

Metabee HM2 Series High-speed Backplane Connectors Catalog

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1. Introduction

Metabee HM2 Series connectors provide the basis for building high-performance backplanes for control and industrial computer systems with 19" technology.

Metabee provides 5- and 8-row 2 mm hard metric connectors in accordance with IEC 61076-4-101. The product family covers all standard types, including CompactPCI variations, Hot Swap, and CTI (Computer Telephony Integration). The modules are classified as 5+2 row types A, B, AB, and C, and 8+2 row types D, E, and DE. All male and female connectors come with press-in terminations.

2. Features

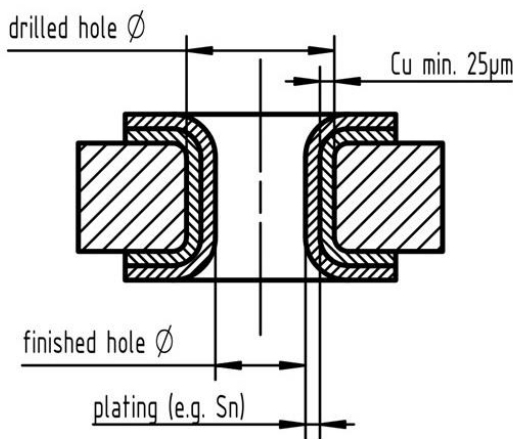
- Compliant to the specifications of the standard IEC 61076-4-101;
- The differential signal transfer rate is 1.25Gbps;
- Excellent contact performance and environmental resilience;
- Various installation methods, power modules, encoding devices, and positioning accessory types;
- Suitable for CPCI, CPCI-E, VME, and ATCA bus systems.

3. Technical Information:

General Information:	
Product Type	High-speed Board-to-board Connector
Design:	IEC 61076-4-101
No. of Contacts	55 – 220 signal (77 – 308 fully shielded); or customized
Contact spacing	2.00 mm
Working current	1A at 70°C
Test voltage $U_{r.m.s.}$	750V AC
Contact resistance	Max. 20 mΩ
Insulation resistance	Min. 10 GΩ
Temperature range	55°C to +125°C
Termination Technology	Press-in
Durability	250 cycles
Mating Force:	0.75N/pin max.
Withdrawal force:	0.15 N/pin min.
Materials	
Mouldings	Thermoplastic resin, glass-fibre filled, UL 94-V0
Contacts	Copper alloy
Male Contact Plating	Au/PdNi/Ni, contacts are treated with Bellcore-recommended lubricant (PPE)
Female Contact Plating	Au/Ni, contacts are treated with Bellcore-recommended lubricant (PPE)
Press-in zone Plating	Ni

4. Recommended configuration of plated through holes

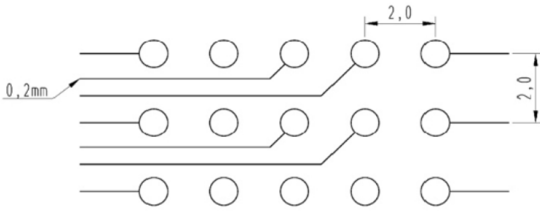
The Metabee HM2 series connectors' press-in zone is EN 60352-5 authorized for use with a plated through-hole measuring 0.60 ± 0.05 mm (drilled hole 0.7 ± 0.02 mm).



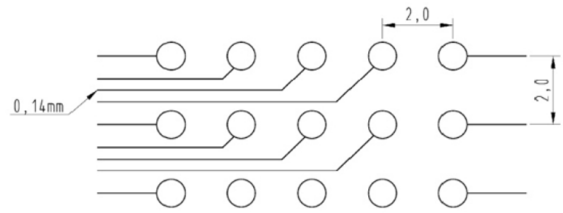
<i>Tin plated PCB (HAL)</i>	Hole-Ø	0.7 ± 0.02 mm
	Cu	min. 25 µm
	Sn	max. 15 µm
	Plated hole-Ø	0.60-0.65 mm
<i>Chemical tin plated PCB</i>	Hole-Ø	0.7 ± 0.02 mm
	Cu	min. 25 µm
	Sn	min. 0.8 µm
	Plated hole-Ø	0.60-0.65 mm
<i>Au / Ni plated PCB</i>	Hole-Ø	0.7 ± 0.02 mm
	Cu	min. 25 µm
	Ni	3-7 µm
	Au	0.05-0.12 µm
	Plated hole-Ø	0.60-0.65 mm
<i>Silver plated PCB</i>	Hole-Ø	0.7 ± 0.02 mm
	Cu	min. 25 µm
	Ag	0.1-0.3 µm
	Plated hole-Ø	0.60-0.65 mm
<i>OSP copper plated PCB</i>	Hole-Ø	0.7 ± 0.02 mm
	Cu	min. 25 µm
	Plated hole-Ø	0.60-0.65 mm

5. Circuit Density

When using the specified diameter of the finished through hole according to IEC 61 076-4-101 (0.6 ± 0.05 mm) with an appropriate annular ring, the remaining distance between the rings is about 1 mm. Under the condition that the width of the track and the space between should be equal, two tracks of 0.2 mm width or three tracks of 0.14 mm width can be placed between two rings. Typical designs are shown in the drawing on the right side.



Two tracks of 0.2 mm width



Three tracks of 0.14 mm width

6. Applications:

Metabee's HM2 series high-speed backplane connectors are primarily intended for usage in **CompactPCI applications**.

In addition to CompactPCI, HM2 series connectors can be utilized in various applications requiring high-density, high-speed connections in a compact size. These applications include:

Industrial automation

Telecommunications

Data acquisition systems

Military and defense applications

7. Part Numbers:



Type A: Male Connector, Straight

Identification	No. of contacts	Contact length [mm] mating side termination side		Part number	Contact configuration
Type A	110	8.2	3.7	17 01 110 1201 17 01 110 2201	
Type A	132	8.2/ 11.2	3.7	17 01 132 1203 17 01 132 2203	
Type A	132	8.2/ 11.2	3.7/ 13.0/ 16.0	17 01 132 1007 17 01 132 2007	
Type A	154	8.2/ 11.2	3.7	17 01 154 1201 17 01 154 2201	
Type A	110	9.7	3.7	17 01 110 1204 17 01 110 2204	
Type A	154	9.7/ 11.2	3.7	17 01 154 1205 17 01 154 2205	

- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type A: Male Connector, Straight

Identification	No. of contacts	Contact length [mm]		Part number	Contact configuration
		mating side	termination side		
Type A	110	8.2	13.0	17 01 110 1402 17 01 110 2402	
Type A	154	9.7/ 11.2	14.5/ 16.0	17 01 154 1001 17 01 154 2001	
Type A CompactPCI Position P1	154	8.2/ 9.7/ 11.2	3.7	17 01 154 1203 17 01 154 2203	
Type A CompactPCI Position P4	154	9.7/ 11.2	16.0	17 01 154 1604 17 01 154 2604	
Type A CompactPCI Position P4	154	8.2/ 9.7/ 11.2	16.0	17 01 154 1603 17 01 154 2603	
Type A CompactPCI hot swap Position P1	154	8.2/ 9.7/ 11.2	3.7	17 01 154 1204 17 01 154 2204	

- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type A: Male Connector, Straight

Identification	No. of contacts	Contact length [mm]		Part number	Contact configuration
		mating side	termination side		
Type A CompactPCI computer telephony Position P4	100	8.2/ 9.7/ 11.2	13.0/ 14.5/ 16.0	17 01 100 1001 17 01 100 2001	
Type A CompactPCI computer telephony Position P4	100	8.2/ 9.7/ 11.2	3.7	17 01 100 1201 17 01 100 2201	

- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type B: Male Connector, Straight

Identification	No. of contacts	Contact length [mm] mating side termination side		Part number	Contact configuration
Type B25	125	8.2	3.7	17 02 125 1201 17 02 125 2201	
Type B25	150	8.2/ 11.2	3.7	17 02 150 1201 17 02 150 2201	
Type B25	175	8.2/ 11.2	3.7	17 02 175 1201 17 02 175 2201	
Type B25	125	9.7/ 11.2	3.7	17 02 125 1205 17 02 125 2205	
Type B25	175	8.2/ 9.7/ 11.2	3.7	17 02 175 1202 17 02 175 2202	
Type B25	175	8.2/ 11.2	13.0/ 16.0	17 02 175 1006 17 02 175 2006	

- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type B: Male Connector, Straight

Identification	No. of contacts	Contact length [mm] mating side	termination side	Part number	Contact configuration
Type B22	110	8.2	3.7	17 04 110 1201 17 04 110 2201	
Type B22	154	8.2/ 11.2	3.7	17 04 154 1201 17 04 154 2201	
Type B22 CompactPCI Position P2	154	9.7/ 11.2	3.7	17 04 154 1203 17 04 154 2203	
Type B22 CompactPCI computer telephony	132	8.2/ 9.7/ 11.2	13.0/ 14.5/ 16.0	17 04 132 1001 17 04 132 2001	
Type B22 CompactPCI AB friendly	154	9.7/ 11.2	3.7/ 16.0	17 04 154 1010 17 04 154 2010	
Type B22 CompactPCI AB friendly	154	9.7/ 11.2	3.7/ 14.5/ 16.0	17 04 154 1002 17 04 154 2002	

- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type B: Male Connector, Straight

Identification	No. of contacts	Contact length [mm]		Part number	Contact configuration
		mating side	termination side		
Type B19 VME Position J0	95	8.2	3.7	17 05 095 1201 17 05 095 2201	
Type B19 VME Position J0	133	8.2/ 11.2	3.7	17 05 133 1201 17 05 133 2201	
Type B19 VME Position J0	133	9.7/ 11.2	3.7	17 05 133 1203 17 05 133 2203	
Type B19 VME Position J0	95	8.2	13.0	17 05 095 1401 17 05 095 2401	
Type B19 CompactPCI AB friendly Position P3	133	9.7/ 11.2	3.7/ 16.0	17 05 133 1005 17 05 133 2005	
Type B19 Compact PCI Position P3 VME Position J0	133	8.2/ 11.2	16.0	17 05 133 1602 17 05 133 2602	

- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type AB: Male Connector, Straight

Identification	No. of contacts	Contact length [mm]		Part number	Contact configuration
		mating side	termination side		
Type AB ₂₅	125	8.2	3.7	17 15 125 1201 17 15 125 2201	
Type AB ₂₅	169	8.2/ 11.2	3.7	17 15 169 1201 17 15 169 2201	
Type AB ₂₅	169	8.2/ 11.2	13.0/ 16.0	17 15 169 1003 17 15 169 2003	

- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type AB: Male Connector, Straight

Identification	No. of contacts	Contact length [mm]		Part number	Contact configuration
		mating side	termination side		
Type AB22	110	8.2	3.7	17 14 110 1201 17 14 110 2201	
Type AB22	146	8.2/ 11.2	3.7	17 14 146 1201 17 14 146 2201	
Type AB22	146	9.7/ 11.2	16.0	17 14 146 1601 17 14 146 2601	

- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type AB: Male Connector, Straight

Identification	No. of contacts	Contact length [mm]		Part number	Contact configuration
		mating side	termination side		
Type AB19	95	8.2	3.7	17 13 095 1201 17 13 095 2201	
Type AB19	127	8.2/ 11.2	3.7	17 13 127 1201 17 13 127 2201	
Type AB19	127	9.7/ 11.2	16.0	17 13 127 1601 17 13 127 2601	

- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



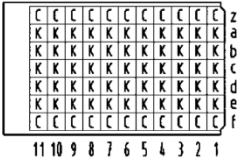
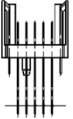
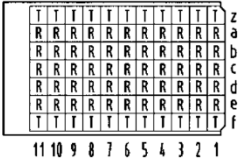

Type C: Male Connector, Straight

Identification	No. of contacts	Contact length [mm]		Part number	Contact configuration
		mating side	termination side		
Type C	55	8.2	3.7	17 03 055 1201 17 03 055 2201	
Type C	77	8.2/ 11.2	3.7	17 03 077 1201 17 03 077 2201	
Type C	55	9.7	3.7	17 03 055 1202 17 03 055 2202	
Type C	77	9.7/ 11.2	3.7	17 03 077 1202 17 03 077 2202	
Type C	55	8.2	13.0	17 03 055 1401 17 03 055 2401	
Type C	66	8.2/ 11.2	13.0/ 16.0	17 03 066 1001 17 03 066 2001	

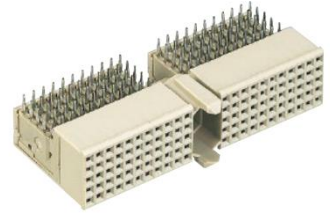
- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type C: Male Connector, Straight

Identification	No. of contacts	Contact length [mm]		Part number	Contact configuration
		mating side	termination side		
Type C	77	8.2/ 11.2	3.7/ 13.0	17 03 077 1001 17 03 077 2001	 
Type C	77	8.2/ 11.2	16.0	17 03 077 1601 17 03 077 2601	 

- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type A: Female Connector, Right Angle

Identification	No. of contacts	Contact length [mm] termination side	Part number
Type A	110	3.4	17 21 110 1101 17 21 110 2101
Type A with upper shield CompactPCI Positions J1, J4	110	3.4	17 21 110 1102 17 21 110 2102
Lower shield for type A connectors			17 21 000 4102
Type A with split upper shield CompactPCI computer telephony Position J4	90	3.4	17 21 090 1103 17 21 090 2103
Lower shield for type A connectors (rows 1 – 5) CompactPCI computer telephony			17 29 000 4102
Lower shield for type A connectors (rows 15 – 25) CompactPCI computer telephony			17 23 000 4102

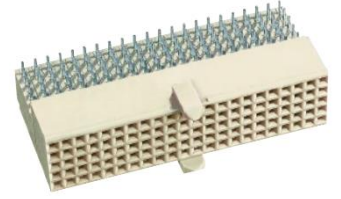
- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type B: Female Connector, Right Angle

Identification	No. of contacts	Contact length [mm] termination side	Part number
Type B19 VME, Position P0	95	3.4	17 25 095 1101 17 25 095 2101
Type B19 with upper shield CompactPCI, Position J3 – VME, Position P0	95	3.4	17 25 095 1102 17 25 095 2102
Lower shield for type B19 connectors			17 25 000 4102
Type B22	110	3.4	17 24 110 1101 17 24 110 2101
Type B22 with upper shield CompactPCI, Positions J2, J5	110	3.4	17 24 110 1102 17 24 110 2102
Lower shield for type B22 connectors			17 24 000 4102
Type B25	125	3.4	17 22 125 1101 17 22 125 2101
Type B25 with upper shield	125	3.4	17 22 125 1102 17 22 125 2102
Lower shield for type B25 connectors			17 22 000 4102

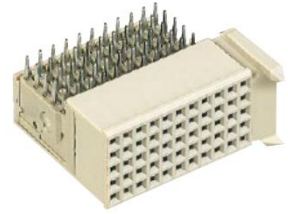
- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type AB: Female Connector, Right Angle

Identification	No. of contacts	Contact length [mm] termination side	Part number
Type AB ₁₉	95	3.4	17 33 095 1101 17 33 095 2101
Type AB ₁₉ with upper shield CompactPCI, Position RJ3	95	3.4	17 33 095 1102 17 33 095 2102
Lower shield for type AB ₁₉ connectors			17 33 000 4102
Type AB ₂₂	110	3.4	17 34 110 1101 17 34 110 2101
Type AB ₂₂ with upper shield CompactPCI, Positions RJ2, RJ5	110	3.4	17 34 110 1102 17 34 110 2102
Lower shield for type AB ₂₂ connectors			17 34 000 4102
Type AB ₂₅	125	3.4	17 35 125 1101 17 35 125 2101
Type AB ₂₅ with upper shield	125	3.4	17 35 125 1102 17 35 125 2102
Lower shield for type AB ₂₅ connectors			17 21 000 4102

- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type C: Female Connector, Right Angle

Identification	No. of contacts	Contact length [mm] termination side	Part number
Type C	55	3.4	17 23 055 1101 17 23 055 2101
Type C with upper shield	55	3.4	17 23 055 1102 17 23 055 2102
Lower shield for type C connectors			17 23 000 4102

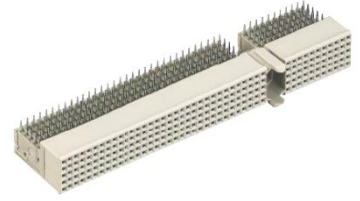
- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type Monoblock 47: Male Connectors, Straight

Identification	No. of contacts	Contact length [mm] mating side	termination side	Part number	Contact configuration
Type Monoblock 47	220	8.2	3.7	17 06 220 1201 17 06 220 2201	
Type Monoblock 47	308	8.2/ 11.2	3.7	17 06 308 1201 17 06 308 2201	
Type Monoblock 47	220	9.7	3.7	17 06 220 1202 17 06 220 2202	
Type Monoblock 47 CompactPCI Positions P1 and P2	308	8.2/ 9.7/ 11.2	3.7	17 06 308 1202 17 06 308 2202	
Type Monoblock 47 CompactPCI hot swap	308	8.2/ 9.7/ 11.2	3.7	17 06 308 1203 17 06 308 2203	
Type Monoblock 47 CompactPCI computer telephony	232	8.2/ 9.7/ 11.2	3.7	17 06 232 1201 17 06 232 2201	

- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type Monoblock 47: Female, Right Angle

Identification	No. of contacts	Contact length [mm] termination side	Part number
Type Monoblock 47	220	3.4	17 26 220 1101 17 26 220 2101
Type Monoblock 47 with upper shield	220	3.4	17 26 220 1102 17 26 220 2102
Type Monoblock 47 with upper shield CompactPCI computer telephony	200	3.4	17 26 200 1103 17 26 200 2103
Lower shield for type Monoblock 47 connectors			17 26 000 4102
Lower shield for type Monoblock 47 connectors (rows 1 – 22) CompactPCI computer telephony			17 24 000 4102
Lower shield for type Monoblock 47 connectors (rows 23 – 27) CompactPCI computer telephony			17 29 000 4102
Lower shield for type Monoblock 47 connectors (rows 37 – 47) CompactPCI computer telephony			17 23 000 4102

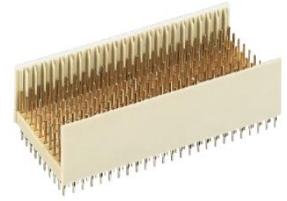
- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type D: Male Connectors, Straight

Identification	No. of contacts	Contact length [mm]		Part number	Contact configuration
		mating side	termination side		
Type D	176	8.2	3.7	17 11 176 1201 17 11 176 2201	
Type D	220	8.2/ 11.2	3.7	17 11 220 1201 17 11 220 2201	
Type D	220	9.7/ 11.2	14.5/ 16.0	17 11 220 1001 17 11 220 2001	

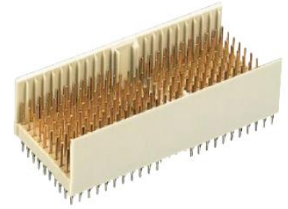
- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type E: Male Connector, Straight

Identification	No. of contacts	Contact length [mm] mating side termination side		Part number	Contact configuration
Type E	200	8.2	3.7	17 12 200 1201 17 12 200 2201	
Type E	250	8.2/ 11.2	3.7	17 12 250 1201 17 12 250 2201	
Type E	250	9.7/ 11.2	14.5/ 16.0	17 12 250 1001 17 12 250 2001	

- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**



Type DE: Male Connectors, Straight

Identification	No. of contacts	Contact length [mm] mating side termination side		Part number	Contact configuration
Type DE	200	8.2	3.7	17 10 200 1201 17 10 200 2201	
Type DE	244	8.2/ 11.2	3.7	17 10 244 1201 17 10 244 2201	
Type DE	244	9.7/ 11.2	14.5/ 16.0	17 10 244 1001 17 10 244 2001	

- Thin print part numbers: performance level 1
- **Bold print part numbers: performance level 2**

Thank You!