Introduction

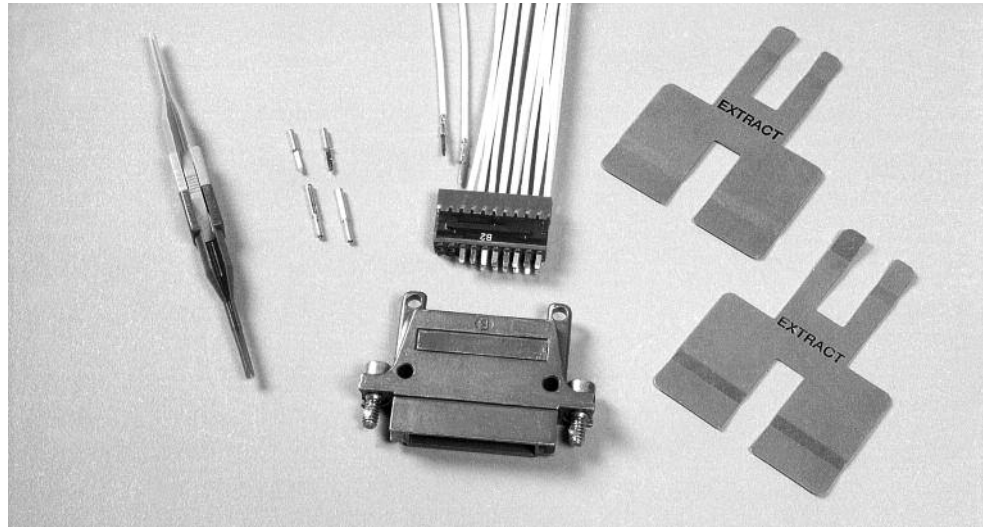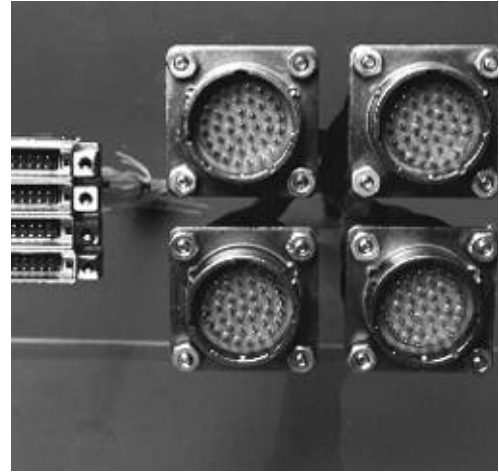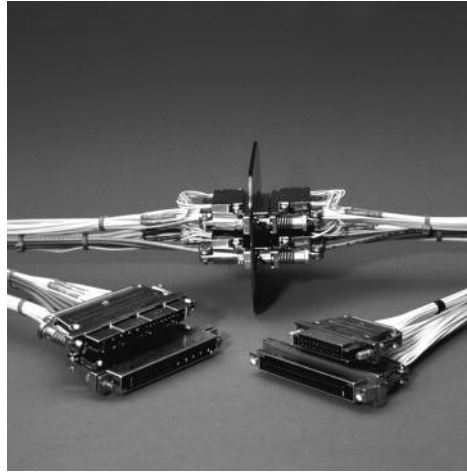### Product Facts

- **Low-profile rectangular design for high packaging density**
- **Environmental sealing for aerospace applications**
- **Modular components for design versatility and logistics savings**
- **Lightweight materials for weight savings**
- **Quick-disconnect or jackscrew mating hardware**

System

TE Connectivity MTC product line is a complete modular connector system consisting of lightweight, environmentally sealed miniature rectangular connectors (shell housings with removable inserts) and individually removable rear-release contacts.

Components

MTC connectors are now available with quick-disconnect mating hardware, EME shielding accessories, and modular inserts that can accommodate a mix of signal and power crimp contacts and coaxial contacts. The need for special termination tooling has been minimized, while the ease of manufacturing and maintenance has been improved.

Configurations

MTC rectangular connectors using jack screws or quick-disconnect hardware can be stacked or panel-mounted next to each other without any provision for grip space, a feature that can save significant panel area.

MTC connectors are available in 1-inch and 2-inch configurations. Modular removable inserts with size 22 and/or size 16 contact cavities can be combined into the 1-inch and 2-inch MTC housings.
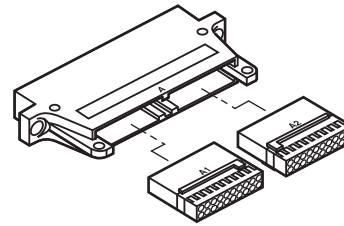
Inserts

MTC inserts are available in 20-cavity and 5-cavity versions. The 20-cavity insert accepts size 20-22 (24 AWG to 20 AWG wire) crimp contacts. The 5-cavity insert accepts size 16–14 crimp contacts. Insertion/extraction of the contacts is rear release.
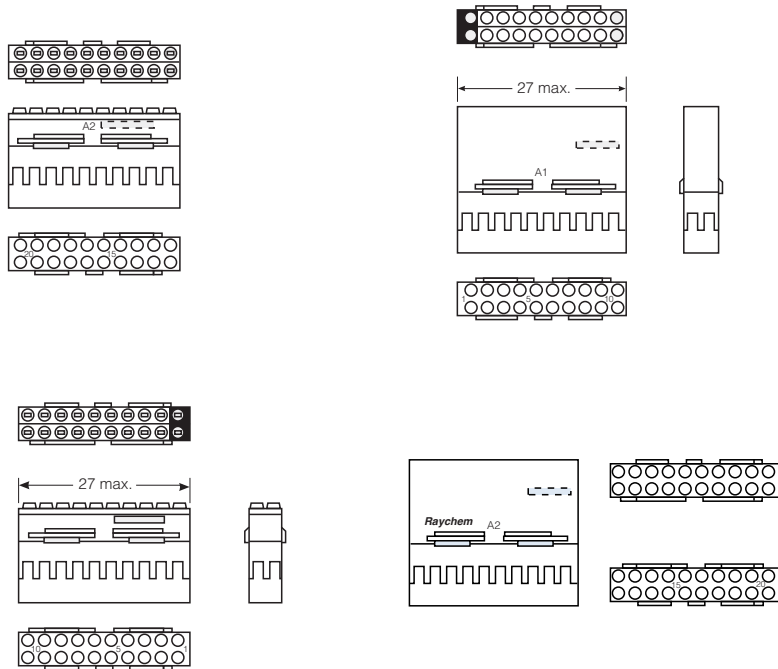
Note:
Other configurations are available in the MTC family (size 12 contacts; 50 mil spacing for double density; accessories). Please contact TE.

20-Cavity Inserts
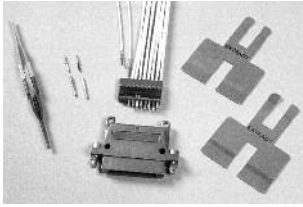
2-inch shell with inserts

27 max.

27 max.

MTCP-122-20 inserts are used with MTC100 1-inch and 2-inch shells.
The 1-inch shell takes:

■ One MTCP-122-20P (pin contact) **or**

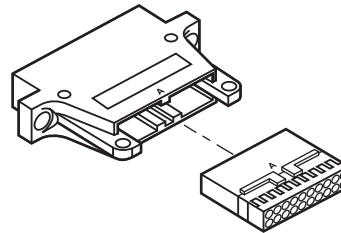■ One MTCP-122-20S (socket contact)

The 2-inch shell takes:

■ One MTCP-122-20P1 and one MTCP-122-20P2 (pin contact) **or**

■ One MTCP-122-20S1 and one MTCP-122-20S2 (socket contact)

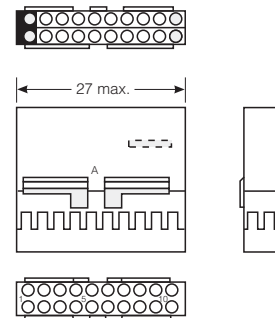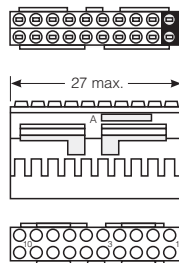**2 x 20 Cavity Inserts**
(Size 20–22)—2-Inch Shell

Pin Insert	Socket Insert
MTCP-122-20P1	MTCP-122-20S1
MTCP-122-20P2	MTCP-122-20S2

20-Cavity Inserts (Continued)

1 x 20 Cavity Inserts (Size 20–22)—1-Inch Shell

1-inch shell with insert

27 max.

27 max.

Pin Insert	Socket Insert
MTCP-122-20P	MTCP-122-20S

Contacts for 20-Cavity Inserts

The contacts for 20-cavity inserts must be ordered separately. They are:

■ CTA-0166—pin contact

■ CTA-0165—socket contact

Contacts accept 24 AWG to 20 AWG wires.
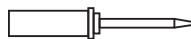
**Pin Contact
CTA-0166**

**Socket Contact
CTA-0165**

Tools		Tools	
Positioner for pin contact	CE-1605900	Positioner for socket contact	CE-1606000
Installation process	ES-61413	Installation process	ES-61413
Contact removal tool (plastic)	CTA-1160	Contact removal tool (plastic)	CTA-1160
Extraction tool for MTCP inserts	CTA-0161	Extraction tool for MTCP inserts	CTA-0161

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Rectangular Pin and Socket Connectors

5-Cavity Inserts

5-Cavity Inserts (Size 16)

27 max.

A1

27 max.

A2
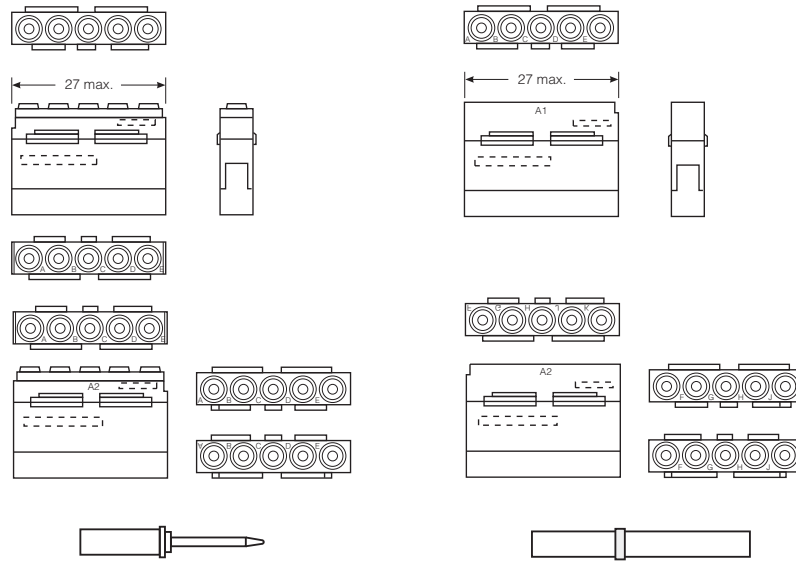
MTCP-116-05 inserts are used with MTC100 1-inch and 2-inch shells.
The 1-inch shell takes:

■ One MTCP-116-05-P1 (pin contact) **or**

■ One MTCP-116-05-S1 (socket contact)

The 2-inch shell takes:

■ One MTCP-116-05P1 and one MTC-116-05P2 (pin contact) **or**

■ One MTCP-116-05-S1 and one MTCP-116-05-S2 (socket contact)

5-Cavity Inserts (Size 16)	
Pin Insert	**Socket Insert**
MTCP-116-05P1	MTCP-116-05S1
MTCP-116-05P2	MTCP-116-05S2

Contacts for 5-Cavity Inserts

The contacts for 5-cavity inserts must be ordered separately. They include:

■ CTA-0079   -   pin contact (MS 27493-16) (MIL-C-39029/58 intermateable)

■ CTA-0078   -   socket contact (MS 27491-16) (MIL-C-39029/57 intermateable)

■ D-602-0140 -   coaxial pin contact (MIL-C-39029/76 intermateable)

■ D-602-0171 -   coaxial socket contact (MIL-C-39029/78 intermateable)

Other contacts designed for M38999 Series II connectors can be used.

Pin Contact	Socket Contact
D-602-0140 (coaxial)	D-602-0171 (coaxial)
CTA-0079 (power)	CTA-0078 (power)

Hybrid Inserts

Plug	Receptacle

MTC100-JH1-P32 XXXX

MTC100-JH1-R32 XXXX
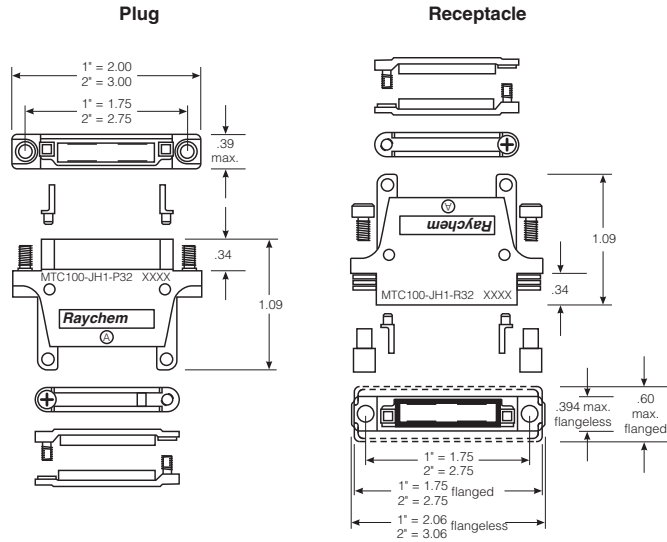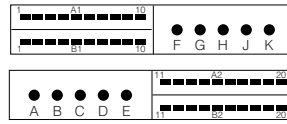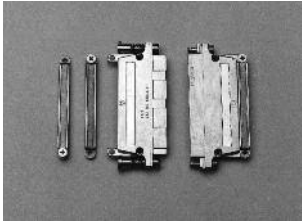
Hybrids

Hybrid insert combinations of size 22 and size 16 contact cavities are also possible.

2-Inch Shell—Hybrid Assembly

Power and signal

Shells

MTC connector housing shells are available with nickel plating (48-hr salt spray performance) or cadmium over nickel plating (500-hr salt spray performance).

MTC connector housings are offered with quick-disconnect or jack-screw mating hardware. Each connector shell is polarized and has 64 user-defined keying combinations. Lightweight, low-profile EME backshells are also available for increased shielding effectiveness of the connector.

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Rectangular Pin and Socket Connectors

8-121

Catalog 1308940
Revised 9-14

www.te.com

Dimensions are shown for reference purposes only. Specifications subject to change.

Dimensions are in millimeters unless otherwise specified.

USA: +1 800 522 6752
Asia Pacific: +86 0 400 820 6015
UK: +44 800 267 666

For additional support numbers please visit www.te.com

MTC Shells Ordering Information

M T C 1 0 0 X - X H X - X X2

2 = Nickel plating.
48-hr salt spray test performance
3 = Cadmium over nickel plating.*
500-hr salt spray test performance

P = Plug housing
R = Receptacle housing, flangeless
F = Receptacle housing, flanged

1 = 1"
2 = 2"

J = Standard housing
S = EMI housing

Q = Quick-disconnect mating hardware
(connector performance per Tyco Electronics
specification C-6114)

Blank = Jack-screw mating hardware
(connector performance per
Tyco Electronics specification C-6115)

*Some combinations of shells, mating hardware and EME shielding accessories are not available.
Contact TE Connectivity for product information.

Accessories
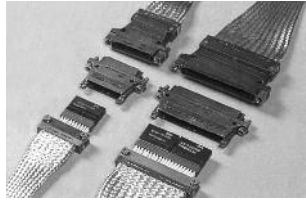
Low-Profile EME Backshells

Lightweight rectangular EME backshells connect the overall bundle shield to the MTC connector housing. Individual cable shields can also be terminated to the backshell braid by using SolderSleeve devices.

The backshell is mounted on the MTC housing via the cable clamp screws.

MTC backshell features include a low profile, light weight, and Level II EME performance.

EME Backshell Adapters

CHA-0275	2-inch adapter (plug or receptacle)
CHA-0276	1-inch adapter (plug or receptacle)
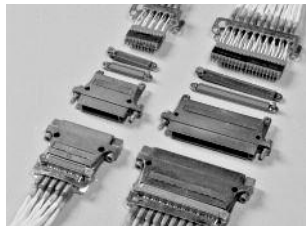
MTC Shield-Grounding BusBars

MTC shield-grounding busbars allow for simple, cost-effective termination of cable shielding to MTC aluminum housings.

Two-inch shield-grounding busbars terminate up to 20 shielded twisted pairs on a 2-inch MTC connector. The individual shields are terminated to "fingers" on the busbar with SolderSleeve devices.

The busbar is mounted on the MTC housing via cable clamp screws.

MTC busbar features include a simple termination, cost effectiveness, light weight, and Level I EME performance.

Shield-Grounding Busbars

CTA-0022	1-inch busbar (with 5 SolderSleeve terminators)
CTA-0023	2-inch busbar (with 10 SolderSleeve terminators)

EME Shielding Accessories for MTC Connectors

Grounding Block (Externally attached)

Allows for cable shield termination grounding on the MTC shell housing via crimp-removable contacts. This grounding scheme allows individual cables to be removed from the connector without cutting a ganged ground connection. Sufficient ground contacts are available to handle shielded twisted-pair cables.

Grounding Block

CHA-0305	1-inch grounding block receptacle shell
CHA-0306	2-inch grounding block receptacle shell
CHA-0307	1-inch grounding block plug shell
CHA-0308	2-inch grounding block plug shell

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Rectangular Pin and Socket Connectors

MTCR Size 12 Connectors

Product Facts

- Low-profile rectangular design for high packaging density
- Environmental sealing for aerospace applications
- 64 user-defined keying positions for logistics savings
- 4 contact cavities per 1" shell
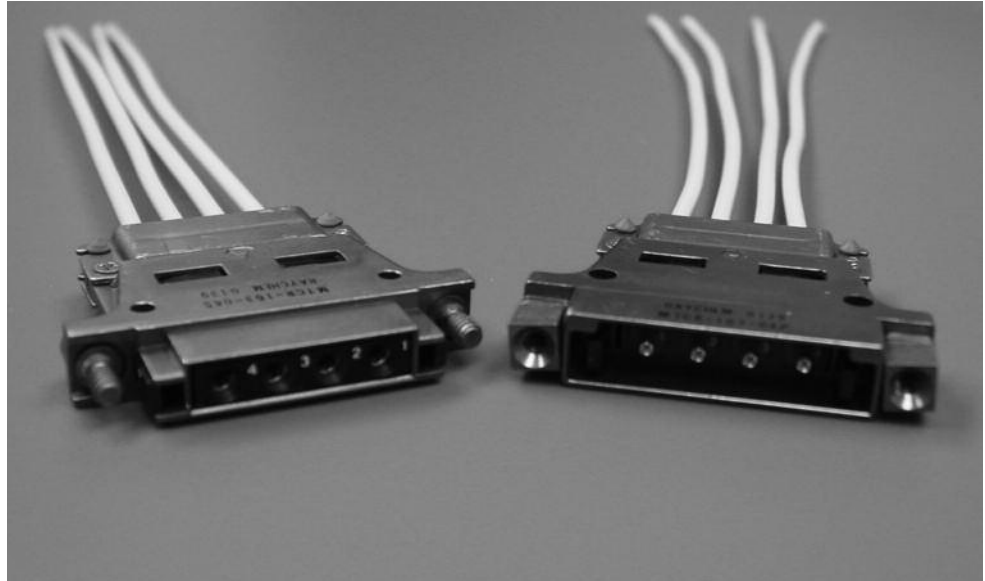
TE Connectivity MTCR connectors are rectangular, lightweight, and environmentally-sealed, with individually removable rear-release size 12 contacts.

The MTCR connector's size 12 cavities accept four standard MIL-C-83723 Series III contacts for twisted pairs, coax, triax, and 12 to 14 AWG power cables.
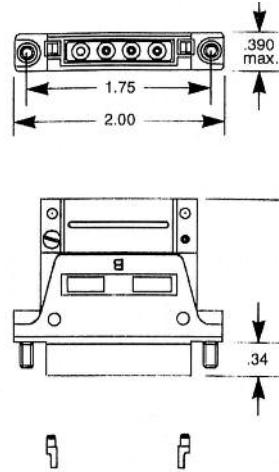
MTCR connectors are available with flanged receptacles and a variety of accessories, including EME backshells.

MTCR connectors are qualified to TE Specification C-6115.

MTCR Size 12 Connectors (Continued)

Connectors

Pin-Cavity Plug Shell
MTCR-163-04P

Pin-Cavity Receptacle Shell
MTCR-103-04P
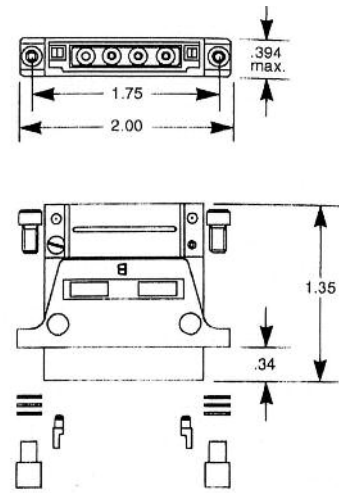
Socket-Cavity Plug Shell
MTCR-163-04S
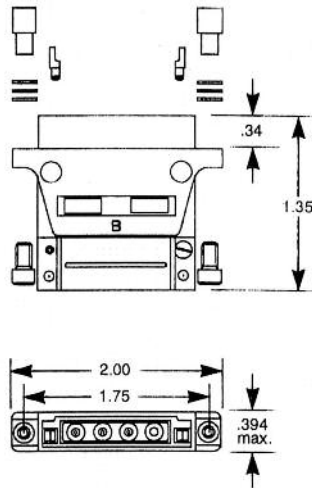
Socket-Cavity Receptacle Shell
MTCR-103-04S
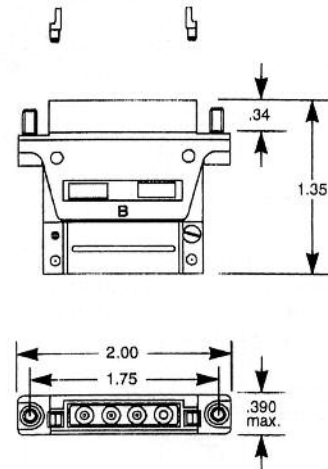
Contacts

Cable Type	12 AWG Power Cable	0.100" Max. Coaxial Cable	0.126" Max Coaxial Cable	Twisted Pair Cable
Pin Contact	CTA-0114 (MIL-C-39029/4)	D-602-0094 (MIL-C-39029/74)	D-602-0106 (MIL-C-39029/74)	D-602-0104 (MIL-C-39029/74)
Socket Contact	CTA-0115 (MIL-C-39029/5)	D-602-0095 (MIL-C-39029/73)	D-602-0107 (MIL-C-39029/73)	D-602-0105 (MIL-C-39029/73)

Note:
Various options are available. Please see customer drawings or contact TE Connectivity.

Tooling

Sealing Plugs (for unused cavities): MS27488-12
Contact Insertion/Removal Tool: M81969/14-04

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Rectangular Pin and Socket Connectors

EME Shielding Accessories for MTC Connectors

Low Profile EME Backshells

Product Facts

■ Low profile

■ Lightweight

■ Level II EME performance
for hardened applications*

MTC Busbar

Product Facts

■ Simple termination

■ Lightweight

■ Cost effective

■ Level I EME performance*

TE Connectivity Raychem brand of MTC Shield-Grounding Busbars allow for simple, cost-effective termination of cable shielding to MTC aluminum housings.

Two-inch shield-grounding busbars terminate up to 20 shielded twisted pairs on a 2" MTC connector. The individual shields are terminated to "fingers" on the busbar with Raychem brand SolderSleeve devices.

The busbar is mounted on the MTC housing via the cable clamp screws.

TE also offers lightweight, rectangular EME backshells that connect the overall bundle shield to the MTC connector housing. Individual cable shields can also be terminated to the backshell braid by using Raychem brand SolderSleeve devices.

The backshell is mounted on the MTC housing via the cable clamp screws.

Screening
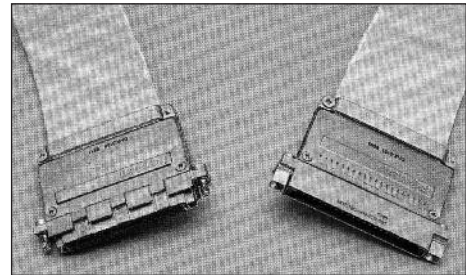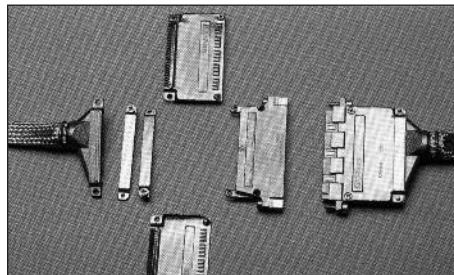
*Per TE Specifications C-6111 for connectors with fixed contacts and C-6115 for connectors with removable contacts.

EME Shielding Accessories for MTC Connectors (Continued)

**Shielding-Grounding
Busbars**

CTA-0022 = 1-inch busbar
(with 5 SolderSleeve terminators)
CTA-0023 = 2-inch busbar
(with 10 SolderSleeve terminators)
CTA-0024 = SolderSleeve terminator
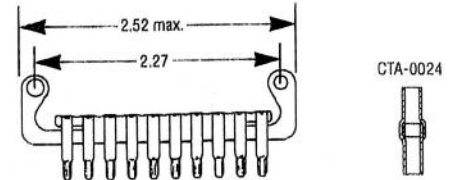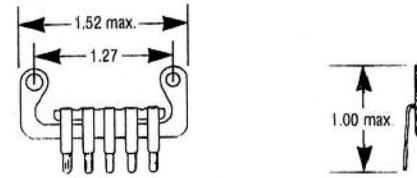
**Typical Surface Transfer
Impedance (Z_t)**
2-inch CTA-0023
(with shielded twisted pairs)
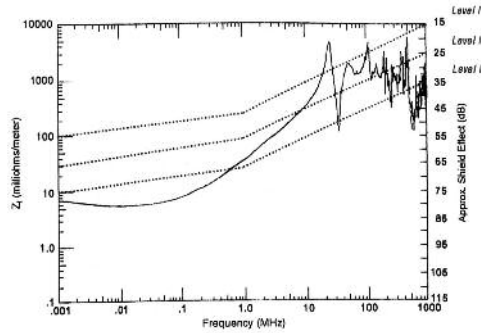
EME Backshell Adapters

CHA-0275 = 2-inch adapter
(plug or receptacle)
CHA-0276 = 1-inch adapter
(plug or receptacle)

Braid Sock

1" = 1.50 ref.
2" = 2.50 ref.

1" = 1.05 min.
2" = 2.05 min.
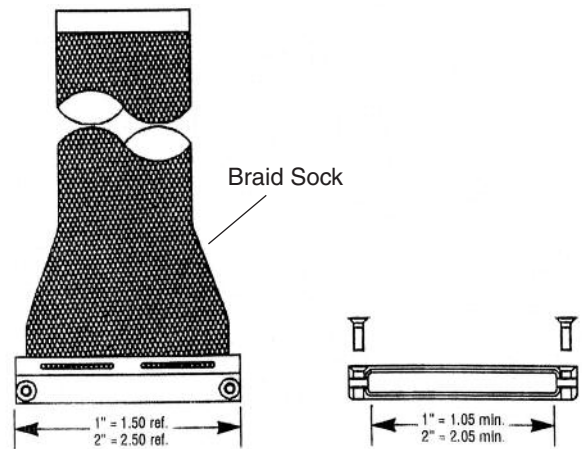
**Typical Surface Transfer
Impedance (Zt)**
1-inch CTA-0276 (with overall
shielded wire bundle)

8-127

Rectangular Pin and Socket Connectors

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Dimensions are shown for
reference purposes only.
Specifications subject
to change.

Dimensions are in millimeters
unless otherwise specified.

USA: +1 800 522 6752
Asia Pacific: +86 0 400 820 6015
UK: +44 800 267 666

For additional support numbers
please visit www.te.com
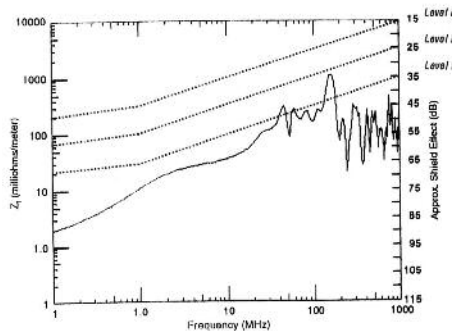
MTC Boxmount Connectors

Size 22 Connectors
Product Facts

■ Fixed size 22 contacts on
  100-mil centers

■ Compact, lightweight design

■ Variety of configurations

■ Termination flexibility:

  Direct mount onto circuit
  boards
  Solderless wire wrap
  Variety of SolderSleeve
  terminations

Size 16 Connectors
Product Facts

■ Removable size 16 MIL-C-
  38999 Series II contacts on
  200-mil centers

■ Compact, lightweight design
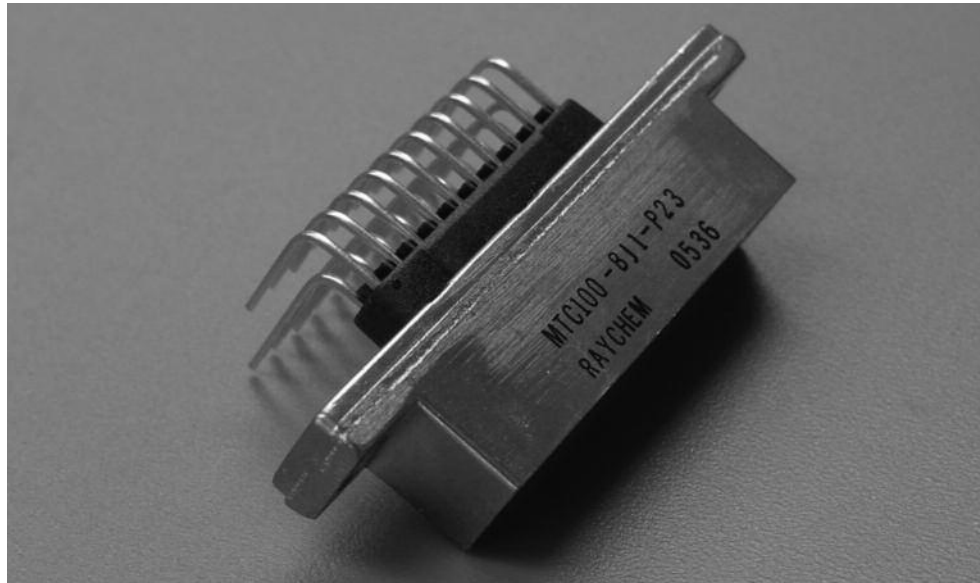
TE Connectivity offers an extensive line of MTC boxmounted connectors to complement the MTC cable connectors.

MTC boxmount connectors are lightweight, high-density, one-piece receptacles with fixed pin or socket inserts.

Boxmounted MTC connectors allow for a high density of interconnections while utilizing a minimum of interior box space.

MTC boxmounts are available with either size 22 or size 16 contacts.

Boxmount Connector
Part Numbers

M T C X X X - B X X - X 3 X

Tail Type
1 = Long tail; 2 = Short tail; 3 = 90˚; 4 = Removable contact

Plating
Cadmium over nickel

Contact Type
P = Pin; S = Socket

Connector Size
1 = 1 inch; 2 = 2 inch

Shell Type
F = Flanged with standard gasket
S = Shielded/EME gasket included

Insert/Cavity Type
100 = 100 mil/size 22; P = 200 mil/size 16
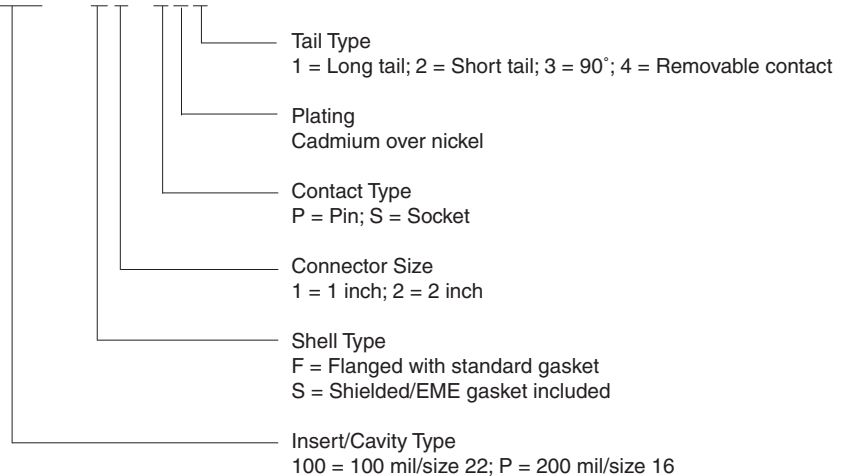
MTC Selection Guide

Total Number	Contacts Number	Size	Arrangement	Possible Round Wire AWG Min.	AWG Max.	Possible Flat Cable AWG Min.	AWG Max.	Family Shell	Shell Size
4	4	12	● ● ● ●	16	12			MTCR	1
5	5	16	● ● ● ● ●	20	16			MTC100	1
10	2x5	16	● ● ● ● ● ● ● ● ● ●	20	16			MTC100	2
10	10 Dummy wafer	22		26	20	24	22	MTC100	1
20	2x10	22		26	20	24	22	MTC100	1
20	20 Dummy wafer	26		28	24		28	MTC50	1
20	2x10 Dummy wafer	22		26	20	24*	22*	MTC100	2
20	20 Dummy wafer	22		26	20	24	22	MTC100	2
25	5 / 2x10	16 / 22		20 / 26	16 / 20	24	22	MTC100	2
30	10 / 20	22 / 26		26 / 28	20 / 24	24	22 / 28	MTC50	1
40	2x20	26		28	24		28	MTC50	1
40	20 / 2x10	22		26	20	24*	22*	MTC100	2
40	4x10	22		26	20	24*	22*	MTC100	2
40	40 Dummy wafer	26		28	24		28	MTC50	2
40	2x20	22		26	20	24	22	MTC100	2
60	20 / 40	22 / 26		26 / 28	20 / 24	24	22 / 28	MTC50	2
60	2x10 / 40	22 / 26		26 / 28	20 / 24	24*	22* / 28	MTC50	2
80	2x40	26		28	24		28	MTC50	2

*Two 4-way wafers FCC cannot be mounted together in a same size 2 shell.

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Rectangular Pin and Socket Connectors

MTC100 Connectors

Product Facts

- **10 or 20 contacts size 22 2.54 mm (0.100 in.) spacing**
- **20 or 40 contacts size 22 2.54 mm (0.100 in.) spacing**
- **Round wire 20-26 AWG or flat cable 22-24 AWG**
- **-65˚C to +125˚C -65˚C to +150˚C**
- **TE Connectivity Specification C-6111**
- **Three shell finishes: Black anodized (non-conductive), Nickel plated (conductive) and Cadmium over nickel (500 h salt spray)**
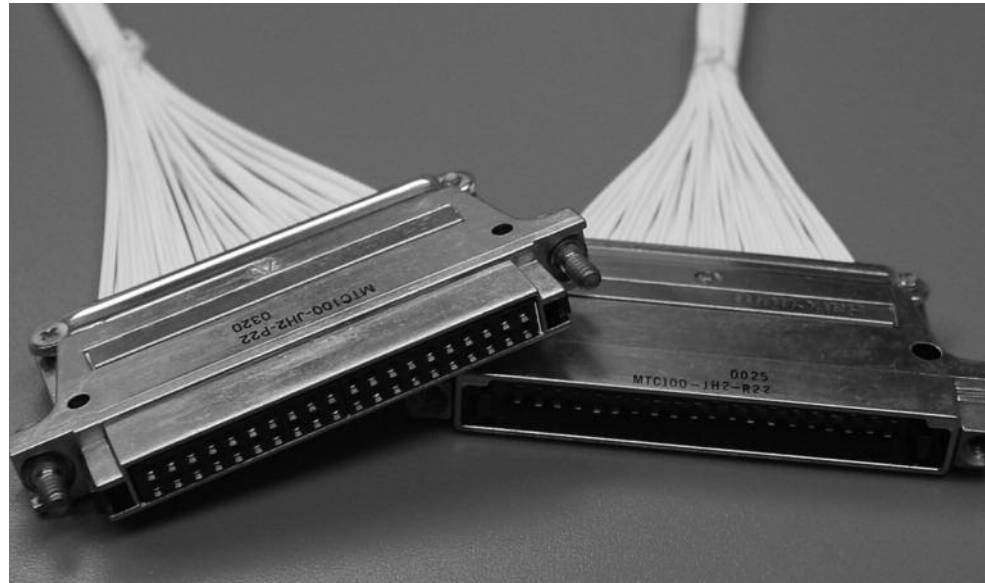
The basic connector consists of the following modular components: two shells (plug and recepta-cle), mounting hardware and keying pins. In each shell are included two removable wafers with either 10 or 20 fixed contacts, 2.54mm (0.100 in.) spacing.

These wafers, pin or socket, are available in two versions to receive either round wire or flat conductor cable or flexible printed circuits. It is recommended to use TE flat cable with rectangular section conductors, perfectly adapted to the contacts shape of the connector.

The wafers use a tuning fork type contact design, which corresponds to the require-ments of MIL-C-28754. Both pin and socket contacts are fixed in the wafer. The pin contact is molded into the wafer while the socket contact has a degree of free movement.

Environmental sealing is achieved by:

- an integral interfacial seal which is attached to the face of the pin wafer. This seal is compressed when the connector is mated.

- a thermoplastic material which seals the wafer body to the wire during soldering

The MTC100 is available in two sizes:

Size 1:
20 contacts, 2.54mm (0.100 in.) spacing 2 rows of contacts

Size 2:
40 contacts, 2.54mm (0.100 in.) spacing 2 rows of contacts
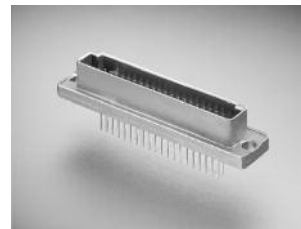
The connector contact is terminated to the wire by controlled soldering using a heat-shrinkable SolderSleeve. This well-known technology achieves a high degree of electrical performance and allows semi-automated termination.

The EME protection continuity can be achieved by additional components. Polarization of shells and wafers prevents mis-mating.

MTC100 Connectors (Continued)

Technical Specification

Materials

|		
	Shell	Aluminum alloy per QQ-A-591
	Shell Finish	Nickel plated (MIL-C-26074) or Black anodized (MIL-C-8625) or Cadmium plated (QQ-P-416)
	Hardware	Passivated stainless steel
	Wafer	Polyarylene thermoplastic
	Interfacial Seal	Silicone elastomer
	Termination Insulation	Transparent blue heat-shrinkable radiation cross-linked PVF2
	Contact	Engaging end: copper alloy gold plated over nickel underplate per MIL-G-45204; type 1, Grade C, class 1 Termination end: Sn 63 pre-tinning (125˚C) or SN96 (150˚C) per QQ-S-571

Technical Data and Performance

	Contact Spacing	2.54 mm
	Insulation Resistance	5000 MΩmin. / 23˚C
	DWV	1500 VAC-RMS 50-60 Hz/Sea level 1500 V eff (round wire) 1000 V eff (flat conductor flat cable)
	Current Rating	1.5A per request
	Temperature Range	-65˚C to 125˚C or -65˚C to 150˚C
	Contact Resistance (low current)	MIL-STD-1344 method 3002 before aging 18mΩ/ after aging 21 mΩ wire size 0.4mm^2
	Shell to shell conductivity (except black anodized non-conductive)	2.5mV (1 A dc)
	Vibration	MIL-STD-1344, method 2005 condition VI-Letter J
	Mechanical Shock	MIL-STD-1344, method 2004 condition D
	Temperature Aging	1000 h 125˚C 1000 MΩmin. at T max. 5000 MΩmin. 23˚C
	Humidity	90-98% RH 10 cycles 100 MΩmin.
	Altitude Immersion	30 minutes at 21000 M 5000MΩmin. (MIL-STD-1344, method 1004)
	Salt Spray	5% salt / 48h or 500 h (cadmium plated) (MIL-STD-1344 method 1001 Condition B)
	Fluid Resistance	MIL-STD-1344 method 1016
	Contact engagement and separation forces	Engagement: 3.3 N Max. per contact Separation: 0.2 N min. per contact
	Durability	500 cycles (including mounting hardware)
	Contact Retention	45 N min. (MIL-STD-1344 method 2007)
	Wafer Retention	Size 1: 178N Size 2: 356N (MIL-STD-1344, method 2010)
	Wire Sizes	FCC MIL-C-49059: 0.25mm^2-0.4mm^2 (22-24 AWG) Round wire 0.15mm^2 -0.34mm^2 (20-26 AWG) For AWG 18 or 20, contact TE Connectivity.

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Rectangular Pin and Socket Connectors

MTC50 Connectors

Product Facts

- ■ **20 or 40 contacts size 26 1.27 mm (0.050 in.) spacing**
- ■ **40 or 80 contacts size 26 1.27 mm (0.050 in.) spacing**
- ■ **AWG 24-28 (round wire) or 28 (flat cable)**
- ■ **-65˚C to +125˚C**
- ■ **TE Connectivity Specification C-6111**
- ■ **Three shell finishes: Black anodized (non-conductive), Nickel plated (conductive) and Cadmium over nickel (500 h salt spray)**
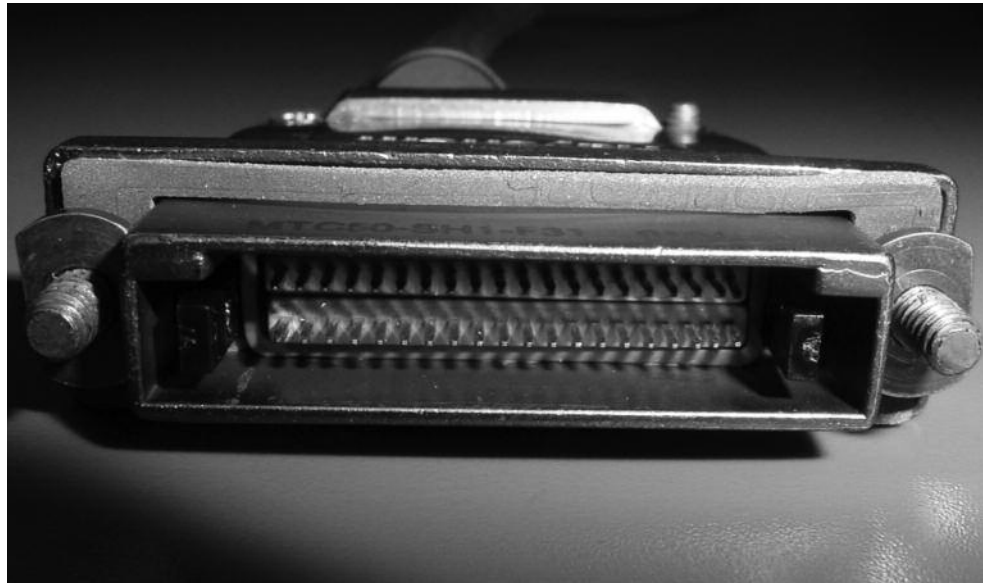
The basic connector consists of the following modular components: two shells (plug and receptacle), mounting hardware and keying pins. In each shell are included two removable wafers with either 20 or 40 fixed contacts, 1.27mm spacing.

These wafers, pin or socket, are available in two versions to receive either round wire or flat conductor cable or flexible printed circuits. It is recommended to use TE flat cable with rectangular section conductors, perfectly adapted to the contacts shape of the connector.

The wafers use a tuning fork type contact design. Both pin and socket contacts are fixed in the wafer. The pin contact is molded into the wafer while the socket contact has a degree of free movement.

Environmental sealing is achieved by:

- an integral interfacial seal which is attached to the face of the pin wafer. This seal is compressed when the connector is mated.

- a thermoplastic material which seals the wafer body to the wire during soldering

The MTC50 is available in two sizes:

Size 1:
40 contacts, 1.27mm (0.050 in.) spacing 2 rows of contacts

Size 2:
80 contacts, 1.27 mm (0.050 in.) spacing 2 rows of contacts

The connector contact is terminated to the wire by controlled soldering using a heat-shrinkable boot. This well-known technology achieves a high degree of electrical performance and allows semi-automated termination.

The EME protection continuity can be achieved by additional components. Polarization of shells and wafers prevents mis-mating.

MTC50 Connectors (Continued)

Technical Specification

Materials

|		
	Shell	Aluminum alloy per QQ-A-591
	Shell Finish	Nickel plated (MIL-C-26074) or Black anodized (MIL-C-8625) or Cadmium plated (QQ-P-416)
	Hardware	Passivated stainless steel
	Wafer	Polyarylene thermoplastic
	Interfacial Seal	Silicone elastomer
	Termination Insulation	Transparent blue heat-shrinkable radiation cross-linked PVF2
	Contact	Engaging end: copper alloy gold plated over nickel underplate per MIL-G-45204; type 1, Grade C, class 1 Termination end: Sn 63 pre-tinning (125˚C) or SN96 (150˚C) per QQ-S-571

Technical Data and Performance

	Contact Spacing	1.27 mm
	Insulation Resistance	5000 MΩmin. / 23˚C
	DWV	750 VAC-RMS 50-60 Hz/Sea level
	Current Rating	1.5A per request
	Temperature Range	-65˚C to 125˚C
	Contact Resistance (low current)	Wire size/before aging/after aging 0.1mm² 43mΩ 51mΩ
	Shell to shell conductivity (except black anodized non-conductive)	2.5mV (1 A dc)
	Vibration	MIL-STD-1344, method 2005 condition VI-Letter J
	Mechanical Shock	MIL-STD-1344, method 2004 condition D
	Temperature Aging	1000 h 125˚C 1000 MΩmin. 125˚C 5000 MΩmin. 23˚C
	Humidity	MIL-STD-1344 Method 1002 Type II, 100 MΩmin.
	Altitude Immersion	30 minutes at 21000 M 5000MΩmin. (MIL-STD-1344, method 1004)
	Salt Spray	5% salt / 48h or 500 h (cadmium plated) (MIL-STD-1344 method 1001 Condition B)
	Fluid Resistance	MIL-STD-1344 method 1016
	Contact engagement and separation forces	Engagement: 2.20 N Max. per contact Separation: 0.14 N min. per contact
	Durability	500 cycles (including mounting hardware)
	Contact Retention	22 N min. (MIL-STD-1344 method 2007)
	Wafer Retention	Size 1: 178N Size 2: 356N (MIL-STD-1344, method 2010)
	Wire Sizes	FCC MIL-C-49059: 0.1mm² (28 AWG) Round wire 0.1mm² -0.15mm² (24-28 AWG)

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Rectangular Pin and Socket Connectors

MTCP 20 Cavity Inserts

Product Facts
■ **20 cavity inserts**
■ **Size 22-20 contacts**
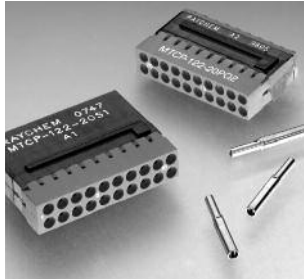
MTCP inserts have been redesigned to include size 22 cavity which can accept 22-20 crimp contacts.

Insertion/extraction of contacts are rear release.

This series completes the MTC100 and MTC50 mass termination families. It extends the crimp version product range from size 12 (MTCR) to size 16 and 20 (MTCP).
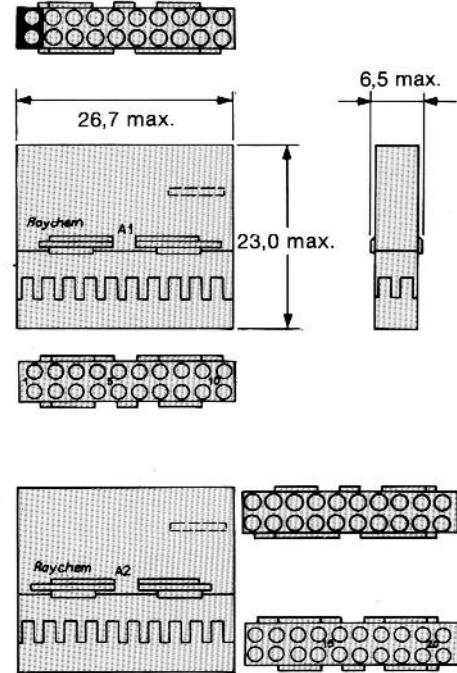
MCTP 22-20 inserts are intermateable and changeable with MTC100 connectors.

They keep the same high performance level.

2" shell Pin Insert
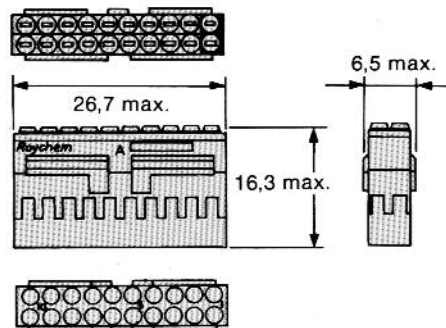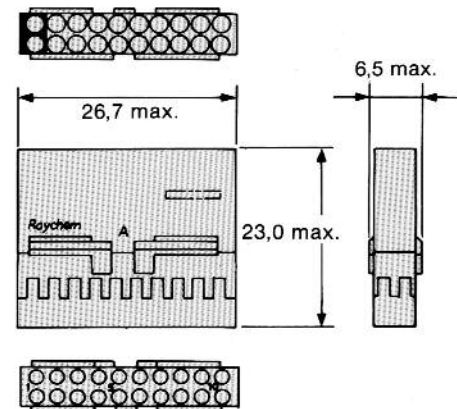MTCP-122-20P1
MTCP-122-20P2
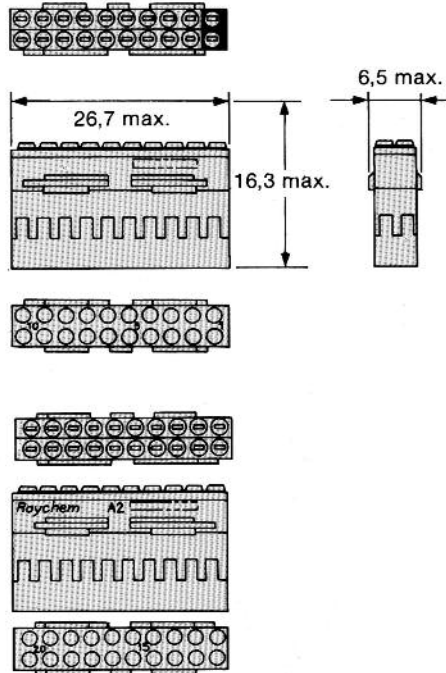
2" shell Socket Insert
MTCP-122-20S1
MTCP-122-20S2

1" shell Pin Insert
MTCP-122-20P

1" shell Socket Insert
MTCP-122-20S

Pin Contact
CTA-0166

Socket Insert
CTA-0165

Contact removal tool (plastic):
CTA-1160
Extraction tool for MTCP inserts:
CTA-0161
Positioner for pin contact:
CE-1605900
Positioner for socket socket:
CE-1606000

MTCT High Performance Modular Rectangular Connectors

for use with ARINC 801 Optical Termini

Product Facts

■ **Available in aluminum or corrosion resisting steel**

■ **Utilizes the industry standard ARINC 801 optical termini - no empty cavities requiring sealing**

■ **Mating hardware options - available in quick disconnect or jack screw styles for optimized space utilization**

■ **Accommodates four ARINC 801 optical termini**

■ **Enhanced MTCT mating interface**

■ **Uses commonly available tooling for installation - no need to carry extra specialized tooling**

TE Connectivity MTCT connector is a compact, lightweight design connector for use with ARINC 801 fiber optic termini.

Ideal for applications such as avionics, in-flight entertainment systems, communications, production breaks and other areas.

Part Number Information

MTCTQ KT 1 X 4 X F XX

= Keying Pin Codes (See Table 1)

= Without Ground Block

= P: Pin Insert
= S: Socket Insert

= 4: Cavities

= P: Plug Shell
= R: Receptacle Shell

= 1 Inch

= Kit

= Fiber Optic Connector with Quick Disconnect Hardware
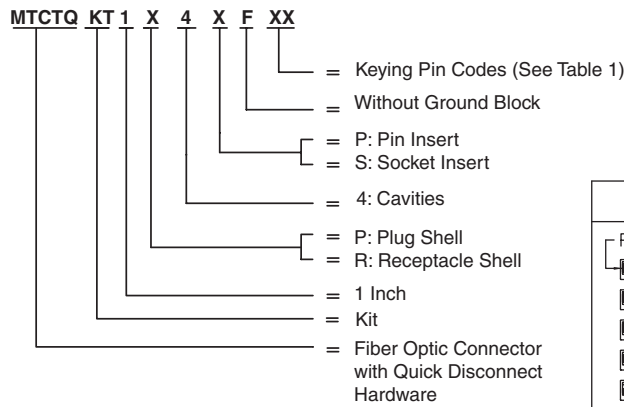
TABLE I KEYING CODES

POSITION OF PROJECTING TAB (TYP)

RECEPTACLE	CODE	PLUG
	−A A−	
	−A B−	
	−A C−	
	−A D−	
	−B A−	
	−B B−	
	−B C−	
	−B D−	
	−C A−	
	−C B−	
	−C C−	
	−C D−	
	−D A−	
	−D B−	
	−D C−	
	−D D−	
UNKEYED	−X X−	UNKEYED

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Rectangular Pin and Socket Connectors

MTCT High Performance Modular Rectangular Connectors (Continued)

Kit, Plug and Receptacle

PLUG SHELL WITH PIN INSERT
MTCTQKT1P4PF

PLUG SHELL WITH SOCKET INSERT
MTCTQKT1P4SF

RECEPTACLE SHELL WITH SOCKET INSERT
MTCTQKT1R4SF

RECEPTACLE SHELL WITH PIN INSERT
MTCTQKT1R4PF
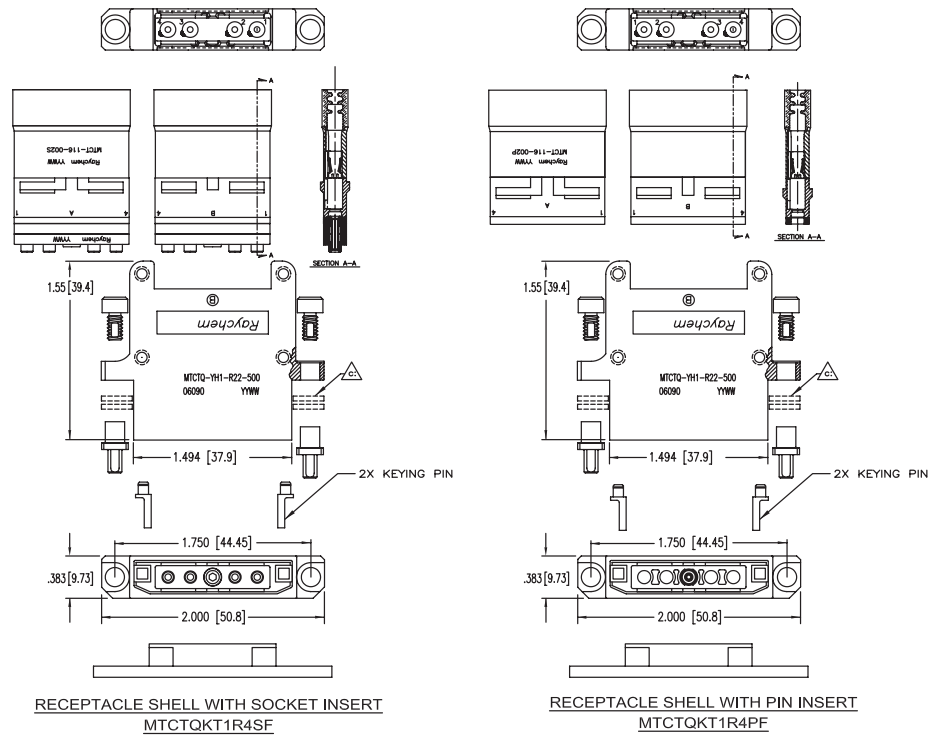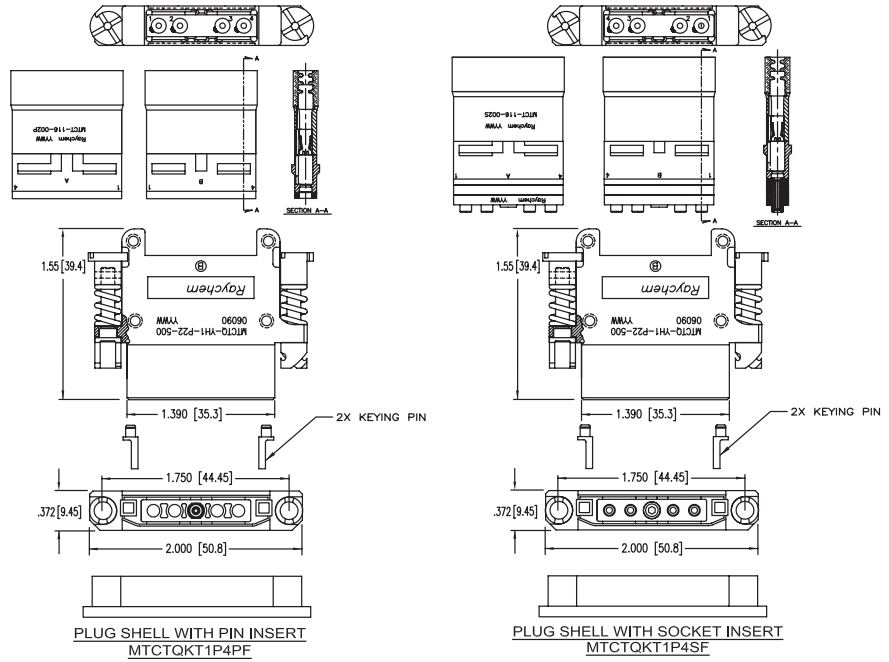
Screening

Round Wire

The following terminal strips must be used to connect screening to the body of an MTC 100 housing:
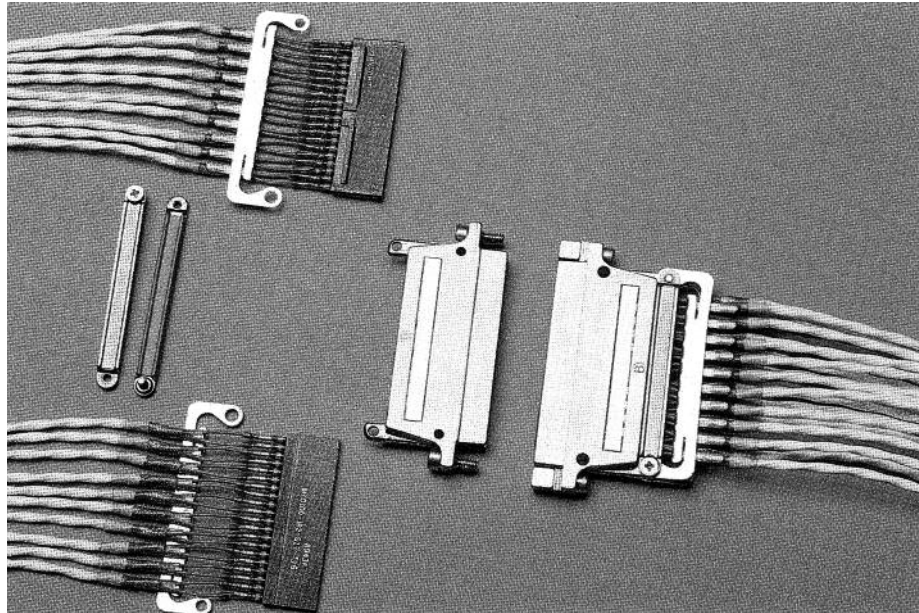
Size 1 housing:
Type CTA-0022
Size 2 housing:
Type CTA-0023

The strips are connected to the screening using SolderSleeve devices, and secured by the connector cable clamp.

Ribbon Cable

With ribbon cables, the screening is provided by a copper strip.

The copper strip is connected using different terminal strips in accordance with the electrical diagram (contact TE Connectivity).

In any case, the terminal strips and block must be connected at the same time in the T.C.W.I. heating device (CE-1404300).

The assembly is contained in the connector housing, and does not alter the overall dimensions of the latter.
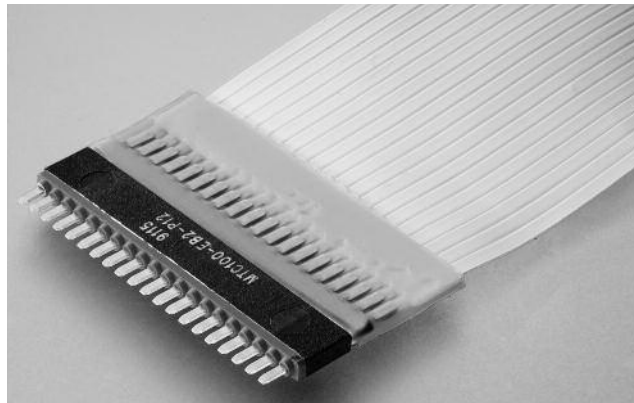
Unscreened cable shown above.

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Rectangular Pin and Socket Connectors

Application and Installation

Panel cut out for boxmount connectors and receptacle shells
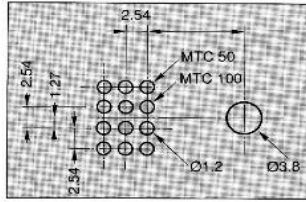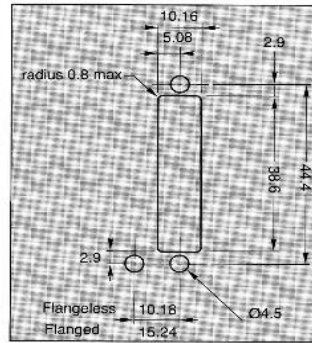
Cut out dimensions opposite are for guidance only. Panel cut out and spacing dimensions must be derived from the current Specification Control Drawing.

Hole Pattern for PCB

Panel Cut Out for 1" Shell

Panel Cut Out for 2" Shell
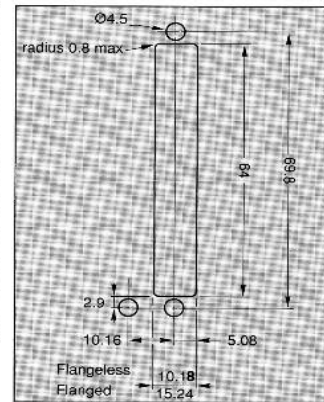
Keying Chart

Both the shell and the wafer have their own built in polarization.

Keying of the shell is completed by the user. Two square keying pins are supplied with each shell and should be inserted into the square sockets in the shell according to one of the 16 keying codes to the right.

Any "keyed" shell may be modified to a different polarization by repositioning the keying pins.

A triangular keying pin is available, giving up to 64 different polarizations.

Triangular keying pin:
CHA-0036

Triangular keying chart:
D-659-0080

Application and Installation (Continued)

Mating possibilities

The mating possibilities of the MTC100 and MTC50 series are depicted below by using a 1" plug shell with cadmium finish. The same mating possibilities are available for 2" shells and other shell finishes. Part numbers should be substituted as necessary.

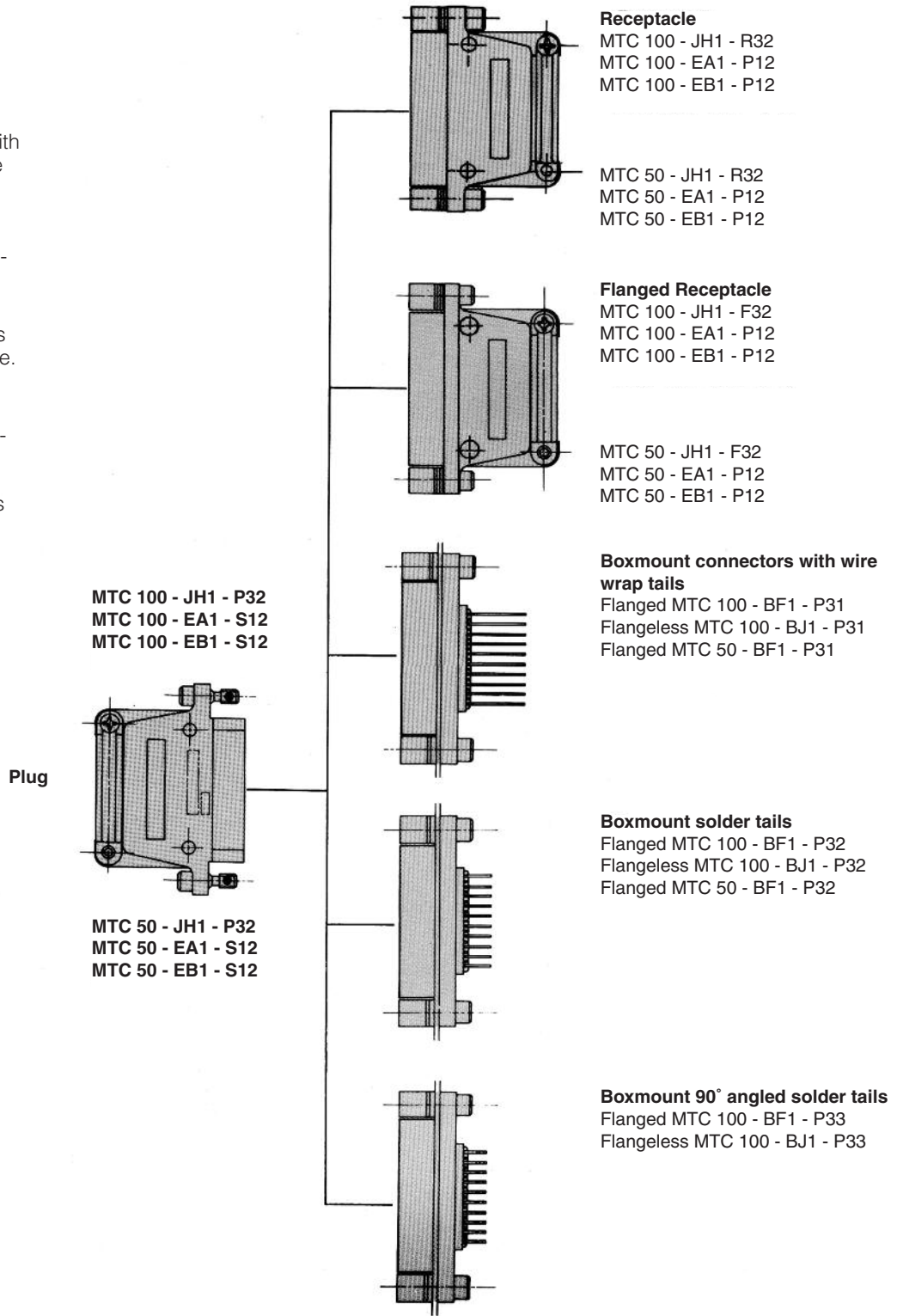The wafers shown in the plug and receptacle shells are for flat conductor cable. For round wire wafers, consult text.

Because of the multiple fitting possibilities of pin or socket waters, the user must ensure that the types of wafer in the plug and receptacle shells match each other.

The MTCR plug shell can only be mated with an MTCR receptacle shell; contact types must match each other.

MTC 100 - JH1 - P32
MTC 100 - EA1 - S12
MTC 100 - EB1 - S12

Plug

MTC 50 - JH1 - P32
MTC 50 - EA1 - S12
MTC 50 - EB1 - S12

Receptacle
MTC 100 - JH1 - R32
MTC 100 - EA1 - P12
MTC 100 - EB1 - P12

MTC 50 - JH1 - R32
MTC 50 - EA1 - P12
MTC 50 - EB1 - P12

Flanged Receptacle
MTC 100 - JH1 - F32
MTC 100 - EA1 - P12
MTC 100 - EB1 - P12

MTC 50 - JH1 - F32
MTC 50 - EA1 - P12
MTC 50 - EB1 - P12

Boxmount connectors with wire wrap tails
Flanged MTC 100 - BF1 - P31
Flangeless MTC 100 - BJ1 - P31
Flanged MTC 50 - BF1 - P31

Boxmount solder tails
Flanged MTC 100 - BF1 - P32
Flangeless MTC 100 - BJ1 - P32
Flanged MTC 50 - BF1 - P32

Boxmount 90˚ angled solder tails
Flanged MTC 100 - BF1 - P33
Flangeless MTC 100 - BJ1 - P33

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Rectangular Pin and Socket Connectors

Application and Installation (Continued)

Installation dimensions for receptacle shells and box-mount connectors

The installation dimensions for the MTC100 and MTC50 series are the same.

All receptacle and box-mount shells are suitable for rear panel mounting. Differences in panel thickness between 0.8mm min. and 2.4mm max. are to be adjusted with the 0.8mm thick spacer washers supplied.

Boxmounts with straight wire wrap or solder tails may also be front panel mounted. Front panel and PCB mounting kits are available (consult TE Connectivity).

All receptacle shells are suitable for flat or stack mounting. It is not necessary to dismantle the stack to remove the mating plug shells.

The MTCR connector has a different cable clamp and is therefore longer than a standard receptacle shell.

34.3

Panel thickness — 0.8 min. / 2.4 max.

Receptacle

28.4 — Fixing holes 3.8 dia. for flat and stack mounting

Flanged receptacle

25,9 — Boxmount wire wrap connection

43.3

15.2 min. / 16.5 max.

15,9

Plug

36.3

Boxmount solder tails

12,7 — 6.1 min.

Cheese head screw

M 3 DIN 84

23

10

Boxmount 90˚ angled solder tails

6.2 min. / 7.8 max.   13,7