



Featuring

.062" (1.58 mm)
5025 Series

&

.093" (2.36 mm)
3191 Series



G

FOLLOWING PAGES G52 TO G60 CONTAIN INFORMATION ON

- **.062" (1.58 mm) and .093" (2.36 mm) Connector Housings and Terminals**
- **.100" (2.54 mm) and .156" (3.96 mm) KK® Modular Interconnection Systems**
- **Crimp Tools and Extractors**
- **Plating Specifications**
- **Technical Data References**

N Pages G52 to G60 inclusive, indicate the **mm equivalent in (brackets)** following the inch dimensions.

O

T Illustrations have the **mm equivalent in (brackets)** below the inch dimension.

E

AREAS OF SERVICE APPLICATION

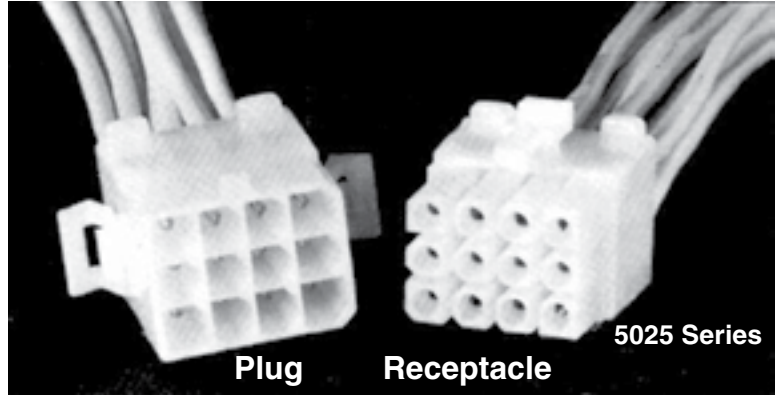
ELECTRONIC DESIGN INDUSTRIES
TRUCK AND AUTOMOTIVE RELATED INDUSTRIES
AIR, MARINE AND RAILWAY SERVICE AND REPAIR
HOME, FARM AND INDUSTRIAL REPAIR AND MAINTENANCE
ENTERTAINMENT AND RECREATIONAL EQUIPMENT REPAIR



NYLON Mini-Fit Pin & Socket Connector Housings

250 V.A.C. / 5 Amp. Rating
Features/Dimensions:

- .062" (1.58 mm) diameter pin and socket
- 2, 3, 4, 6, 9, 12 and 15 circuits
- Positive lock
- UL 94V-2 material - natural color
- Meets international specifications of UL (USA), CSA (Canadian), VDE (Germany) and EAMCL (Japan)



Example of complete (12 circuit) CONNECTOR made from **Plug** and **Receptacle** parts listed on pages G54 and G56 (and below,) plus the appropriate wire.

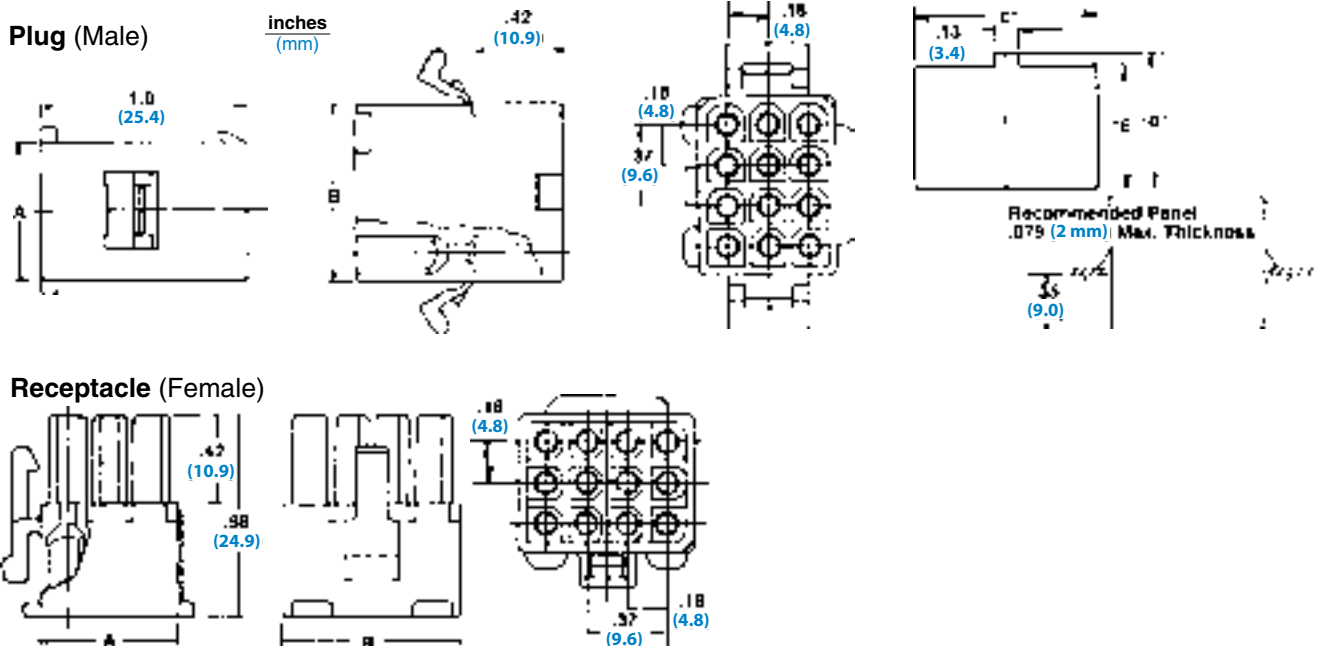
Shielding sleeve design on both plug and receptacle isolates each terminal and assures a .16" (4 mm) over-surface and .12" (3 mm) through-air spacing between terminals. Spacing between the back of the terminals' crimped section and the closest point to which it could meet a metal panel is .16" (4 mm) Terminals used are the standard .062" (1.58 mm) diameter pin and socket, except for the P.C. tail version, which is not adaptable. 5005/5006 International terminals also can be used.

Fully Polarized

The 5025 Mini-Fit connectors are available with integrally molded mounting ears for fast snap-lock panel mounting. They are designed so that the connectors cannot be misconnected. For additional polarity, the pin and socket terminals can be inserted in either a plug or receptacle.

5025 Mini-Fit connectors have been developed to meet the demands of miniaturization, high reliability and safety requirements.

Dimensional Data for following pages.



Continued on Next Page

Connector Housings / Crimping Tools

Logement de raccords / Outils de sertissage



Inch

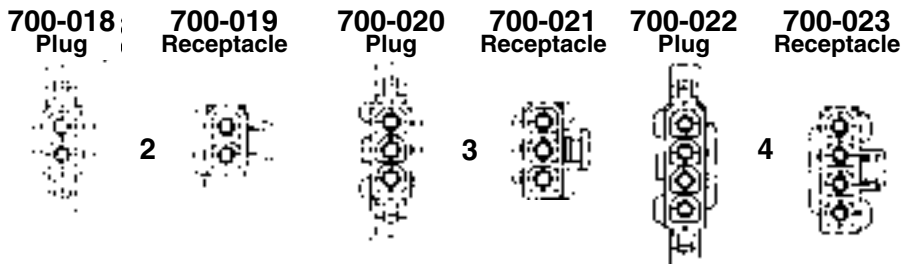
Pouce

NYLON
5025 Mini-Fit
Pin & Socket
Connector
Housings

UL
94V-2

ORDER BY SPAENAUR NUMBERS LISTED BELOW

5025 Series



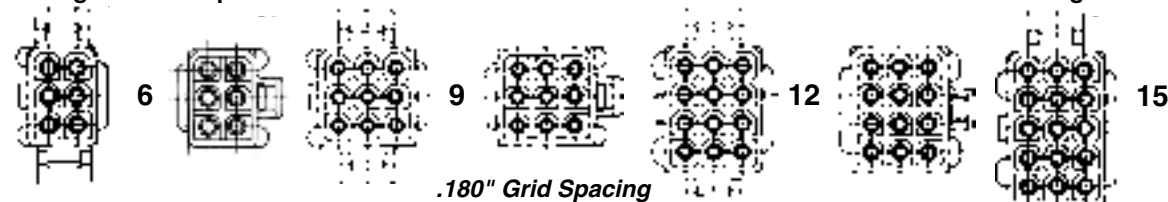
PKG QTY. 10

250 V.A.C. / 5 Amp. Rating

700-024 Plug

700-025 Receptacle

700-030 Plug



.180" Grid Spacing

Dimensional Information - Plug (Male part — even SPAENAUR No's.)

Circuits	Dim. A	Dim. B	Dim. C	Dim. D	Dim. E	Circuits	Dim. A	Dim. B	Dim. C	Dim. D	Dim. E
2	.28 (7.2)	.47 (12.0)	.62 (15.8)	.35 (8.9)	.30 (7.8)	9	.66 (16.8)	.66 (16.8)	.81 (20.6)	.72 (18.5)	.68 (17.4)
3	.28 (7.2)	.66 (16.8)	.81 (20.6)	.35 (8.9)	.30 (7.8)	12	.66 (16.8)	.85 (21.6)	1.0 (25.4)	.72 (18.5)	.68 (17.4)
4	.28 (7.2)	.85 (21.6)	1.0 (25.4)	.35 (8.9)	.30 (7.8)	15	.66 (16.8)	1.03 (26.4)	1.18 (30.2)	.72 (18.5)	.68 (17.4)
6	.47 (12.0)	.66 (16.8)	.81 (20.6)	.53 (13.7)	.50 (12.6)						

Ordering Information - Plug (Male part — even SPAENAUR No's.)

Circuits	SPAENAUR No.	Circuits	SPAENAUR No.
2	700-018	4	700-022
3	700-020	6	700-024

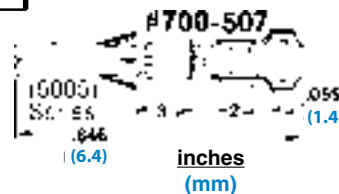
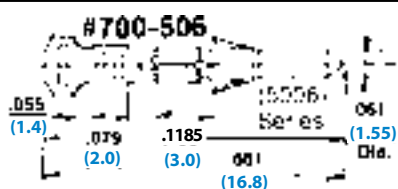
Dimensional Information - Receptacle (Female part) - See page G53 for A, B, C, D & E.

Circuits	Dim. A	Dim. B	Circuits	Dim. A	Dim. B	Circuits	Dim. A	Dim. B	Circuits	Dim. A	Dim. B
2	.28 (7.2)	.47 (12.0)	4	.28 (7.2)	.85 (21.6)	9	.66 (16.8)	.66 (16.8)	15	.66 (16.8)	1.03 (26.4)
3	.28 (7.2)	.66 (16.8)	6	.47 (12.0)	.66 (16.8)	12	.66 (16.8)	.86 (21.6)			

Ordering Information - Receptacle (Female part — odd SPAENAUR No's.)

Circuits	SPAENAUR No.	Circuits	SPAENAUR No.
2	700-019	4	700-023
3	700-021	6	700-025

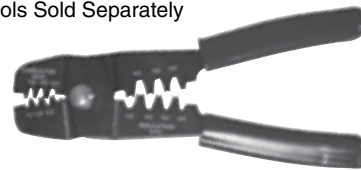
5005/5006
Mini Fit
Series Terminals
(for 5025 Housings)



Tin Plated Brass Terminal

Loose Terminals		PKG QTY.	Wire Size	Insulation Diameter
Male	Female			
SPAENAUR NUMBERS LISTED BELOW				
700-506	700-507	200	AWG #18-24	(ø 3.0 Max.)

Tools Sold Separately



876-482 Hand Crimper
Mfr. #63811-1000

CATALOG 14

SPAENAUR

Inch

Pouce



.100" (2.54 mm) KK® Interconnection System

Système d'interconnexion KK® de 0,100 po (2,54 mm)

Housing Material: UL 94V-0 NYLON (Flame Retardant Red or White - our option.)

SPAENAUR No.	Molex Series	Circuits	Description	PKG QTY.	
700-093	6471	2	Crimp Terminal Housing (With Locking Ramp) Used with No. 700-510 Crimp Terminal (below)	15	
700-094	6471	3		15	
700-095	6471	4		15	
700-096	6471	5		15	
700-138	6471	6		15	
700-098	6471	7		10	
700-099	6471	8		10	
700-100	6471	10		10	
700-101	4455-AC	10		P.C. Board Connector Rt. Angle Mount	10
700-102	4455-BC	10		P.C. Board Bottom Entry Connector	10
700-104	4030	10	Square Pin Straight Wafer - Short	15	
700-105	4030	10	Square Pin Straight Wafer - Long	15	
700-108	7478	4	Square Pin Friction Lock, Rt. Angle Wafer	5	
700-109	7478	5		5	
700-110	7478	6		5	
700-111	7478	7		5	
700-112	7478	8		5	
700-113	7478	10		5	
700-114	6410	2	Square Pin Friction Lock Wafer	5	
700-115	6410	3		5	
700-116	6410	4		5	
700-117	6410	5		5	
700-118	6410	6		5	
700-119	6410	10		5	
700-510	2759	1	Crimp Terminal - Tin Plated, BRASS	350	
876-482	63811-1000	-	Hand Crimper - for Terminal No. 700-510	1	
876-485	HT-2759	-	Extractor Tool - for removing Terminals from Housings	1	

G

KK® Technical Data Reference

KK® .100" (2.54 mm)

UL Recognized (File #29179)

CSA Recognized (File 19980)

Voltage Rating - 250 VAC maximum Temperature Range **-40°C to +105°C** Dielectric Withstanding Voltage - 1500 VAC for 60 seconds
 Current Rating - 3.5 Amps maximum (with 22 AWG wire)
 Resistance - 20 milliohms maximum (after testing per MIL STD 202E)

Insulation Resistance - Greater than 500K megohms (75°F and 50% R.H.)

Engagement Force - 7 oz. (199 g) maximum with tin plated .025" (0.64 mm) square pin
 Disengagement Force - 2 oz. (57 g) minimum for first cycle with tin plated .025" (0.64 mm) square pin

Terminal Retention to Housing - 8 lbs. (3.63 kg) minimum Wire Pullout Forces (Crimp) - 22 AWG - 10 lbs. (4.54 kg)
 24 AWG - 8 lbs. (3.63 kg)
 26 AWG - 6 lbs. (2.72 kg)
 28 AWG - 4 lbs. (1.81 kg)
 30 AWG - 3 lbs. (1.36 kg)

CATALOG 14 SPAENAUR

Connector Housings / Extractors / Crimping Tools

Logement de raccords / Extracteurs / Outils de sertissage



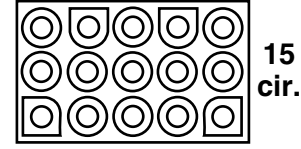
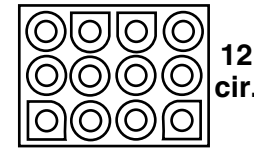
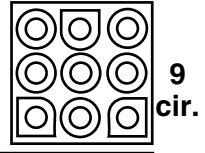
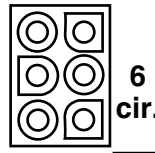
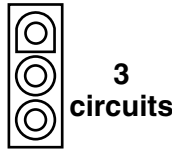
Inch

Pouce

NYLON

Rated 94V-2 **3191 Series**

.093" (2.36 mm) Connector Housings



Current Rating: 250 V.A.C. or 600 V.A.C.

Connector Circuit Grid Patterns
.264" (6.71 mm) grid spacing

PKG QTY. 10

See Page G57 for Dimensional Information 3191.

Circuits	Receptacle		Plug		Electrical		Circuits	Receptacle		Plug		Electrical	
	Available only without Mounting Ears	with Mounting Ears	without Mounting Ears	Max. Amps.	Max. Volts	Available only without Mounting Ears		with Mounting Ears	without Mounting Ears	Max. Amps.	Max. Volts		
SPAENAUR No.													
1							6	700-011	700-010			9	600
2	700-005	700-004		12	600		9	700-013	700-012			8	600
3	700-007			11	600		12	700-015	700-014			7	600
4	700-009	700-008		9	600		15	700-017	700-016			6	600

.093" (2.36 mm) Diameter

Terminals

.010" Brass, Crimp Type
Tin Plated

PKG QTY. 200

.093" (2.36 mm) Diameter,
Terminal Information

Please order by SPAENAUR No's.

Wire Size	Insulation Diameter	Model No.	Wire Size	Insulation Diameter	Model No.
14-20	.065/.160 (1.65/4.06)	1189 - Female 1190 - Male	22-24 (a)	.050/.070 (1.27/1.78)	2871 - Female 2870 - Male
18-22	.060/.120 (1.52/3.05)	1381 - Female 1380 - Male	24-30	.030/.060 (0.76/1.52)	1433 - Female 1434 - Male

SPAENAUR No's. (six-digit)

(a) For fire retardant insulated wire.

Female Terminals						Male Terminals						
Finish	Form	Dimple	1189-F	1381-F	2871-F	1433-F	Finish	Form	1190-M	1380-M	2870-M	1434-M
Tin	Loose	Yes	700-503	700-505			Tin	Loose	700-502	700-504		

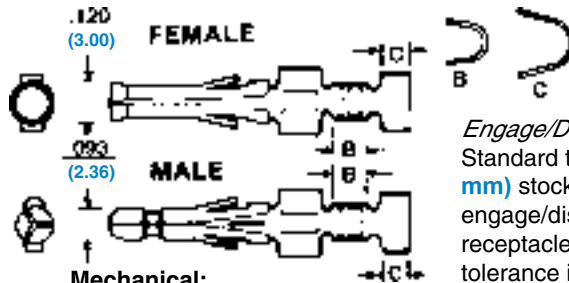
Specifications - Electrical:

Resistance - MV voltage drop per amp, ±10%: ● 1st engagement 3.0 ● 10th engagement 3.1 Probe about 1" (2.54 cm) from crimp barrel on 18 AWG stranded wire. Voltage drop includes mated terminals and both crimps. Brass material and tin plating. High Voltage Test - Withstands 1500 volts RMS applied between adjacent terminals for 60 seconds mounted in all housings.

Temperature Rise/Operating Range - 30° maximum for all connectors at maximum rated current.

Temperature range - 40°C to 105°C

Current Rating - Amperage rating up to 12 amps on some sizes.



Mechanical:

Terminal Crimp Strength - Minimum pull-out force in pounds (kilograms) for AWG wire sizes:

14-35 (15.9)	24-8 (3.63)
16-30 (13.6)	26-5 (2.27)
18-20 (9.07)	28-3 (1.36)
20-15 (6.80)	30-2 (0.91)
22-10 (4.54)	

Hand-Crimp Tool

B - Conductor Crimp area
C - Insulation Crimp Area

Engage/Disengage Forces -

Standard terminal of .010" (0.25 mm) stock 70/30 brass. Average engage/disengage forces in plug/receptacle connector with +30% tolerance in pounds (kilograms) by circuit:

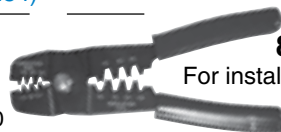
1-circuit	3.5/2.75	(1.59/1.25)
2-circuit	7.0/5.5	(3.18/2.50)
3-circuit	9.5/8.26	(4.77/3.75)
4-circuit	14.0/11.02	(6.36/5.00)
5-circuit	17.5/13.7	(7.95/6.24)
6-circuit	21.0/16.5	(9.53/7.50)
9-circuit	31.5/24.8	(14.30/11.24)
12-circuit	42.0/33.07	(19.06/15.00)
15-circuit	52.5/41.3	(23.84/18.73)

Mfr. #HT - 2038



876-483 Extractor Tool
(for removing .093" Terminals)

Hand-Crimp Tool



Mfr. #63811-1000

876-482

For installing .093 terminals

PKG QTY. 1

Inch
Pouce



Connector Housings

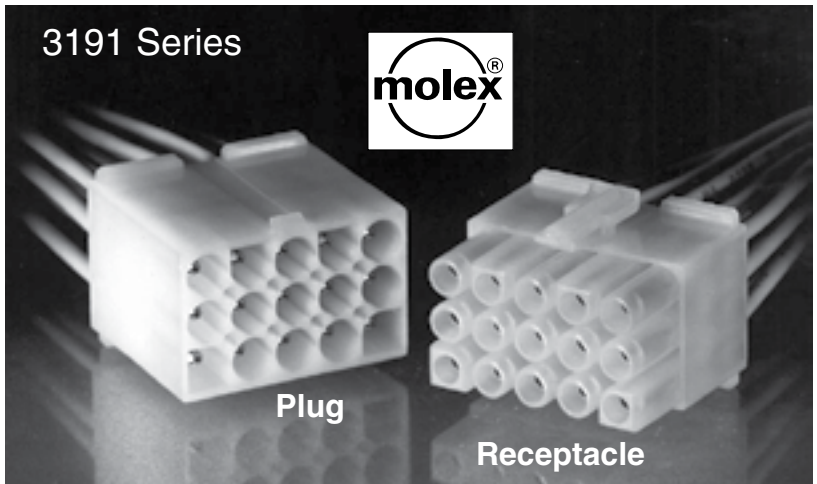
Logement de raccords

NYLON

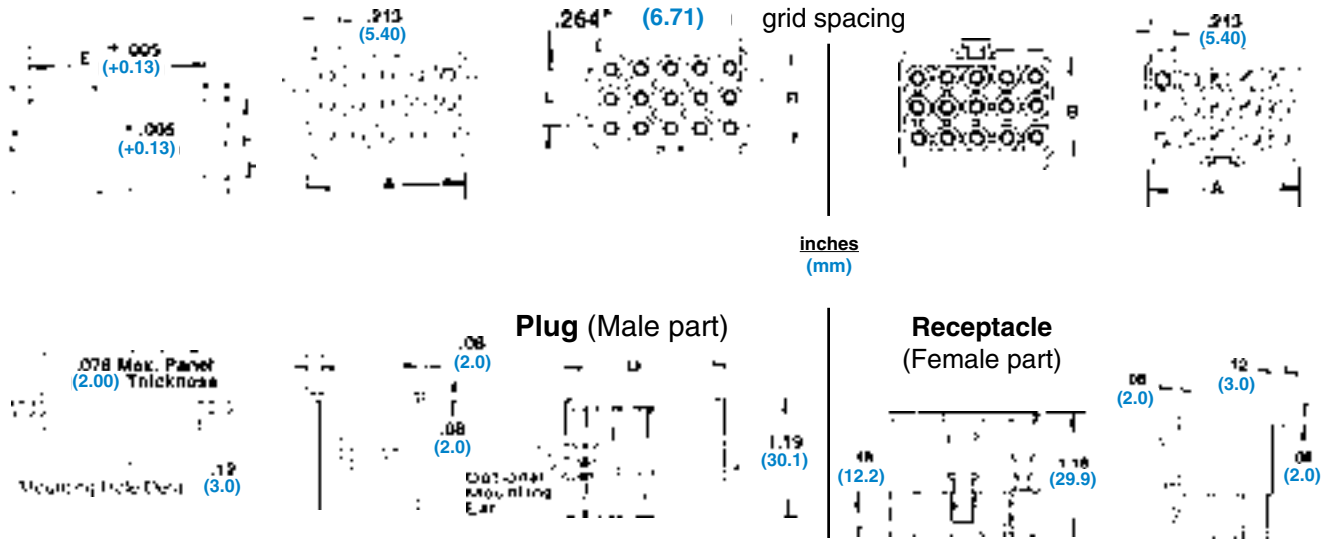
Current Rating
250 V.A.C.
or 600 V.A.C.

.093" (2.36 mm) Connector Housings

- Integrally molded polarization
- 94V-2 rated nylon
- Accepts Molex .093" (2.36 mm) crimp type or P.C. tail terminals
- Meets current and future European, Japanese and American Specs.
- .093" (2.36 mm) Pin & Socket dia.
- 2, 3, 4, 6, 9, 12, 15 circuit versions
- Positive locking
- Integrally molded mounting ears available
- .16" (4 mm) over surface and .12" (3 mm) through air spacing between terminals.
- Standard color white can be color coded in black, brown, green, gray, orange, amber, red or yellow.
- .264" (6.71 mm) grid pattern.



Example of complete (15 circuit) **CONNECTOR** made from **Plug** and **Receptacle** parts listed on page G54, G56 and below, plus the appropriate wire.



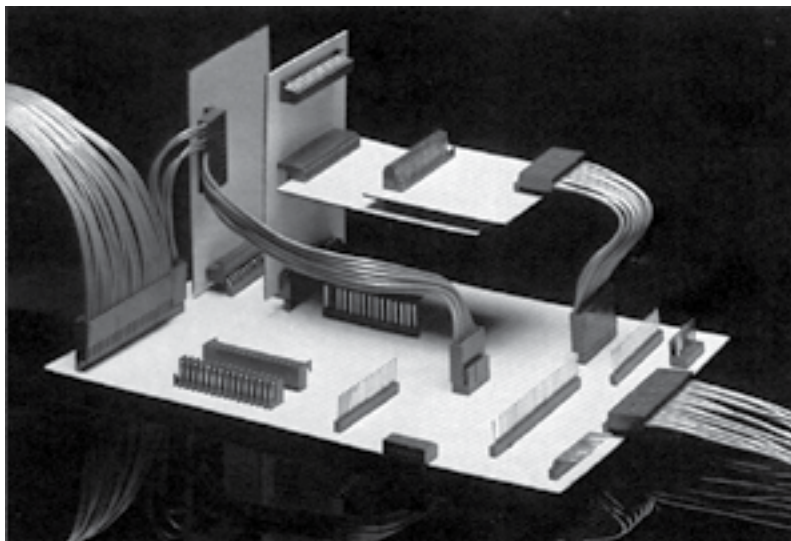
Dimensional Information 3191 (See page G56 also.)

Cir- cuits	Receptacle		Plug						Cir- cuits	Receptacle		Plug					
	A	B	A	B	C	D	E	F		A	B	A	B	C	D	E	F
1	.300 (7.6)	.300 (7.6)	.32 (8.1)	.32 (8.1)	.32 (8.1)	.32 (8.1)	2.065 (12.31)	3.43 (68.7)	6	.83 (21.0)	.56 (14.3)	.85 (21.6)	.604 (15.2)	.58 (14.7)	.888 (22.55)	1.048 (26.62)	.658 (16.71)
2	.56 (14.3)	.300 (7.60)	.58 (14.7)	.32 (8.1)	.32 (8.1)	.635 (16.13)	.800 (20.32)	.365 (9.27)	9	.83 (21.0)	.83 (21.0)	.85 (21.6)	.868 (22.05)	.58 (14.7)	.883 (28.96)	1.048 (33.02)	.909 (23.11)
3	.83 (21.0)	.300 (7.60)	.848 (21.59)	.32 (8.1)	.32 (8.1)	.862 (21.80)	1.022 (25.96)	.365 (9.27)	12	1.09 (27.7)	.83 (21.0)	1.112 (28.3)	.868 (22.05)	.58 (14.7)	1.140 (28.96)	1.300 (33.02)	.910 (23.11)
4	1.09 (27.7)	.300 (7.60)	1.11 (28.2)	.321 (8.15)	.321 (8.15)	1.109 (28.17)	1.270 (32.26)	.365 (9.27)	15	1.35 (34.4)	.83 (21.0)	1.38 (35.0)	.868 (22.05)	.58 (14.7)	1.392 (35.56)	1.552 (39.42)	.910 (23.11)

CATALOG 14 SPAENAUR

KK® Modular Interconnecting System

Système d'interconnexion modulaire KK®



Introduction

The Molex KK® Interconnection System

The proven KK® system of “building block” connectors can be used to create thousands of different configurations, thereby allowing each user to build a system that is precisely suited to any application on .098" (2.5 mm), .100" (2.54 mm), .156" (3.96), and .200" (5.08 mm) centres.

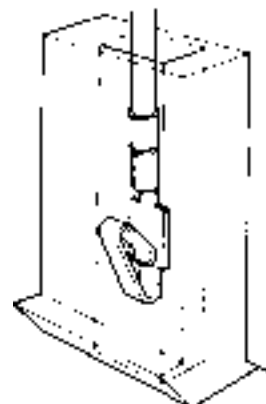
The system offers interconnection in a number of modes; cable-to-board, board-to-board, both parallel and perpendicular; and board-or cable-to-chassis. Features include a friction lock to secure connectors to wafer, polarizing wall or location pegs to assure correct assembly, and a chassis mount option for mounting to sheet metal panels. Various methods of securely holding the connectors to a P.C. board are available.

The Molex KK® interconnect system can provide all the options necessary to complement P.C. board interconnection design requirements. For this reason KK® has become known as a versatile interconnecting system developed to meet the challenge of modularization. For specifications or design information please contact our sales office.

To complement the KK® System Molex has developed a full line of application tooling. This includes both manual and semi-automatic crimp tooling, and also some of the fastest and most economical pinsetting equipment in the industry. The Molex Vibrator Multi-Pinsetter® can set 12,000 pins in three minutes.

Molex KK® Concept

The Molex KK concept utilizes a double cantilever contact design in mating with P.C. board pins. The proven double cantilever design provides a high uniform contact pressure for a reliable connector interface. The high pressure creates many contact points at a microscopic level, thereby providing a lower contact resistance. The wiping action of the double cantilever design tends to clean oxides and film when the connector is mated.



G

Inch

Pouce



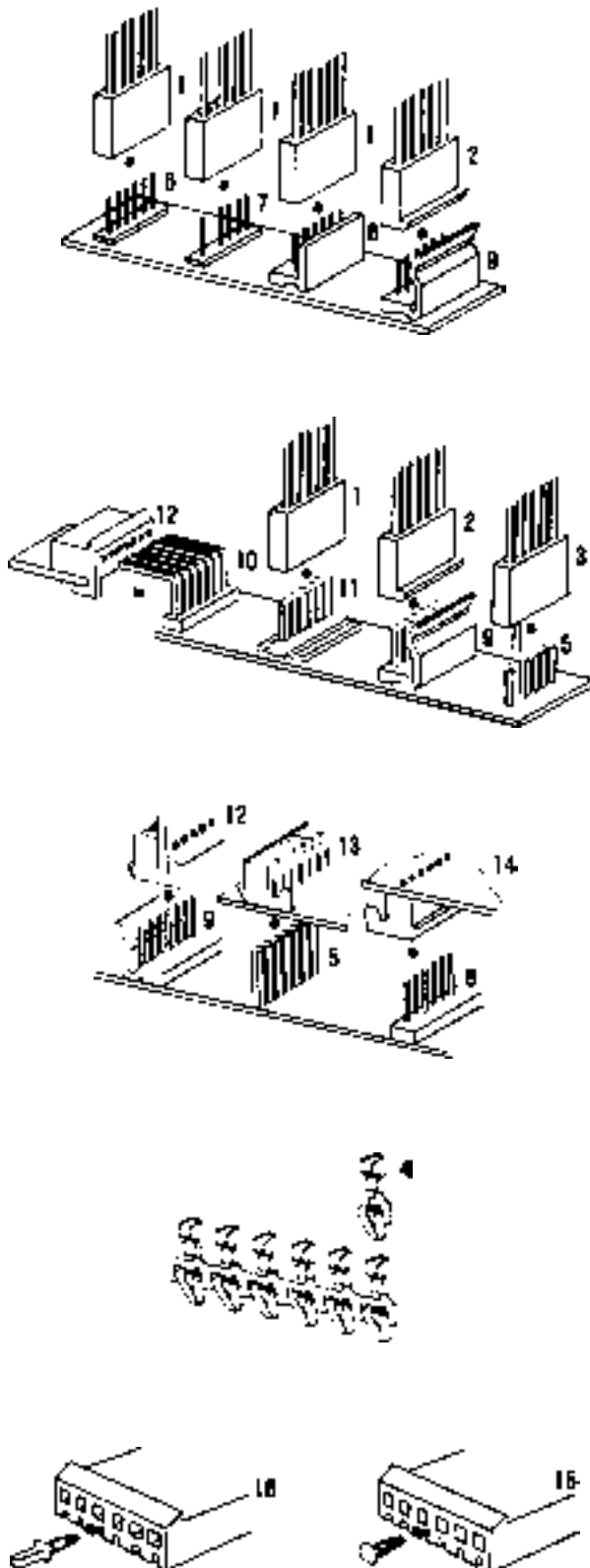
KK® Modular Interconnecting System

Système d'interconnexion modulaire KK®

Molex Series No's. (for reference use only)

.100" (2.54 mm) - .156" (3.96 mm)

CENTRE SPACING REFERENCE CHART



No.	Description	Centre Spacing	
		.100 (2.54)	.156 (3.96)
1	Connector housing for use with crimp-type terminals	2695	2139
		6471	6442
		7880	
2	Connector housing with locking ramp	2695	2139
		6471	3069
			6345
3	Connector with polarizing peg	-	-
4	Terminals for use with above housings	2759	2478
		4809	2578
		7879	6838
			7258
5	Male pins	2766	2161
		4166	2173
6	Straight wafer	4030	2402
			2461
			3192
			Contact Factory
8	Polarizing wafer	6410	2403
		6373	2534
		7478	6393
9	Locking wafer	6410	2391
		6373	2420
		7478	4042
10	Right angle wafer	4094	2373
			3246
11	Chassis mount wafer	-	2220
			4737
12	(Right angle) Connector to interconnect perpendicular P.C. boards	4455	2145
			3243
13	Connector to interconnect parallel bottom entry P.C. boards	4455	2145
14	Connector to interconnect parallel P.C. boards	4455	2145
15	Polarizing key without peg	4161-1	2560-1
16	Polarizing key with peg	4161-2	2560-2

See Page G55 for Spaenaur Part No's

G

CATALOG 14

SPAENAUR

Molex® Data / Molex® Connector Assortment



Inch

Données Molex^{MD} / assortiment de cosses de connecteur Molex^{MD}

Pouce

KK® Technical Data Reference

KK® .156" (3.96 mm) and .200" (5.08 mm) UL Recognized (File #29179) CSA Recognized (File 19980)

Voltage Rating - 250 VAC maximum *Temperature Range* -40°C to +105°C
Current Rating - 7 Amps maximum (with 18 AWG wire)
Resistance - 20 milliohms maximum (after testing per MIL STD 202E) *Dielectric Withstanding Voltage* - 1500 VAC for 60 seconds
Insulation Resistance - Greater than 500K megohms (75°F and 50% R.H.)

Engagement Force - 24 oz. (680 g) maximum with tin plated .045" (1.14 mm) square pin or round pin;
 27 oz. for Trifurcor® terminal

Disengagement Force - 4 oz. (113 g) minimum with .045" (1.14 mm) square or round pin.
 Model 2145-B is 2 oz. (57 g) minimum

Terminal Retention to Housing
 8 lbs. (3.63 kg) minimum

Wire Pullout Forces (Crimp)
 18 AWG - 20 lbs. (9.07 kg)
 20 AWG - 15 lbs. (6.81 kg)
 24 AWG - 8 lbs. (3.63 kg)
 26 AWG - 5 lbs. (2.27 kg)

G

ASSORTMENT
ASSORTIMENT 805-502

molex® **KK®**
Interconnection
System .100"
(2.54 mm)
Centre Spacing

235 CONNECTORS
350 TERMINALS

Drawer Size: 13-3/8" x 9-1/4" x 2"
 Drawers will fit into the Slide Racks shown on page A2



Name	Product Type	Angle	Spenaaur No.	Number of Contacts	Qty.	Page
Molex KK International System	PCB Connector	Right Angle	700-101	10	10	G55
	Top Entry PCB Connector		700-103			
	Bottom Entry PCB Connector	Straight	700-102			
	Square Pin Straight Wafer		700-104			
	Crimp Terminal		700-105			
			700-510	1	350	
			700-114	2	10	
	Friction Lock Wafer	Straight	700-115	3	5	
			700-116	4		
			700-117	5		
			700-118	6		
			700-119	10		
		Right Angle	700-108	4	10	
			700-109	5		
			700-110	6		
700-111			7			
700-112			8			
Molex KK International System Connector & Terminal Housings			700-093	2	15	
			700-094			3
			700-095			4
			700-096	5		
			700-138	6		
			700-098	7		
			700-099	8		
700-100	10	10				
Name	Tool Type	Spenaaur No.	For Use With	Qty.	Page	
Tools	Crimping Tool	876-482	Installing 0.093 terminals	1	G54 G55 G56 G60	
	Extraction Tool	876-485	Removing Terminals		G55	

CATALOG 14

SPAENAUR

G60