

DIN Connectors

Amphenol Information Communications
and Commercial Products

 ***FCi Basics***

Amphenol ICC

- **Din** is a 2.54mm pitch modular connector series standardised as per DIN 41612 & IEC 603 -2 spec. It is the first generation Back plane connectors, addressing a wide variety of applications in Telecommunications, Industrial & Instrumentation, Medical & Military markets. Basics offers a wide range of Din connectors to meet all design requirements.
- Offers cost effective and reliable product solution with over 40 years of manufacturing experience.
- Leveraging strong relation with Global Distributors, these commodity connectors are readily available through the distribution channel.



- **Standard mount**

- Vertical receptacle + Right angle header
 - Preferred in I & I segment



- **Reverse mount**

- Vertical header + Right angle receptacle
 - Preferred in Telecom



- **Plating material:**

- Contact side: GXT or selective Gold over Nickel
- Termination side: pure Tin
- RoHS compliant

- **Performance classes**

- DIN class III (50 operations)
- DIN class II (400 operations - popular in general market)
- DIN class I (500 operations)

- **Standard style**

- Right angle Header
- Straight Receptacle

- **Style C, C/2**

- 3 row connector
- 96 or 48 position
- Selective row loading
- Solder-to-board or press-fit

- **Style B, B/2**

- 2 row connector
- 64 or 32 position
- Solder-to-board



- **Reverse style**

- Straight angle Header
- Right Angle Receptacle

- **Style R, R/2**

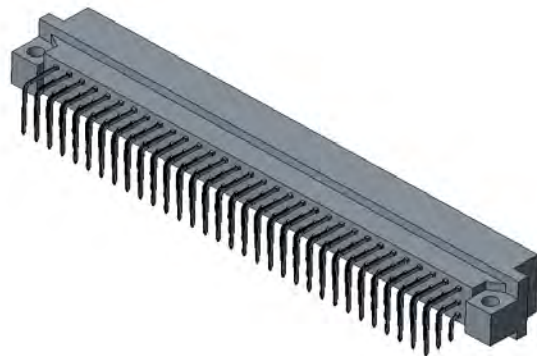
- 3 row connector
- 96 or 48 position
- Selective row loading
- Solder-to-board or press-fit

- **Style Q, Q/2**

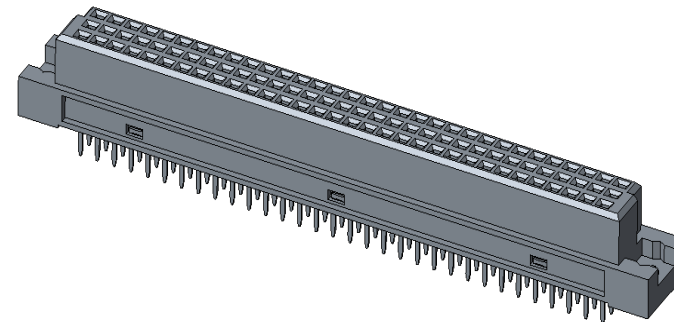
- 2 row connector
- 64 or 32 position
- Solder-to-board
- *note for Q/2 - select configuration on request only.*
- *To check availability at factory*

- **IDC cable connector**
- **Connector and cover**
 - As package
 - or ordered separately
- **Various AWG-sizes**
 - 30 – 28 AWG
 - 26 – 24 AWG
- **Various positions**
 - 96 pos. (3 x 32)
 - 21 pos. (3 x 7)
 - 9 pos. (3 x 3)
- **Application tooling**
 - Hand tool
 - Automatic tool

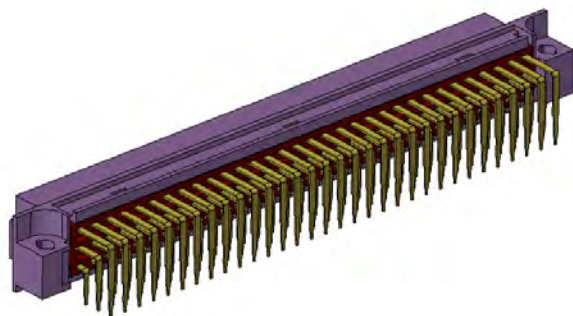




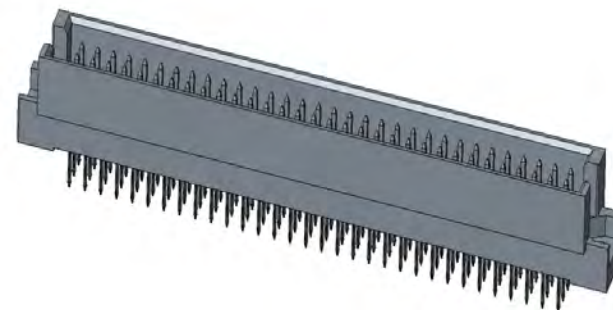
Header RA - 86093967113755ELF



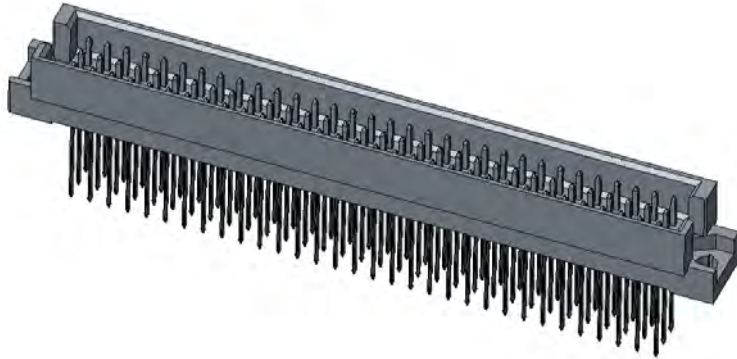
Receptacle Straight - 86093968114755V1LF



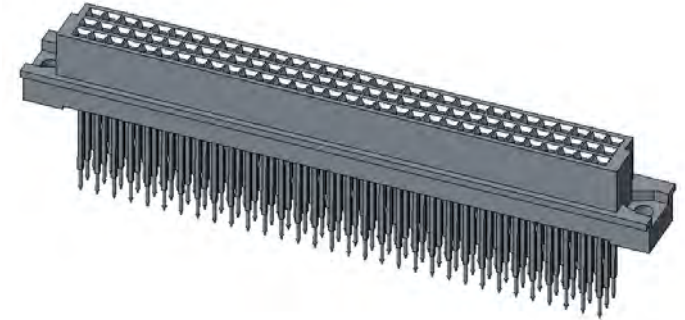
Receptacle RA - 86093968813755V1LF



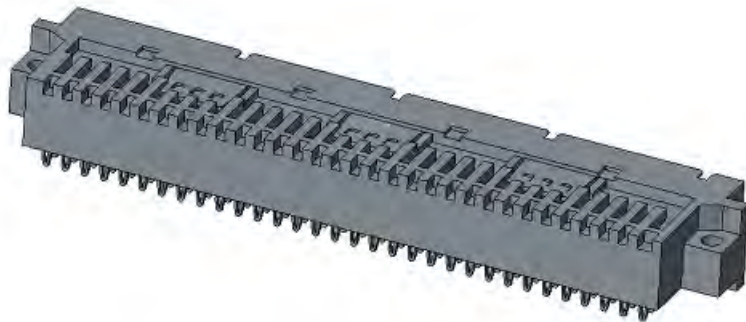
Header Straight - 86093967814755ELF



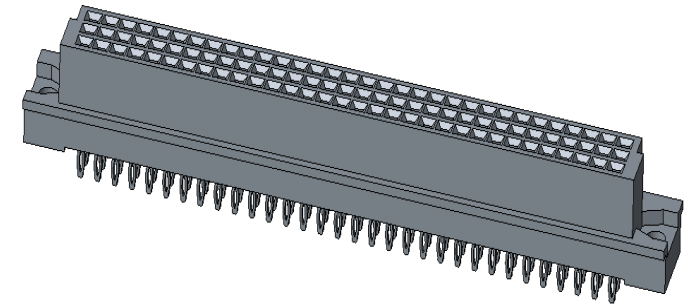
Header Wire wrap
86093967815755E1LF



Receptacle Wire wrap
86093968115755E1LF



Header Press fit
86093967194755E1LF



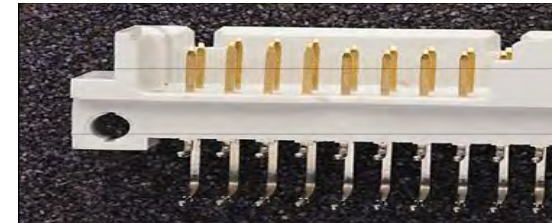
Receptacle Press fit
86093968194755E3LF

Selective loading / Custom Patterns

a	√	X	X	X	X	X	X	X	X	#	X	#	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	√	X	▲	
b																																					
c	√	X	X	X	X	X	X	X	X	#	X	#	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	√	X	▲
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32					

X - Standard Contact
 ▲ - Special contact
 √ - Leading Contact (FMLB)
 # - Short Contact (LMEB)
 - empty cavity

FMLB/LMEB contacts

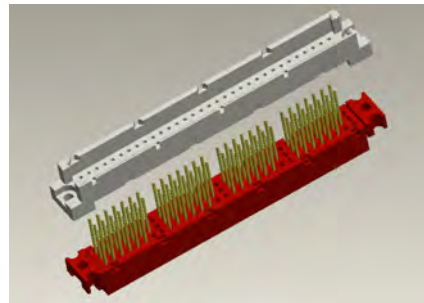
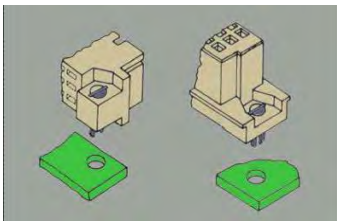


Board locks

Latches

Rear shrouds

Various covers



DIN – High Temperature Series

Reflow Compatible (THR) series

FCi Basics



Header RA - 86093967113B55F1LF



Receptacle Straight -86093968114B55F1LF

- For hazardous and high risk product platforms of fire safety applications
- Robust and reliable for Railway applications as per unified EU safety norms
- Tested and certified to EN45545, NFF 16-101/102, DIN41612, IEC 60603-2 standards

Flexible PCB mounting

Customized loading

Grounding options

High temperature solderable



Multi-standard compliance

High reliability

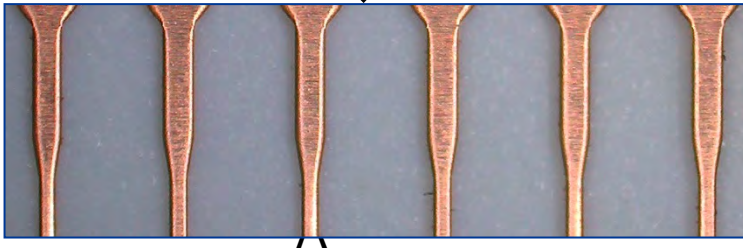
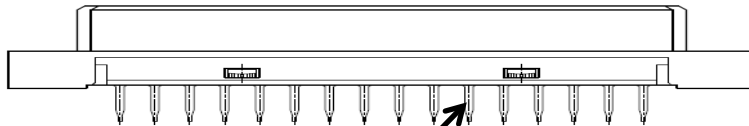
Competitive service levels

Standard performance classes

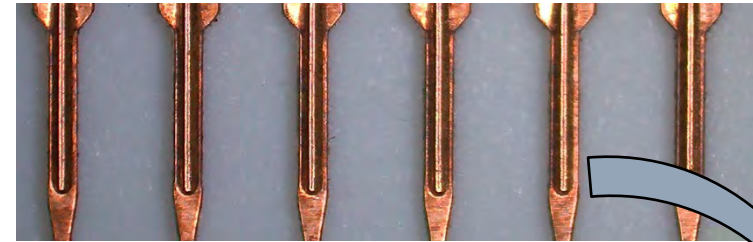
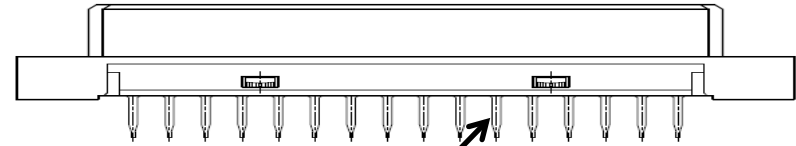
New Improvements

Addition of rib feature in terminals straight DIN Receptacle

Earlier Design (Terminal without Rib)



New Improved Design (Terminal with Rib)

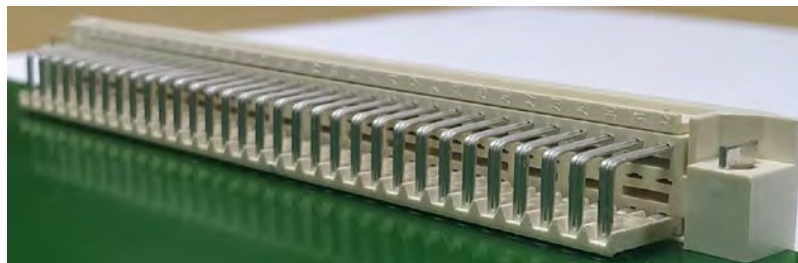
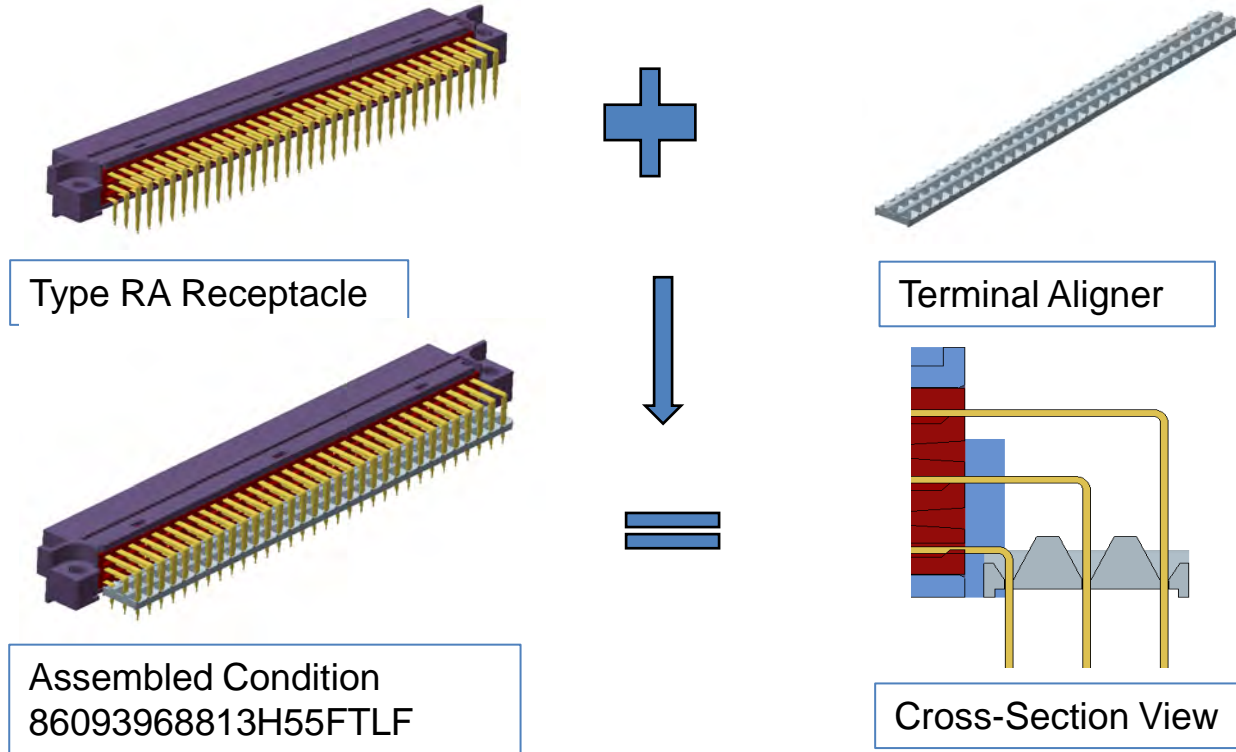


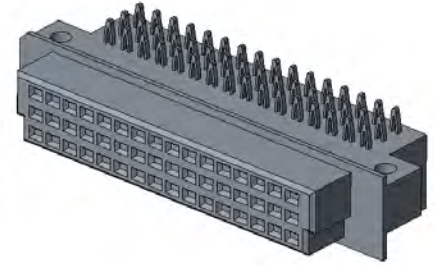
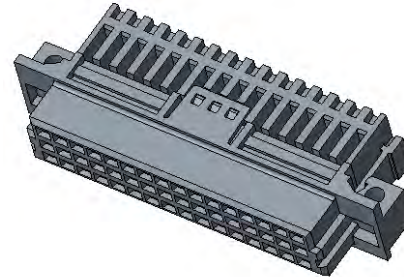
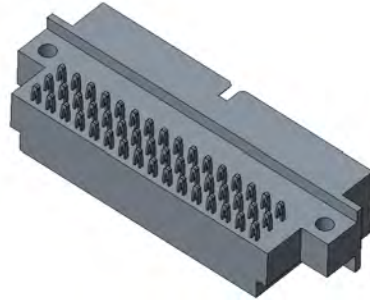
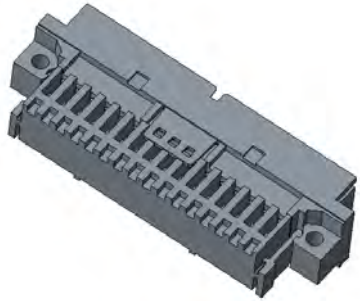
- Straight spill terminals provided with ribs to give additional support to the terminals for enhancing strength
- Better ruggedness and true position
- No change in P/N



New Improvements

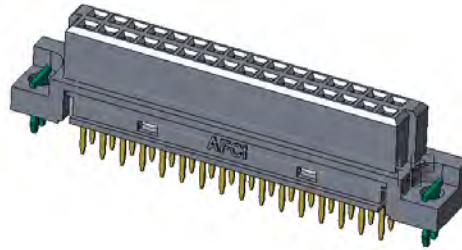
Terminal Aligner variant for sturdiness for RAR DIN





48 pin Header RA Press fit
86093487394755E1LF

48 pin Receptacle RA Press fit
86093488694755E3LF



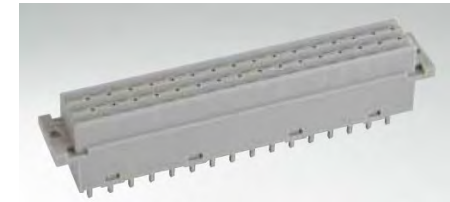
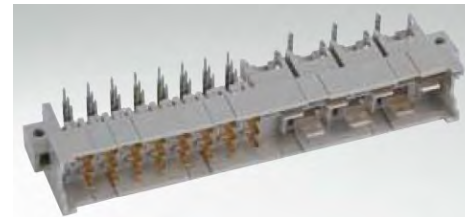
32 pin B/2 Economy version
86092326314H55V1LF

- PELT Reduction
 - Invested and installed on Auto Assy M/c
 - Reduced from Avg 10 Wks to 5 Wks
- Sample Support
 - Dedicated person for samples in Cochin
 - Expanded the stock in Eu sample room
- Website
 - New improved landing page
 - 24 hours Tech support
 - More P/Ns added
 - More 3D models loaded

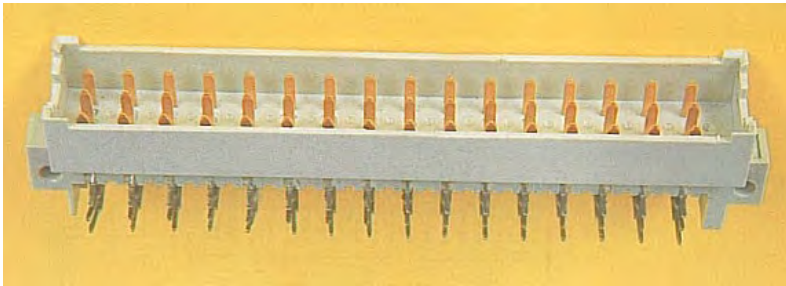


The screenshot displays the Amphenol ICC website interface. At the top, there is a search bar with the placeholder text "Enter Keyword or Part Number..." and a magnifying glass icon. To the right of the search bar are links for "CONTACT US", "ENGLISH", and "日本語 | 簡". Below the search bar is a navigation menu with "OUR PRODUCTS", "APPLICATIONS", "RESOURCES", and "OUR BUSINESSES". On the far right of this menu are "LOGIN" and "REGI" buttons. A "SAMPLE CART" icon is also visible. The main content area shows the product name "DIN 41612 - 86093967113755ELF" and a status indicator "Status Part: ACTIVE". Below this are three buttons: "ADD TO SAMPLE CART", "QUOTE REQUEST", and "PRODUCT ENQUIRY". A navigation bar below these buttons includes "OVERVIEW", "DISTRIBUTOR", "RELATED PARTS", and "SPECIFICATION". The "OVERVIEW" section is active and contains a 3D model of the product, a "DESCRIPTION" section with text: "DIN Headers & Receptacles, Backplane Connector, Header, Right Angle, Through Hole, Style C, 96 ways, Class II", and a "DOCUMENTATION" section with links for "Product Drawing", "Product Specification", and "Datasheet". A "3D Model (STP)" link is also present. At the bottom of the overview section, there is a "PRODUCT ENVIRONMENTAL COMPLIANCE" section with a link to download a "Certificate of Compliance Report". A "Welcome to Tech Support" button is located at the bottom right of the page.

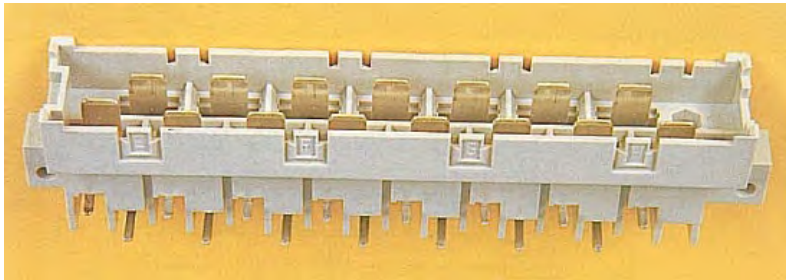
- DIN Power range includes the medium power and high power connectors
 - Medium power – 5 amps
 - High power – 15 amps
 - Hybrid version
- 2 row up to 32 contacts or 3 row up to 48 contacts
- Board mount for rack applications
- Hand solder and Faston terminations for wire applications.



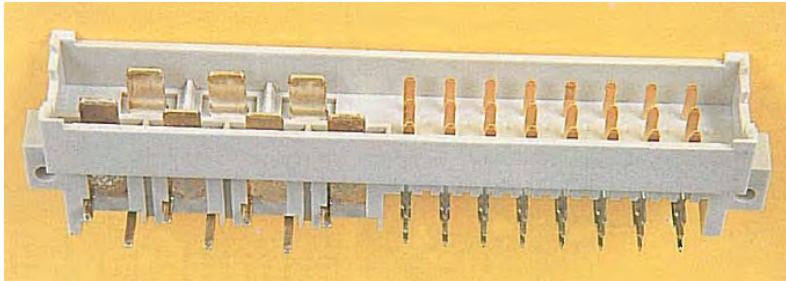
Din Power Solution Overview



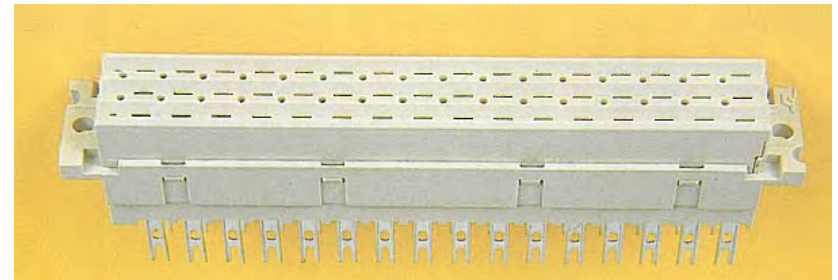
Style F Male – 5159009486394111LF



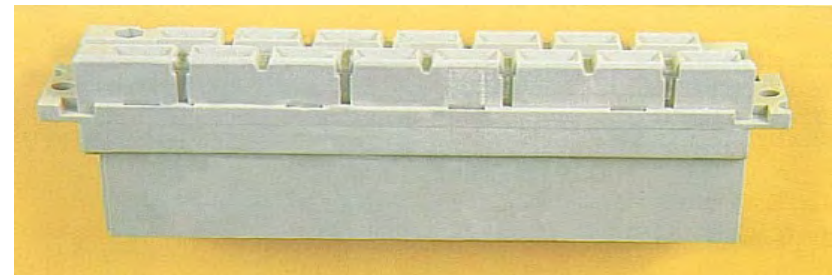
Style H Male - 51590291523660LF



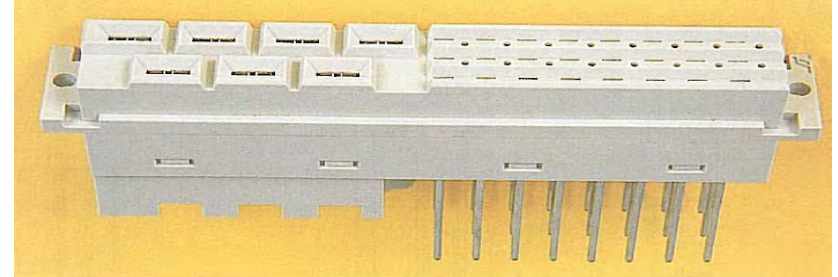
Mix Style (F+H) Male - 5159002312394111LF



Style F Female – 5159909481194111LF



Style H Female - 51590291519620LF



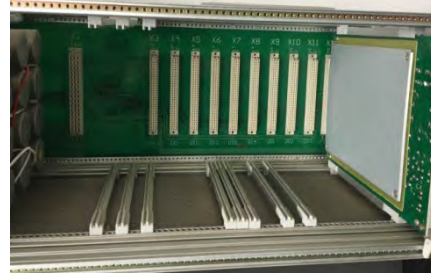
Mix Style (F+H) Female - 5159002311194111LF

DIN 41612	DIN Signal	DIN Power			
	Style C	Style D & E	Style F	Style H	Style F+H (Mix)
Number of Rows	3	3	3	2	3/2
Number of Contacts	32/64/96	32/48	32/48	15	24/7
Contact Spacing	2.54 mm	5.08 mm	5.08 mm	10.16 mm	5.08 / 10.16 mm
Rated Current (@20°C)	1.5 A	5.5 A	5.5 A	15 A	5.5 / 15 A
Test Voltage (rms)	1000 V/50 Hz	1550 V/50 Hz	1550 V/50 Hz	3100 V/50 Hz	1550 V/3100 V/50 Hz
Creepage distance	≥ 1.2 mm	≥ 3 mm	≥ 1.6 mm	≥ 4.5 mm	≥ 1.6 mm / ≥ 4.5 mm
Clearance distance	≥ 1.2 mm	≥ 3 mm	≥ 3 mm	≥ 8 mm	≥ 3 mm / ≥ 8 mm
Insulation Resistance	≥10 ⁶ MΩ	≥10 ⁶ MΩ	≥10 ⁶ MΩ	≥10 ⁶ MΩ	≥10 ⁶ MΩ
Contact Resistance	≤ 20 mΩ	≤ 15 mΩ	≤ 15 mΩ	≤ 8 mΩ	≤ 15 mΩ / ≤ 8 mΩ
Temperature Range	(-) 55°C to (+) 125°C	(-) 55°C to (+) 125°C	(-) 55°C to (+) 125°C	(-) 55°C to (+) 125°C	(-) 55°C to (+) 125°C
Mechanical Endurance					
Class 1	500 Cycles	500 Cycles	500 Cycles	500 Cycles	500 Cycles
Class 2	400 Cycles	400 Cycles	400 Cycles	400 Cycles	400 Cycles
Class 3	50 Cycles	50 Cycles	50 Cycles	50 Cycles	50 Cycles
Surface Finish					
Contact Side	Au / Gxt	Au	Au	Ag or Sn	Au /Ag or Sn
Termination Side	Sn	Sn	Sn		
Insulator Material	PBT / LCP	PBT	PBT /PC/PA	PBT /PC/PA	PBT /PC
Flammability	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Contact Material	Copper Alloy	Copper Alloy	Copper Alloy	Copper Alloy	Copper Alloy
Connector Insertion force per contact	≤ 0.94 N	≤ 1.25 N	≤ 1.55 N	≤ 6 N	≤ 1.55 N / ≤ 6 N
Connector Extraction force per contact	≥ 0.15 N	≥ 0.2 N	≥ 0.2 N	≥ 0.2 N	≥ 0.2 N

FEATURES	BENEFITS
Follows Modular system	Standardized and cost-effective solutions
Available in 2.54mm and 5.08mm pitch	Compatible to industry standards and hence inter-mateable & interchangeable
High-temperature compatibility	Suitable for reflow soldering
NFF 16-101/102 and EN45545-2 certified	Suitable for railway applications
FMLB and LMEB contacts	Flexibility in grounding options
Available in various termination types	Flexible PCB mounting options
Selective loading pattern for contacts	Improves creepage distance, facilitates custom loading
Rear Plug-Up (RPU) capability	Promotes extended mating applications via shrouds on the rear side of the PCB
A wide range of accessories available	Enhances connector suitability and flexibility
Can achieve polarization using accessories	Prevents insertion of daughter card in the wrong slot

- Smart Grid – Relay Protection
- Railways - Signaling
- Health Care – Scanner
- Network Communication
- Process Automation
- Access Control
- Control Drives
- Energy Management
- Display Boards
- Power Supplies
- Signaling
- Home Automation
- Test Equipment
- Solar Inverter
- Elevator
- Defense Radar
- Smart class

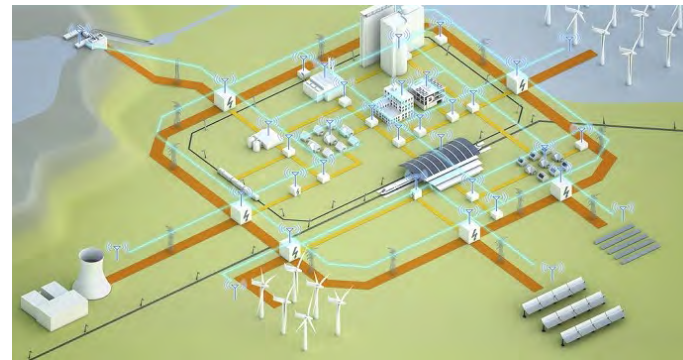
Control panel Instrumentation



DCS & Transmission Systems



Smart Grid



Routers and Switches



Medical scanning & Imaging



Railways & Signaling



CNC and HMI machines



- Samples: Request to load your sample orders on **Samples, Tatabanya**
- Sample kit: By Q4, 2020
- Hand tool: IDC crimp tools can be supported
- **Landing page in Website**
 - Product drawing
 - Product specification
 - 3D Models
 - Mating connector
 - Sample request
 - PN comparison
 - Cross Reference
 - Distributor stock levels and locations

• Visit Din landing page in <https://www.amphenol-icc.com/backplane-connectors/din-backplane-connectors.html>

The screenshot shows a webpage for Amphenol FCi's DIN 41612 Signal Headers & Receptacles. The page features a header with the product name and the Amphenol FCi logo. Below the header, there is a section titled 'COST-EFFECTIVE YET DURABLE CONNECTORS' which describes the product's benefits and lists features and benefits. The features include a 2.54mm pitch, modular system, selective loading pattern, FMLB/LHEB contacts, and a wide range of accessories. The benefits include adequate spacing for routing PCB traces, standardized and cost-effective solutions, improved creepage distance, critical grounding options, enhanced connector suitability, and extended mating applications via shrouds. The page also includes a 'TARGET MARKETS' section with icons for Industrial, Telecom, and Data markets.

DIN 41612 SIGNAL HEADERS & RECEPTACLES

Amphenol FCi

COST-EFFECTIVE YET DURABLE CONNECTORS

Amphenol offers a broad and complete range of interconnection systems conforming to DIN 41612 and IEC 603-2 specifications. They are easily available, cost-effective, highly durable and ideal for Industrial, Telecom and Data markets.

- Standard Mount and Reverse Mount options available
- Available up to 3 rows and 96 positions with Solder, Press-fit and pin-in Paste terminations
- Revolutionary beam-on-beam contact interface
- 3 standard performance class options available

TARGET MARKETS

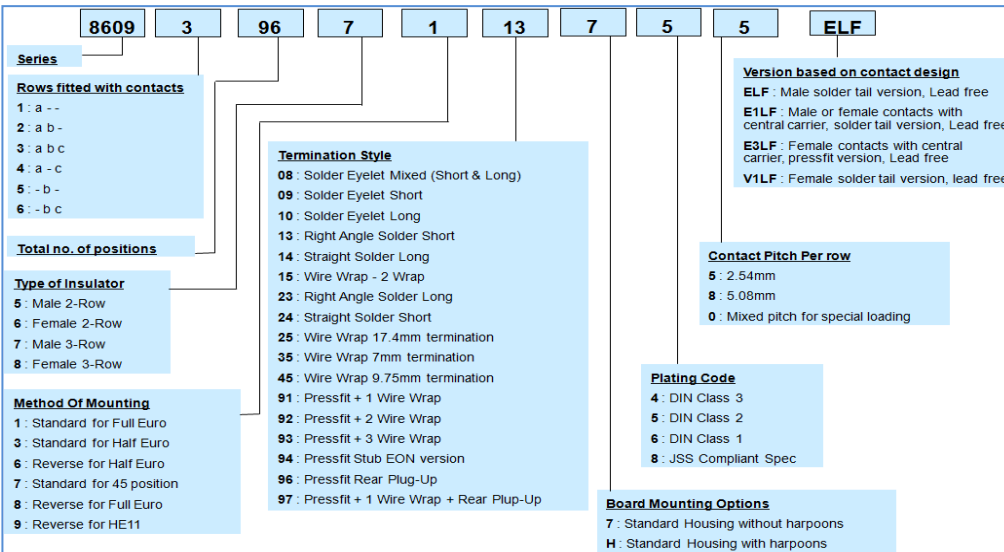
FEATURES

- 2.54mm pitch
- Modular system
- Selective loading pattern for contacts
- FMLB/LHEB contacts
- Wide range of accessories (board-locks, latches, shrouds, hoods, keys)
- Rear plug up variants in press-fit applications

BENEFITS

- Adequate spacing for routing PCB traces
- Standardized and cost-effective solutions
- Improve creepage distance, allow custom loading
- Critical grounding option
- Enhances the connector suitability and flexibility
- Extended mating applications via shrouds on the rear side of the PCB

Ordering information

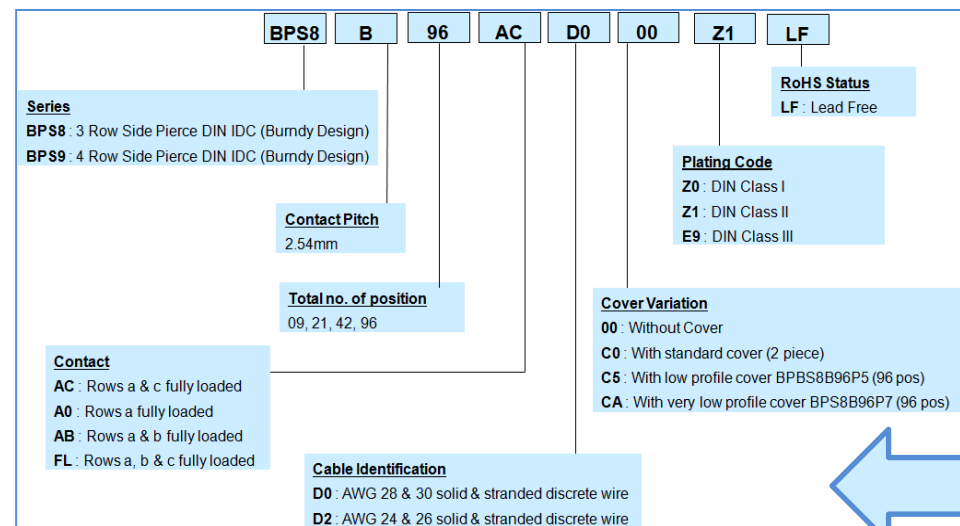


8609 series – DIN Signal

5159 series – DIN Power

Description	Amp.	Type	Termination	Part number
Style F Medium Power Right Angle Header	5,5 A	2 row / 32 pos.	solder-to-board	5159009326394101LF
	5,5 A	3 row / 48 pos.		5159009486394111LF
Style F Medium Power Straight Receptacle	5,5 A	2 row / 32 pos.		5159009321894AAALF
	5,5 A	3 row / 48 pos.		5159009481894AAALF
Style H High Power Right Angle Header	15 A	2 row / 15 pos.	solder-to-board	51590291523660LF
Style H High Power Straight Receptacle	15 A	2 row / 15 pos.	solder-to-board	51590291519620LF
Style F24 / H7 Mix Medium/High Power Right Angle Header		3 row medium power (24 pos.) and 2 row high power (7 pos.)	solder-to-board	5159002312354111LF
Style F24 / H7 Mix Medium/High Power Straight Receptacle		3 row medium power (24 pos.) and 2 row high power (7 pos.)	solder-to-board / faston	5159002311893111LF

Note: special loading on request



BPS8 series – IDC cable connector

Amphenol ICC

Thank you!

For any support please contact,

Tech.Support@amphenol-icc.com