

# SPRING-LOADED CONNECTORS

A PERFECT ALTERNATIVE  
TO CONVENTIONAL CONNECTION SOLUTIONS



preci-dip

swiss world connects



preci-dip

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# SPRING-LOADED CONTACT TECHNOLOGY

## DESCRIPTION AND TECHNICAL SPECIFICATIONS

### Functional principle

PRECI-DIP spring-loaded contacts are made of a contact body or barrel, a piston and an helical compression spring. The electrical contact is established by the pressure against a fixed, flat area called the pad connector.

### An evolving line

Based on this initial model, we have developed additional designs featuring particular advantages:

- contacts with a slant or polygonal piston. These designs lead to a radial force on the piston, resulting in a lower ohmic resistance.

- patented coaxial or in-line designs with integrated multifinger sliding contact (clip) establishing electrical continuity between body and piston. The electrical multipoint connection between the mobile piston and the clip guarantees low, stable electrical resistance values without micro-discontinuities, even when the piston is moving or in case of vibrations, thus assuring maximum reliability.

We produce since 1995 a wide range of dimensions with varying technical specifications (see table).

## CHARACTERISTICS

STANDARD CONTACTS  
HOLLOW PISTON DESIGN



IMPROVED-DESIGN CONTACTS  
SLANT PISTON DESIGN      POLYGONAL PISTON DESIGN



«HIGH RELIABILITY» CONTACTS  
CLIP COAXIAL DESIGN      CLIP IN-LINE DESIGN



### ENVIRONMENTAL

Operating temp. range

- 55°C to + 85°C (music wire) / + 125°C (stainless steel)

### MATERIALS (RoHS-compliant)

Piston		Gold plated machined brass		
Barrel		Gold plated machined brass		
Spring		Gold plated music wire / Stainless steel		
Clip	-	-		Gold plated BeCu C17200

### MECHANICAL

Min. diameter	1.1 mm	1.5 mm	1.8 mm	0.8 mm
Min. initial height	2.5 mm	5 mm	4.5 mm	9 mm
Travel / height ratio	Max. 0.3	Max. 0.2	Max. 0.2	Max. 0.15
Max. travel (stroke)	2 mm	2 mm		1.5 mm
Min. initial spring force	0.2 N	0.2 N		0.2 N
Mechanical life*	100'000 cycles	50'000 cycles		10'000 cycles****

### ELECTRICAL

Contact resistance**	Max. 15 mΩ	Max. 10 mΩ	Max. 20 mΩ	
Max. operating current***	1 A cont. / 2 A peak	3.5 A cont. / 7 A peak	2 A cont. / 4 A peak	

\* Tested at nominal stroke with perpendicular pad connector area  
 \*\* Static measurement in halfway position of piston travel  
 \*\*\* Above max. current values are for single contacts in free air and for 10°C temperature rise. Values are indicative and maybe affected by contact force, static or dynamic applications, shocks or vibrations  
 \*\*\*\* Could be reduced according to working conditions

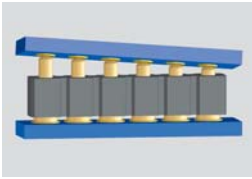


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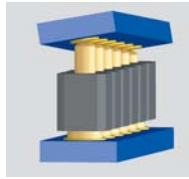
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# EXAMPLES OF APPLICATIONS

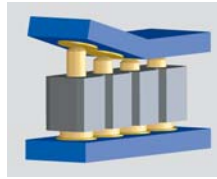
## SPECIFIC ADVANTAGES



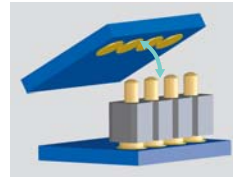
Accepts important positioning tolerances of the connectors



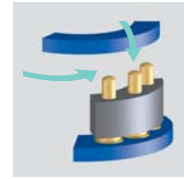
Connects surfaces non-perpendicular to the contact axis



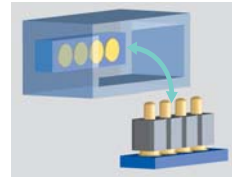
Compensates errors of parallelism and flatness



Connects pivoting or rotating elements



Connects with sliding mating action (push & lock)



Suitable for blind matings

## DOUBLE-SIDED SPRING LOADED

A solderless connecting system with double-sided pressure connection (Fig.1).

The conventional spring-loaded contact (SLC) ① is mounted in a frame (housing) ②.

The barrel has a groove behind a retention barb ③.

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

The second contact surface will actuate the spring-loaded contact. An equal contact pressure applies on both surfaces (Fig. 3).

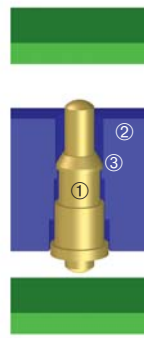


Fig. 1



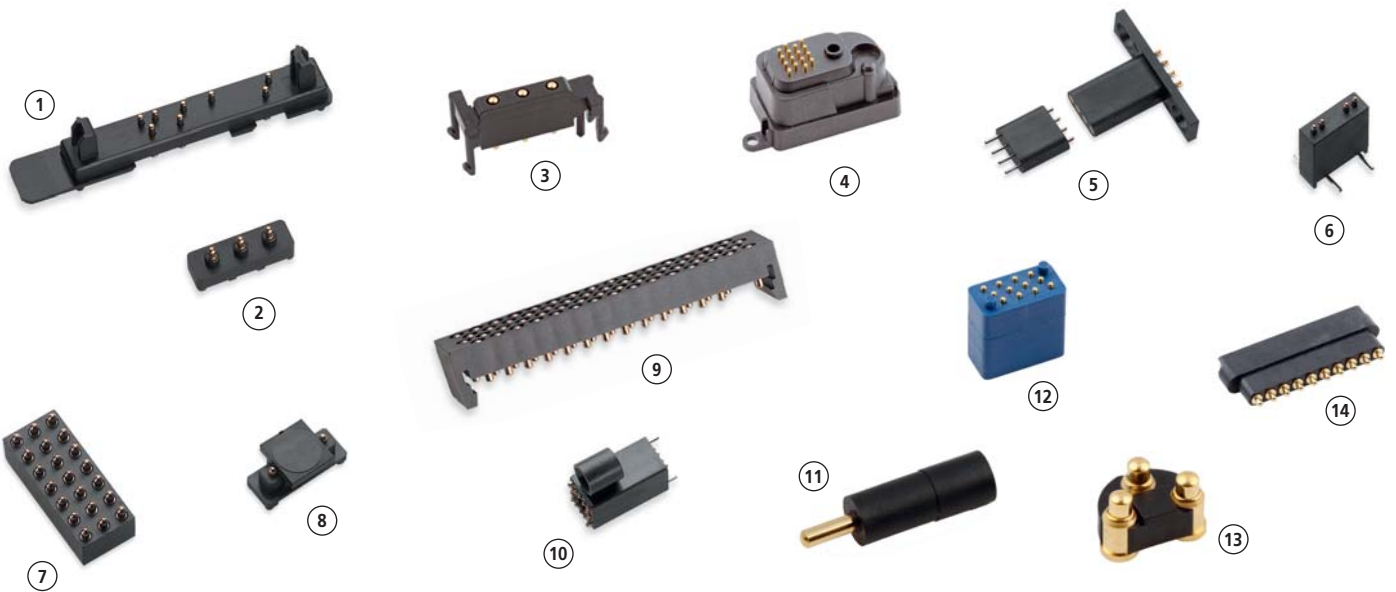
Fig. 2



Fig. 3

## EXAMPLES OF CONNECTORS

Applications in telecommunications, automation, industrial, transportation, testing, medical, aerospace, military equipments and consumer goods.



1 Connector with integrated guiding system for docking station of professional mobile radio

2 Connector for sealed assembly for mobile phone battery

3 Board-to-board 3-way double-sided connector with click-in mounting latches for heating system control unit

4 Connector system for professional mobile radio

5 Spring-loaded and pad connector for gate control on automatic conveyor system

6 Connector for security control loop on automatic cash dispenser, banking and vending machines

7 SMD spring-loaded and pad connector for dash board add-on for telecommunication equipment

8 SMD connector for internal dash board connection

9 Double-sided spring-loaded connector with integrated snap-in bracket for motherboard to mezzanine board connection

10 Board-to-board connection in tactical manpack radio

11 Double-sided sealed contact for countermeasures dispenser

12 Ultra-miniature board-to-board double-sided connector, 0.5 x 1mm grid

13 Board-to-board 3-way connector for RF interface

14 Board-to-board 10-way double-sided connector for payment terminal

## ENJOY THE BENEFITS

# HEADED FOR SUCCESS

Awards from prestigious institutions and customers. Major certifications. Worldwide recognition. For ongoing innovation, perfect teamwork, environmental responsibility as well as entrepreneurial excellence and sustained growth. In short, for swiss quality.

- COMPLETE RANGE OF HIGHLY RELIABLE INTERCONNECT COMPONENTS
- DIVERSE FIELDS OF APPLICATION
- IN-HOUSE MANUFACTURING – FROM RAW MATERIAL TO FINISHED PRODUCT
- EFFECTIVE MANAGEMENT SYSTEM
- HIGHLY SKILLED AND MOTIVATED WORKFORCE
- STRONG CUSTOMER SUPPORT
- CUSTOM DESIGN
- COMPETITIVE PRICING, FLEXIBILITY AND SWISS QUALITY
- WORLDWIDE PRESENCE
- PRESTIGIOUS CLIENT BASE

## CHOOSE THE BEST CONNECTION

# AROUND THE WORLD

More than 100 Distributors around the world distribute preci-dip products across the five continents.



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