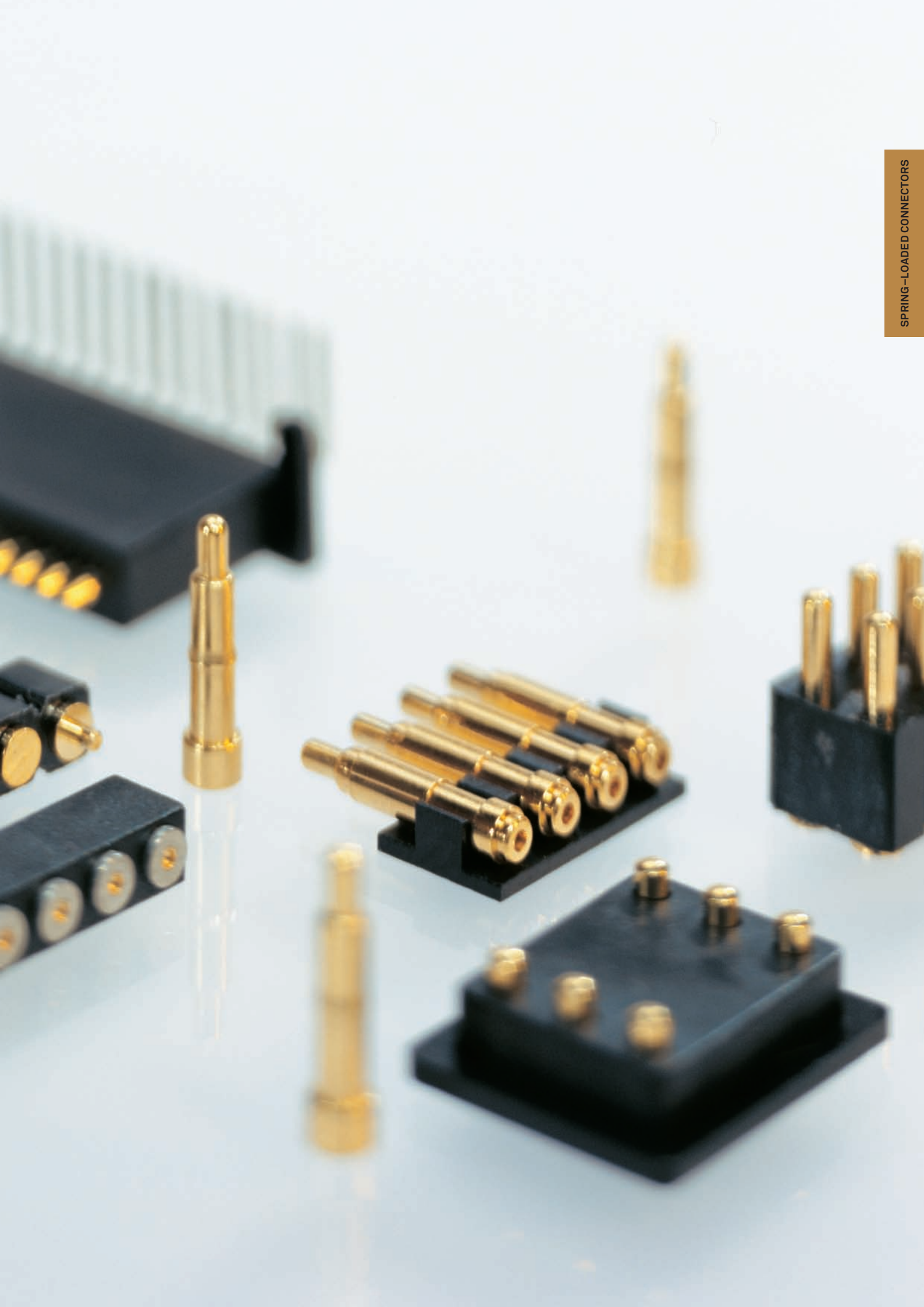


SPRING-LOADED CONNECTORS







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QUICK SELECTOR CHART

SPRING-LOADED CONNECTORS AND PAD CONNECTORS

GRID

	1.25 mm	2.54 mm	
	SINGLE ROW	SINGLE ROW	DOUBLE ROW

SLC CONNECTORS

SEE PAGE

Straight solder tail		32	33	33
Right angle solder tail		32		
Surface mount perpendicular			34, 35	34, 35
Surface mount perpendicular with positioning pins			36	36
Surface mount parallel			37	
SIM card socket				37
Floating mount			38	

PAD CONNECTORS

Surface mount perpendicular			39	39
Surface mount parallel			39	

The values listed below are general specs applying for Preci-Dip spring-loaded connectors. Please see individual catalog page for additional and product specific technical data.

OPERATING TEMPERATURE RANGE	-55 ... +125 °C
CLIMATIC CATEGORY (IEC)	55/85/21
OPERATING HUMIDITY RANGE	Annual mean 75%
MAX. WORKING VOLTAGE	100 V _{RMS} /150 V _{DC} (2.54 mm grid)



Preci-Dip products are recognized by Underwriters Laboratories Inc. and listed under "Connectors for Use in Data, Signal, Control and Power Applications", File Nr. E174442.

MECHANICAL CHARACTERISTICS

	BASIC HOLLOW PISTON TYPE	LOW RESISTANCE SHAPED PISTON TYPE	LOW RESISTANCE CLIP IN-LINE DESIGN TYPE
MIN. INITIAL HEIGHT	3 mm	6 mm	10 mm
STROKE/HEIGHT RATIO	Max. 0.3	Max. 0.2	Max. 0.15
MAX STROKE	2 mm	2 mm	1.5 mm
MIN. INITIAL SPRING FORCE	0.2 N	0.2 N	0.2 N

ELECTRICAL CHARACTERISTICS

INSULATION RESISTANCE BETWEEN ANY TWO ADJACENT CONTACTS	Min. 10'000 MΩ at 500 V _{AC}
CAPACITANCE BETWEEN ANY TWO ADJACENT CONTACTS	Max. 1 pF

ENVIRONMENTAL CHARACTERISTICS

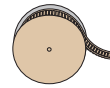
The sockets withstand the following environmental tests without mechanical and electrical defects:

- Dry heat steady state IEC 60512-11-9.11i / 60068-2-2.Bb: 125 °C, 16 h
 - Damp heat cyclic IEC 60512-11-12.11m / 60068-2-30.Db: 25/55 °C, 90 – 100 %rH, 1 cycle of 24 h
 - Cold steady state IEC 60512-11-10.11j / 60068-2-1.A: -55 °C, 2 h
 - Thermal shock IEC 60512-11-4.11d / 60068-2-14.Na: -55/125 °C, 5 cycles 30 min
 - Sinusoidal vibrations IEC 60512-6-4.6d / 60068-2-6.Fc: 10 to 500 Hz, 10 g, 1 octave/min, 10 cycles for each axis
 - Shock IEC 60512-6-3.6c / 60068-2-27.Ea: 50 g, 11 ms, 3 shocks in three axis
- During the above two tests, no contact interruption >50 ns does appear.

- Solderability J-STD-002A, Test A, 245 °C, 5 s, solder alloy SnAg3.8Cu0.7
- Resistance to soldering heat J-STD-020C, 260 °C, 20 s
- Moisture sensitivity J-STD-020C level 1
- Resistance to corrosion:
 - 1) Salt spray test IEC 60068-2-11.Ka: 48 h
 - 2) Sulfur dioxide (SO₂) test IEC 60068-2-42 Kc: 96 h at 25 ppm SO₂, 25 °C, 75 %rH
 - 3) Hydrogen sulfide (H₂S) test IEC 60068-2-43 Kd: 96 h at 12 ppm H₂S, 25 °C, 75 %rH

PACKAGING

- Standard connector packaging is card box.
- SMD mount connectors available on request with Tape & Reel packaging acc. to EIA Standard 481. These products are marked with the symbol:



T & R Packaging

Please consult www.precidip.com for availability, size of tape, size of reel, number of components per reel and packing units.



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SPRING-LOADED CONNECTORS

1.25 mm GRID / SINGLE ROW / SOLDER TAIL

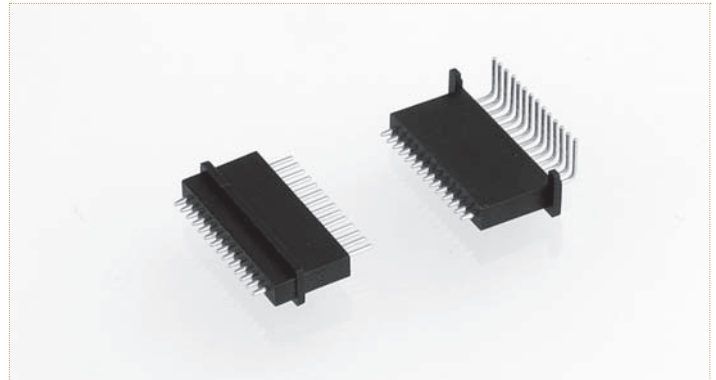
Fine pitch connectors with spring-loaded contacts (SLC), solder tail. High-rel contacts with clip, patented in-line design.

TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR	Black glass filled polyester PCT-GF30-FR	
FLAMMABILITY	UL 94V-0	
PISTON AND BARREL	Brass CuZn36Pb3 (C36000)	
CONTACT CLIP	Beryllium copper (C17200)	
SPRING	Stainless steel X12 CrNi177, DIN 17224	
MAX. STROKE	1.4 mm	
FORCES	0.2 N initial	0.36 N at 1/2 stroke
MECHANICAL LIFE	40'000 cycles	
OPERATING CURRENT	Max. 2 A	
CONTACT RESISTANCE	20 mΩ (static measurement, halfway position)	

ORDERING INFORMATION ROHS COMPLIANT PARTS

PLATING CODE	PIN	PISTON
28	Tin	0.3 µm min. gold



See page 178 for plating specs.

Surface mount miniature SLC connectors available on request.

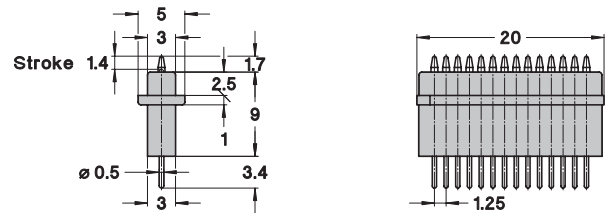
Please consult.

8PD-28-0014-01-812

Straight SLC connector, solder tail, single row

Standard number of contacts: 14

Please consult for other pin number or partially equipped connectors

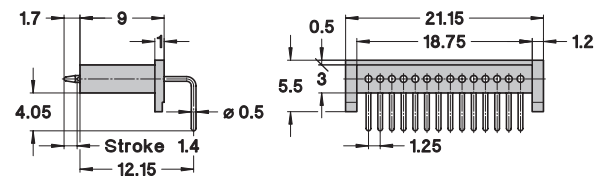


8PC-28-0014-01-828

Right angle SLC connector, solder tail, single row

Standard number of contacts: 14

Please consult for other pin number or partially equipped connectors





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SPRING-LOADED CONNECTORS

2.54 mm GRID / SINGLE ROW / DOUBLE ROW / SOLDER TAIL

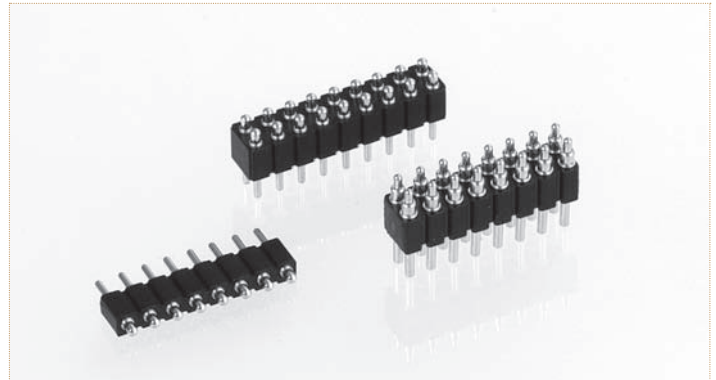
Low resistance modular connectors with spring-loaded contacts (SLC), solder tail. Contacts with improved, shaped piston design.

TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR	Black glass filled polyester PCT-GF30-FR	
FLAMMABILITY	UL 94V-0	
PISTON AND BARREL	Brass CuZn36Pb3 (C36000)	
SPRING	Music wire DIN 17223, gold plated	
MAX. STROKE	1.4 mm	
FORCES	0.25 N initial	0.85 N at 1/2 stroke
MECHANICAL LIFE	50'000 cycles	
OPERATING CURRENT	Max. 3.5 A	
CONTACT RESISTANCE	10 mΩ (static measurement, halfway position)	

ORDERING INFORMATION ROHS COMPLIANT PARTS

PLATING CODE	BARREL	PISTON
S1	0.25 μm gold	0.5 μm gold
SS	0.5 μm gold	0.5 μm gold



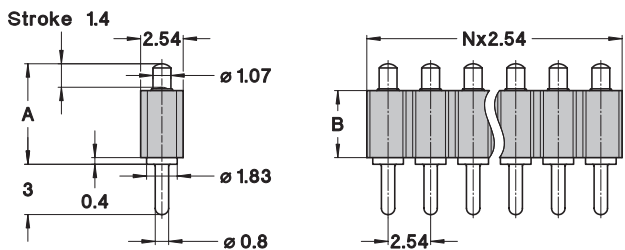
See page 178 for plating specs.

NNN number of poles: Replace **NNN** with the requested number of poles, e.g. 813-S1-**NNN**-10-014101 for a double row version with 16 pins becomes 813-S1-**016**-10-01410110-001101.

811-S1-**NNN**-10-**XXX**101

Straight SLC connector, low profile, solder tail, single row

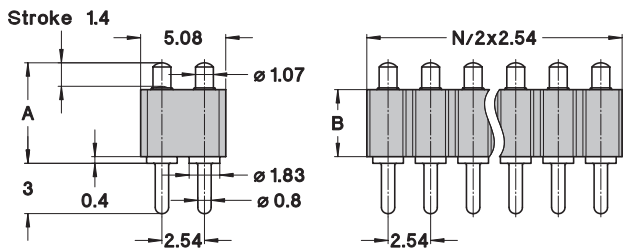
AVAILABILITY FROM 2 to 64 contacts
(standard number of contacts: 64)



813-S1-**NNN**-10-**XXX**101

Straight SLC connector, low profile, solder tail, double row

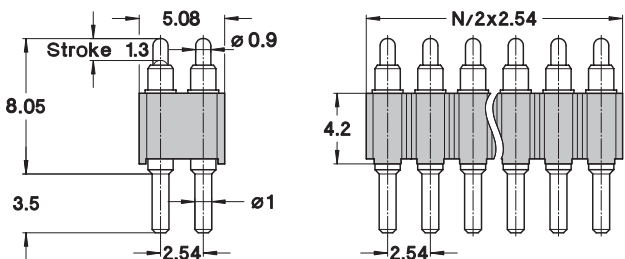
AVAILABILITY FROM 4 to 72 contacts
(standard number of contacts: 72)



813-SS-**NNN**-10-474101

Straight SLC connector, solder tail, double row

AVAILABILITY FROM 4 to 64 contacts
(standard number of contacts: 64)



AVAILABLE CONNECTOR HEIGHTS

INITIAL HEIGHT A (mm)	PLASTIC BODY HEIGHT B (mm)	XXX CODE
6	4	014
6.5	4	015
7	4	016
7.5	4	017



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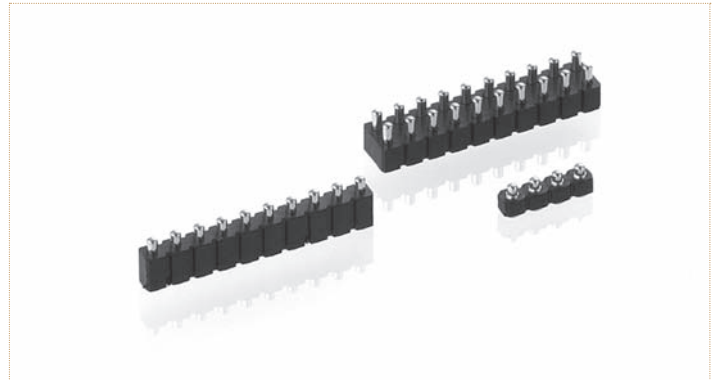
SPRING-LOADED CONNECTORS

2.54 mm GRID / SINGLE ROW / DOUBLE ROW / SURFACE MOUNT

Basic modular connectors with spring-loaded contacts (SLC), surface mount. Contacts with hollow piston design for low profile.

TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR	Black glass filled polyester PCT-GF30-FR	
FLAMMABILITY	UL 94V-0	
PISTON AND BARREL	Brass CuZn36Pb3 (C36000)	
SPRING	Stainless steel X12 CrNi177, DIN 17224 (Music wire DIN 17223, gold plated for 811...008101)	
MAX. STROKE	1.4 mm (1 mm for 811-...-008101 and 811/813-...-001101)	
FORCES	0.25 N initial	0.6 N at 1/2 stroke
MECHANICAL LIFE	100'000 cycles	
OPERATING CURRENT	Max. 3.5 A	
CONTACT RESISTANCE	15 mΩ (static measurement, halfway position)	
COPLANARITY SMD TERMINATIONS	Max. 0.1 mm (measured on 25 mm long connectors)	



ORDERING INFORMATION ROHS COMPLIANT PARTS

PLATING CODE	BARREL	PISTON
SS	0.5 μm gold	0.5 μm gold

See page 178 for plating specs.

NNN number of poles. Replace **NNN** with the requested number of poles, e.g. 811-SS-**NNN**-30-002101 for a single row version with 16 pins becomes 811-SS-**016**-30-002101.

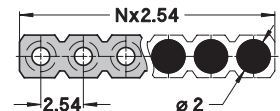
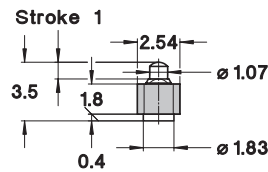
811-SS-**NNN**-30-008101

Surface mount SLC connector, very low profile, single row

AVAILABILITY FROM 2 to 10 contacts
(standard number of contacts: 10)



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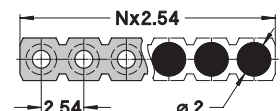
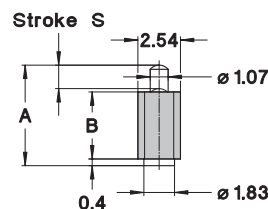
811-SS-**NNN**-30-**XXX**101

Surface mount SLC connector, low profile, single row

AVAILABILITY FROM 2 to 10 contacts
(standard number of contacts: 10)



T & R Packaging



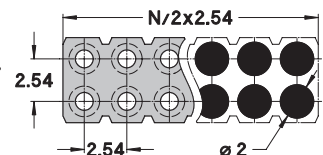
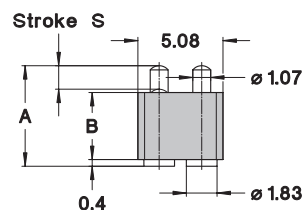
813-SS-**NNN**-30-**XXX**101

Surface mount SLC connector, low profile, double row

AVAILABILITY FROM 4 to 20 contacts
(standard number of contacts: 20)



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AVAILABLE CONNECTOR HEIGHTS

INITIAL HEIGHT A (mm)	STROKE S (mm)	PLASTIC BODY HEIGHT B (mm)	XXX CODE
4.5	1.15	2.95	001
5	1.4	2.95	002
5.5	1.4	2.95	003
6	1.4	4	004
6.5	1.4	4	005
7	1.4	4	006
7.5	1.4	4	007



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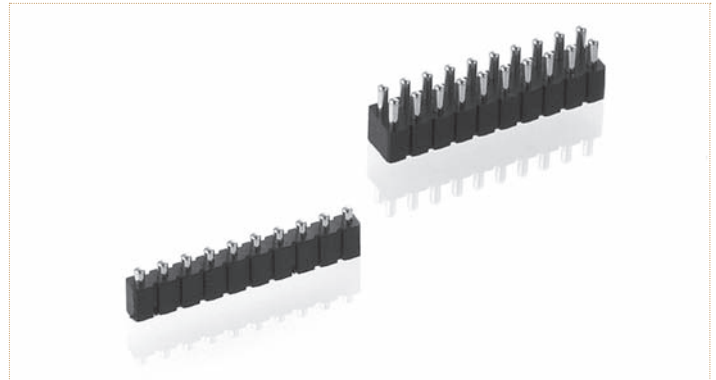
SPRING-LOADED CONNECTORS

2.54 mm GRID / SINGLE ROW / DOUBLE ROW / SURFACE MOUNT

Low resistance modular connectors with spring-loaded contacts (SLC), surface mount. Contacts with improved shaped piston design.

TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR	Black glass filled polyester PCT-GF30-FR	
FLAMMABILITY	UL 94V-0	
PISTON AND BARREL	Brass CuZn36Pb3 (C36000)	
SPRING	Music wire DIN 17223, gold plated	
MAX. STROKE	1.4 mm	
FORCES	0.25 N initial	0.85 N at 1/2 stroke
MECHANICAL LIFE	50'000 cycles	
OPERATING CURRENT	Max. 3.5 A	
CONTACT RESISTANCE	10 mΩ (static measurement, halfway position)	
COPLANARITY	Max. 0.1 mm (measured on 25 mm long connectors)	
SMD TERMINATIONS		



ORDERING INFORMATION ROHS COMPLIANT PARTS

PLATING CODE	BARREL	PISTON
S1	0.25 μm gold	0.5 μm gold

See page 178 for plating specs.

NNN number of poles. Replace **NNN** with the requested number of poles, e.g. 813-S1-**NNN**-30-014101 for a double row version with 16 pins becomes 813-S1-**016**-30-014101.

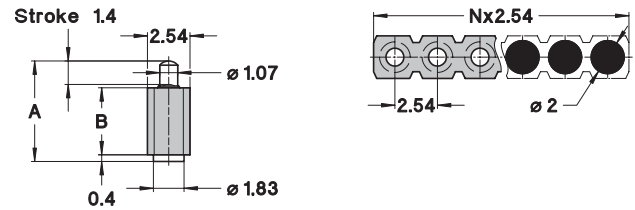
811-S1-**NNN**-30-**XXX**101

Surface mount SLC connector, low profile, single row

AVAILABILITY FROM 2 to 10 contacts
(standard number of contacts: 10)



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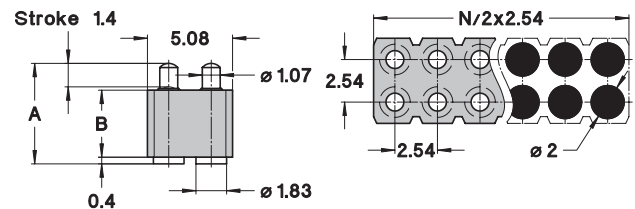
813-S1-**NNN**-30-**XXX**101

Surface mount SLC connector, low profile, double row

AVAILABILITY FROM 4 to 20 contacts
(standard number of contacts: 20)



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AVAILABLE CONNECTOR HEIGHTS

INITIAL HEIGHT A (mm)	PLASTIC BODY HEIGHT B (mm)	XXX CODE
6	4	014
6.5	4	015
7	4	016
7.5	4	017



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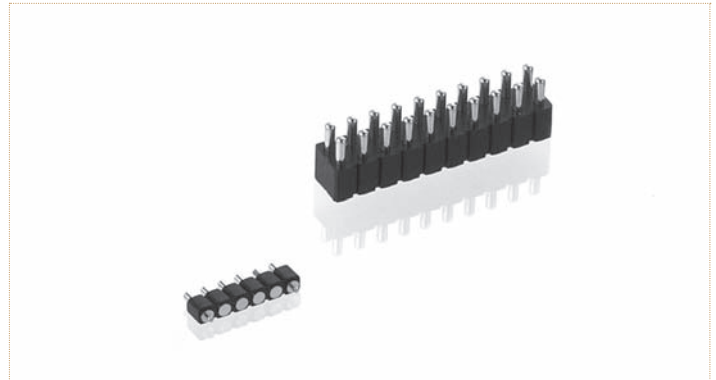
SPRING-LOADED CONNECTORS

2.54 mm GRID / SINGLE ROW / DOUBLE ROW / SURFACE MOUNT

Basic modular connectors with spring-loaded contacts (SLC), surface mount with positioning pins. Contacts with hollow piston design for low profile.

TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR	Black glass filled polyester PCT-GF30-FR
FLAMMABILITY	UL 94V-0
PISTON AND BARREL	Brass CuZn36Pb3 (C36000)
SPRING	Stainless steel X12 CrNi177, DIN 17224
MAX. STROKE	1.4 mm (1.15 mm for 811/813-...-021101)
FORCES	0.25 N initial 0.6 N at 1/2 stroke
MECHANICAL LIFE	100'000 cycles
OPERATING CURRENT	Max. 3.5 A
CONTACT RESISTANCE	15 mΩ (static measurement, halfway position)
COPLANARITY	
SMD TERMINATIONS	Max. 0.1 mm (measured on 25 mm long connectors)



ORDERING INFORMATION ROHS COMPLIANT PARTS

PLATING CODE	BARREL	PISTON
SS	0.5 μm gold	0.5 μm gold

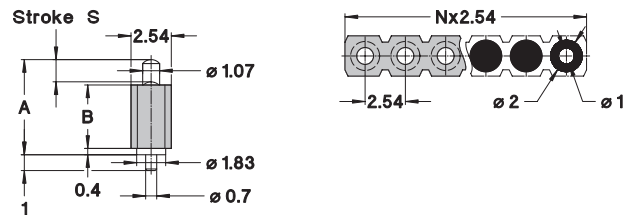
See page 178 for plating specs.

NNN number of poles. Replace **NNN** with the requested number of poles, e.g. 813-SS-**NNN**-30-021101 for a double row version with 16 pins becomes 813-SS-**016**-30-021101.

811-SS-**NNN**-30-**XXX**101

Surface mount SLC connector, low profile, single row, with 2 positioning pins

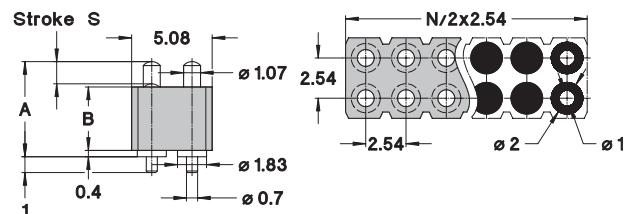
AVAILABILITY FROM 2 to 10 contacts
(standard number of contacts: 10)



813-SS-**NNN**-30-**XXX**101

Surface mount SLC connector, double row, with 4 positioning pins

AVAILABILITY FROM 4 to 20 contacts
(standard number of contacts: 20)



AVAILABLE CONNECTOR HEIGHTS

INITIAL HEIGHT A (mm)	STROKE S (mm)	PLASTIC BODY HEIGHT B (mm)	XXX CODE
4.5	1.15	2.95	021
5	1.4	2.95	022
5.5	1.4	2.95	023
6	1.4	4	024
6.5	1.4	4	025
7	1.4	4	026
7.5	1.4	4	027



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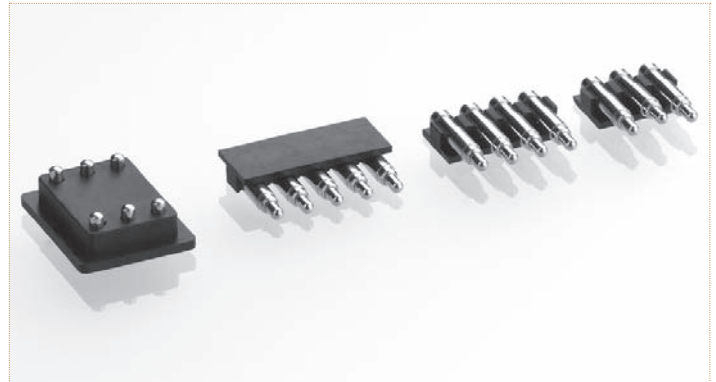
SPRING-LOADED CONNECTORS

2.54 mm GRID / SINGLE ROW / DOUBLE ROW / SURFACE MOUNT

Connectors with spring-loaded contacts (SLC), surface mount.

TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR	Black glass filled polyester PCT-GF30-FR	
FLAMMABILITY	UL 94V-0	
PISTON AND BARREL	Brass CuZn36Pb3 (C36000)	
	8PM...131	8PM...913
SPRING	Music wire DIN 17723, gold plated	Stainless steel X12 CrNi177, DIN 17224
MAX. STROKE	1.5 mm	1 mm
FORCES	0.2 N initial 0.9 N at 1/2 stroke	0.25 N initial 0.6 N at 1/2 stroke
MECHANICAL LIFE	50'000 cycles	100'000 cycles
OPERATING CURRENT	Max. 3 A	Max. 3 A
CONTACT RESISTANCE	10 mΩ	15 mΩ (static measurement, halfway position)
COPLANARITY	Max 0.1 mm (measured on 25 mm long connectors)	
SMD TERMINATIONS		



Other plating on request (see page 178 for plating specs).

NN number of poles. Replace **NN** with the requested number of poles, e.g. 8PM-11-00**NN**-02-131 with 5 pins becomes 8PM-11-00**05**-02-131.

ORDERING INFORMATION ROHS COMPLIANT PARTS

PLATING CODE	BARREL	PISTON
11	0.25 μm gold	0.25 μm gold
SS	0.5 μm gold	0.5 μm gold

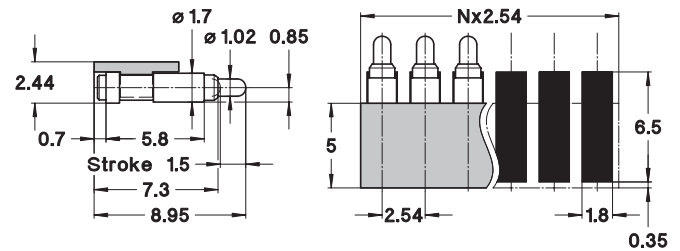
8PM-11-00**NN**-02-131

Parallel surface mount SLC connector for pick & place automatic assembly

AVAILABILITY FROM 2 to 10 contacts
(standard number of contacts: 10)



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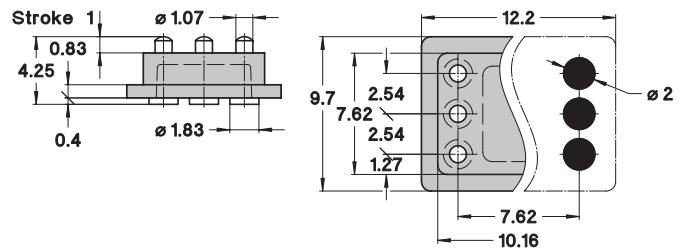
8PM-SS-0006-01-913

SLC connector for chipcards with contacting pads acc. to ISO 7816

Standard number of contacts: 6



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SPRING-LOADED CONNECTORS

DOUBLE-SIDED, FLOATING MOUNT

Connectors with floating mount spring-loaded contacts (SLC) for solderless pressure connection.

TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR	Black glass filled polyester PCT-GF30-FR	
FLAMMABILITY	UL 94V-0	
PISTON AND BARREL	Brass CuZn36Pb3 (C36000)	
SPRING	Stainless steel X12 CrNi177, DIN 17224	
MAX. STROKE	2 mm	
FORCES	0.25 N initial	0.5 N at 1/2 stroke
MECHANICAL LIFE	50'000 cycles	
OPERATING CURRENT	Max. 3.5 A	
CONTACT RESISTANCE	10 mΩ (static measurement, halfway position)	

ORDERING INFORMATION ROHS COMPLIANT PARTS

Floating mount contacts for applications with 4.5 to more than 10 mm distance (D) between connecting surfaces (see Fig. 3) have been designed to be assembled on plastic bodies or to be integrated by customer into specific assemblies. Please consult for more information.



SPRING-LOADED CONNECTORS WITH FLOATING MOUNT CONTACTS

A solderless connecting system with double-sided pressure connection.

Double-side contact effect can be achieved using spring-loaded contacts in a floating mounting design (Fig.1).

The conventional spring-loaded contact ① made of a barrel, spring and plunger (piston) is mounted in a frame (housing) ②.

The barrel has a groove behind a retention barb ③. The frame has a restriction in the cavity hole.

The diameters are chosen so that the barrel is nicely guided but can move freely inside the hole once it has been clicked over the retention feature.

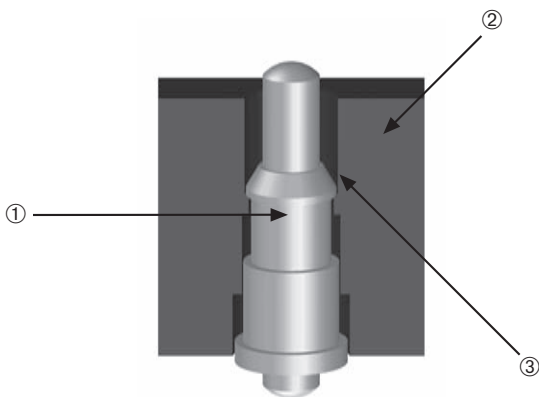


Fig. 1

The first contact surface is positioned on one side of the SLC (Fig. 2).

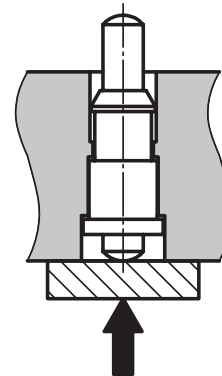


Fig. 2

The second contact surface will actuate the spring-loaded contact. The spring-loaded contact is self-aligned between the two planes. An equal contact pressure applies on both surfaces (Fig. 3).

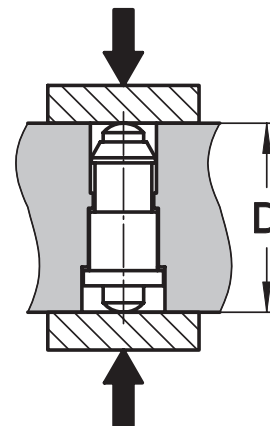


Fig. 3



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PAD CONNECTORS

SINGLE ROW / DOUBLE ROW / SURFACE MOUNT

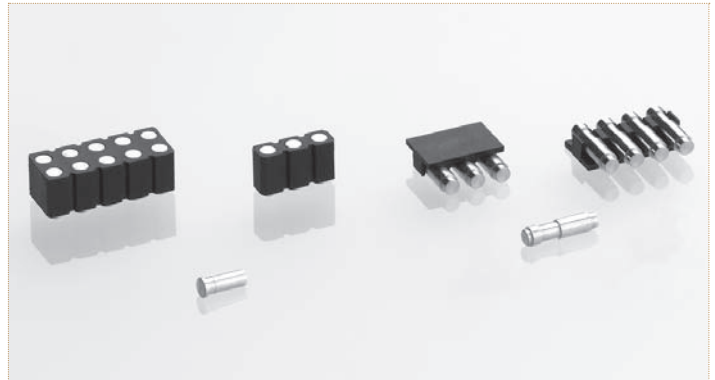
Pad connectors with fixed contacts, counterparts for spring-loaded connectors.

TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR	Black glass filled polyester PCT-GF30-FR
FLAMMABILITY	UL 94V-0
CONTACT	Brass CuZn36Pb3 (C36000)
CONTACTING AREA Ø	1.5 mm
OPERATING CURRENT	Max. 3.5 A
DIELECTRIC STRENGTH	Min. 1'000 V _{RMS}
COPLANARITY	
SMD TERMINATIONS	Max. 0.1 mm (measured on 25 mm long connectors)

ORDERING INFORMATION ROHS COMPLIANT PARTS

PLATING CODE	TERMINATION	CONTACTING AREA
10, 11	0.25 µm gold	0.25 µm gold



See page 178 for plating specs.

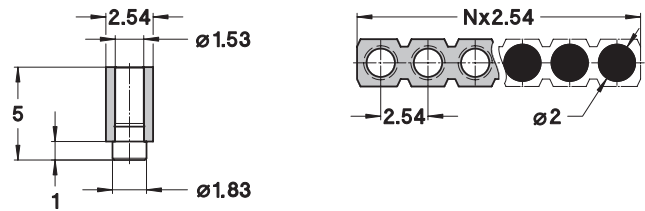
800-10-NNN-30-507101

SMD pad connector, single row, perpendicular mount

AVAILABILITY FROM 2 to 10 contacts
(standard number of contacts: 10)



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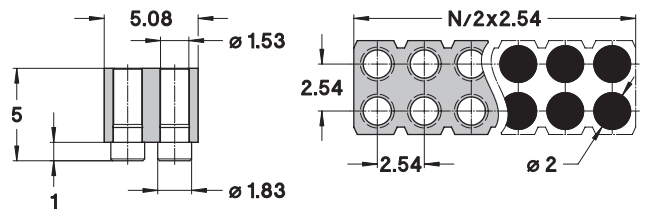
802-10-NNN-30-507101

SMD pad connector, double row, perpendicular mount

AVAILABILITY FROM 4 to 20 contacts
(standard number of contacts: 20)



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8MM-11-00NN-02-131

SMD pad connector, single row, parallel mount

AVAILABILITY FROM 2 to 10 contacts
(standard number of contacts: 10)



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