SMART CARD READERS

Product Presentation

Basics Portfolio
Smart Card Readers

Agenda

1. Value Proposition

2. Product Families Overview
   1. E Series
   2. L26 Series High Performance
   3. P Series
   4. L04 Series
   5. L08 Series
   6. C Series
   7. S Series

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

<table>
<thead>
<tr>
<th>Product</th>
<th>Number of Cycles</th>
<th>Card Size</th>
<th>Soldering</th>
<th>Contact Technology</th>
<th>Switch Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Full</td>
<td>SIM</td>
<td>TMT</td>
<td>SMT</td>
</tr>
<tr>
<td>E Series</td>
<td>200K, 500K</td>
<td>X</td>
<td>X + Flex</td>
<td>X</td>
<td>Sealed</td>
</tr>
<tr>
<td>L26 Series</td>
<td>10K - 100K</td>
<td>X</td>
<td>X + Flex</td>
<td></td>
<td>Sealed</td>
</tr>
<tr>
<td>High Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L26 Series</td>
<td>2.5K</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Sealed</td>
</tr>
<tr>
<td>P Series</td>
<td>100K</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Sealed</td>
</tr>
<tr>
<td>L08 Series</td>
<td>100K</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Sealed</td>
</tr>
<tr>
<td>C Series</td>
<td>100K</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Sealed</td>
</tr>
<tr>
<td>S Series</td>
<td>10K</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Sealed</td>
</tr>
</tbody>
</table>
## Smart Card / SIM Readers

### Product Selector by Target Application

<table>
<thead>
<tr>
<th>Application</th>
<th>E Series</th>
<th>P Series</th>
<th>L08 Series</th>
<th>C04 Series</th>
<th>S16 Series</th>
<th>S08 Series</th>
<th>S20 Series</th>
<th>L26 Series</th>
<th>S07 Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Set Top Box</td>
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<tr>
<td>Smart Meter</td>
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<tr>
<td>Security Access Control</td>
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<td></td>
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<tr>
<td>Intruder Alarm Systems</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
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

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

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

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

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

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

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

Part Numbers
- 7434L0825S01LF
- 7434L0835S01LF

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

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

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMT</td>
<td>Suitable for Wave soldering</td>
</tr>
<tr>
<td>Spoon shaped contacts</td>
<td>Offers an efficient mechanical solution against vandalism</td>
</tr>
<tr>
<td>Sealed Switch</td>
<td>Enables card detection &amp; suitable for harsh environments</td>
</tr>
<tr>
<td>Horizontal switch component</td>
<td>Allows the ejection of broken cards and debris at the back of the connector.</td>
</tr>
</tbody>
</table>
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

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

Part Numbers
- 7832C0425X01LF
- 7832C0435X01LF

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

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

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMT</td>
<td>Suitable for Wave soldering</td>
</tr>
<tr>
<td>Available with 8 &amp; 16 contacts</td>
<td>Design Flexibility for customer</td>
</tr>
<tr>
<td>Spoon shape contacts</td>
<td>Offers an efficient mechanical solution against vandalism</td>
</tr>
</tbody>
</table>
# S07 Series Readers

## Features & Benefits

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMT</td>
<td>Suitable for automatic reflow process</td>
</tr>
<tr>
<td>Blade switch (Normally open) present</td>
<td>Enables card detection</td>
</tr>
<tr>
<td>Low profile - 2.3mm (Height above PCB)</td>
<td>Space saving</td>
</tr>
<tr>
<td>Suitable for Full Card &amp; SIM card solution</td>
<td>Design Flexibility</td>
</tr>
</tbody>
</table>
**Product Specifications**

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

**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

**Part Numbers**
- 7112S0815X19LF
- 7112S0815X29LF
- 7112S0825X19LF
- 7112S0825X29LF
- 7312S0815X19LF
- 7312S0815X29LF
- 7312S0825X19LF
- 7312S0825X29LF

**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**

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMT</td>
<td>Suitable for Reflow Soldering</td>
</tr>
<tr>
<td>Available with 6 &amp; 8 Pins</td>
<td>Design flexibility to customer</td>
</tr>
<tr>
<td>Locating pegs</td>
<td>Helps for easy assembly on to PCB</td>
</tr>
<tr>
<td>Polarization Feature</td>
<td>Correct orientation of SIM card</td>
</tr>
<tr>
<td>Tape &amp; Reel Packaging</td>
<td>Designed for SMT automatic Assembly process</td>
</tr>
<tr>
<td>Visible SMT contact tails and “open window” cover</td>
<td>Allow easy electrical testing of the soldered connector</td>
</tr>
<tr>
<td>Hinged cover</td>
<td>Reliable and durable locking/latching mechanism</td>
</tr>
<tr>
<td>“With window &amp; without window” hinged cover option</td>
<td>Design flexibility to customer</td>
</tr>
</tbody>
</table>
## Smart Card Readers – S16 series

### Product Specifications

<table>
<thead>
<tr>
<th>Product Facts</th>
<th>Part Numbers</th>
</tr>
</thead>
</table>
| ▪ This connector is designed to meet interconnection requirements of SIM cards. | ▪ 7111S1615A01LF  
| ▪ The S16 series is equipped with 6 contacts, Insulator and with or w/o a switch terminal | ▪ 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

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMT</td>
<td>Suitable for automatic reflow process</td>
</tr>
<tr>
<td>Blade switch (Normally open) present</td>
<td>Enables card detection</td>
</tr>
<tr>
<td>Tape &amp; Reel Packaging</td>
<td>Designed for SMT automatic Assembly process</td>
</tr>
<tr>
<td>2 Type solder tail width available</td>
<td>Design Flexibility to customer</td>
</tr>
</tbody>
</table>
# Smart Card Readers – S20 series

## Locating Pegs version now available

### Product Specifications

<table>
<thead>
<tr>
<th><strong>Product Facts</strong></th>
<th><strong>Part Numbers</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>This connector is designed to meet interconnection requirements of «plug in» SIM cards.</td>
<td>7111S2015X02LF</td>
</tr>
<tr>
<td>The S20 series is equipped with 6 contacts, hinge and cover</td>
<td>7112S2015X02LF</td>
</tr>
<tr>
<td>Locating pegs version available</td>
<td></td>
</tr>
</tbody>
</table>

### 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

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