

MiniBridge

1.27 mm Connectors



MiniBridge - CABLE CONNECTOR SYSTEMS

The compact design of the single-row cable connector systems in a 1.27 mm pitch is excellent for space-saving connections between PCBs and decentralised function units such as operator panel displays, switches, motors, fans or fuses. The single row MiniBridge connector Koshiri version with a 1.27 mm pitch offers a high level of mating reliability. The housing geometry helps to avoid damage of the male contacts even in case of improper skewed insertion. In addition to Koshiri Secure*, the MiniBridge connector fulfils the applicable requirements of LV214 for automotive connectors in Insulation Displacement Connection (IDC) technology. The cable connector system is used in various fields for example, automobile industry, mechanical engineering, medical technology and also consumer electronics. Various connection options can be realised thanks to the right angle or vertical male connectors and female connectors with 90° and 180° cable outlets. Both female and male connectors in Surface Mount Technology (SMT) and IDC variants are available. The plastic housing is resistant to temperatures up to 150 °C whereby the connector is suitable for lead-free reflow soldering. The male connectors are available as tape and reel packaging for automatic assembly.

The cable guide of the female connector simplifies cable connection or individual wires. Prefabricated cables are available in stock. Specified assemblies are realised within a short time period.



MiniBridge Connectors Standard



MiniBridge Connectors Koshiri

*Requirement for Koshiri Secure:

Signal and current carrying components (contacts) may only be touched by their signal and current carrying opposites (and their catch funnels) during assembly/disassembly. Contact with housing components is structurally not permitted. (Source LV 214)

TECHNICAL DETAILS

Standard Variant

| | |
|----------------------------|--|
| Pitch | 1.27 mm |
| Current rating per contact | up to 8 A (depends on cable) |
| Termination technology | Male connector SMT, female connector IDC |
| Cables | Ribbon cable AWG 26/7 Discrete wire AWG 22/7, AWG 24/7 and AWG 26/7 |
| Variants | Vertical male connector type P, Right angle male connector type A, Right angle female connector type P, Female connector type A with 180° cable outlet, Female connector type P with 90° cable outlet, Male connector type P with 180° cable outlet |
| Interlocking | Female connector red (high vibration/shock load) - unlockable only with a tool, e.g. tip of pen Female connector black / white (normal vibration/shock load) - unlockable without any tool |

Koshiri Variant

| | |
|----------------------------|--|
| Pitch | 1.27 mm |
| No. of Pins | 2, 3, 4, 6, 8, 10, 12 |
| Current rating per contact | up to 8,7 A (depends on cable) |
| Termination | Male connector SMT, female connector IDC |
| Cable | Discrete wire AWG 22/7, AWG 24/7 and AWG 26/7 |
| Variants | Vertical male connector type P, Right angle male connector type A, Female connector type A with 180° cable outlet, Female connector type P with 90° cable outlet, |
| Interlocking | Female connector red (high vibration/shock load) - unlockable only with a tool, e.g. pen with a round tip |



Mating Advantages Koshiri Variant

- Additional tongues at the male and grooves at the female connector allow a pre-alignment and provide an exact mating procedure.
- The male connector contact pins are not damaged during improper or skewed mating.

AVAILABLE TERMINATIONS



- Vertical male - Female with 90° cable outlet



- Right angle male - Female with 90° cable outlet



- Right angle male - Female with 180° cable outlet



- Vertical male - Female with 180° cable outlet

AVAILABLE TERMINATIONS



- Female and male with 180° cable outlet



- Right angle male - Right angle female

FEATURES

Easy Assembly

- Pick-and-place cover for automatic assembly with a vacuum pipette.
- Reliable retention force due to ruggedized metal clips on both sides of each male.



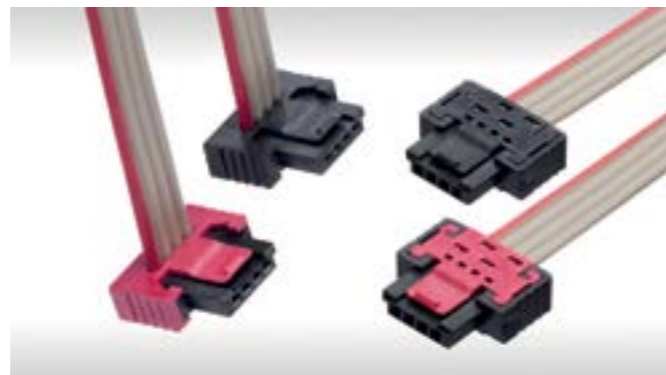
Guiding Elements

- The rugged insulation body of the male connector provides an excellent cable connector guide.
- Two pegs (round and oval) for exact positioning on the printed circuit board (pcb).



Interlocking

- Positive lock (red): (high vibration/Shock load) unlockable only with a tool, e.g. tip of pen
- Friction lock (black): (normal vibration/shock load) unlockable without any tool



SSL-Lighting Technology

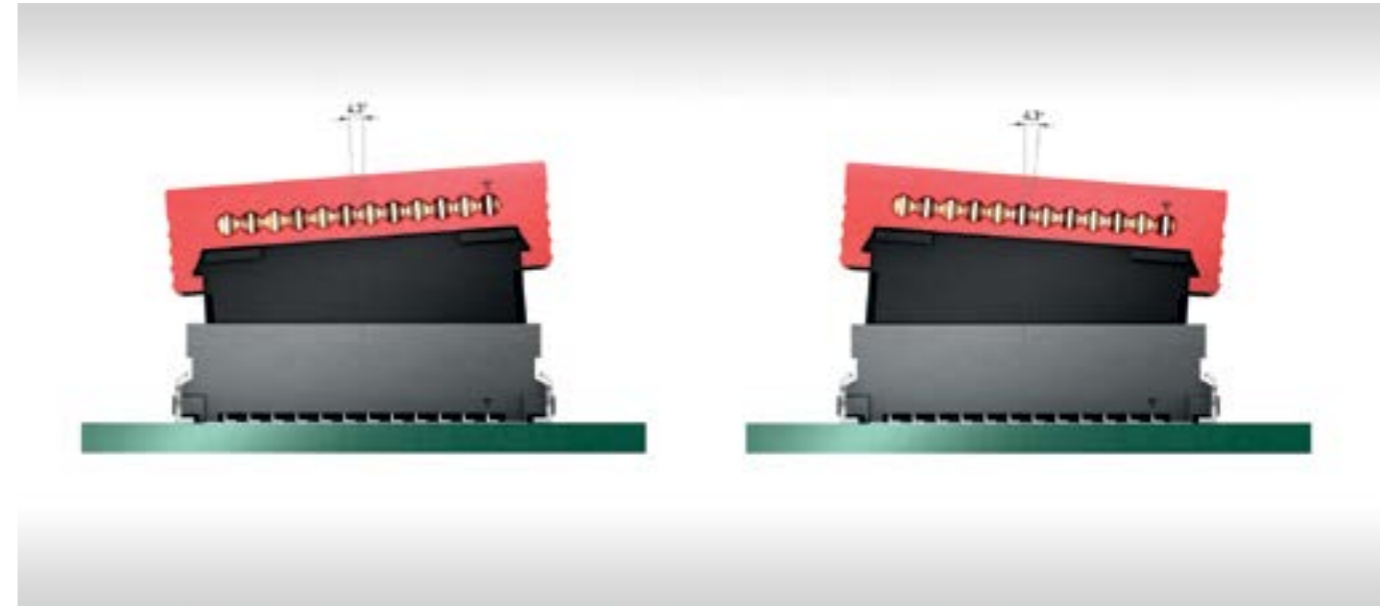
- Connectors with colourless insulation bodies helps prevent shadow formation in lighting applications, e.g. LED strips with transparent diffusion disks. Thus providing uniform light distribution.



MATING CONDITIONS

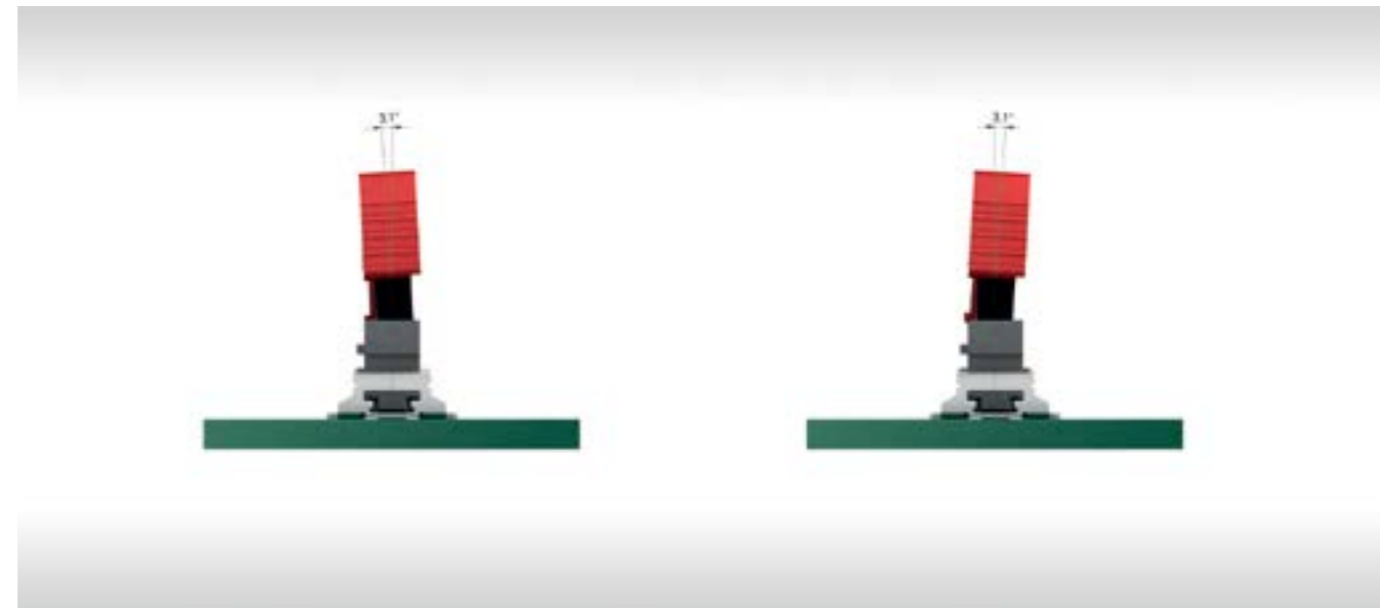
Allowed Angular Inclination Tolerances, Longitudinal 4.3°

Standard Variant



Allowed Angular Inclination Tolerances, Transverse 3.1°

Standard Variant



ELECTRICAL AND MECHANICAL CHARACTERISTICS SMT AND IDC

Technical Data

| Description | Standard | Male Connector | Female | Male Connector | Female |
|--|-----------------------|---|---|---------------------------------|---|
| | | SMT Type A and P | Connector SMT Type P | IDC Type P | Connector IDC Type A and P |
| Climate category | DIN EN 60068-1 test b | 55 / 150 / 56 | 55 / 125 / 56 | 55 / 150 / 56 | |
| Temperature range | | -55 / 150 °C | -55 / 125 °C | -55 / 150 °C | |
| Current rating per contact | IEC60512 test 5b | see IDC or SMT female connector | 20 C° max. 4.8 A 70 C° max. 3.2 A 100 C° max. 2.0 A | see IDC or SMT female connector | 20 C° max. 8.7 A 70 C° max. 6.8 A 100 C° max. 5.4 A depends on cable |
| Air- and creepage distance | | contact - contact 0.4 mm | | | |
| Operating voltage | IEC 60664 | <p>The permissible operating voltages depend on the customer application and on the applicable or specified safety requirements.</p> <p>Insulation coordination according to IEC 60664-1 has to be regarded for the complete electrical device. Therefore, the maximum creepage and clearance distances of the mated connectors are specified for consideration as a part of the whole current path. In practice, reductions in creepage or clearance distances may occur due to the conductive pattern of the printed board or the wiring used, and have to be taken into account separately.</p> <p>As a result the creepage and clearance distances for the application may be reduced compared to those of the connector.</p> | | | |
| Dielectric strength | IEC 60512 test 4a | contact - contact 500 V _{rms} | | | |
| Contact resistance | IEC 60512 test 2a | ≤ 25 mΩ | | | |
| Insulation resistance | IEC 60512 test 3a | ≥ 10 ⁴ MΩ | | | |
| Vibration, sine | IEC 60512 test 6d | 10 - 2000 Hz 20 g | | | |
| Contact disturbance (while vibration test) | IEC 60512 test 2e | < 1 μs | | | |
| Shock halvesine | IEC 60512 test 6c | 50 g 11 ms | | | |
| Mechanical operation | IEC 60512 test 9a | 500 mating cycles | | | |
| Insertion and withdrawal force | IEC 60512 test 13b | 1 N per contact | | | |
| Gauge retention force | IEC 60512 test 16e | > 0.1 N | | | |
| Polarization | IEC 60512-13-5 | 60 N | | | |
| Interlocking noise | | 40 dB (A) | | | |

ELECTRICAL AND MECHANICAL CHARACTERISTICS SMT AND IDC

Technical Data

| Description | Standard | Male Connector | Female | Male Connector | Female |
|-----------------------------------|--------------------|---|-------------------------|----------------|-------------------------------|
| | | SMT Type A and P | Connector SMT Type P | IDC Type P | Connector IDC Type A and P |
| Process-conditions | | | | | |
| Solder temperature max. | IEC 60068-2-20 | | | | |
| Hand soldering temperature max. | | 3.5 s at 350 °C | | | |
| Reflow soldering temperature max. | JEDEC J-STD-020 | 20 - 40 s at 260 °C | | | |
| Coplanarity | | < 0.1 mm | | | |
| Housing Material | | | | | |
| Plastic material | | LCP | | | |
| CTI value | IEC 112 | 175 | | | |
| UL flame rating | | UL 94 V-0* | | | |
| UL file | | E83005 | | | |
| Contact Material | | | | | |
| Base material | | Cu alloy | | | |
| Mating area | | gold plating | | | |
| Termination area | | Sn | | | |
| Environment compatibility | | | | | |
| Recycling | | no flame-retardant additives, no toxic additives allow easy recycling | | | |
| Product-approval | | | | | |
| UL | | E84703 | | | |

* not valid for SMT female connectors in red color (positive lock)

ELECTRICAL AND MECHANICAL CHARACTERISTICS CABLE

Cable Data

| Description | Standard Cable (PVC) | High Temperature Cable (TPE-ET) | Halogen-free Cable (TPE-O) |
|-------------------------|--|--|--|
| Cross Section | AWG-26/ 7/ 0.14 mm ² | | |
| Conductor | Cu wire tin-plated | | |
| Marking | available | | |
| Insulation | PVC wall thickness min. 0.178 mm | TPE-ET wall thickness min. 0.2 mm | Polyolefin wall thickness min. 0.178 mm |
| Shore hardness | 94 ±3 (Shore A) | 96 ±3 (Shore A) | 90 ±3 (Shore A) |
| Technical data | | | |
| Temperature range | -30/105 °C (unmoved) -20/105 °C (moved) | -60/125 °C (unmoved) -40/125 °C (moved) | -40/105 °C (unmoved) -20/105 °C (moved) |
| Voltage rating | max. 300 V | | |
| Dielectric strength | 2000 V _{rms} | 1500 V _{rms} | 1500 V _{rms} |
| Conductor resistance | ≤ 135 Ω/km | ≤ 138 Ω/km at 20 °C | max. 135 Ω/km at 20 °C |
| Insulation resistance | ≥ 100 MΩ x km at 20 °C | ≥ 20 MΩ x km at 20 °C | min. 20 MΩ x km at 20 °C |
| Capacitance at 1 kHz | GSG ≤ 60 pF/m | GSG 40 pF/m | GSG 40 pF/m |
| Inductance | GSG 0.9 μH/m at 10 KHz | GSG 0.79 μH/m at 10 KHz | GSG 0.95 μH/m at 1 KHz |
| Impedance | GSG 100 Ω | GSG 110 Ω | GSG 95 Ω |
| Crosstalk in % | Cable length 3 m: NE 5.4 / FE 6.8 | - | - |
| Propagation delay | 4.6 ns/m | 6.2 ns/m | - |
| Flammability | UL VW-1; CSA FT-1 | UL 1581 Sec. 1080, VW-1 | UL 1581 |
| Product-approval | | | |
| UL | AWM 2651 | - * | AWM 21151 |
| CSA | Yes | No | Yes |

* UL Style 21739 on request

For more information on tooling, variation and processing of cable please check [Processing Specification MiniBridge IDC](#)

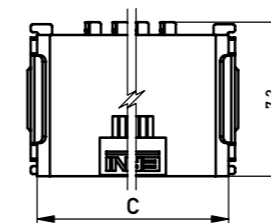
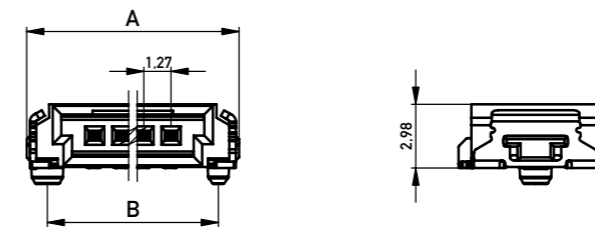
RIGHT ANGLE MALE SMT TYPE A

Product Specification

- SMT termination
- tape and reel packaging for automatic assembly
- suitable for lead-free reflow soldering process
- white versions for lighting applications
- for available part numbers please refer to our website



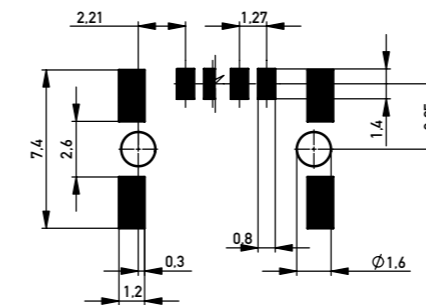
Dimensional Drawings



| No. of Contacts | A | B | C |
|-----------------|-------|-------|-------|
| 2 | 7.62 | 5.69 | 6.72 |
| 3 | 8.89 | 6.96 | 7.99 |
| 4 | 10.16 | 8.23 | 9.26 |
| 6 | 12.70 | 10.77 | 11.80 |
| 8 | 15.24 | 13.31 | 14.34 |
| 10 | 17.78 | 15.85 | 16.88 |
| 12 | 20.32 | 18.39 | 19.42 |

All dimensions in mm

Recommended Layout



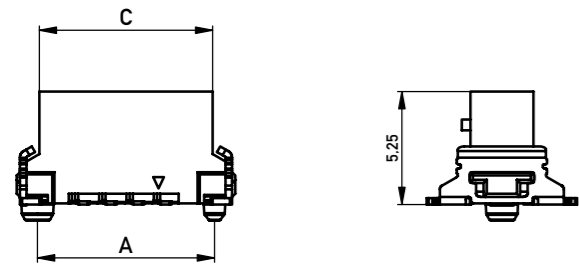
VERTICAL MALE SMT TYPE P

Product Specification

- SMT termination
- tape and reel packaging for automatic assembly
- suitable for lead-free reflow soldering process
- with pick-and-place cover
- for available part numbers please refer to our website

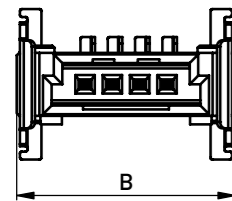


Dimensional Drawings

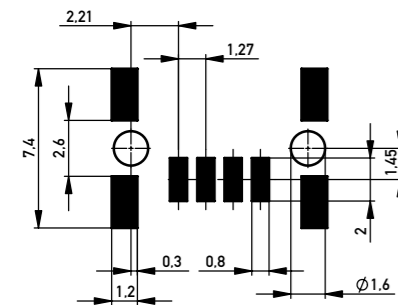


| No. of Contacts | A | B | C |
|-----------------|-------|-------|-------|
| 2 | 5.69 | 7.62 | 5.60 |
| 3 | 6.96 | 8.89 | 6.79 |
| 4 | 8.23 | 10.16 | 8.06 |
| 6 | 10.77 | 12.70 | 10.60 |
| 8 | 13.31 | 15.24 | 13.14 |
| 10 | 15.85 | 17.78 | 15.68 |
| 12 | 18.39 | 20.32 | 18.22 |

All dimensions in mm



Recommended Layout



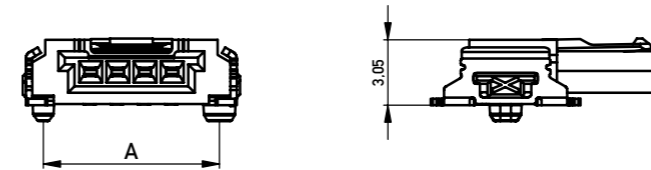
RIGHT ANGLE FEMALE SMT TYPE P

Product Specification

- SMT termination
- tape and reel packaging for automatic assembly
- suitable for lead-free reflow soldering process
- white versions for lighting applications
- two types of interlocking are available
- for available part numbers please refer to our website

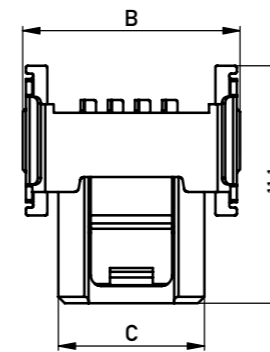


Dimensional Drawings

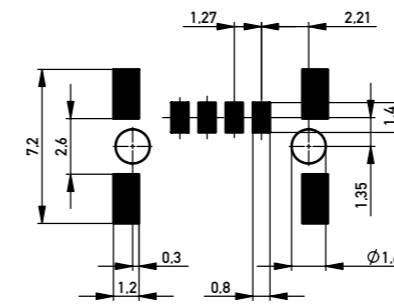


| No. of Contacts | A | B | C |
|-----------------|-------|-------|-------|
| 2 | 5.69 | 7.62 | 4.29 |
| 3 | 6.96 | 8.89 | 5.56 |
| 4 | 8.23 | 10.16 | 6.83 |
| 6 | 10.77 | 12.70 | 9.37 |
| 8 | 13.31 | 15.24 | 11.91 |

All dimensions in mm



Recommended Layout



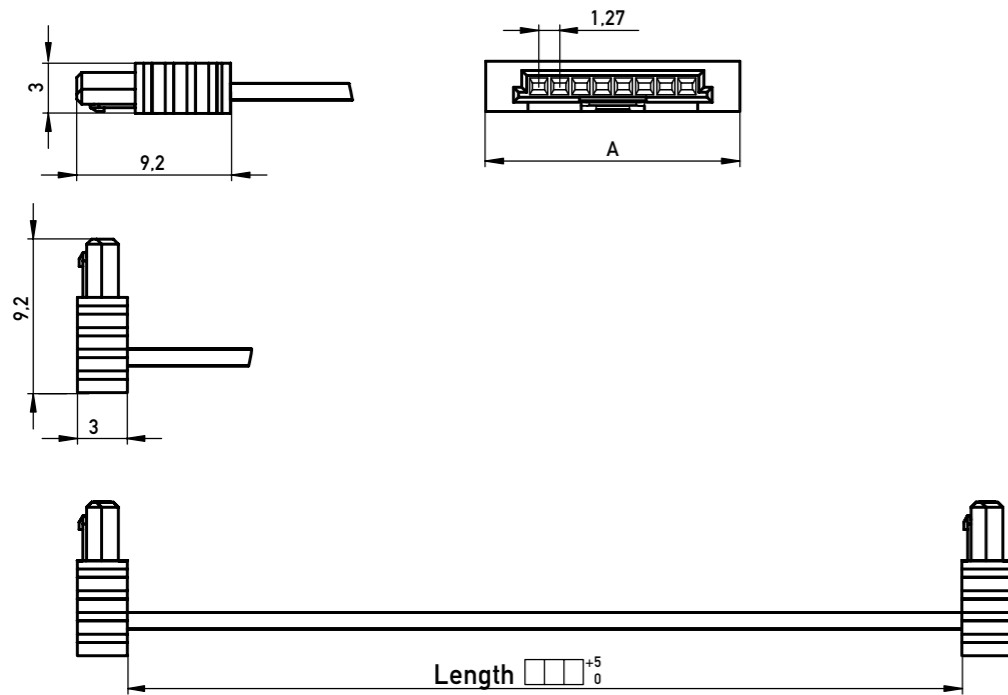
CABLE ASSEMBLIES

Product Specification

- IDC termination
- Ribbon cable AWG 26/7
- Discrete wire AWG 22/7, AWG 24/7 and AWG 26/7
- for available part numbers please refer to our website



Dimensional Drawings

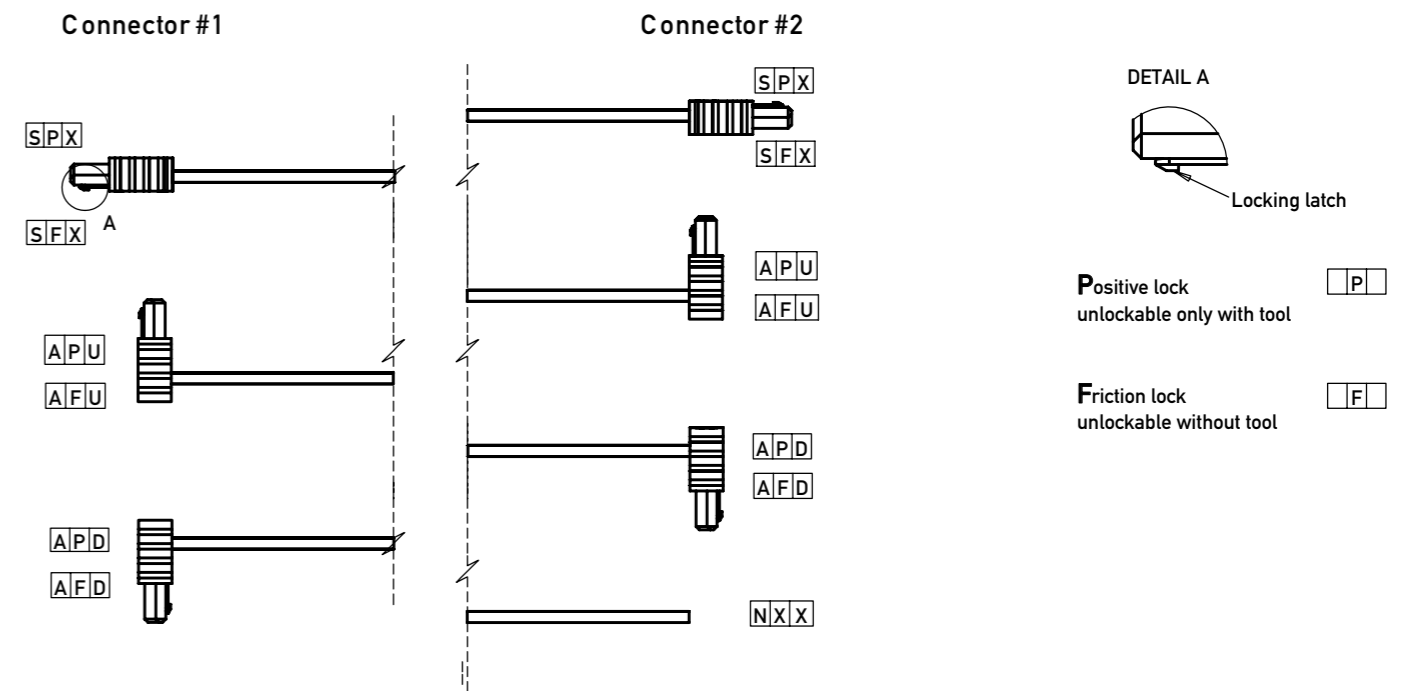


| No. of Contacts | A |
|-----------------|-------|
| 2 | 7.62 |
| 3 | 8.89 |
| 4 | 10.16 |
| 6 | 12.70 |
| 8 | 15.24 |
| 10 | 17.78 |
| 12 | 20.32 |

All dimensions in mm

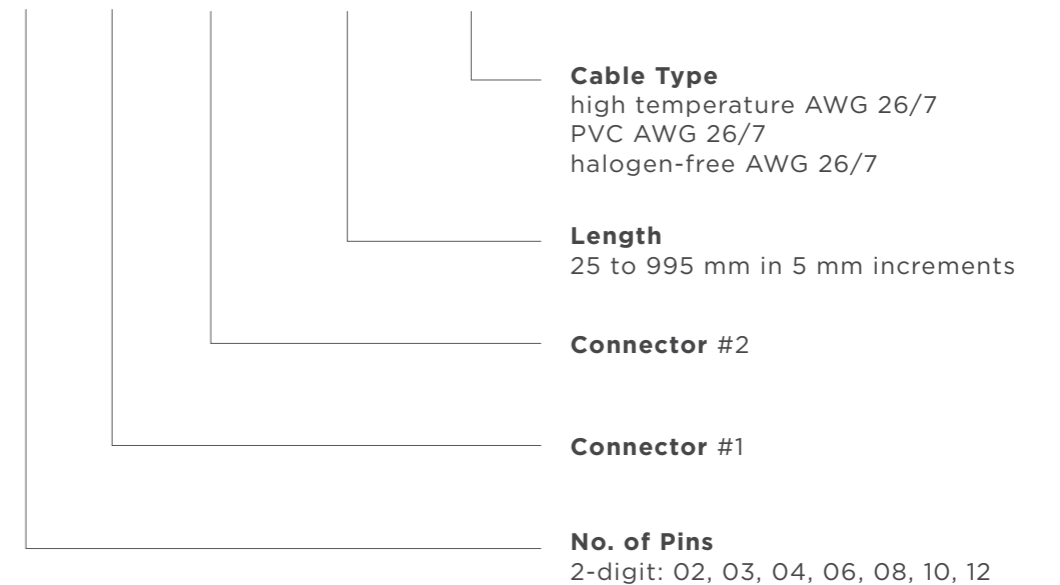
CABLE ASSEMBLIES

Coding and Interlocking



Order Code Standard Assemblies

IDCCS _ SRC _ 1.27 _ □□ _ □□ _ □□□ _ □□□□□ _ □□



Discrete wire cable assemblies on request.

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