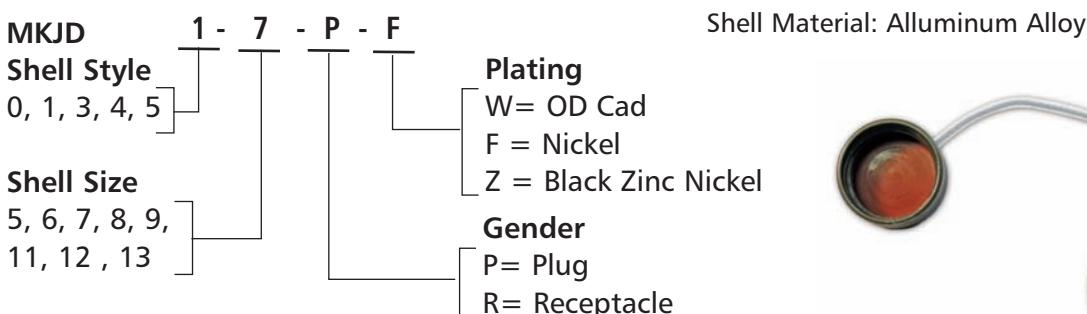
Shell Size	ITT P/N
5, 6, 7	980-2010-020
8, 9	980-2010-021
10, 11, 12, 13	980-2010-022

Material: Fluid resistant elastomer

Adhesive: Polyamide hot melt

## Metal Dust Caps

## MKJ Aluminum Dustcap Designator- Talking Dog



No Size 11 or 12 dustcaps are available on MKJ1  
 No size 11 or 13 dustcaps are available on MKJ0, MKJ3, & MKJ4  
 No size 5, 6, 7, or 13 dustcaps are available on MKJ5



## High Vibration, Higher Temperature, Highest Sealing

ITT Interconnect Solutions has been always looking forward to satisfy their customers' needs. In order to meet these specific demands ITT ICS developed a new signal connector series for sensor applications (100V / 4A) in harsh environments. One such application is the engine compartments of both heavy diesel and gas units. ITT ICS's engineered for life design philosophy ensures that Metr1x connectors stay dry and fully functional in all situations. Engine oils, soot or even aggressive salt spray have no impact on the connector's performance or function. The connector provides EMI shielding as well as resistance against vibration of up to 20g and shock of up to 50g. In addition it is sealed to IP69K, can operate up to 150°C (+302°F) conforms to UL94-V0 and is RoHS compliant.

### Metr1x Product Line Talking Dog



M1X — 1 — P — 3 — C1 — S — P1

**M1X** SERIES  
Metr1x

#### 1 SHELL STYLE

- 1 - Cable Receptacle (pin)
- 6 - Cable Plug (socket)

#### P CONTACT GENDER

- P - Pin
- S - Socket

#### 3 CONTACT ARRANGEMENT

- 2 = 2-way
- 3 = 3-way
- 4 = 4-way

#### C1 CONTACT TYPE

- C1 Gold plated crimp contact  
0,22 mm<sup>2</sup> to 0,75 mm<sup>2</sup> (AWG 24-20)

#### S CABLE TYPE

- S - Standard, without cable

#### P1 VARIANT/LENGTH OF CABLE

- P1 - Piece parts with contacts, no cable
- P0 - Piece parts, no contacts, no cable

## Specifications

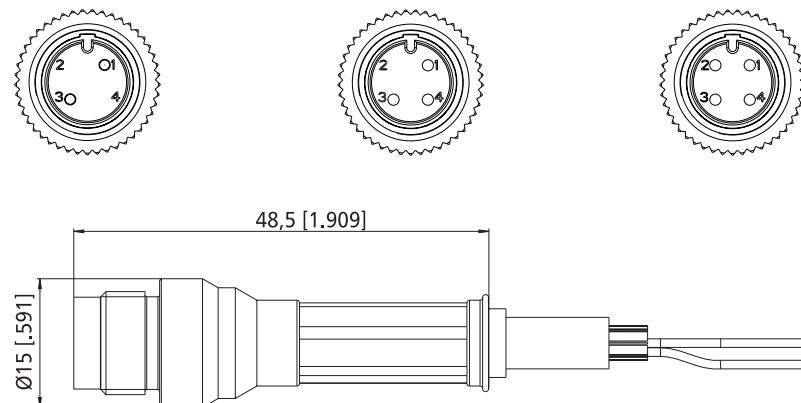


Contact Type	CGK crimp contacts, size 20
Wire Accommodation	0,22 - 0,75 mm <sup>2</sup> (AWG 24-20)
Housing Material	Stainless Steel V2A
Cable Diameter	6 mm
Durability	50 mating cycles
Current Rating	4A
Voltage Rating	100V dc
Mating Face	Acc. DIN EN 61076-2-1001 / Type D
Locking Torque	1,5Nm to 2,1Nm
Insulation Resistance (acc. IEC 60512. Method 3a)	1 GΩ minimum / 500 V dc
Operating Temperature	-40°C to +150 °C (-40 °F to +302 °F)
Contact Resistance (acc. IEC 60512, Method 2a)	5 mΩ maximum
Vibration (acc. IEC 60512. Method 6e)	20g rms, 5Hz to 2 kHz
Shock (acc. IEC 60512, Method 6c)	50g, half-sine, 11 ms
EMI Shielding (acc. VG95328 / VG 95343)	50 dB minimum, 30 kHz – 100 MHz
Sealing Class	IP69K, IP68 (4m / 2 hours) in mated condition
Flammability Rating	UL94-V0
Salt Spray Resistance (acc. IEC 60512, Method 11f)	48 hours
Resistance against fluids	Engine oil, diesel, cooling liquid, kerosene, hydraulic oil



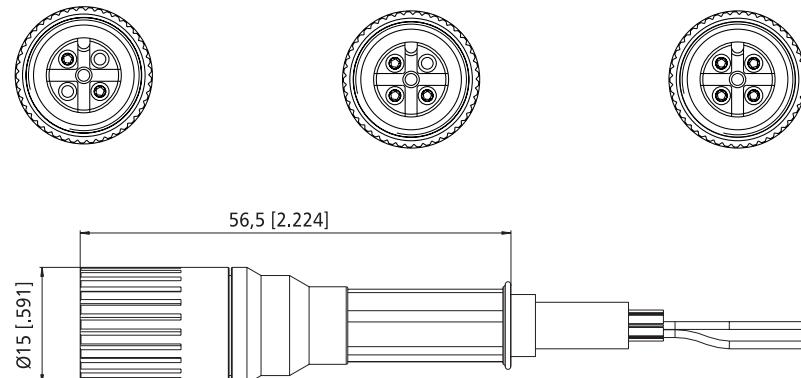
## Metr1x Receptacle

### 2-, 3-, 4-way Pin



## Metr1x Plug

### 2-, 3-, 4-way Socket



## Metr1x Housing



Robust stainless steel housing is available in different versions for receptacle. Further housing variations on request.

For assembly and crimp tooling please consult factory.



MICRO-K microminiature circular connectors are rugged yet lightweight - and meet or exceed the applicable requirements of MIL-DTL-83513. Applications include biomedical, instrumentation and miniature black boxes.

**MIK:** Accommodate up to 55 contacts on .050 (1.27) centers (equivalent to 420 contacts per square inch). Five keyway polarization prevents cross plugging. The threaded coupling nuts provide strong, reliable coupling. MIK receptacles can be either front or back panel mounted; in back mounting applications, panel thickness of up to 3/32" can be used on the larger sizes. Maximum temperature range - 55°C to + 125°C.

Standard MIK connectors are available in two shell sizes accommodating two contact arrangements pre-wired to your specific requirements.

**MIKM:** Similar to our MIK, except has a steel shell and receptacle for improved ruggedness and RFI resistance. It accommodates up to 85 twist pin contacts. Maximum temperature range - 55°C to + 125°C.

**MIKQ:** A quick disconnect metal shell and receptacle version that can be instantaneously disconnected yet provides a solid lock when engaged. Applications include commercial TV cameras, portable

radios, military gun sights, airborne landing systems and medical equipment. Maximum temperature range - 55°C to + 125°C.



## Specifications

### STANDARD MATERIAL AND FINISHES

	<b>MIK</b>	<b>MIKM</b>	<b>MIKQ</b>
Shell	Thermoplastic	Stainless Steel	Brass
Coupling Nut	Stainless Steel Passivated	Stainless Steel Passivated	Brass, Electroless Nickel Plated*
Insulator	Glass-reinforced Thermoplastic	Glass-reinforced Thermoplastic	Glass-reinforced Thermoplastic
Contacts	50 Microinch Gold Plated Copper Alloy	50 Microinch Gold Plated Copper Alloy	50 Microinch Gold Plated Copper Alloy

\*For plug only  
Electrodeposited for receptacle.

### ELECTRO/MECHANICAL FEATURES

	<b>MIK</b>	<b>MIKM</b>	<b>MIKQ</b>
No. of Contacts	7,55	7,55, 85	7,19, 37
Wire Size	#24 AWG thru #32 AWG	#24 AWG thru #32 AWG	#24 AWG thru #32 AWG
Contact Termination	Crimp	Crimp	Crimp
Contact Rating	3 Amps	3 Amps	3 Amps
Coupling	Threaded	Threaded	Push/Pull
Polarization	Keyways	Keyways	Keyways
Contact Spacing	.050 (1.27) Centers	.050 (1.27) Centers	.050 (1.27) Centers
Shell Styles	0-Wall Mtg. 6-Straight Plug	0-Wall Mtg. 6-Straight Plug	7-Jam Nut 6-Straight Plug 9-Rear Panel Mtg. Receptacle

## How to Order



**RoHS COMPLIANCE** \_\_\_\_\_

**SERIES** \_\_\_\_\_

**CONNECTOR TYPE** \_\_\_\_\_

**SHELL STYLE** \_\_\_\_\_

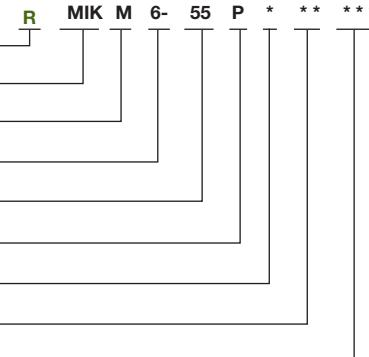
**CONTACT ARRANGEMENT** \_\_\_\_\_

**CONTACT TYPE** \_\_\_\_\_

**TERMINATION TYPE** \_\_\_\_\_

**TERMINATION LENGTH CODE** \_\_\_\_\_

**HARDWARE** \_\_\_\_\_



### SERIES

MIK: Microminiature Circular

### CONNECTOR TYPES

No Letter - Screw coupling, plastic shell  
M - Screw coupling, metal shell  
Q - Push/Pull, metal shell

### SHELL STYLES

0 - Wall mounting receptacle (MIK and MIKM only)  
6 - Straight plug (MIK, MIKM and MIKQ)  
7 - Jam nut mount (MIKQ only)  
9 - Rear panel mounted receptacle (MIKQ)

### CONTACT ARRANGEMENTS

7, 19, 37, 55, 85

### CONTACT TYPE

P - Pin  
S - Socket

### TERMINATION TYPES

H - Insulated round hook-up wire  
L - Uninsulated round solid wire

### TERMINATION LENGTH CODE (STANDARDS)

(H) 001 - 18", 7/34 strand, #26 AWG, MIL-W-16878/4, Type E Teflon, yellow.

(H) 003 - 18", 7/34 strand, #26 AWG, MIL-W-16878/4, Type E Teflon, color coded to MIL-STD-681 System I.

(L) 1 - 1/2" uninsulated solid #25 AWG gold plated copper.

(L) 2 - 1" uninsulated solid #25 AWG gold plated copper.

### HARDWARE

G - Cable nut and grip (MIKQ plug only)

N - Nut only (MIKQ plug only)

NOTE: Contact types cannot be interchanged between shell styles.

Dimensions shown in inches (mm)

Specifications and dimensions subject to change

[www.ittcannon.com](http://www.ittcannon.com)





# Microminiature Circular - .050" Contact Spacing MICRO-K

**Circular**

**B**

## Standard Wire Termination Codes

The following termination codes are listed for your information. For additional codes please refer to Appendix on page B-79 and B-81. All wire lengths are minimum.

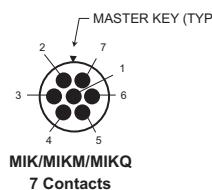
### HARNESS TYPES (H)

#26 AWG per MIL-W-16878 Type E, Teflon Stranded

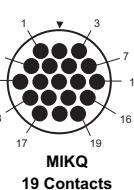
Length	-All Yellow	Color Coded
3 (76.2)	020	027
6 (152.4)	019	016
8 (203.2)	026	034
10 (254.0)	029	025
12 (304.8)	028	002
18 (457.2)	001	003
20 (508.0)	038	023
24 (609.6)	009	004
30 (762.0)	010	005
36 (914.4)	011	006
48 (1219.2)	013	048
72 (1828.8)	017	046
120 (3048.0)	042	041

## Contact Arrangements

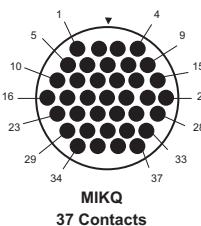
### Face View, Pin Side-(Male Twist Pin Contacts)



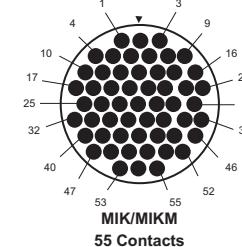
MIK/MIKM/MIKQ  
7 Contacts



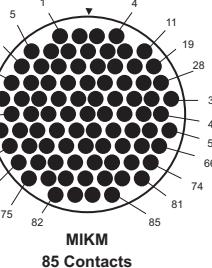
MIKQ  
19 Contacts



MIKQ  
37 Contacts



MIK/MIKM  
55 Contacts



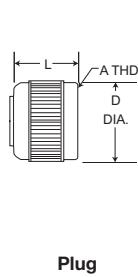
MIKM  
85 Contacts

Cavity identification numbers are for reference only, they do not appear on connectors.

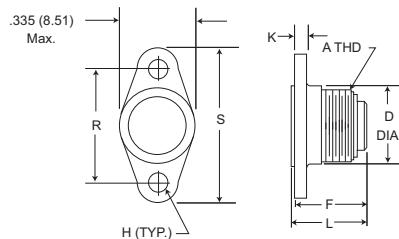
## Shell Dimensions

### MIK (Rear Panel Mount Thickness - see Tabulation "T")

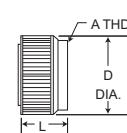
Weight given is 1/2" uninsulated, solid #25 AWG gold plated copper pigtailed



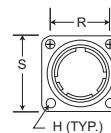
Plug



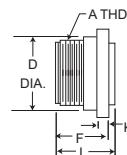
Receptacle  
Shell Size 7 only



Plug



Receptacle  
Shell Size 55 only



### Plug

Part Number by Shell Size	A Thread	D Max.	L Max.	Avg. Weight oz. (gm.) $\pm 5\%$
MIK6-7P	5/16-24UNF-2B	.375 (9.52)	.315 (8.00)	.054 (1.54)
MIK6-55P	9/16-24UNF-2A	.755 (19.18)	.460 (11.68)	.202 (5.72)

### Receptacle

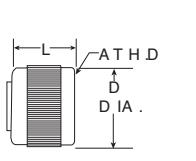
Part Number by Shell Size	A Thread	D $\pm .010$ (0.25)	F Max.	H $\pm .003$ (0.08)	K $\pm .010$ (0.25)	L Max.	R $\pm .005$ (0.13)	S Max.	T Max.	Avg. Weight oz. (gm.) $\pm 5\%$
MIKO-7S	5/16-24UNF-2B	.325 (8.26)	.315 (8.00)	.078 (1.98)	.062 (1.57)	.355 (9.02)	.460 (11.68)	.630 (16.00)	.032 (0.81)	.022 (.635)
MIKO-55S	9/16-24UNF-2A	.625 (15.88)	.440 (11.18)	.089 (2.26)	.100 (2.54)	.495 (12.57)	.580 (14.73)	.760 (19.30)	.062 (1.57)	.134 (3.81)



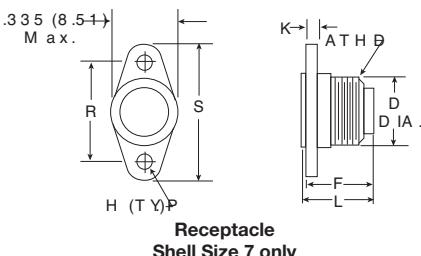
B

Shell Dimensions (Continued)

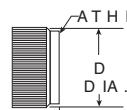
MIKM (Rear Panel Mount Thickness .335 (8.51) max. - see Tabulation "T")



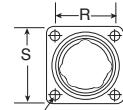
Plug



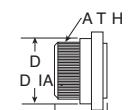
Receptacle  
Shell Size 7 only



Plug



Receptacle  
Shell Size 55 & 85



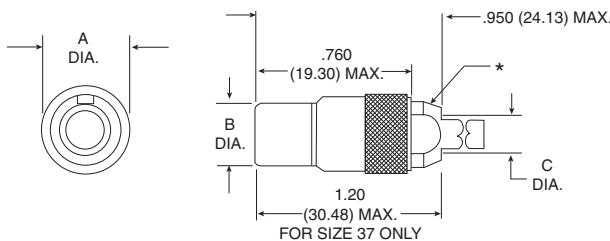
Plug

Part Number by Shell Size	A Thread	D	F Max.	H +.003 (0.08)	K	L Max.	R +.005 (0.13)	S Max.	T Max.	Avg. Weight oz. (gm.)±5%
MIKM6-7P	5/16-24UNF-2A	.375 (9.52)				.315 (8.00)				.054 (1.54)
MIKM6-55P	5/8-24UNEF-2B	.775 (19.18)				.440 (11.18)				.333 (9.44)
MIKM6-85P	11/16-24UNEF-2B	.860 (21.84)				.460 (11.68)				.419 (11.88)

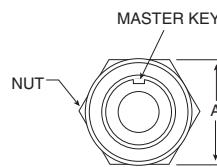
Receptacle

Part Number by Shell Size	A Thread	D	F Max.	H +.003 (0.08)	K	L Max.	R +.005 (0.13)	S Max.	T Max.	Avg. Weight oz. (gm.)±5%
MIKMO-7S	5/16-24UNF-2A	.325 (8.26)	.320 (8.13)	.078 (1.98)	.062 (1.57)	.400 (10.16)	.460 (11.68)	.630 (16.00)	.032 (0.81)	.051 (1.45)
MIKMO-55S	5/8-24UNEF-2A	.625 (15.88)	.440 (11.18)	.091 (2.31)	.062 (1.57)	.490 (12.45)	.580 (14.73)	.760 (19.30)	.125 (3.18)	.269 (7.62)
MIKMO-85S	11/16-24UNEF-2A	.745 (18.92)	.440 (11.18)	.091 (2.31)	.062 (1.57)	.490 (12.45)	.674 (17.12)	.845 (21.46)	.125 (3.18)	.346 (9.80)

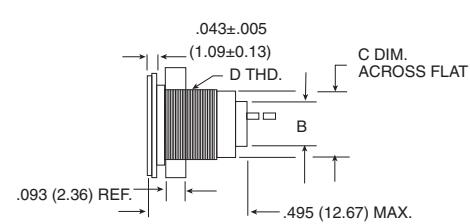
MIKQ (Front Panel Mounting Type Shown-.093 (2.36) Thickness)



Plug



Receptacle



Plug

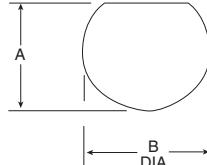
Part Number by Shell Size	A MAX.	B MAX.	C Ref.	Avg. Weight oz. (gm.)±5%
MIKQ7-7S	.385 (9.78)	.305 (7.75)	.180 (4.57)	.214 (6.08)
MIKQ6-19S	.515 (13.08)	.405 (10.29)	.260 (6.60)	.376 (10.70)
MIKQ6-37S	.760 (19.30)	.635 (16.13)	.350 (8.89)	.714 (20.23)

\*Std. Conn. not supplied with Cable Nut & Grip, See Mod Codes. Lanyard Release Is Available. Consult factory.

Receptacle

Part Number by Shell Size	A MAX.	B MAX.	C MAX.	D Thread	Avg. Weight oz. (gm.)±5%
MIKQ6-7S	.510 (12.95)	.245 (6.22)	.359 (9.12)	3/8-32UNEF-2A	.128 (3.63)
MIKQ7-19P	.575 (14.60)	.345 (8.76)	.470 (11.94)	1/2-28UNEF-2A	.214 (6.08)
MIKQ7-37P	.855 (21.71)	.520 (13.20)	.740 (18.80)	3/4-20UNEF-2A	.300 (8.52)

MIKQ Front Panel Mounting



Front Panel Mounting-MIKQ7

Shell Size	A ± .005 (0.13)	B DIA.
MIKQ7-7P	.364 (9.24)	.390 (9.91)
MIKQ7-19P	.475 (12.06)	.515 (13.08)
MIKQ7-37P	.740 (18.78)	.755 (19.17)

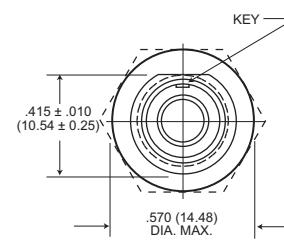
Dimensions shown in inches (mm)

Specifications and dimensions subject to change

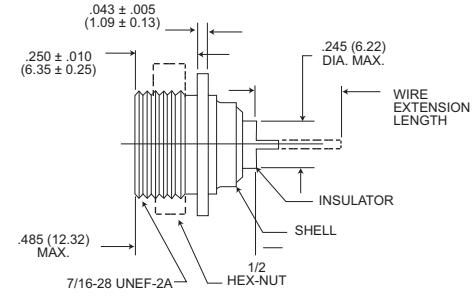


**Shell Dimensions (Continued)**

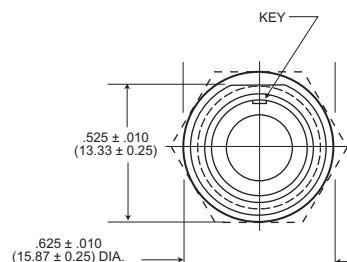
**MIKQ9-7P (Back Panel Mounting)**



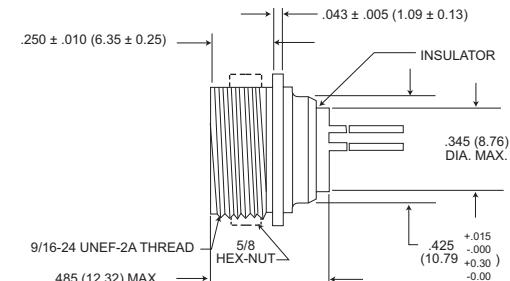
**Receptacle**



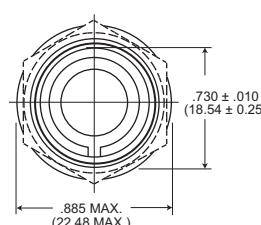
**MIKQ9-19P (Back Panel Mounting)**



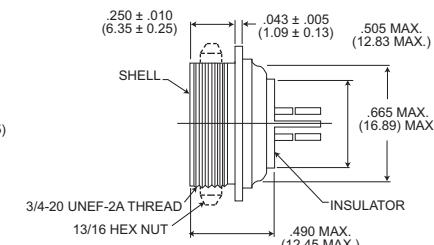
**Receptacle**



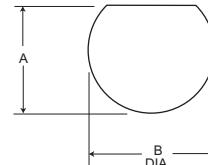
**MIKQ9-37P (Back Panel Mounting)**



**Receptacle**



**MIKQ Rear Panel Mounting**



**Rear Panel Mounting-MIKQ9**

Shell Size	A ± .005 (0.13)	B Dia.
MIKQ9-7P	.425 (10.76)	.440 (11.18)
MIKQ9-19P	.535 (13.58)	.564 (14.33)
MIKQ9-37P	.740 (18.78)	.755 (19.17)