

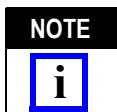
NUMBER OF POSITIONS	HOUSING PART NUMBER		ACCESSORIES	
	PLUG	RECEPTACLE	STRAIN-RELIEF ASSEMBLY	KEYING PLUG
4	207015	207016	---	200821 or 207654
6	207152	207153	207600-1	
9	207439	207440	207601-1	
12	207017	207018	207602-1	
18	207442	207443	207603-1	
24	207304	207305	207088-1	
36	207019	207020	207604-1	

Figure 1

## 1. INTRODUCTION

This instruction sheet covers the assembly of the Self-Locking Metrimate Connectors shown in Figure 1.

These connectors have metric and U.S. customary dimensions which meet international standards (UL, VDE, IEC, and CSA International). For specific information concerning the connectors, contact Tyco Electronics at the number at the bottom of this page.



*Dimensions in this instruction sheet are in millimeters [with inches in brackets]. Figures and illustrations are for reference only and are not drawn to scale.*

Reasons for revision to this document are given in Section 10, REVISION SUMMARY.

## 2. DESCRIPTION

The connectors consist of a housing plus the contacts and wires. The connectors are available with 4-, 6-, 9-,

12-, 18-, 24-, and 36-positions. Each consist of a one-piece housing (plug or receptacle) and contacts (pins or sockets). The connectors can be used for free-hanging or panel-mounted applications.

Each housing features two locks with serrated releases, panel latches, polarization, cavity numbers, and a raised collar around the No. 1 cavity. Refer to Figure 3.

The panel latches are designed to retain a connector in a panel. The panel latches deflect to permit insertion and extraction through a FRONT or BACK of a panel.

The locking tabs will secure two mated connections and retain them until two serrated releases of either connector are depressed. This feature avoids inadvertent disengagement, and permits the connectors to be used for both free-hanging and panel-mounted applications.

Cavity numbers and the raised collar on the back of each connector provide a visual means of identifying each circuit.

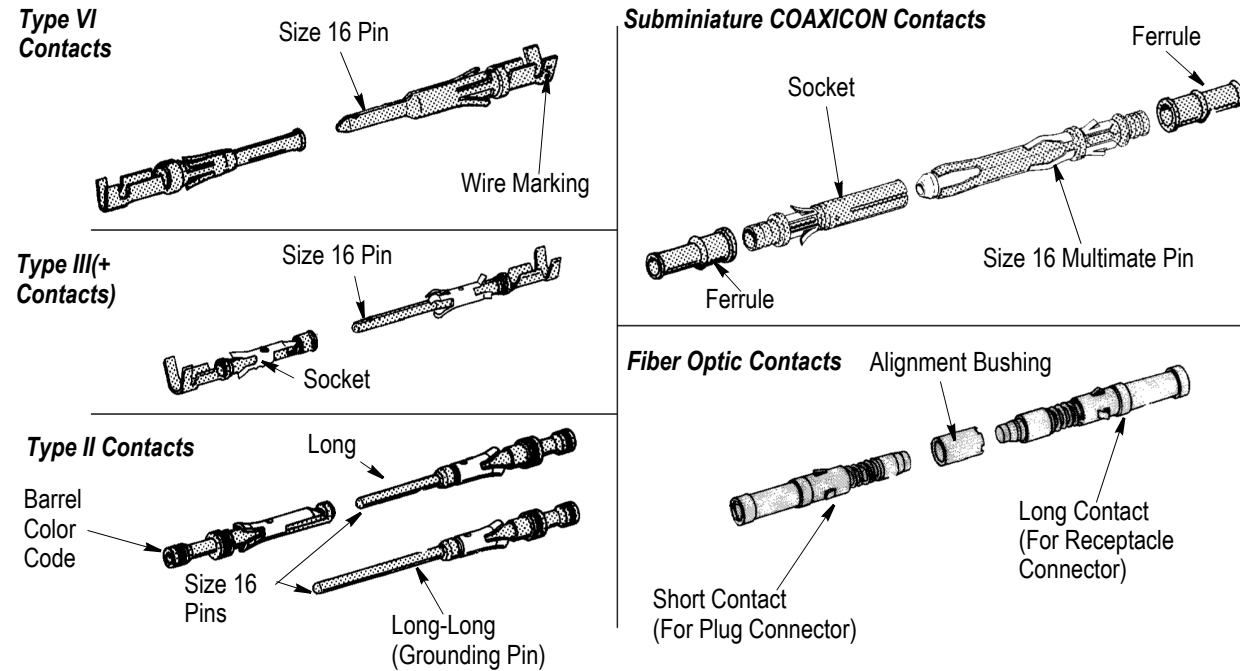
Strain-relief assemblies and keying plugs are accessories that can be used with these connectors. The strain-relief assembly provides protection for exposed and/or heavy cable bundles. The keying plug provides additional polarization of connectors.

Each contact cavity will accept any of the various contacts in the Multimate Program (Subminiature COAXICON\* Contacts, Types II,

III(+), VI, and fiber optic). All of the contacts are size 16 with a pin diameter of 1.6 [.062].

**3. CONTACT SELECTION** (Figure 2)

There are three forms of contacts: (1) loose-piece (all styles), (2) tape-mounted strip (Type II only), and (3) continuous metal strip (all styles except Type II and fiber optic). The loose-piece contacts are for low-volume applications, while the Type III (+) and Type VI strip contacts are for high-volume applications.



CONDUCTOR		MULTIMATE CONTACTS	
TYPE	SIZE	TYPE	DESCRIPTION
Coaxial Cable	RG-161, 174*, 178, 179, 187, 188, 196*, and 316	Subminiature Coaxicon	3--Piece (Screw Machine Inner Contact Body with Precision Formed Outer Shell and Ferrule)
Shielded (1.90 [.075] OD Max)	26 AWG		
Twisted Pair (Solid and Stranded)	26 AWG		
Twisted Pair (Solid)	28 AWG		
Twisted Pair (Stranded)	28 AWG		
Single Wire (Solid and Stranded)	30 AWG	Type II Contact	2-Piece (Screw Machine/Precision Formed Spring)
	32-14 AWG	Type III (+) Contact	2-Piece (Precision Formed Contact Body and Spring)
	26-14 AWG	Type VI Contact	1-Piece (Precision Formed)
Fiber Optic (Solid and Stranded)	0.41, 0.61, 1.12 [.016, .024, .046] Dia	Fiber Optic Contact	4-Piece, Short Contact (Precision Formed and Molded)
			5-Piece, Long Contact (Precision formed and Molded)

\* Both single and double braid cable.

Figure 2

There are five styles of contacts as shown in Figure 2. Make your selection as follows:

1. Determine the type and size of conductor specified for your application.
2. Determine the contact style that you are going to use. See Figure 2.
3. Refer to the instruction sheet packaged with the contacts for contact and tool selection. If Type III(+) or Type VI strip contacts are going to be used, consult your local Tyco Electronics Representative for the machine that will best suit your needs.

#### 4. CONTACT INSERTION AND EXTRACTION

##### 4.1. Insertion (Figure 3)

Normally an insertion tool is not needed to insert these contacts. However, if the wire is too small and fragile, or if the cable bundle is too large, Insertion Tool 91002 can be used to insert the contacts. When inserting contacts, grip the wire directly behind the contact and push the contact straight into the back of the connector until it bottoms. Pull back lightly on the wire to make sure the contact is locked in position.

##### 4.2. Extraction (Figure 3)

Extraction Tool 305183 is designed to release contacts through the front of the connector, and extract them from the back. Read Instruction Sheet 408-1216 packaged with the tool for specific instructions.

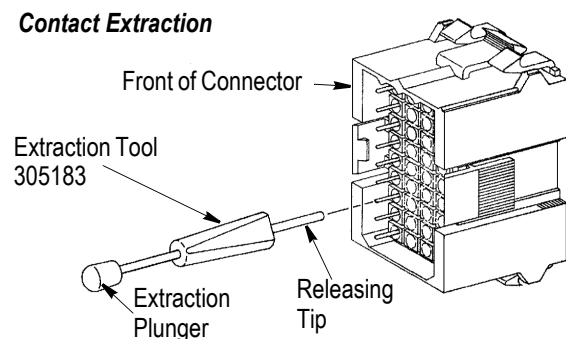
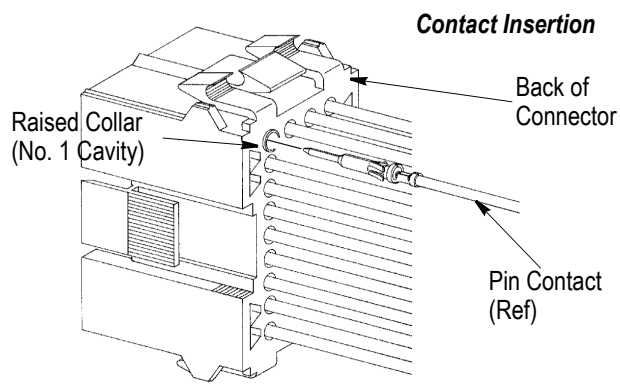


Figure 3

#### 5. KEYING PLUGS

Keying plugs 200821 and 207654 are designed for use in plug connectors which mate with receptacle connectors. However, keying plug 207654 can also be used for plug connectors mating with pin headers.

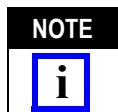
1. Determine the applicable cavity to be keyed and align the tapered end of the plug with the FRONT of the connector.
2. Insert the keying plug straight into the cavity until it bottoms. Approximately 3.18 [.125] of the keying plug 200821 will protrude from the connector. Keying plug 207654 will be flush with the mating surface.

If removal of the keying plugs is necessary, remove the 200821 plug by gripping it with pliers and pulling the plug straight out the FRONT of the connector. To remove keying plug 207654, insert Extraction Tool 305183 ( Refer to Instruction Sheet 408-1216) into the BACK of the applicable cavity, depress the plunger, and remove the keying plug from the FRONT of the connector.

#### 6. INSTALLING STRAIN-RELIEF ASSEMBLIES

Strain-relief assemblies consist of two symmetrical halves and various sizes of strain-relief cable gates. They can be attached to the connector for panel mounting without interfering with the panel. Select and install the strain-relief assembly as follows:

1. Determine the number of positions in the housing, then refer to the table in Figure 1 and select the applicable strain-relief assembly.
2. Gather the wires together and determine the approximate opening required in the strain-relief. (The wire bundle can be flat or circular as it exits the strain-relief).
3. Select one or more cable gates packaged with the strain-relief assembly and place in the strain-relief track. Those with strain-relief ribs on both sides can be inserted either side first. See Figure 4.



**NOTE** Several strain-relief cable gates have been included to accommodate any number of wires (one or more can be used). Notice that each gate is numbered on the surface containing the strain-relief ribs (some on both sides).

4. Align the slot tabs with the slots between the panel locks and housing, then insert the tabs into the slots. See Figure 4.
5. Bundle the wires together and place them on the strain-relief gate. To avoid strain on the wire between the connector and cable gate, push the wire bundle toward the connector slightly.

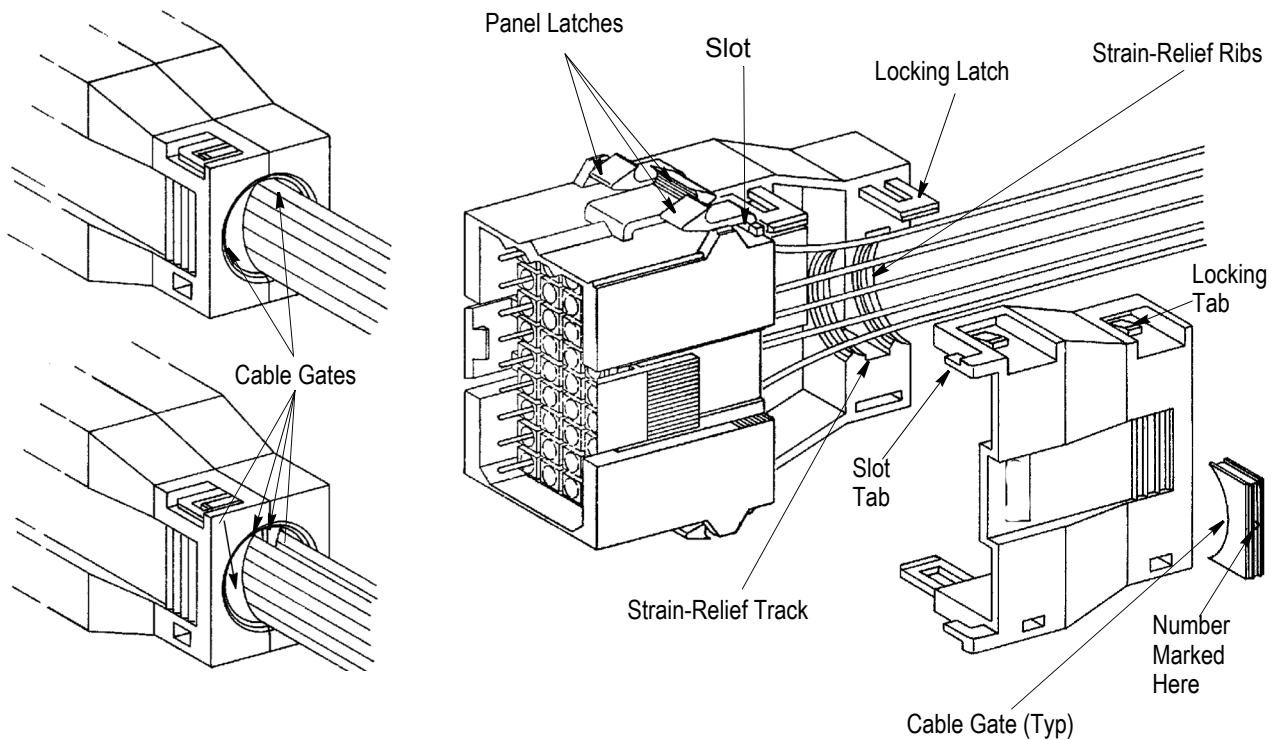


Figure 4

6. Align the second strain-relief half with the connector. Note that the slot tabs must be aligned with the slots between the panel latches and housing, and the strain-relief locking latches must be aligned with the locking tabs.

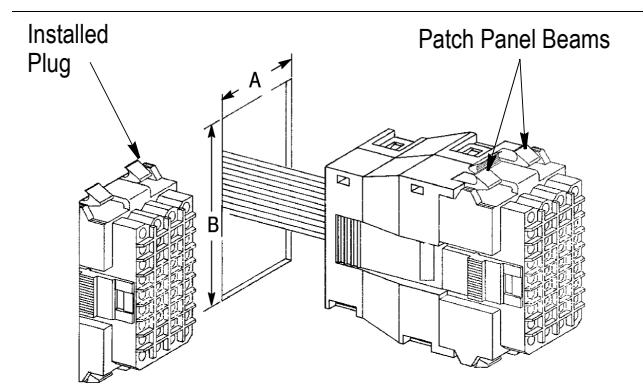
7. Press the two halves together, making sure the locking latches engages the locking tabs.

**7. PANEL MOUNTING**

The connector can be installed or removed from either the FRONT or BACK of the panel. When only one connector is to be panel mounted, we recommend that you mount the plug connector. Make the panel cutout and install the connector as follows:

1. Determine the number of positions in the connector and make a cutout in the panel using the dimensions provided in Figure 5.
2. Position the panel latch beams against the panel and push the connector straight into the panel until snapped in position.

To remove the connector from the panel, depress the panel latch beams and push the connector through the panel.



NO. OF POSN	DIMENSION S±0.15 [.006]		PANEL THICKNESS
	A	B	
4	18.10 [.712]	20.30 [.799]	0.8-2.3 [.030-.090] Max
6	18.10 [.712]	25.10 [.988]	
9	24.00 [.945]	25.10 [.988]	
12	24.00 [.945]	30.00 [1.81]	
18	24.00 [.945]	40.50 [1.594]	
24	28.30 [1.114]	40.50 [1.594]	
36	28.30 [1.114]	55.50 [2.185]	

Figure 5

## 8. ENGAGING CONNECTORS

1. Check that the plug and receptacle have identical positions. If keying plugs have been installed in the plug connector, corresponding cavities must be empty in the receptacle connector.
2. Orient connectors so polarizing features are aligned.
3. Make sure the mating faces are parallel to each other, then push the connector together until the locks engage.

## 9. DISENGAGING CONNECTORS

When possible, we suggest that you remove the longer connector (receptacle) from the shorter connector (plug).

1. Simultaneously depress both serrated releases of one connector. See Figure 6.
2. Pull the connectors straight away from one another. They should separate easily.



*Damaged product should not be used. If damaged product is evident, it should be replaced.*

## 10. REVISION SUMMARY

Since the previous release of this instruction sheet, the company logo has been updated.

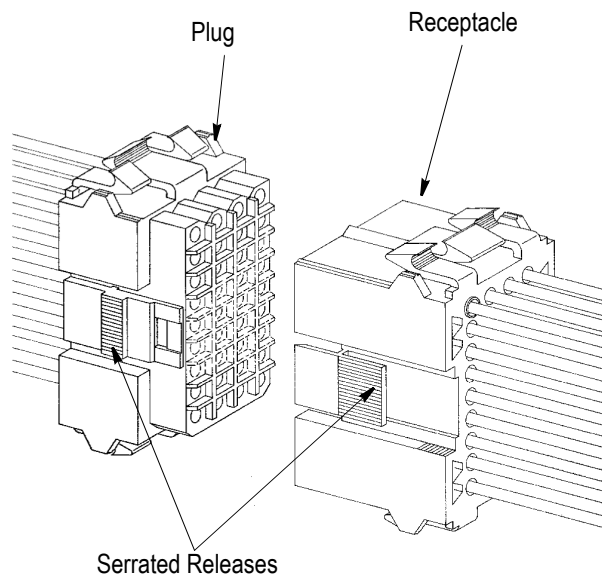


Figure 6