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ITT

ENGINEERED FOR LIFE

Cannon

Trinity MKJ

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

Features & Benefits

TRINITY
Design • Functionality • Flexibility

ITT

ENGINEERED FOR LIFE

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.

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/s² (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

RoHS COMPLIANT PART NUMBERS

Our products do, what we say they will do

Contact Availability

Offered in a split tine and PC tail/soldercup contact designs with proven reliability in harsh environment conditions. Contacts meet stanard 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.

Integral Band Platform

Intergral 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.

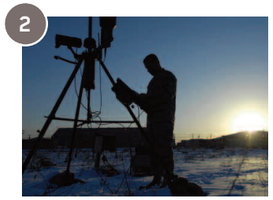
High Density Connector

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

When compared to the 38999 size 22 layout

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
Insultation 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 UNC Thread	MKJ 1 Double Start	MKJ 3 Bayonet	MKJ 4 Breakaway	MKJ 5 Triple Start
Markets & Segments	Defense, Aerospace, Medical, Industrial, Commercial				
Hardware	Aluminum	Aluminum/ Stainless Steel	Aluminum	Aluminum	Aluminum
EMI Shielding Effectiveness	40db attentuation, 100Mhz to 1000Mhz				
Mating Cycles	2000	2000	250 Aluminum 2000 Stainless Steel	500	500
RoHS Compliant	Available				
Materials	Shells - Aluminum Alloy or Stainless Steel Insultators - Thermoplastic Seals - Flourosilicone Contacts - Copper Alloy with gold over nickel plating				

Applications

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

- Sensors
- Satellites
- Instrumentation
- Missle systems
- Avionic systems
- Soldier technology
- Industrial equipment
- Unmanned aviation vehicles
- Navigation and Telemetry equipment
- Medical test and diagnostic equipment
- Ruggedized computers and hand held communication equipment
- Commercial & Military aircraft electronics

For more information please visit our website at **www.ittcannon.com**

How to Order Guide

Trinity MKJ Talking Dog

MKJ1	C	2	F	9-19	P	N	**
Series	Class	Shell Style	Material/ Plating	Shell Size Contact Arrangement	Contact Style	Shell Clocking	Modifications

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