POSEIDON SCIENTIFIC INSTRUMENTS PTY LTD
17 QUEEN VICTORIA ST, FREMANTLE WA 6160. PHONE (08) 9430 6639 FAX (08) 9335 4650

CABLE DRAWING: **CAB-0XXX (SALEM CODE)**

DRAWING TITLE:
SBC RJ45 Internal Cable

DRAWING NO.:	DRAWN BY:	DATE: 5-Jan-10	REV:
MWACAB-0033	**DRC**	SHEET: 1 of 3	**A**

Cable Detail:

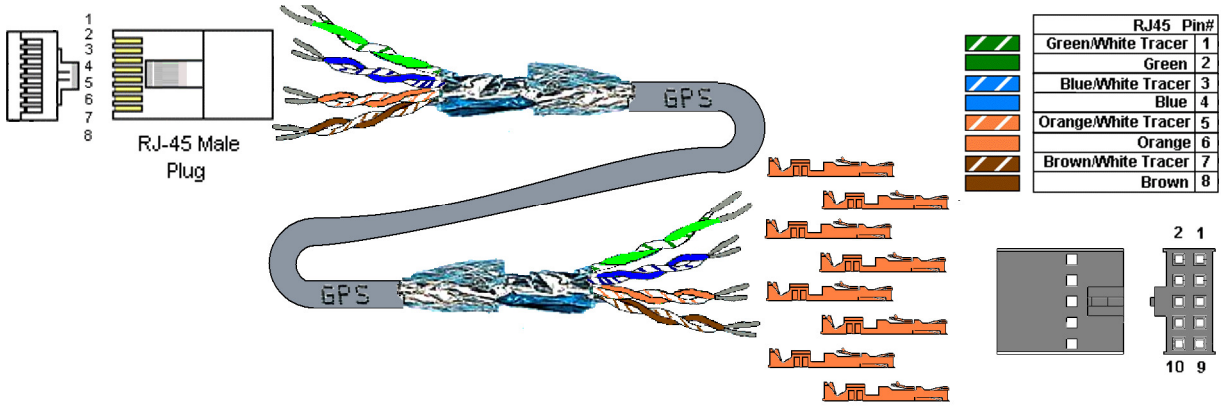
Connectors:	Description	Parts (Qty)
SBC-FP	Plug RJ45 TYCO 5-569552-3	See Note1 Below(1)
SBC-P4/6	MOLEX – 90142-0010 – Housing - 2row 10Way	See Note2 Below(1)
SBC-P4/6	Crimp Socket, 22-24AWG MOLEX 90119-2110	See Note3 Below(8)
Conductors:		
	Shielded Ethernet Cable REX GPS	See Note4 Below(?)

Overall Length ??+/-5mm

Notes:

1. The RJ-45 Plug can be supplied from Farnell #120-5942. Any equivalent will be OK refer to data sheets supplied with this drawing.
2. The Housing can be supplied from Farnell #392-1583. Any equivalent will be OK refer to data sheets supplied with this drawing.
3. The Housing Pins can be supplied from Farnell #973-3272. Any equivalent will be OK, but must match the housing refer to data sheets supplied with this drawing.
4. The cable can be supplied from Farnell #126-8071. Any equivalent will be OK, but must match the housing refer to data sheets supplied with this drawing.

Typical Drawing:



REVISION

Date	Rev	Remarks
05/01/10	A	Draft

POSEIDON SCIENTIFIC INSTRUMENTS PTY LTD
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CABLE DRAWING: **CAB-0XXX (SALEM CODE)**

DRAWING TITLE:
SBC RJ45 Internal Cable

DRAWING NO.:	DRAWN BY:	DATE: 5-Jan-10	REV:
MWACAB-0033	**DRC**	SHEET: 2 of 3	**A**

Connection Table:

SBC FP	Description		SBC-P4/6
Pins(8)	**P4**	**P6**	Pins(10)
1	SDA	SCTN1	1
2	Shield	SCTN2	2
3	SCL	NC	3
4	+3V3	NC	4
5	+3V3	NC	5
6	+5V	NC	6
7	+5V	NC	7
8	0V	NC	8
	NC	NC	9
	NC	NC	10

Connection Detail:

From: (SBC FP) Attached to the SBC Front Panel
To: (SBC PCB P4/6) Attach to the SBC PCB P4/6

Note: This cable is used in two places. P4 is CLK-Mod I2C and P6 is SCTN.

REVISION

Date	Rev	Remarks
05/01/10	A	Draft

POSEIDON SCIENTIFIC INSTRUMENTS PTY LTD
17 QUEEN VICTORIA ST, FREMANTLE WA 6160. PHONE (08) 9430 6639 FAX (08) 9335 4650

CABLE DRAWING: **CAB-0XXX (SALEM CODE)**

DRAWING TITLE:
SBC RJ45 Internal Cable

DRAWING NO.:	DRAWN BY:	DATE: 5-Jan-10	REV:
MWACAB-0033	**DRC**	SHEET: 3 of 3	**A**

Assembly Details:

CRIMPING & STRIPPING

Wire Preparation

The wire must be stripped to the dimension provided in Figure 2.

Do not nick, scrape, or cut the wire conductor during the stripping operation.

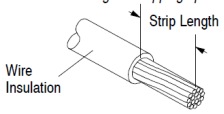


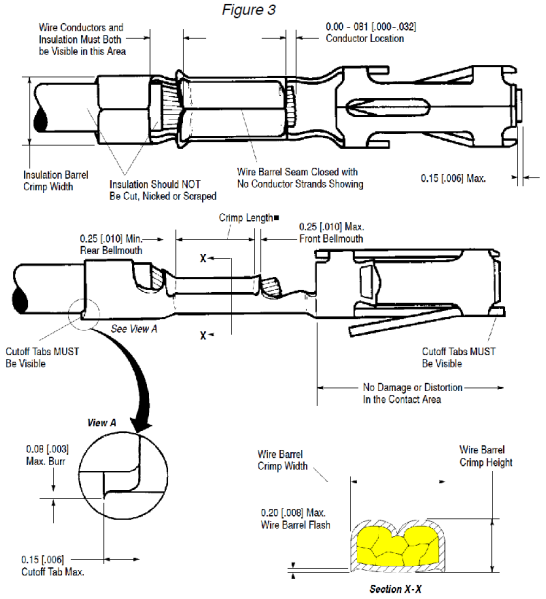
Figure 2

WIRE SIZE RANGE, (AWG)	INSUL DIA MAX.	STRIP LENGTH	WIRE BARREL		INSUL BARREL CRIMP WIDTH
			CRIMP HEIGHT	CRIMP WIDTH	
20	•	4.78–3.58	0.94–0.72	1.4	1.57
22	•	4.78–3.58	0.84–0.72		
24	•	4.78–3.58	0.83–0.64		
22	1.55	4.37–2.77	0.97–0.81	1.07	
24	1.55	4.37–2.77	0.86–0.71		
26	1.55	4.37–2.77	0.81–0.71		
26–30	1.22	4.37–2.77	0.74–0.64	1.4	
27, 28	1.02	4.37–2.77	0.61–0.51	0.84	1.4
30, 32	1.02	4.37–2.77	0.61–0.48		

Crimp Length

For optimum crimp effectiveness, the crimp must be within the area shown and must meet the crimp dimensions provided in Figure 3. Effective crimp length shall be defined as that portion of the wire barrel, excluding bellmouth(s), fully formed by the crimping tool.

Figure 3



NOTE: *Comparing a crimped contact to an uncrimped contact should reveal any fault that may have occurred to front shoulder or locking lances during crimping.*

■Effective crimp length shall be 2.67 mm minimum for 20–24 AWG wire, and 2.16 mm minimum for all other wire sizes; and is defined as that portion of the wire barrel fully formed by the tool, excluding the bellmouths.

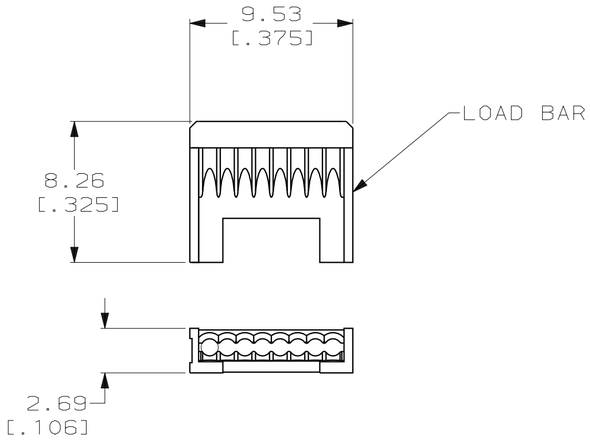
REVISION

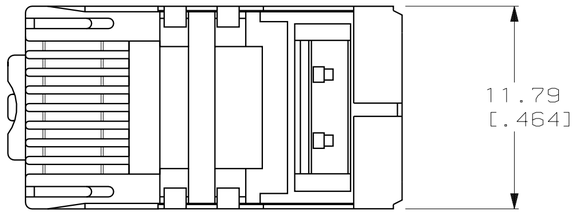
Date	Rev	Remarks
05/01/10	A	Draft

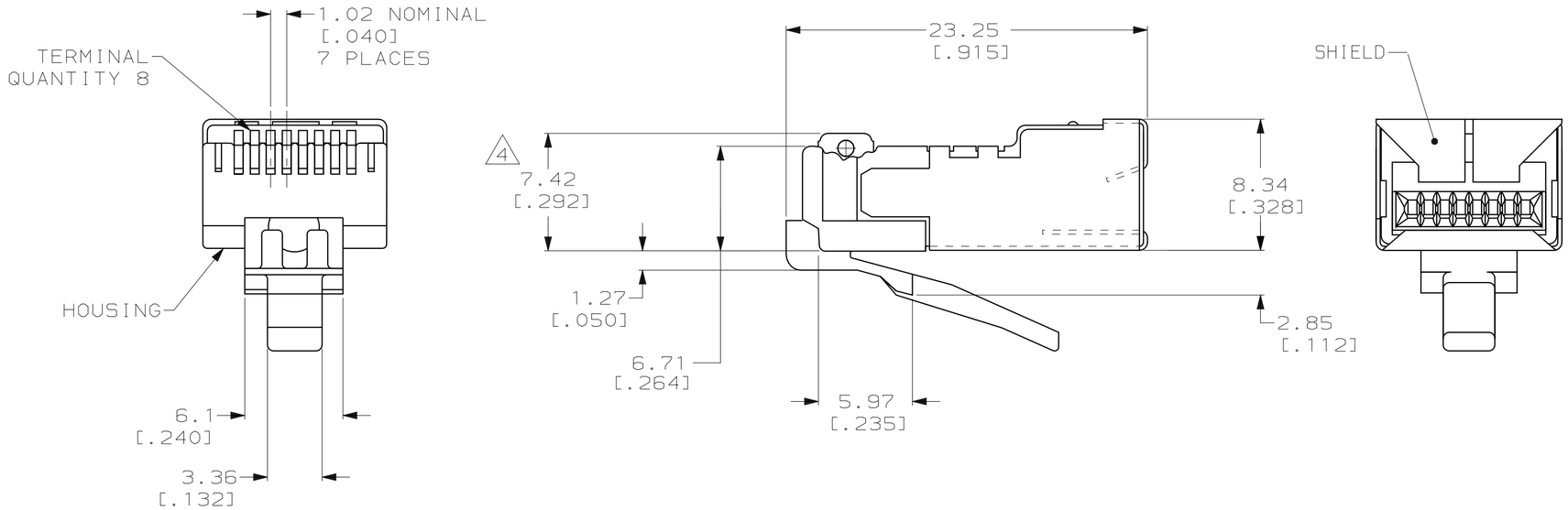
LOC	DIST
AA	22

REVISIONS

P	LTR	DESCRIPTION	DATE	DWN	APVD
	A	REVISED PER EC 0S15-0123-03	11APR03	DD	EL







1. DIMENSIONS ARE MAXIMUM UNLESS OTHERWISE SPECIFIED.

2. MATERIAL: HOUSING - POLYCARBONATE, CLEAR
TERMINAL - PHOSPHOR BRONZE, PLATED WITH 1.27µm [.000050] MINIMUM THICK GOLD IN LOCALIZED GOLD PLATE AREA, GOLD FLASH OVER THE REMAINDER, OVER 2.54µm [.000100] MINIMUM THICK NICKEL UNDERPLATE.
SHIELD - COPPER ALLOY WITH 1.27µm[.000050] MINIMUM SEMI-BRIGHT(SATIN) NICKEL.
LOAD BAR - PBT POLYESTER, BLACK.

3. PLUG WILL ACCEPT A 24 OR 26 AWG STRANDED CONDUCTOR, PROVIDED THE INSULATED CONDUCTOR DIAMETER IS 0.89[.035] TO 0.99[.039] WITH A SHIELDED, PLIABLE, LOOSE CABLE JACKET OF 4.83[.190] TO 5.21[.205] DIAMETER OR A SHIELDED, RIGID, HARD CABLE JACKET OF 4.83[.190] TO 5.08[.200] DIAMETER.

4. TERMINATED DIMENSION 6.15 [.242] MAXIMUM.

5. PACKAGED 500 ASSEMBLIES AND 500 LOAD BARS PER CARTON.

6. PACKAGED 100 ASSEMBLIES AND 100 LOAD BARS PER BOX.

7. PACKAGED 25 ASSEMBLIES AND 25 LOAD BARS PER BAG.

LEAD FREE

PACKAGED	PART NUMBER
7	5-569552-4
6	5-569552-3
5	5-569552-2

THIS DRAWING IS A CONTROLLED DOCUMENT FOR AMP INCORPORATED. IT IS SUBJECT TO CHANGE AND THE CONTROLLING ENGINEERING ORGANIZATION SHOULD BE CONTACTED FOR THE LATEST REVISION.

DIMENSIONS: mm [INCHES]

TOLERANCES UNLESS OTHERWISE SPECIFIED:
0 PLC ±-
1 PLC ±-
2 PLC ±-
3 PLC ±-
4 PLC ±-
ANGLES ±-
1

MATERIAL 2
FINISH 2

DWN G. GARRETT 10-12-95
CHK C. WHITT 10-31-95
APVD E. LAURER 11-7-95
PRODUCT SPEC 108-1163
APPLICATION SPEC 114-6053
WEIGHT –

AMP Incorporated
Harrisburg, PA 17105-3608

NAME
MODULAR PLUG ASSEMBLY,
8 POSITION,SHIELDED,ROUND CABLE,
STRANDED WIRE,HIGH PERFORMANCE

SIZE	CAGE CODE	DRAWING NO
A2	00779	C-569552

CUSTOMER DRAWING

SCALE	SHEET	REV
4:1	1 OF 1	A

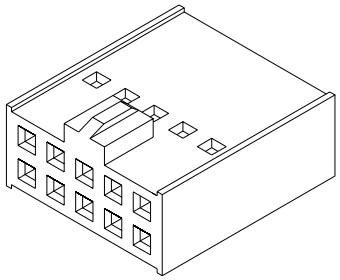
569552

FEATURES AND SPECIFICATIONS

2.54mm (.100") Pitch C-Grid III™ Crimp Connector Housing

90142

Dual Row



Features and Benefits
- Sizes 6 to 64 circuits
- Polarized
- Friction lock

Reference Information
Product Specification: PS-99020-0001
Packaging: Bag
Mates With: 90122, 90130 and 90131
Use With: 90119
Designed In: Inches

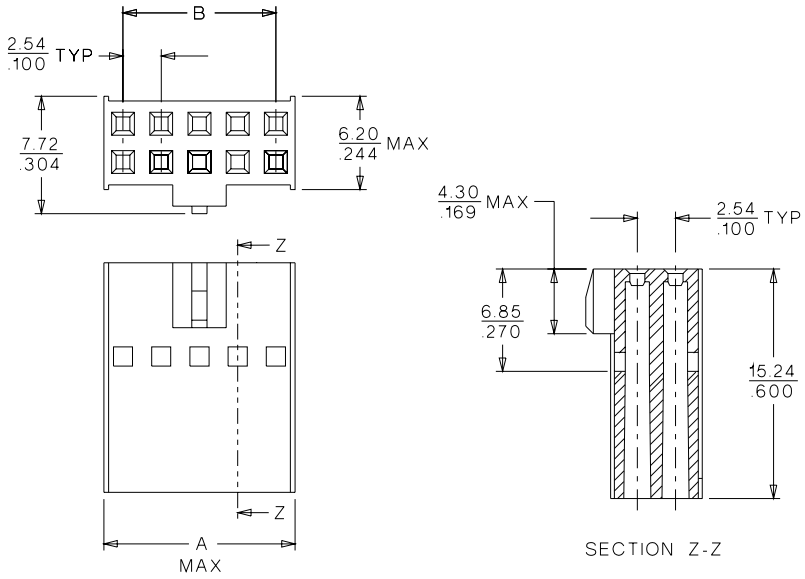
Electrical
Voltage: 350V
Current: 3.0A max.
Contact Resistance: 20mΩ max.
Insulation Resistance: 1000 MΩ min.

Mechanical
Contact Retention to Housing: 15N min.
Normal Force: 1N

Physical
Housing: Black polyphenylene oxide, UL 94V-1
Operating Temperature: -55 to +105˚C

CATALOG DRAWING (FOR REFERENCE ONLY)

Not For Use With Molex SL™ Components



Delivered on a carrier with 20 pieces per strip.

Actual Size

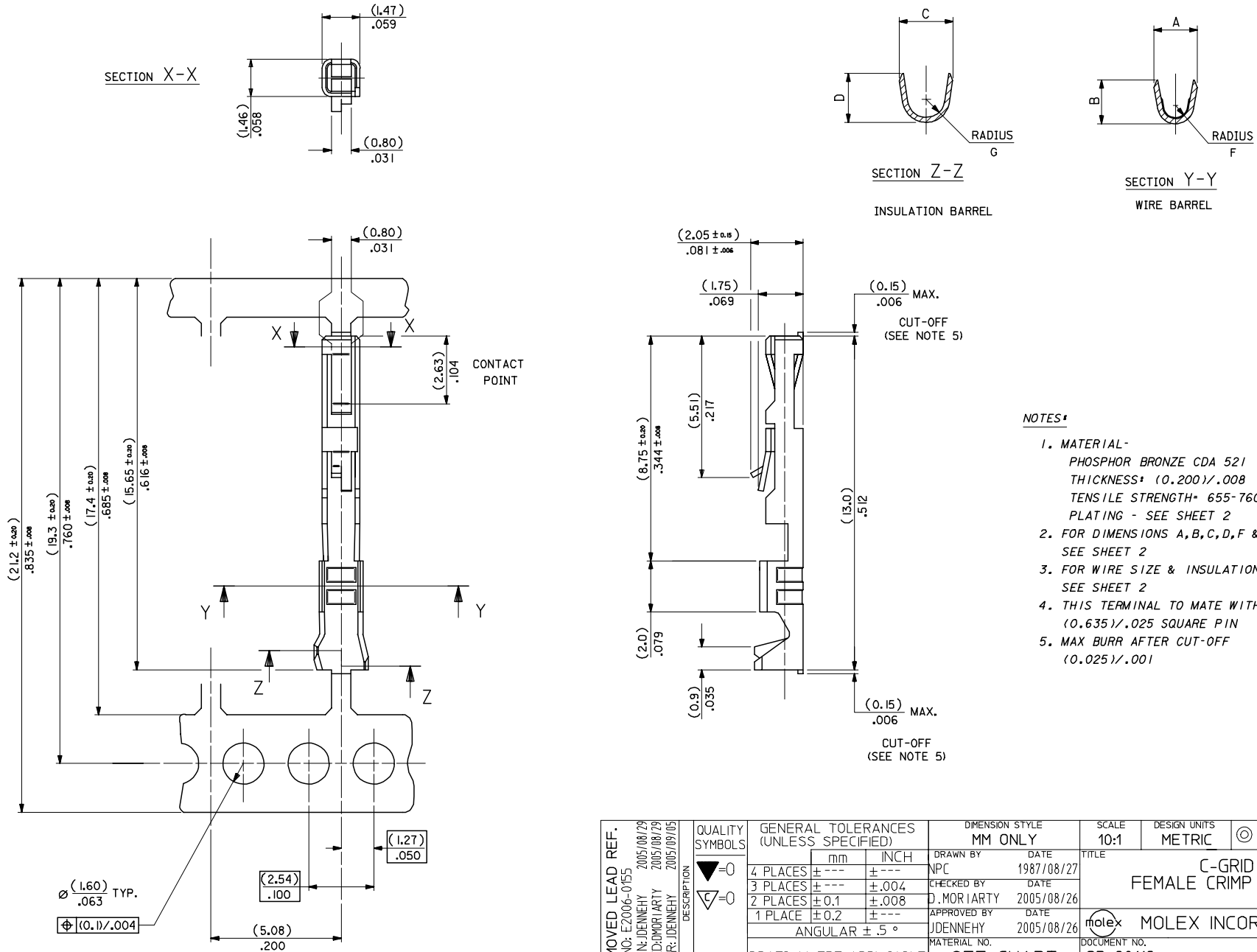
Universal Polarizing Pin
40713-1
Order No. 15-04-0292

ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No.	Dimension	
		A	B
6	90142-0006	7.77 (.306)	5.08 (.200)
8	90142-0008	10.31 (.406)	7.62 (.300)
10	90142-0010	12.85 (.506)	10.16 (.400)
12	90142-0012	15.39 (.606)	12.70 (.500)
14	90142-0014	17.93 (.706)	15.24 (.600)
16	90142-0016	20.47 (.806)	17.78 (.700)
18	90142-0018	23.01 (.906)	20.32 (.800)
20	90142-0020	25.55 (1.006)	22.86 (.900)
22	90142-0022	28.09 (1.106)	25.55 (1.006)
24	90142-0024	30.63 (1.206)	27.94 (1.100)
26	90142-0026	33.17 (1.306)	30.48 (1.200)

Circuits	Order No.	Dimension	
		A	B
30	90142-0030	38.25 (1.506)	35.56 (1.400)
34	90142-0034	43.33 (1.706)	40.64 (1.600)
36	90142-0036	45.87 (1.806)	43.18 (1.700)
38	90142-0038	48.41 (1.906)	45.72 (1.800)
40	90142-0040	50.95 (2.006)	48.26 (1.900)
44	90142-0044	56.03 (2.206)	53.34 (2.100)
50	90142-0050	63.65 (2.506)	60.96 (2.400)
54	90142-0054	68.73 (2.706)	66.06 (2.600)
60	90142-0060	76.35 (3.006)	73.66 (2.900)
64	90142-0064	81.43 (3.206)	78.74 (3.100)
68	90142-0068	86.51 (3.406)	83.82 (3.300)

For other available circuit sizes contact Molex



NOTES:

1. *MATERIAL-*
   PHOSPHOR BRONZE CDA 521
   THICKNESS: (0.200)/.008
   TENSILE STRENGTH= 655-760 N/mm²
   PLATING - SEE SHEET 2
2. *FOR DIMENSIONS A,B,C,D,F & G SEE SHEET 2*
3. *FOR WIRE SIZE & INSULATION DIA SEE SHEET 2*
4. *THIS TERMINAL TO MATE WITH (0.635)/.025 SQUARE PIN*
5. *MAX BURR AFTER CUT-OFF (0.025)/.001*

REMOVED LEAD REF.
EC NO: E2006-0155
DRWN: JDENNEHY 2005/08/29
CH'KD: DMORIARTY 2005/08/29
APPR: JDENNEHY 2005/09/05
DESCRIPTION
REV
K

QUALITY SYMBOLS
▼=0
▽=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± .004
2 PLACES	± 0.1	± .008
1 PLACE	± 0.2	± ---

ANGULAR ± .5 °

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

DIMENSION STYLE: MM ONLY
SCALE: 10:1
DESIGN UNITS: METRIC
THIRD ANGLE PROJECTION

DRAWN BY: NPC DATE: 1987/08/27
CHECKED BY: D.MORIARTY DATE: 2005/08/26
APPROVED BY: JDENNEHY DATE: 2005/08/26

TITLE: C-GRID III FEMALE CRIMP TERMINAL

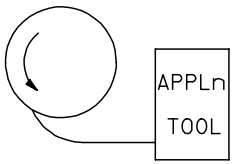
MOLEX INCORPORATED

MATERIAL NO.: SEE CHART
DOCUMENT NO.: SD-90119
SHEET NO.: 1 OF 2

SIZE: A2

PART No	PLATING	REELING	WIRE SIZE (AWG)	INSULATION RANGE	CRIMP DIMENSIONS: WIRE BARREL A ±(0.15)/.006	WIRE BARREL B ±(0.15)/.006	WIRE BARREL F ±(0.15)/.006	INSULATION BARREL C ±(0.15)/.006	INSULATION BARREL D ±(0.15)/.006	INSULATION BARREL G ±(0.15)/.006
90119-0109	A	L.H FEED	22,24	(1.02-1.47) .040-.058	(1.70) .067	(1.70) .067	(0.51) 0.20	(2.10) .083	(1.90) .075	(0.70) 0.27
-0110	E									
-0111	F									
-0120	A		26,28	(0.76-1.22) .030-.048	(1.37) .054	(1.37) .054	(0.28) 0.11	(2.00) .079	(1.70) .067	(0.60) 0.24
-0121	E									
-0122	F									
-2109	A	LOOSE PIECE PARTS	22,24	(1.02-1.47) .040-.058	(1.70) .067	(1.70) .067	(0.51) 0.20	(2.10) .083	(1.90) .075	(0.70) 0.27
-2110	E									
-2111	F									
-2120	A		26,28	(0.76-1.22) .030-.048	(1.37) .054	(1.37) .054	(0.28) 0.11	(2.00) .079	(1.70) .067	(0.60) 0.24
-2121	E									
90119-2122	F									

TYPE	PLATING
A	PRE-PLATED HOT DIP TIN (1.0 to 2.5 um)/.00004 TO .0001
E	(1.27 TO 1.78um)/.00005 TO .00007 NICKEL OVERALL. (0.38 TO 0.64um)/.000015 TO .000025 GOLD ON CONTACT AREA. (3.0 TO 5.0 um)/.00012 TO .0002 TIN ON TERMINATION AREA.
F	(1.27 TO 1.78um)/.00005 TO .00007 NICKEL OVERALL. (0.76 TO 01.0 um)/.00003 TO .00004 GOLD ON CONTACT AREA. (3.0 TO 5.0 um)/.00012 TO .0002 TIN ON TERMINATION AREA.



L.H FEED

REMOVED LEAD REF.
EC NO: E2006-0155
DRWN: JDENNEHY 2005/08/29
CHKD: DMORIARTY 2005/08/29
APPR: JDENNEHY 2005/09/05
DESCRIPTION
K
REV

QUALITY SYMBOLS
▼=0
▽C=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± ---
2 PLACES	± ---	± ---
1 PLACE	± ---	± ---
ANGULAR ±---°		

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

DIMENSION STYLE: MM ONLY
SCALE: ---
DESIGN UNITS: METRIC
THIRD ANGLE PROJECTION

DRAWN BY: KS DATE: 1987/09/01
CHECKED BY: DMORIARTY DATE: 2005/08/26
APPROVED BY: JDENNEHY DATE: 2005/08/26
MATERIAL NO.: SEE CHART

TITLE: C-GRID III FEMALE CRIMP TERMINAL

molex MOLEX INCORPORATED

DOCUMENT NO.: SD-90119
SHEET NO.: 2 OF 2
SIZE: A3

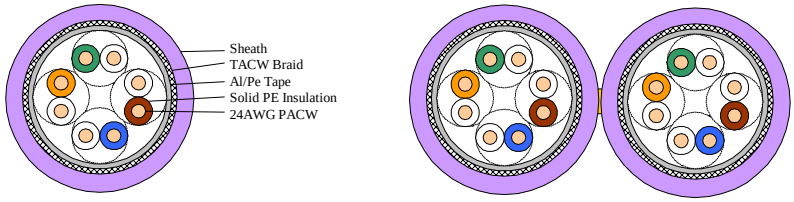
SF/UTP, 100Ω, 4x2xAWG24/1, premium grade Category 5e cables for installation in horizontal and backbone areas

Network Applications:
CCITT I.430 (1) ISDN 0,64/2 Mbit/s; Ethernet IEEE 802.3 10 BaseT 10 Mbit/s; Token Ring IEEE 802.5 4/16 Mbit/s; IEEE 802.12 100 VG AnyLAN 100 Mbit/s; IEEE 802.3u Fast Ethernet 100 BaseT 100 Mbit/s; DQDB; Video; ANSI X3T9.5 FDDI TP-PMD 125 Mbit/s; ATM Forum 155 Mbit/s; IEEE 802.3ab Gigabit Ethernet 1000 BaseT

Applicable Cable & Cabling Standards:
ISO 11801:1995; ISO 11801:1995 & A1,A2:1999; FDIS ISO 11801:2002; FDIS ISO 61156-5
EN 50173:1995 & A1:2000; prEN 50173:2002; EN50167, EN 50169, prEN 50288-2-1

Conformance verified by:
3P Third Party Testing, Denmark

Cable Structure:



Core

Conductor:	24 AWG Plain Annealed Copper Wire
Insulation:	Polyolefin
Diameter:	1.10 mm nominal
Pair:	2 of the above cores
Pair colour code:	Blue -White/Blue, Orange - White/Orange, Green - White/Green, Brown - White/Brown

Final Assembly

Cable:	4 of the above pairs
Binder:	Wrapped with polyester tape, 100% coverage
Tape screen:	Wrapped with aluminium polyester tape, applied metal side out
Braid screen:	0.127mm Tinned Annealed Copper Wire, 30% minimum coverage
Sheath:	RAL 7037 Grey PVC or RAL 4005 Violet, flame retardant, zero halogen, thermoplastic, polyolefin compound

Example of print legend for GPS
BRAND-REX LTD GPS 4 PAIR 24 AWG GigaPlus Rev 1 S-FTP IEC 60332-1 ENHANCED CATEGORY 5 EN 50173 + ISO/IEC 11801 + TIA/EIA 568B NVP 68% WWYY ββββββ ******
(WWYY = Week/Year of manufacture, ββββββ = batch number, ****** = sequential metre mark)

Brand-Rex Part No.	GPS	GPS-D	GPS-HF1	GPS-HFI-D	GPS-HF3	GPS-HF3-D
Outer sheath	PVC	PVC	LSF/OH	LSF/OH	FR-LSF/OH	FR-LSF/OH
Construction	Simplex	Duplex	Simplex	Duplex	Simplex	Duplex
Cable weight	48.9 Kg/km	97.8 Kg/km	51.0 Kg/km	102.0 Kg/km	58.8 Kg/km	117.6 Kg/km
Calorific value	0.14 kWh/m	0.28 kWh/m	0.12 kWh/m	0.24 kWh/m	0.16 kWh/m	0.32 kWh/m
Outer diameter (nom.)	6.1 mm	12.2 x 6.1 mm	6.1 mm	12.2 x 6.1 mm	6.7 mm	13.4 x 6.7 mm
Sheath colour	Grey RAL 7037		Violet RAL 4005			
Fire Safety rating	IEC 60332 Part 1				IEC 60332 Part 3c	
Acid Gas Emissions	na		IEC 60754-2			
Smoke Index	na		IEC 61034			

Rev	Date	Author	Review	Amendment
	26/04/01	PS	JW	First issue replacing DAT5790
1	19.11.02	KGH	PK,JW	Changed format & updated specs., added typicals

Description:
Communication Cable
SF/UTP, 100Ω, 4x2xAWG24/1

Datasheet No. G40547

Headquarters and Registered Offices : Glenrothes Fife KY6 2RS, Scotland **Tel+44 (0) 1592 772124** **Fax +44 (0) 1592 775314**

Mechanical characteristics

Minimum bend radius: 8 x Outer Diameter (installation) & 4 x Outer Diameter (operational)
Temperature range: 0 to50 °C (installation) & -20 to 75 °C (operational)
Max Tensile load: 10kg simplex cable (installation)

Electrical Characteristics @ 20°C

Characteristic	Specification	Typical performance
Conductor Loop Resistance	Max 19 Ω/100m	16 Ω/100m
Conductor Resistance Unbalance	Max 2 %	0.5 %
Dielectric Strength	1.0kV d.c. or 0.7kV a.c. for 1min	100% in process test
Insulation resistance	>500 MΩ.km @ 100-500V test voltage	>5 GΩ.km
Capacitance Unbalance to Earth	Max 1600 pF/km	40 pF/km
Velocity of Propagation	<537.6 nS/100m @100MHz	496 nS/100m @100MHz (NVP for hand held testers = 0.68)
Skew	Max 40 nsec/100m @100MHz	25 nsec/100m @100MHz
Mean Characteristic Impedance	100 Ω ± 5Ω @ 100 MHz	100 Ω ± 3Ω @ 100 MHz
Transfer Impedance	Max 100 mΩ/m @ 10MHz	20 mΩ/m @ 10MHz (ISO 61156 grade 2 cable - see fig 2)
Coupling Attenuation up to 1GHz (ffs)	Min 55dB	80dB

frequency (MHz)		1	4	10	16	20	31.25	62.5	100	*155*	*200*	*250*
Insertion Loss (dB/100m)	Spec*	2.1	4.0	6.3	8.0	9.0	11.4	16.5	21.4	*na*	*na*	*na*
	Typical	*2.0*	*3.8*	*6.0*	*7.6*	*8.6*	*10.8*	*15.8*	*20.4*	*26.1*	*30.3*	*34.5*
NEXT (dB)	Spec*	65.3	56.3	50.3	47.2	45.8	42.9	38.4	35.3	*na*	*na*	*na*
	Typical	*73.3*	*64.3*	*58.3*	*55.2*	*53.8*	*50.9*	*46.4*	*43.3*	*40.4*	*38.8*	*37.3*
PSNEXT (dB)	Spec*	62.3	53.3	47.3	44.2	42.8	39.9	35.4	32.3	*na*	*na*	*na*
	Typical	*70.3*	*61.3*	*55.3*	*52.2*	*50.8*	*47.9*	*43.4*	*40.3*	*37.4*	*35.8*	*34.3*
ELFEXT (dB/100m)	Spec*	63.8	51.8	43.8	39.7	37.8	33.9	27.9	23.8	*na*	*na*	*na*
	Typical	*78.8*	*66.8*	*58.8*	*54.7*	*52.8*	*48.9*	*42.9*	*38.8*	*35.0*	*32.8*	*30.8*
PSELFEXT (dB/100m)	Spec*	60.8	48.8	40.8	36.7	34.8	30.9	24.9	20.8	*na*	*na*	*na*
	Typical	*76.8*	*64.8*	*56.8*	*52.7*	*50.8*	*46.9*	*40.9*	*36.8*	*33.0*	*30.8*	*28.8*
Return loss (dB)	Spec*	*na*	23.0	25.0	25.0	25.0	23.6	21.5	20.1	*na*	*na*	*na*
	Typical	*25.0*	*28.0*	*30.0*	*30.0*	*30.0*	*28.6*	*26.5*	*25.1*	*23.8*	*23.0*	*22.3*
ACR (dB/100m)	*Typical*	*71.3*	*60.5*	*52.3*	*47.6*	*45.2*	*40.0*	*30.6*	*22.9*	*14.3*	*8.5*	*2.9*
PSACR (dB/100m)	*Typical*	*68.3*	*57.5*	*49.3*	*44.6*	*42.2*	*37.0*	*27.6*	*19.9*	*11.3*	*5.5*	*-0.1*

*prEN50288-2-1 December 2001

Figure 1: ACR chart

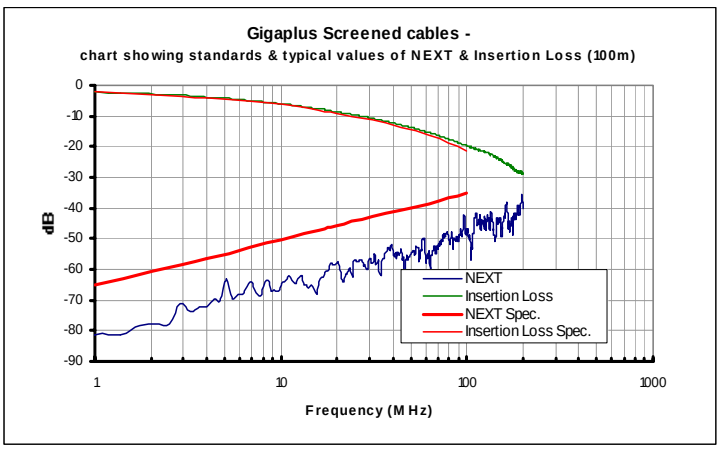


Figure 2: STI chart