



SMART CARD READERS

Product Presentation

Basics Portfolio

Amphenol
FCi

Smart Card Readers

Agenda

1. Value Proposition
2. Product Families Overview
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 3. P Series
 4. L04 Series
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 6. C Series
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3. Product Specifications
4. Features & Benefits
5. Markets & Applications

Smart Card Readers

Value Proposition

The Smart Card Portfolio is a comprehensive and versatile portfolio designed for long Life durability and reliability to satisfy all customer needs.

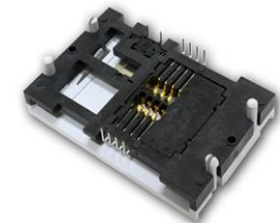
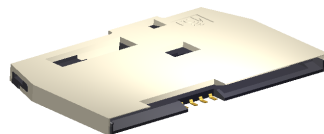
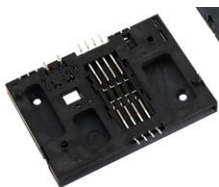
The Smart Card Portfolio includes sliding or landing contact technology, TMT, SMT, or Flex mounted option, with 6, 8 or 16 data contacts are available with either blade or sealed switches.

The Smart Card portfolio includes SIM or full size card connectors.

Smart Card / SIM Readers


















Product Families Overview

Product	Number of Cycles	Card Size		Soldering		Contact Technology		Switch Type	
		Full	SIM	TMT	SMT	Sliding	Landing	Blade	Sealed
E Series	200K , 500K	X		X + Flex	X		X		X
L26 Series High Performance	10K - 100K	X		X + Flex		X		X	
L26 Series	2.5K	X		X		X		X	
P Series	100K	X			X	X		X	
L 08Series	100K	X		X		X			X
C Series	100K	X		X		X			
S Series	10K	X	X		X	X		X	



Smart Card / SIM Readers

Product Selector by Target Application

Product Application	E Series	P series	L08 Series	C04 Series	S16 Series	S08 Series	S20 Series	L26 Series	S07 Series
ATM									
Set Top Box									
Smart Meter									
Security Access Control									
Intruder Alarm Systems									

Smart Card Readers – E series

Product Specifications

Product Facts

- All “E Series” use “landing” contact technology.
- This IC Chip Card connector is equipped with 8 data contacts with a spoon shape mating surface.
- Sealed Card detection switch is fully protected against dust or contaminants.
- Signal contacts self clean before the card is fully inserted.
- Distance of activation and deactivation of the switch complies with the Europay Master Visa recommendations (EMV) specifications.
- Optional guided card entry (bell mouth).

Performance Characteristics

- Durability: 200,000 & 500,000 cycles
- Insertion Force: < 10N
- Withdrawal Force: $1 < F < 10N$
- Contact Force: $0.2 < F < 0.3$ for 0.6mm of Deflection
- Operating Range: -40°C to +85°C
- Current Rating: 10 micro amps min., 1A max.
- Resistance (Contact): <100 milli ohms
- Resistance (Insulation)>1000 M-ohms

Part Numbers

- 7311E0225S01LF
- 7312E0225S01LF
- 7312E0525S01LF
- 7332E0225S01LF
- 7332E0225S04LF
- 7332E0225S14LF
- 7332E0225S15LF
- 7361E0225S05LF
- 7311E0225S01001LF



Specifications

- Housing: thermoplastic UL94 V0
- Contact: Cooper Alloy
- Plating Pin: Gold or Equivalent PdNi over Nickel on Contact area
- Connector Family & Technology: Landing, High Cycle
- Cover: Yes
- Number of Contacts: 8
- Positioning: Pegs
- Card Detection Switch: Sealed Normally Open
- Thickness: 5.8mm
- Termination: TMT, SMT, Flexible PCB

E Series Readers

Features & Benefits

Features	Benefits
Direct connection to PCB (through holes or SMT) or through a flexible printed circuit.	Flexibility for customer design
Durability – 200K & 500K version Available	Suitable for High durability applications
Landing contacts	Offers an efficient mechanical solution to prevent vandalism as contacts are recessed when no card is inserted.
Sealed Switch	Enables card detection & suitable for harsh environments
Extended card guide option available	Ensures better card guiding

Smart Card Readers – P series

Product Specifications

Product Facts

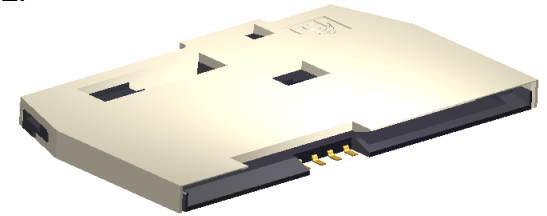
- IC Chip Card connector especially designed for SMT technology and low profile needs
- Normally open switch
- Available with or without cover, completely equipped
- SMT
- Blade switch (Normally open) present
- Low profile version height above PCB - 3.6 mm
- Distance between the Rear & Front solder pads - 25.4mm
- With Locating pegs

Performance Characteristics

- Durability: 100,000 cycles
- Insertion Force: 10N max
- Withdrawal Force: 3N min.
- Contact Force: 0.2N to 0.5N
- Operating Range: -40°C to +85°C
- Current Rating: 10 micro amps min., 1A max.
- Resistance (Contact): <100 milli ohms
- Resistance (Insulation): >1000 M-ohms

Part Numbers

- 7312P0225A13LF
- 7312P0025A13LF
- 7312P0235A13LF



Specifications

- Housing: thermoplastic UL94 V0
- Contact: Cooper Alloy
- Plating Pin: Gold or Equivalent PdNi over Nickel on Contact area
- Connector Family & Technology: Sliding, Low Profile, High Cycle
- Cover: Yes
- Number of Contacts: 8 & 16
- Positioning: Pegs
- Card Detection Switch: Normally Open
- Thickness: 3.6mm
- Termination: surface mount

P Series Readers

Features & Benefits

Features	Benefits
SMT	Suitable for automatic reflow process
Blade switch (Normally open) present	Enables card detection
Low profile available- 3.6 mm (Height above PCB)	Space saving
Distance between the Rear & Front solder pads - 25.4mm	Termination within the boundary of the Connector
With Locating pegs (2 nos)	Enables easy placement

Smart Card Readers – L04 series

Product Specifications

Product Facts

- This IC Chip Card connector uses standard “sliding” contact technology.
- The housing is equipped with optional 8 or 16 data contacts with a spoon shape design.
- The card stop is protected against overstress.
- Sealed switch in the horizontal position performs the card detection.
- Designed for outdoor application

Performance Characteristics

- Durability: 100000 cycles
- Insertion Force: 10N max
- Withdrawal Force: 1.5N Min
- Operating Range: -40°C to +85°C
- Current Rating: 10 micro amps min., 1A max.
- Resistance (Contact): <100 milli ohms
- Resistance (Insulation): 1000 M-ohms
- Voltage rating: 1000V rms between Contacts
- Voltage rating (Switch Open Contact): > 300V rms

Part Numbers

- 10116976-1211FLF
- 10057542-1311FLF
- 52436-25FLF



Specifications

- Housing: thermoplastic UL94 V0
- Contact: Cooper Alloy
- Plating Pin: Gold over Nickel
- Connector Family & Technology: Sliding, Anti-Vandalism Reader
- Cover: Yes
- Number of Contacts: 8
- Positioning: Pegs-Retention Clips (board locks)
- Card Detection Switch: Normally Open or Close
- Thickness: 6.5mm
- Height (card entrance): 3.0mm
- Termination: Through Hole (3.5 mm)

L04 Series Readers

Features & Benefits

Features	Benefits
Robust and Reliable Design	Suitable for Outdoor Application
Low Profile Design	Space Saving
Center lines Design	Offers an efficient mechanical solution against vandalism
Wiping-blade limit switch Design	Superior Reliability by switch away oxide/dirt & provide a clean & reliable contact area
Extended locating locks	Allow easier mounting onto PCB

Smart Card Readers – L08 series

Product Specifications

Product Facts

- This IC Chip Card connector uses standard “sliding” contact technology.
- The housing is equipped with optional 8 or 16 data contacts with a spoon shape design.
- The card stop is protected against overstress.
- Sealed switch in the horizontal position performs the card detection.
- Designed for outdoor application

Performance Characteristics

- Durability: 100,000 cycles
- Insertion Force: 8.2N max
- Withdrawal Force: 6.2N
- Contact Force: 0.2N to 0.6N
- Operating Range: -40°C to +85°C
- Current Rating: 10 micro amps min., 1A max.
- Resistance (Contact): <100 milli ohms
- Resistance (Insulation)> 1000 M-ohms

Part Numbers

- 7434L0825S01LF
- 7434L0835S01LF



Specifications

- Housing: thermoplastic UL94 V0
- Contact: Cooper Alloy
- Plating Pin: Gold or Equivalent PdNi over Nickel on Contact area
- Connector Family & Technology: Sliding, Anti-Vandalism Reader
- Cover: Yes
- Number of Contacts: 8 & 16
- Positioning: Pegs-Retention Clips (board locks)
- Card Detection Switch: Sealed Normally Open
- Thickness: 9mm
- Termination: Through Hole (1.6 mm)

L08 Series Readers

Features & Benefits

Features	Benefits
TMT	Suitable for Wave soldering
Spoon shaped contacts	Offers an efficient mechanical solution against vandalism
Sealed Switch	Enables card detection & suitable for harsh environments
Horizontal switch component	Allows the ejection of broken cards and debris at the back of the connector.

Smart Card Readers – L26 series

Product Specifications

Product Facts

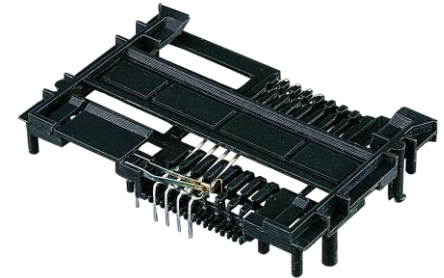
- This IC Chip Card connector uses standard “sliding” contact technology
- Monoblock housing with optional 8 or 16 inserted data contacts
- Card detection switch utilizes a self-cleaning, wiping blade, normally closed
- Meets the ISO (7810, 7816)
- Different versions are available :
 - low profile 6.5 mm total height
 - PC stand-off allowing component mounting under the connector.
- Through hole with board locks

Performance Characteristics

- Durability: 2,500, 10,000 & 100,000 cycles
- Insertion Force: 10N max
- Withdrawal Force: 1N to 10N
- Contact Force: 0.2N to 0.6N
- Operating Range: -40°C to +85°C
- Current Rating: 10 micro amps min., 1A max.
- Resistance (Contact): <100 milli ohms
- Resistance (Insulation)> 1000 M-ohms

Part Numbers

- For durability 10000 cycles
 - 7334L2622F01LF
 - 7334L2622F02LF
 - 7334L2622F04LF
 - 7334L2622F05LF
 - 7334L2622F13LF
 - 7334L2632F02LF
 - 7334L2632F04LF
 - 7334L2632F05LF
- For durability 2500 cycles
 - 7334L2620F01LF
 - 7334L2620F02LF
 - 7334L2620F04LF
 - 7334L2620F05LF
 - 7334L2620F13LF



Specifications

- Housing: thermoplastic UL94 V0
- Contact: Cooper Alloy
- Plating Pin: Gold or Equivalent PdNi over Nickel on Contact area
- Connector Family & Technology: Sliding, Standard
- Cover: No
- Number of Contacts: 8 & 16 option
- Positioning: Pegs with Boardlocks
- Card Detection Switch: Blade Normally Closed
- Termination: Through Hole (1.6 mm)

L26 Series Readers

Features & Benefits

Features	Benefits
TMT	Suitable for Wave soldering
Blade switch (Normally closed) present	Enables card detection
Different Stand off available	Design Flexibility to customer
With Built-in retaining clips (board locks)	Helps for easy assembly on to PCB
Mono bock housing, sliding contacts & blade switches	Competitive solution for TMT application

Smart Card Readers – C04 series

Product Specifications

Product Facts

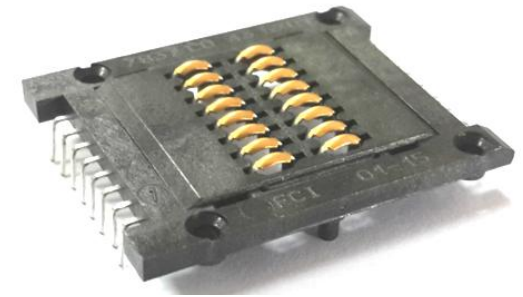
- This IC Chip Card connector uses standard “sliding” contact technology.
- This IC Chip Card connector has the option of either 8 or 16 terminal contacts. The contacts mating surface geometry adopt the back of the spoon shape for durability & reliability against vandalism or harsh environment.
- A special carrier frame is included in the connector
- Designed for indoor and outdoor applications

Performance Characteristics

- Withdrawal Force: 3N min
- Contact Force: 0.6N max
- Operating Range: -40°C to +85°C
- Current Rating: 10 micro amps min., 1A max.
- Resistance (Contact): <100 milli ohms
- Resistance (Insulation)>1000 M-ohms

Part Numbers

- 7832C0425X01LF
- 7832C0435X01LF



Specifications

- Housing: thermoplastic UL94 V0
- Contact: Cooper Alloy
- Plating Pin: Gold or Equivalent PdNi over Nickel on Contact area
- Connector Family & Technology: Sliding, Anti-Vandalism Reader
- Cover: No
- Number of Contacts: 8 & 16
- Positioning: Pegs
- Card Detection Switch: None
- Thickness: 3.9mm
- Termination: Through Hole (1.6 mm)

C04 Series Readers

Features & Benefits

Features	Benefits
TMT	Suitable for Wave soldering
Available with 8 & 16 contacts	Design Flexibility for customer
Spoon shape contacts	Offers an efficient mechanical solution against vandalism

S07 Series Readers

Features & Benefits

Features	Benefits
SMT	Suitable for automatic reflow process
Blade switch (Normally open) present	Enables card detection
Low profile - 2.3mm (Height above PCB)	Space saving
Suitable for Full Card & SIM card solution	Design Flexibility

Smart Card Readers – S08 series

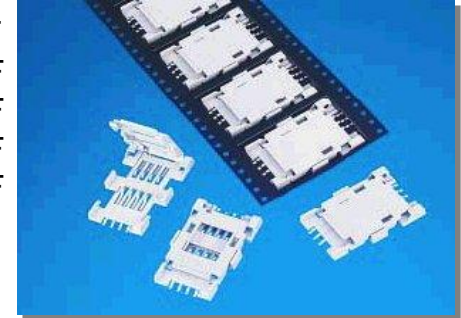
Product Specifications

Product Facts

- Plug in SIM/SAM connector.
- Open or full cover, opening up to 120

Part Numbers

- 7112S0815X19LF
- 7112S0815X29LF
- 7112S0825X19LF
- 7112S0825X29LF
- 7312S0815X19LF
- 7312S0815X29LF
- 7312S0825X19LF
- 7312S0825X29LF



Performance Characteristics

- Durability: 10,000 cycles
- Insertion Force: 10N max
- Withdrawal Force: 3N min
- Contact Force: 0.5N max
- Operating Range: -40°C to +85°C
- Current Rating: 10 micro amps min., 1A max.
- Resistance (Contact): <100 milli ohms

Specifications

- Housing: thermoplastic UL94 V0
- Contact: Cooper Alloy
- Plating Pin: Gold or Equivalent PdNi over Nickel on Contact area
- Connector Family & Technology: Flip Top
- Cover: With window & without window option available
- Number of Contacts: 6 & 8
- Positioning: Pegs
- Card Detection Switch: No Card Detection
- Termination: Surface Mount

S08 Series Readers

Features & Benefits

Features	Benefits
SMT	Suitable for Reflow Soldering
Available with 6 & 8 Pins	Design flexibility to customer
Locating pegs	Helps for easy assembly on to PCB
Polarization Feature	Correct orientation of SIM card
Tape & Reel Packaging	Designed for SMT automatic Assembly process
Visible SMT contact tails and “open window” cover	Allow easy electrical testing of the soldered connector
Hinged cover	Reliable and durable locking/latching mechanism
“With window & without window” hinged cover option	Design flexibility to customer

Smart Card Readers – S16 series

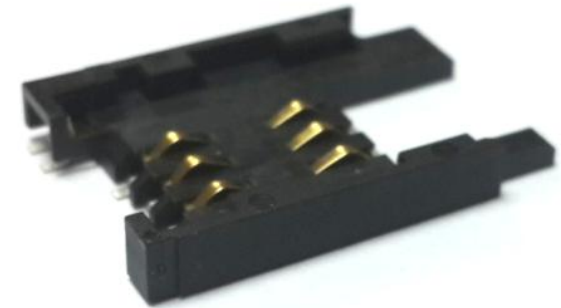
Product Specifications

Product Facts

- This connector is designed to meet interconnection requirements of SIM cards.
- The S16 series is equipped with 6 contacts, Insulator and with or w/o a switch terminal

Part Numbers

- 7111S1615A01LF
- 7111S1615A02LF



Performance Characteristics

- Durability: 10,000 cycles
- Contact Force: 0.5N max
- Insertion Force: 2.5N +/- 0.3N
- Withdrawal Force: 2N min
- Contact Force: 0.2N to 0.6N
- Operating Range: -40°C to +85°C
- Current Rating: 10 micro amps min., 1A max.
- Resistance (Contact): <100 milli ohms
- Resistance (Insulation): 1000 M-ohms

Specifications

- Housing: thermoplastic UL94 V0
- Contact: Cooper Alloy
- Plating Pin: Gold or Equivalent PdNi over Nickel on Contact area
- Connector Family & Technology: With Card Guides
- Cover: No
- Number of Contacts: 6
- Positioning: None
- Card Detection Switch: Blade Normally Open
- Termination: Surface Mount

S16 Series Readers

Features & Benefits

Features	Benefits
SMT	Suitable for automatic reflow process
Blade switch (Normally open) present	Enables card detection
Tape & Reel Packaging	Designed for SMT automatic Assembly process
2 Type solder tail width available	Design Flexibility to customer

Smart Card Readers – S20 series

Locating Pegs version now available

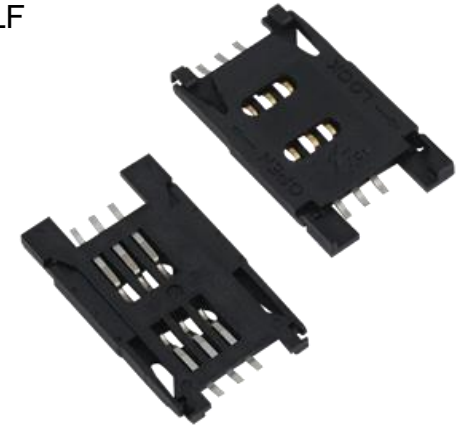
Product Specifications

Product Facts

- This connector is designed to meet interconnection requirements of «plug in» SIM cards.
- The S20 series is equipped with 6 contacts, hinge and cover
- Locating pegs version available

Part Numbers

- 7111S2015X02LF
- 7112S2015X02LF



Performance Characteristics

- Durability: 10,000 cycles
- Insertion Force: 2N to 8N
- Withdrawal Force: 2N min
- Contact Force: 0.5N max
- Operating Range: -40°C to +85°C
- Current Rating: 10 micro amps min., 1A max.
- Resistance (Contact): <100 milli ohms
- Resistance (Insulation): 1000 M-ohms

Specifications

- Housing: thermoplastic UL94 V0
- Contact: Cooper Alloy
- Plating Pin: Gold or Equivalent PdNi over Nickel on Contact area
- Connector Family & Technology: Flip Top
- Cover: With Windows
- Number of Contacts: 6
- Positioning: Locating pegs version available
- Card Detection Switch: No Card Detection
- Termination: Surface Mount

S20 Series Readers

Features & Benefits

Features	Benefits
SMT	Suitable for Reflow Soldering
Low Profile - 2.5mm above PCB	Design Flexibility to customer
Locating peg version available	Helps for Easy assembly on to PCB
Polarization Feature	Ensures correct Orientation of SIM card
Tape & Reel Packaging	Designed for SMT automatic Assembly process
Hinged cover	Reliable and durable locking/latching mechanism
Visible SMT contact tails and “open window” cover	Allow easy electrical testing of the soldered connector

Smart Card Readers

Main Market & Applications

Vending Machine



Security Systems



Set top box



PC peripherals



Smart Meters

Smart Card Readers

Main Market & Applications

POS Machines



ATM Machines



Health Terminals



Security Access Controls

Smart Card Readers

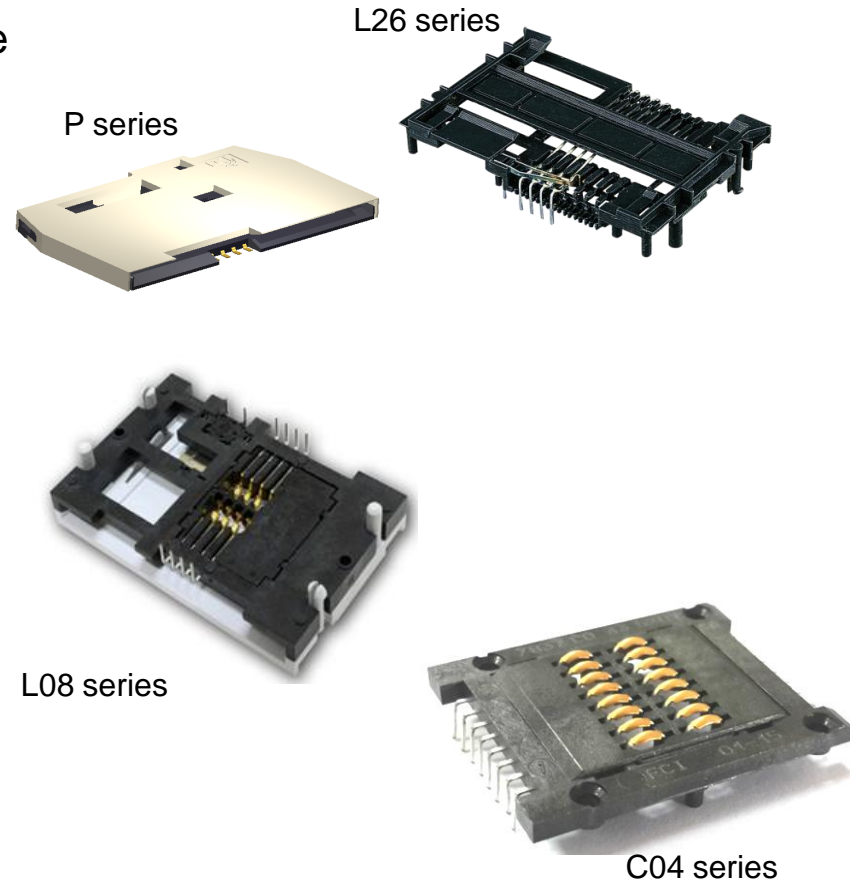
Main Market & General Applications

Friendly Environments for Indoor Application

- POS terminal / Health data terminal / Pay TV and internet decoder / Set top box / PCs secure access
- Number of cycles: 2.5K / 10K / 100K
- Smart Card Connector Type:
 - L26 High Performance and Standard Version
 - P00/P02

Harsh Environments for Outdoor Application

- Public payphone / Vending machine / Parking meter / Utility Meters
- Number of cycles: 100K
- Smart Card Connector Type:
 - L04
 - L08
 - C04



Smart Card / SIM Readers

Main Market & Applications

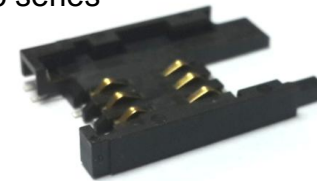
■ Portable Environments

- Road toll / Electronic purse / Access control / Car radio/ GSM module in electricity meters
- Number of cycles: 10K
- Smart Card Connector Type:
 - S08
 - S07
 - S16
 - S20

■ All Environments

- All applications
- Number of cycles: 200K / 500K
- Smart Card Connector Type:
 - E-Readers

S16 series



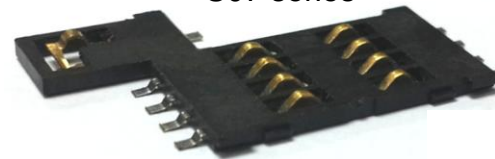
S20 series



S08 series



S07 series



E series





THANK YOU

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