



PRODUCT SPECIFICATION

LANGUAGE

ENGLISH

1.0 SCOPE

This specification covers the (1.27) / .050 centerline, single beam QF50 connector series. The full product covered in this specification consists of: Female (lower) housing containing single beam (selective gold plated) terminals which, with an upper housing is terminated to the appropriate ribbon cable using Insulation Displacement Technology. Optional strain relief is then fitted and the whole assembly mates with the header assembly.

2.0 PRODUCT DESCRIPTION

2.1 Product Description:

Part Name	Part Number
Female Assembly	90635-****
Header Assembly	90663-**** & 90571-**** & 90572-****
Strain Relief	90170

2.2 Materials, Platings, and Markings:

See the appropriate Sales drawings for information on materials, platings and markings.

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See the appropriate Sales Drawings and any other sections of this specification for the necessary referenced documents and specifications. See section 9.0 of this documents for test sequence.

4.0 RATINGS

4.1.	Voltage:	250 Volts AC or DC
4.2	Current and Applicable Wires	
	AWG	Amps
	26 stranded	1
	28 stranded	1
	28 solid	1
4.3	Operating Temperature:	-25 °C to +85°C
	Non Operating temperature:	-25 °C to +85°C

REV	B	B	B	B	B	B	B	B	
SHT	1	2	3	4	5	6	7	8	
REVISE ON PC ONLY						TITLE PRODUCT SPECIFICATION QIK FLECS 50 SINGLE BEAM COONNECTOR FAMILY			
B	90572-**** ADDED E2008-0129 07.09.12 DB					THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION			
REV	DESCRIPTION								
DESIGN CONTROL MOLEX IRELAND LTD				STATUS M		WRITTEN BY: POB	CHECKED BY: MG	APPROVED BY :	DATE : YR/MO/DAY 93/01/12
DOCUMENT NO. PS-99020-0015						FILE PS99020_0015.DOC		SHT NO. 1 of 8	
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5.0 PERFORMANCE SPECIFICATIONS

5.1 Electrical Performance

Item	Test Condition	Requirement
Contact Resistance (Low Level)	Mated Connectors with a maximum voltage of 20 mV and a current of 10 mA. (See section 7.2)	20 mOhms max.
Insulation Resistance	Mate connectors with 500 VDC between adjacent terminals and between terminals and ground	1000 MegOhms min.
Dielectric Strength	Apply a voltage of 500 VAC for 1 minute between adjacent terminals and between terminals & ground	No breakdown

5.2 Mechanical Performance

Gauge Extraction Force	Gauges attached to a weight (70g) inserted into contact (see section 7.1)	Contact must hold gauge when held aloft.
Connector Insertion Withdrawal	Insert and withdraw & mating connectors at a rate (25 6mm) / 1 0.25" per minute	Max. Ins. 350 g Min. With. 160g x cct size x cct size
Durability	Mate connectors at 10 cycles/minute to 300 cycles...GS2 plating 100 cycles...GS3 plating 50 cycles.....GS1 plating	Contact Resistance Cycles Initial 20 mOhms max. Final 40 mOhms max.
Vibration	Amplitude: (1.5mm) / .060" peak to peak Sweep: 10-55-10 Hertz in 1minute Duration: 2 hours in each X-Y-Z axis (See section 7.3)	Appearance: No Damage Contact Resistance: 20 mOhms max change from initial. Discontinuity: 1 micro-sec. max

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Item	Test Condition	Requirement
Mechanical Shock	50 G's with three shocks in each X-Y-Z axis	Appearance: No Damage Contact Resistance: 20 mOhms max change from initial Discontinuity: 1 micro-second max.
Upper Housing Retention Force	Upper housing removed from lower housing by a force applied to cable at (25 6mm)/1 0.25" per minute (See section 7.4)	5 kg min.
Pin retention force	Apply axial force to mating end of pin assembled in the header at (25 6mm) /1 0.25" per minute	1.5 kg min.
5.3 Environmental Performance:		
Item	Test Condition	Requirement
Thermal shock	Mate connectors exposed for 5 cycles of: Temp.Duration -55 C 30 minutes +25 C 5 minutes max. +125 C 30 minutes +25 C 5 minutes max.	Appearance: No Damage Contact Resistance: 20 mOhms max change from initial
Thermal Aging	Mate connectors exposed for 1000 hours at 85 2 C	Appearance: No Damage Contact Resistance: 20 mOhms max change from initial
Cyclic Humidity	Mate connectors for 40 continuous cycles as shown in Fig. 5.3. Full test to last for 240 hours	Appearance: No Damage Contact Resistance: 20 mOhms max change from initial

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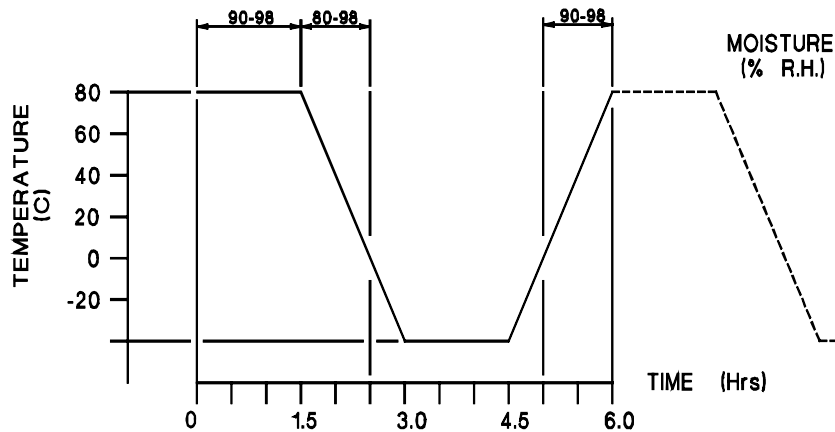


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Figure 5.3



Item	Test Condition	Requirement
Salt Spray	Mate connectors and expose to a 5% NaCl solution for 48 hours at $35 \pm 3 \text{ }^\circ\text{C}$	Appearance: No Damage Contact Resistance: 20 mOhms max change from initial.
Humidity Steady State	Mate connectors and expose to $40 \pm 2 \text{ }^\circ\text{C}$ with relative humidity 90-95% for 96 hours Dielectric Strength: 500 VAC for 1 minute Insulation Resistance: 1000 megOhms min.	Appearance: No Damage Contact Resistance: 20 mOhms max change from initial.
Solderability	Solder time: $3 \pm 0.5 \text{ sec.}$ Solder temperature: $230 \pm 5 \text{ }^\circ\text{C}$	95% of immersed area must show no voids, pin holes, etc.
Resistance to Solder Heat	Solder time: $3 \pm 0.5 \text{ sec.}$ Solder temperature: $260 \pm 5 \text{ }^\circ\text{C}$	Appearance: No Damage

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Corrosive Environment (SO₂ Gas)

Mated connector exposed to 50 ppm SO₂ gas at 40 ± 3 °C for 24 hours

Appearance: No Damage
Contact Resistance: 20 mOhms max change from initial

Temperature Rise

Mate the connectors and measure the contact temperature at the rated current load

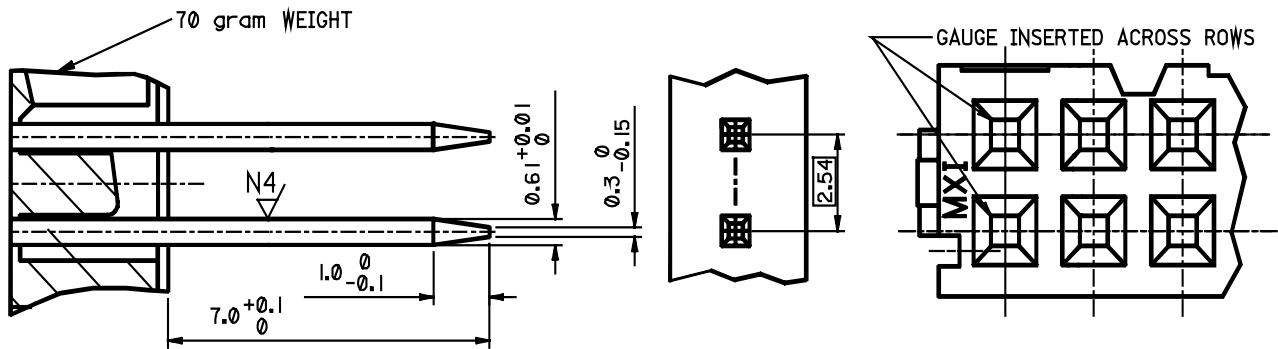
Maximum temperature of the terminal over ambient of 30 °C

6.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage. No styrofoam shall be used in any packaging that comes in direct contact with the connectors.

7.0 GAUGES AND FIXTURES

7.1 Extraction Force Gauge (Part No. : 99002-0190)



7.2 Contact Resistance

The positions to be measured are as shown in figure 7.2. The conductor resistance of the cable shall be subtracted from the measurement value.

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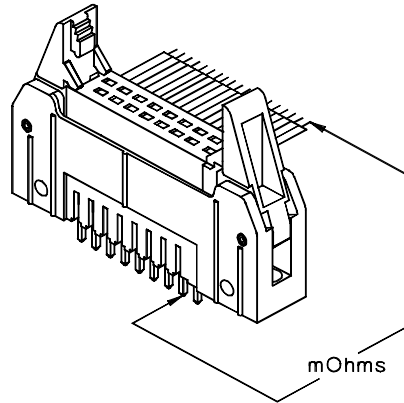


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Figure 7.2



7.3 Vibration

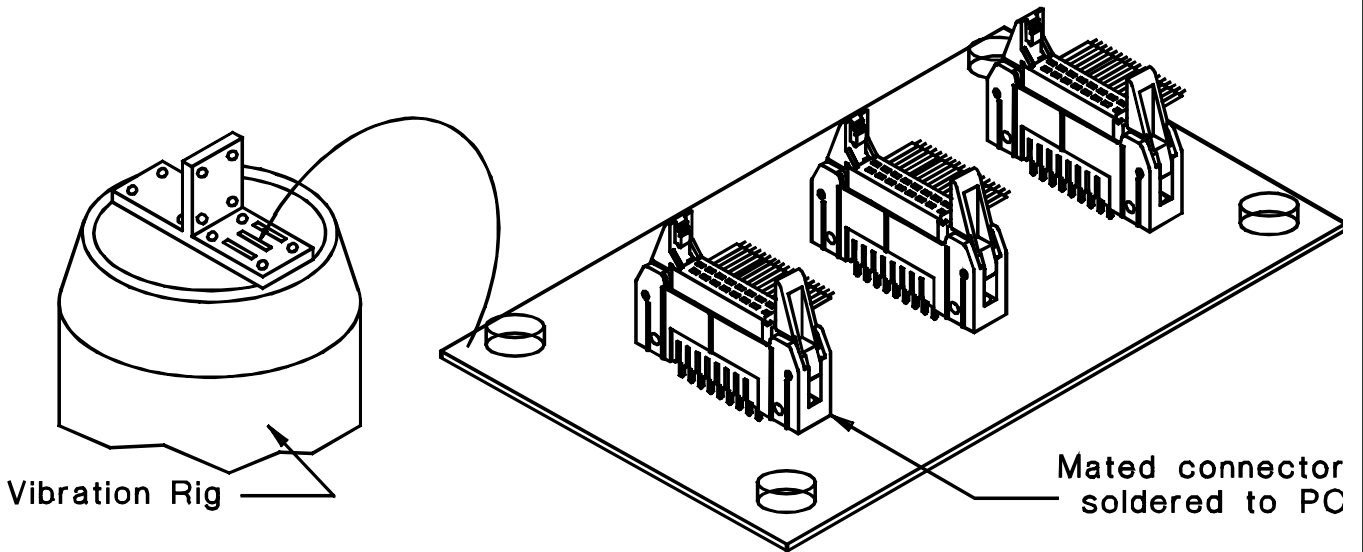
Samples shall be mounted to assure that mounting is free from resonances over the test frequency range (see Fig 7.3).

Samples to be subjected to simple harmonic motion having an amplitude of 1.5mm max.

The frequency range from 10 to 55 Hz and return to 10Hz shall be traversed in 1 minute 5 seconds.

This motion to be applied for 2 hours in each of 3 mutually perpendicular directions (total of 6 hours).

Figure 7.3



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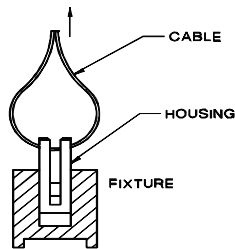
7.4 Upper Housing Retention

Assembled females are to be terminated with ribbon cable as shown in Figure 7.4.

A force shall be applied to the cable at a rate of $(25 \pm 3\text{mm}) / 1 \pm 0.12''$ per minute.

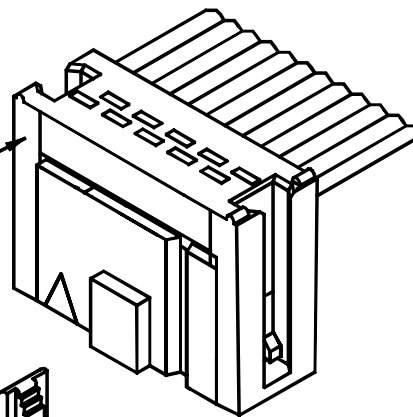
The force required to remove the upper housing shall be measured. The strain relief clamp is not to be fitted. The fixture must not interfere with the movement of the upper housing.

Figure 7.4

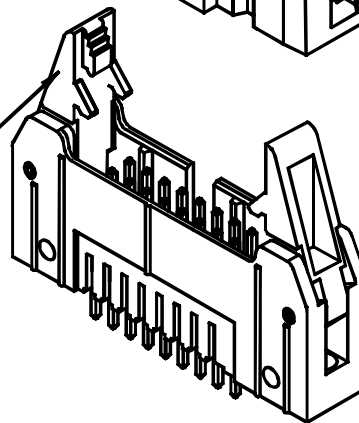


8.0 OTHER INFORMATION

Female Assembly terminated at 1.27mm pitch ribbon cable



Header Assembly with DIN eject levers



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9.0 TEST SEQUENCE

TEST ITEM			TE	ST		GR	OU	P		
	(i-a)	(i-b)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)
VISUAL	6	4	14	6	6	2	2			
TOTAL RESISTANCE	135	1,3	1,5,9 11,13	1,3, 5						
INSULATION RESISTANCE			2,7							
WITHSTANDING VOLTAGE			3,8							
CYCLIC HUMIDITY	2									
MECHANICAL DURABILITY	4				3					
SALT SPRAY		2								
THERMAL SHOCK			4							
HUMIDITY			6							
VIBRATION			10							
MECHANICAL SHOCK			12							
TEMPERATURE LIFE				2						
SULFUROUS ACID GAS				4						
INSERTION/WITHDRAWEL FORCES					1, 4					
GAUGE EXTRACTION FORCE					2, 5					
SOLDERABILITY						1				
RESISTANCE TO SOLDER HEAT							1			
PIN RETENTION FORCE								1		
UPPER HOUSING RETENTION FORCE									1	
TEMPERATURE RISE										1

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