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Cannon

## Trinity MKJ

71% weight and 52% size reduction  
in an industry leading quick disconnect

Features & Benefits



ENGINEERED FOR LIFE

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Design • Functionality • Flexibility



ENGINEERED FOR LIFE

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# Trinity MKJ – Reduction in weight and size without loss of reliability.

The Trinity MKJ family of mini circular connectors provides similar electrical and mechanical characteristics to larger and heavier Military Standard Environmental connectors.

ITT Cannon continues the tradition of innovation with the Trinity MKJ line of miniature circular connectors. Trinity MKJ products boldly positions itself as a primary resource to tackle your matrix of harsh environment applications. These connectors offer three coupling methods (threaded, bayonet and breakaway) in a highly engineered design with reduced weight by 71% and size by 52% without sacrificing the environmental performance or reliability.\*

Bringing together a unique combination of Design, Functionality and Flexibility, the Trinity excels in delivering a product for a broad variety of harsh environment applications. The MKJ series comes with rear accessory threads or integral band platform for direct attachment of cable shield and overmold. Trinity MKJ provides unparalleled functionality for numerous applications across multiple markets including Industrial, Defense and Aerospace.

Our products do, what we say they will do

**Contact Availability**



Offered in a split tinned and PC tail/soldercup contact designs with proven reliability in harsh environment conditions. Contacts meet standard MIL-C-39029.

**MKJ 1 and 5 Robust Coupling Mechanism**



Trinity's internal ratchet mechanism system meets the robust MIL-DTL-38999 shock and vibration requirement and is well suited for harsh environment applications.

**Multiple Keying Positions**



Master Key and 2 secondary keys. Multiple clocking positions available.


\*When compared to the 38999 size 22 layout

Why customers benefit from choosing ITT's Trinity MKJ

- Available in rear release crimp or PCB/soldercup contacts
- Shells and jam nuts available in aluminum alloy or corrosion resistant stainless steel (AMS-QQ-S 763)
- Up to 2,000 mating cycles

Technical Overview  
For size 23 contact

- √ Max Vibration 200 m/s<sup>2</sup> (20 g's) rms
- ⊘ #22 - #28 AWG wire
- ⚡ Max. current 5 Amps / max. voltage 500 VAC
- 🌡️ -55°C to +150°C / -67°F to +300°F



**Integral Band Platform**




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

**Tooling & Accessory Options**



Dust cap and backshells maintain the rear environmental sealing. crimp, contact insertion/extraction and banding tools are also available.

**High Density Connector**

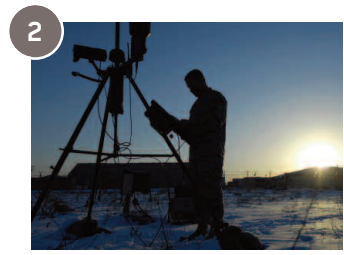


Connector uses size 23 contacts accepting #22 to #28 wire. Contacts spacing is reduced to 0.076 inches providing a compact yet robust package.

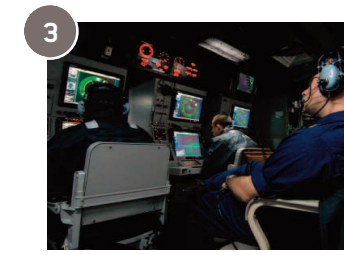
# Delivering a durable, reliable and lightweight product for military & commercial aviation



**Teflon nickel, black zinc nickel and olive drab cadmium** plating maintain robust reliability for 500 hours of salt spray.



A variety of the series offer ruggedized computers and hand held communications equipment a **2,000 mating cycle**.



Trinity MKJ's **multiple coupling mechanisms** equip connectivity for navigation and telemetry applications.



Plugs and receptacles are **environmentally sealed** to meet the harsh environments

## Product Performance

| Trinity MKJ Series Performance |  |   |  |  |
|--------------------------------|--|---|--|--|
| Contact Size                   | #23  | #20   | #16  | #12  |
| Spacing                        | .076"  | .076"   | .076"  | .076"  |
| Contact Type                   | Rear Crimp, Solder Cup, PCB Mount  |   |  |  |
| Current Rating                 | 5 Amps   | 7.5 Amps  | 13 Amps  | 23 Amps  |
| Wire Accommodation             | #22 - 28 AWG   | #20 - 24 AWG  | #16 - #20 AWG  | #12 - #14 AWG  |
| Operating Voltage Rating       | 500 VAC  | 750 VAC   | 1800 VAC   | 1800 VAC   |
| Insulation Resistance          | 5000 Megohms RMS Sea   |   |  |  |
| Operating Temperature          | -55°C to +150°C  |   |  |  |
| Contact Resistance             | 8 Milliohms  |   |  |  |
| Shock/Vibration                | 300g / 37g   |   |  |  |
| Clocking Position              | Master Key and 2 Secondary Keys. 4 Clocking Positions  |   |  |  |
| Housing Materials              | Aluminum and Stainless Steel   |   |  |  |
| Layouts                        | 5-3, 6-4, 6-6, 6-7, 7-10, 8-4, 8-6, 8-7, 8-13, 9-10, 9-19, 10-13, 10-26, 11-19, 12-26, 12-37, 13-37, 14-55, 15-37, 15-85, 16-55, 17-85, 18-55, 19-85 | 6-23, 8-23, 9-25, 10-28, 11-210, 12-220, 13-220, 14-235, 15-220, 15-241, 16-235, 17-241, 18-235, 19-241 | 6-1, 8-1, 8-2, 9-4, 10-2, 10-5, 11-4, 12-5, 12-713-7, 15-7, 14-12, 15-14, 16-12, 17-14, 18-12, 19-14 | 7-1, 9-1, 10-2, 12-2, 12-3, 13-2, 13-3, 14-5, 15-2, 15-3, 15-7, 16-5, 17-7, 18-5, 19-7 |
| Receptacle Mounting            | Jam Nut, Square Flange, In-Line  |   |  |  |



## Coupling Styles

The wide range of coupling options available for Trinity MKJ allow compatible connectors to meet your harsh environments demands.

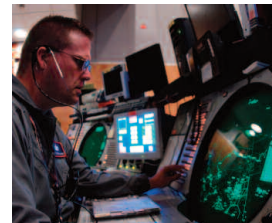
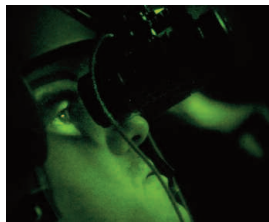


| Coupling                    | MKJ0<br>UNC Thread  | MKJ1<br>Double Start         | MKJ3<br>Bayonet                      | MKJ4<br>Breakaway | MKJ5<br>Triple Start |
|-----------------------------|---|------------------------------|--------------------------------------|-------------------|----------------------|
| Markets & Segments          | Defense, Aerospace, Medical, Industrial, Commercial   |                              |                                      |                   |                      |
| Hardware                    | Aluminum  | Aluminum/<br>Stainless Steel | Aluminum                             | Aluminum          | Aluminum             |
| EMI Shielding Effectiveness | 40db attenuation, 100Mhz to 1000Mhz   |                              |                                      |                   |                      |
| Mating Cycles               | 2000  | 2000                         | 250 Aluminum<br>2000 Stainless Steel | 500               | 500                  |
| RoHS Compliant              | Available   |                              |                                      |                   |                      |
| Materials                   | Shells - Aluminum Alloy or Stainless Steel<br>Insulators - Thermoplastic<br>Seals - Fluorosilicone<br>Contacts - Copper Alloy with gold over nickel plating |                              |                                      |                   |                      |

## Applications

ITT is pushing the boundaries of technology to provide MKJ users with success innovations for a multitude of market-places to help achieve all of the important product differentiations.

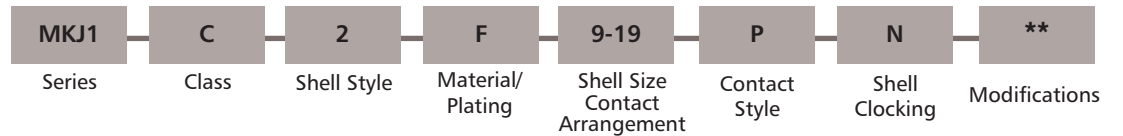
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- Commercial & Military aircraft electronics



For more information please visit our website at [www.ittcannon.com](http://www.ittcannon.com)

## How to Order Guide

### Trinity MKJ Talking Dog



### 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

### CLASS

A - Environmental Plug & Receptacle with Banding/Overmolding Attachment  
B - Environmental Plug & Receptacle with Threaded Accessory Attachment  
C - Back-Potted Plug/Receptacle - PC/Flex/Solder

D - C Filtered Receptacle - Fixed Contacts  
E - L Filtered Receptacle - Fixed Contacts  
F - Pi Filtered Receptacle - Fixed Contacts  
G - Space  
H - Hermetically Sealed Receptacle - Fixed Contacts

### SHELL STYLE

1 - In-Line Receptacle  
2 - Box Mount Receptacle (Square Flange)  
3 - Receptacle, Round, Solder Mount  
4 - Box Mount Plug (Flange)  
6 - Straight Plug  
7 - Jam Nut Receptacle - Rear Panel Mount

8 - Jam Nut Receptacle - Front Panel Mount (MKJ4 series only)  
9 - Jam Nut Plug - Rear Panel Mount (MKJ4 series only)  
10 - Jam Nut Plug - Front Panel Mount (MKJ4 series only)  
16 - Straight Plug with Self-Locking Coupling Nut (MKJ0 series only)  
26 - Straight Plug with Self-Ratchet Coupling Nut (MKJ1 series only)

### MATERIAL/PLATING

C - Aluminum/Anodize, Black  
F - Aluminum/Electroless Nickel  
K - Stainless Steel/Passivated  
T - Aluminum/Teflon Nickel

W - Aluminum/OD Cad  
Y - Stainless Steel/Electroless Nickel, Black  
Z - Aluminum/Zinc Nickel, Black  
N - Stainless Steel/Electroless Nickel

### SHELL SIZE & CONTACT ARRANGEMENT

5-3 Size 3/23 Contacts Series MKJ0, MKJ1, MKJ3, MKJ4  
6-1 Size 1/16 Contacts Series MKJ0, MKJ1, MKJ3, MKJ4  
6-4 Size 4/23 Contacts Series MKJ0, MKJ1, MKJ3, MKJ4  
6-7 Size 7/23 Contacts Series MKJ0, MKJ1, MKJ3, MKJ4  
7-1 Size 1/12 Contacts Series MKJ0, MKJ1, MKJ3, MKJ4  
7-10 Size 10/23 Contacts Series MKJ0, MKJ1, MKJ3, MKJ4  
8-1 Size 1/16 Contacts Series MKJ5  
8-4 Size 4/23 Contacts Series MKJ5  
8-7 Size 7/23 Contacts Series MKJ5  
8-13 Size 13/23 Contacts Series MKJ0, MKJ1, MKJ3, MKJ4  
9-1 Size 1/12 Contacts Series MKJ5  
9-4 Size 4/16 Contacts Series MKJ0, MKJ1, MKJ3, MKJ4  
9-10 Size 10/23 Contacts Series MKJ5  
9-19 Size 19/23 Contacts Series MKJ0, MKJ1, MKJ3, MKJ4  
10-13 Size 13/23 Contact Series MKJ5  
10-26 Size 26/23 Contacts Series MKJ0, MKJ1, MKJ3, MKJ4

11-4 Size 4/16 Contacts Series MKJ5  
11-19 Size 19/23 Contacts Series MKJ5  
12-2 Size 2/12 Contacts Series MKJ0, MKJ3, MKJ4  
12-26 Size 26/23 Contacts Series MKJ5  
12-37 Size 37/23 Contacts Series MKJ0, MKJ3, MKJ4  
13-2 Size 2/12 Contacts Series MKJ1  
13-37 Size 37/23 Contacts Series MKJ1  
14-55 Size 55/23 Contacts Series MKJ0, MKJ3, MKJ4  
15-2 Size 2/12 Contacts Series MKJ5  
15-37 Size 37/23 Contacts Series MKJ5  
15-55 Size 55/23 Contacts Series MKJ0, MKJ3, MKJ4  
16-55 Size 55/23 Contacts Series MKJ1  
17-85 Size 85/23 Contacts Series MKJ1  
18-55 Size 55/23 Contacts Series MKJ5  
19-85 Size 85/23 Contacts Series MKJ5

### CONTACT STYLE

P - Pin, Crimp, Removable (For Class A & B only)  
S - Socket, Crimp, Removable (For Class A & B only)  
A - Pin, PC Tail, .062 Extension (For Class C through G only)  
B - Pin, PC Tail, .109 Extension (For Class C through G only)

C - Socket, PC Tail, .062 Extension (For Class C through G only)  
D - Socket, PC Tail, .109 Extension (For Class C through G only)  
E - Pin, Solder Cup (For Class C through G only)  
F - Socket, Solder Cup (For Class C through G only)

### 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°  
E - Clocking Position E 75° - 275°  
F - Clocking Position F 95° - 210°

**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 CODE

F0 - Less Contacts ("F0" not stamped on the connector, but must be included on the P.O.)

Consult factory for other modification codes  
518 - Class "C" PC style back potted receptacle connectors with water immersion testing.

Capacitance Codes (pF)  
A - 19,000 - 28,000  
B - 16,000 - 22,500  
C - 9,000 - 16,500  
D - 4,000 - 6,000  
E - 1,650 - 2,500  
F - 400 - 650  
G - 200 - 300

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