# INTERNATIONAL STANDARD

## IEC 61076-4-108

QC 480301XX0009 First edition 2002-02

## Connectors for electronic equipment -

## Part 4-108:

Printed board connectors with assessed quality – Detail specification for cable-to-board connectors, with a modular pitch of 25 mm and integrated shielding function, applicable for transverse packing density of 15 mm, having a basic grid of 2,5 mm in accordance with IEC 60917-1

© IEC 2002 — Copyright - all rights reserved

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



## CONTENTS

FC	REW	ORD		5	
1	Gen	eral data	a	8	
	1.1	Recon	mmended method of mounting	8	
		1.1.1	Maximum number of contacts		
	1.2	Rating	gs and characteristics		
	1.3	_	ative references		
	1.4		ng		
	1.5		vpe designation		
	1.6	-	ing information		
2	Tech	nnical in	offormation	14	
	2.1	Definit	tions	14	
		2.1.1	Mechanical features		
		2.1.2	Contacts and terminations		
		2.1.3	Engagement sequence		
		2.1.4	Mechanical coding, locking		
	2.2		ys of styles and variants		
		2.2.1	Styles of connectors		
		2.2.2	Survey of termination variants		
•			nation on application		
		2.3.1	Connector pairs		
		2.3.2	Fixed board connectors		
		2.3.3	Free cable connectors	23	
		2.3.4	Accessories	23	
		2.3.5	Shielding and grounding	24	
		2.3.6	Basic styles of the connections		
	2.4	Surve	y of contact arrangements	25	
3	Dimensional information				
	3.1				
			etric view and common features		
			Common features		
		3.2.2	Reference system	28	
		3.2.3	Height dimensions		
		3.2.4	Width dimensions		
		3.2.5	Depth dimensions	31	
	3.3	Mating	g information	31	
		3.3.1	Engaging direction	31	
		3.3.2	Perpendicular to engaging direction		
		3.3.3	Inclination		
	3.4	Fixed	32		
		3.4.1	Dimensions of board connectors	32	
		3.4.2	Dimensions of male contacts	39	

	3.5	.5 Free cable connectors		41	
		3.5.1	Dimensions of cable connectors	41	
		3.5.2	Dimensions of female contacts	45	
	3.6	Access	sories	46	
		3.6.1	Coding devices	46	
		3.6.2	Shielding / ground contact	47	
	3.7	Mounti	ng information for fixed board connectors	48	
		3.7.1	Hole pattern on backplane		
		3.7.2	Hole pattern on printed board (front)	49	
	3.8		ng information for free cable connectors		
	3.9	Gauge	S		
		3.9.1	Sizing and retention force gauges		
		3.9.2	Test gauge for shield / ground contact		
4	Characteristics				
	4.1		c categories		
	4.2	Electric	cal		
		4.2.1	Creepage and clearance distances	51	
		4.2.2	Voltage proof	51	
		4.2.3	Current carrying capacity	52	
		4.2.4	Initial contact resistance	52	
		4.2.5	Initial insulation resistance		
	4.3	Mecha	nical	53	
		4.3.1	Mechanical operation		
		4.3.2	Engaging and separating forces		
		4.3.3	Contact retention in insert		
		4.3.4	Static load, transverse		
		4.3.5	Withdrawal force with gauge		
		4.3.6	Vibration (sinusoidal)		
		4.3.7	Shock		
		4.3.8	Polarizing method		
		4.3.9	Mechanical coding		
			Latching force in male connector body		
			Cable clamp resistance to cable rotation		
			Cable connector drop test		
	4.4	Electro	magnetic compatibility (EMC)		
		4.4.1	Shielding effectiveness		
5	Test	schedul	e	56	
	5.1	Genera	al		
		5.1.1	Arrangement for contact resistance measurement		
		5.1.2	Arrangement for dynamic stress tests		
		5.1.3	Arrangement for testing static load, transverse	58	
		5.1.4	Arrangement for testing insulation resistance, voltage proof and polarization voltage	59	
		5.1.5	Arrangement for flammability test	59	
	5.2	Test so	chedule tables	60	
		5.2.1	Group P – Preliminary		
		5.2.2	Group AP – Dynamic / Climatic		
		522	Group RP Mechanical endurance	6/	

		5.2.4	Group CP – Moisture	65
		5.2.5	Group DP – Electrical load	65
		5.2.6	Group EP – Mechanical resistivity	66
		5.2.7	Group FP – Chemical resistivity	67
		5.2.8	Group GP – Connections	67
		5.2.9	Group HP – Electromagnetic compatibility	67
6	Quality assessment procedures			67
	6.1	Qualifi	ication approval testing	67
		6.1.1	Method 1	67
		6.1.2	Method 2	67
	6.2	Quality	y conformance inspection	68
		6.2.1	Lot-by-lot tests	68
		6.2.2	Periodic tests	69
	6.3	Delaye	ed delivery, re-inspection	69

Annex A (informative) Shielding effectiveness

### INTERNATIONAL ELECTROTECHNICAL COMMISSION

### CONNECTORS FOR ELECTRONIC EQUIPMENT -

Part 4-108: Printed board connectors with assessed quality –
Detail specification for cable-to-board connectors, with a modular pitch
of 25 mm and integrated shielding function, applicable for transverse
packing density of 15 mm, having a basic grid of 2,5 mm
in accordance with IEC 60917-1

#### **FOREWORD**

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61076-4-108 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

The text of this standard is based on the following documents:

FDIS	Report on voting	
48B/1122/FDIS	48B/1170/RVD	

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated when a new edition is prepared.

The QC number that appears on the front cover of this publication is the specification number in the IEC Quality Assessment System for Electronic Components (IECQ).

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

Annex A is for information only.

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.