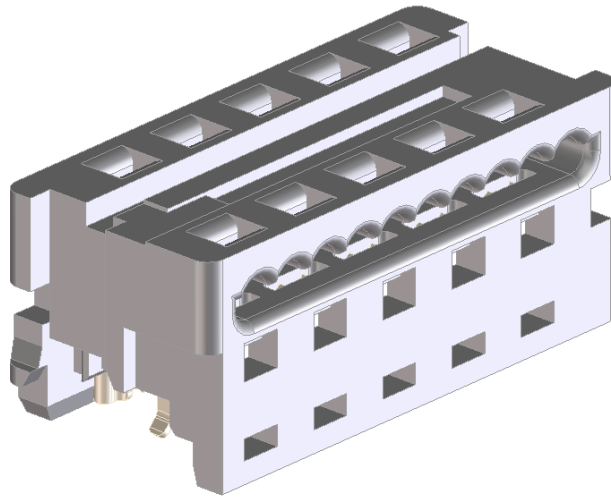
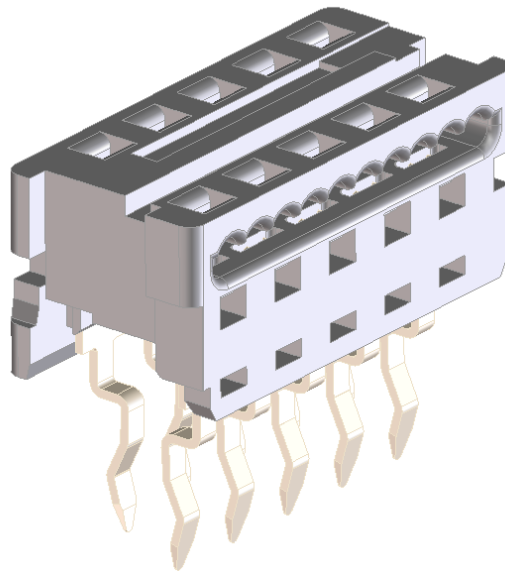


MICA

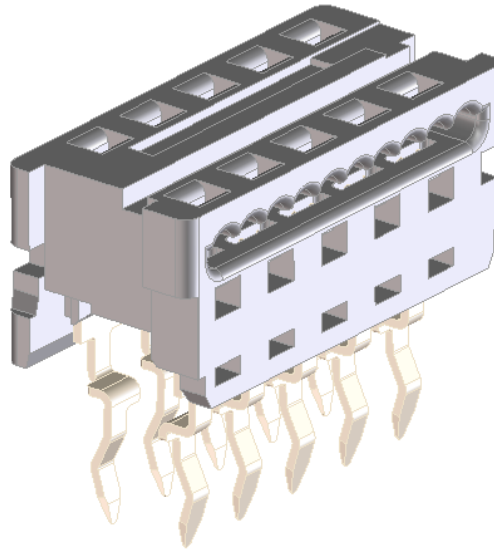


MICAL



	Date	Name	Edition	1	2	3	4	5			
Author	21.08.2002	Hegel	Name	Hegel	Hegel	Gazke	Schubert	Schubert			
Checked	10.03.2016	sch	Date	12.12.2002	07.07.2004	21.02.2007	28.01.2016	01.03.2016			

MICALD



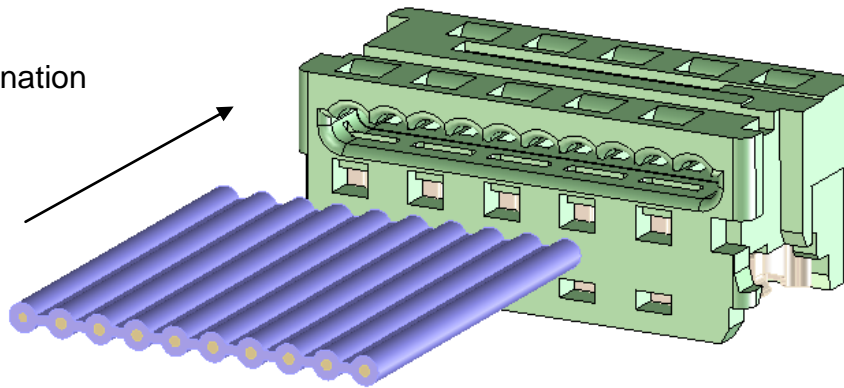
Contents:

1	System featured	5
1.1	Types of products.....	6
2	Contact principle	8
3	Application tooling and machines	9
3.1	Tools	9
3.2	Machines.....	9
3.3	Semi-automatics	10
3.3.1	Uncoiling directions.....	10
3.4	Fully-automatic machines	11
4	Cable specification.....	12
4.1	Cable specifications cross section for connection 0,09... 0,135 mm ²	12
5	Assembly	13
5.1	Connector feed.....	13
5.2	Cutting clearance	14
5.3	Termination head	14
5.4	Adjustment height of the processing machine and connector height after assembly.....	15
5.5	Wire end position	16
5.6	Cable.....	16
5.7	Housing.....	16
6	Guarantee against incorrect mating	17
6.1	Coding.....	17
6.2	Torsion safety.....	17
6.3	Colour coding	17
7	Quality assurance	18
7.1	Quality features	18
7.2	Quality features / IDC.....	18
7.3	ID slot width.....	18
7.4	Symmetry of ID slot.....	18
7.5	Cable quality	18
7.6	Contact insertion depth	18
7.7	Cable protrusion.....	19
7.8	Retention force of the wire	19
7.9	Electrical tesing.....	19
8	Storage.....	20

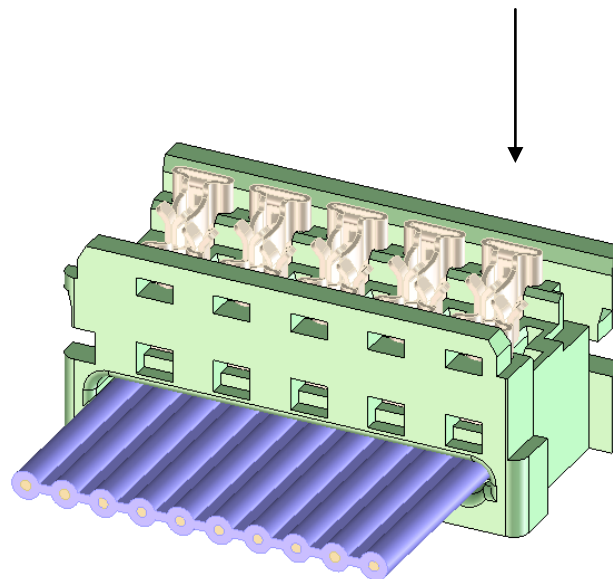
1 System featured

One-piece body,
Contact springs in pre-latching position,
Pitch 1,27 mm

Wire termination



Insulation displacement connection by pressing the contacts
Wire exit 90°. The maximum bending radii of the cables and conductors are listed in the specifications from the cable manufacturer.



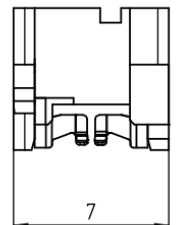
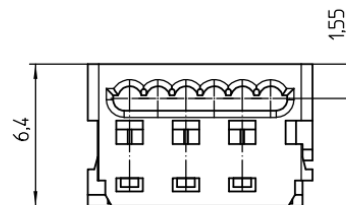
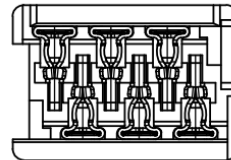
1.1 Types of products

MICA series

Insulation displacement (IDC) connectors, for indirect mating with snap-in lock.

Pitch 1,27mm

Acc. to data sheet 300 01

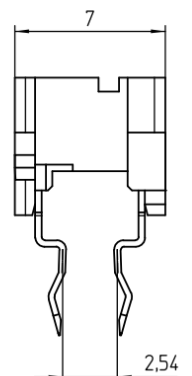
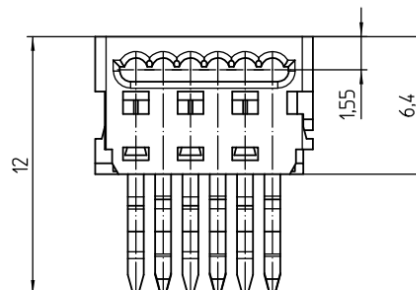
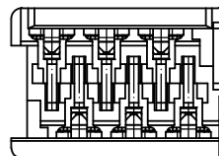


MICAL series

Solder-in insulation displacement (IDC) connectors, with two rows of offset solder contacts.

Pitch 1,27mm

Acc. to data sheet 301 03

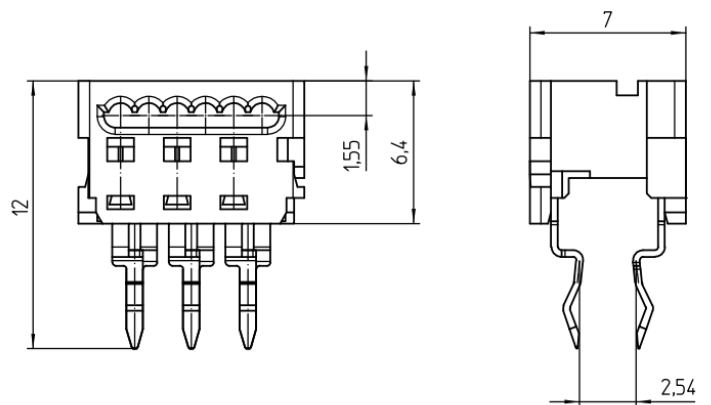
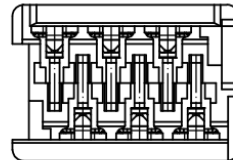


MICALD series

Solder-in insulation displacement (IDC) connectors, with two rows of parallel solder contacts.

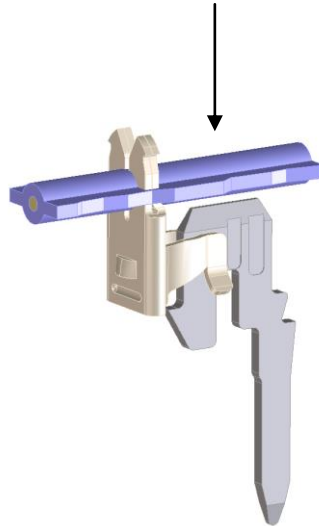
Pitch 1,27mm

Acc. to data sheet 301 04



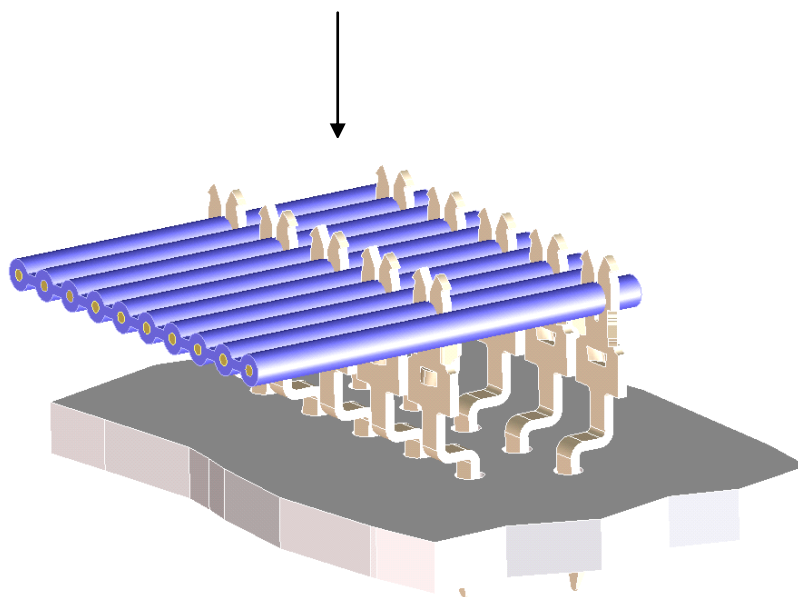
2 Contact principle

Indirect mating on the contact tab (Type MICA)



Insulation displacement connection
(Test acc. to DIN EN 60352-4 / IEC 60352-4)

Soldering on the PCB (Types MICAL and MICALD)



Insulation displacement connection
(Test acc. to DIN EN 60352-4 / IEC 60352-4)

3 Application tooling and machines

The function, safety and quality of the connectors are only guaranteed by using of LUMBERG processing equipment. It has to be taken into account that the connectors aren't checked electrically before the processing / assembling. Because of that an electrical test should be carried out after processing / assembling.

The user bears full responsibility if any other processing equipment is used.

In case of using any lubricants or sliding agents in the feed and press areas residues (impurities) must not come into contact with the connectors.

3.1 Tools

All delivery conditions are possible.

HZ30

The HZ30 manual crimping tool is available for processing the connectors of type MICA (up to 16 poles).

HZ-M30

For processing all connector types (MICA / MICAL / MICALD, up to 26 poles in small series), for producing sample parts, and for repairing cable harnesses on site.

KHP30

For processing all connector types (MICA / MICAL / MICALD, up to 26 poles in small series).

AZ30

The AZ30 puller pliers are recommended for use when dismantling the MICA type connectors.

3.2 Machines

The delivered condition depends on the type of machine.

PP30

Pneumatic press for the production of small and medium-sized series. The processing machine possesses a cable stop position interrogation with automatic release of the Press.

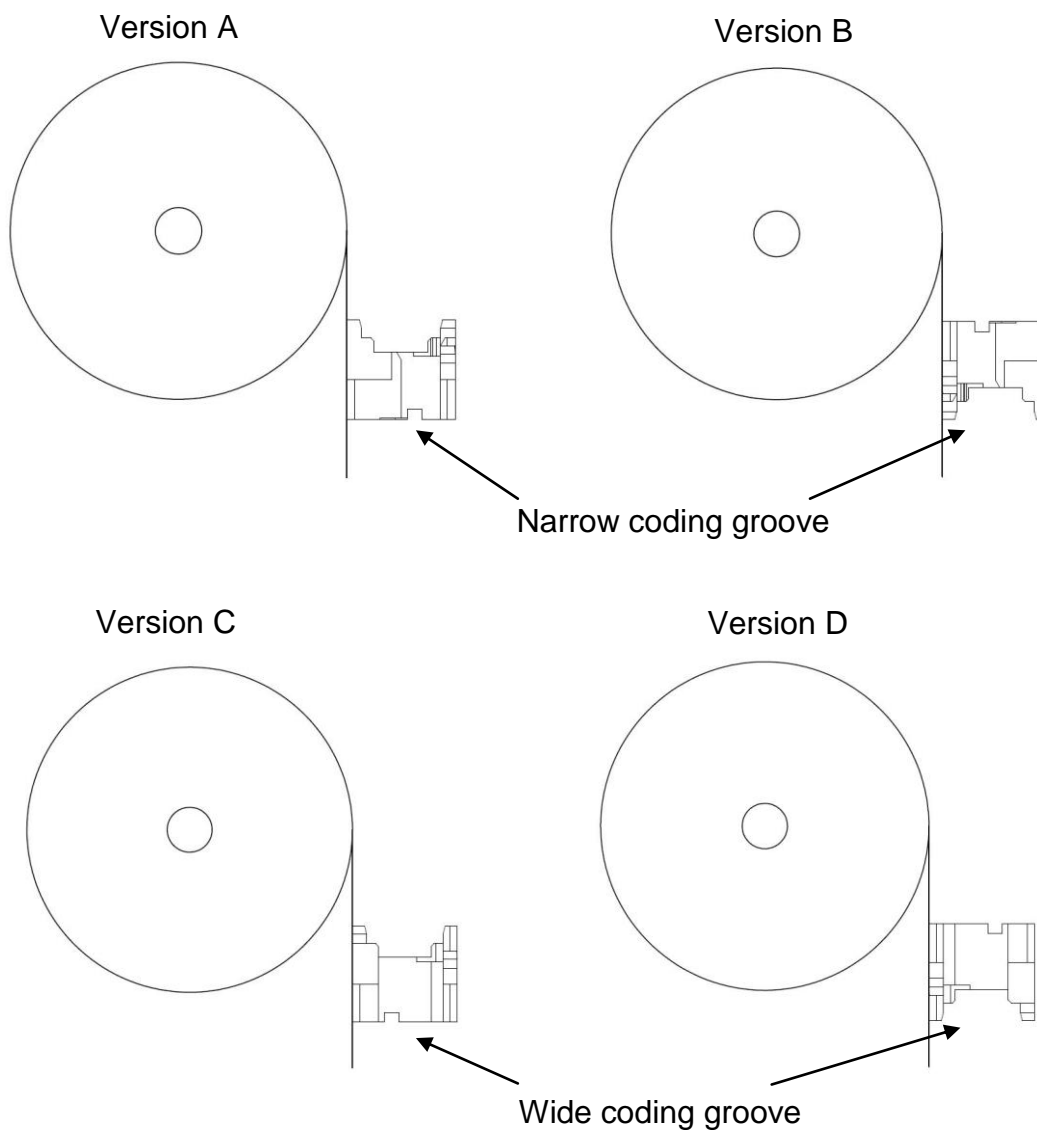
3.3 Semi-automatics

Delivery can only be made in versions A and C.

HA30e-R

Semi-automatic machine for cost-effective attachment of ribbon cables to automatically supplied MICA-series connectors. Used for medium-sized and large series. Connectors are delivered on adhesive tape and rolled in spool.

3.3.1 Uncoiling directions



3.4 Fully-automatic machines

All delivery conditions are possible.

VARICON 1000

A fully-automatic machine where the ribbon wire is cut and mated on both sides with the connectors. An electrical continuity check and short circuit test is optionally integrable. There are end-stop versions for 1-to-1 (Z-shaped) and 1-to-n (U-shaped). Used for large-scale industrial series production.

4 Cable specification

This instruction is not valid for shielded flat cables. The cable specifications must be kept. Any deviation must be discussed and approved by LUMBERG.

4.1 Cable specifications cross section for connection 0,09... 0,135 mm²

Flat cable AWG28 (7 x $\varnothing 0,127\text{mm}$ = 0,09mm²); tin-plated
Technical specification sheet 901 01

Flat cable AWG28 ($\varnothing 0,32\text{mm}$ = 0,09mm²); tin-plated
Technical specification sheet 901 02

Flat cable AWG26 (69 x $\varnothing 0,05\text{mm}$ = 0,135mm²); tin-plated
Technical specification sheet 901 04

Other cables see – Approval list is on the internet at www.lumberg.com.

5 Assembly

The cables are mated with the contact equipped connectors.

5.1 Connector feed

Depending on the kind of delivery the connector feed is as follows

- Bar stock carrier consisting of antistatic, transparent PVC



- Bulk material



- Coils adhesive taped in 4 different uncoil directions A to D (point 3.3.1)



5.2 Cutting clearance

Wire cross section for connection (conductor) and insulation displacement area (ID slots) have to correspond. Only released cables are to be used for the ID slots.

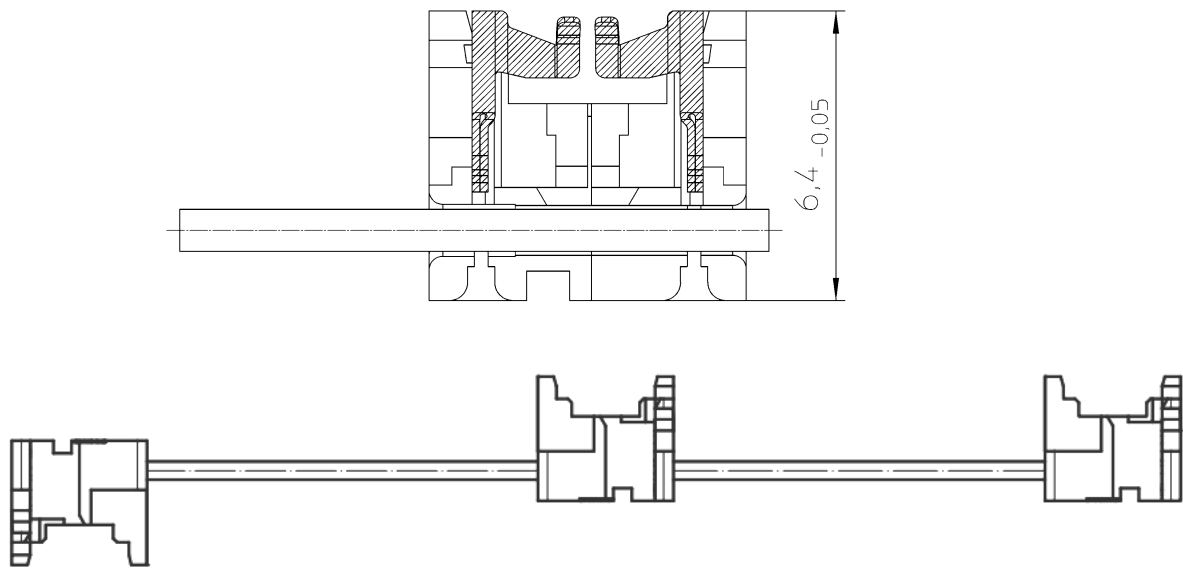
5.3 Termination head

In order to guarantee a correct positioning of the contacts and not to damage the bodies during the termination of the contacts, termination head, contact and connector have to correspond. The termination heads are part of the application machines.

One mounting form exists for the type MICA, another mounting form exists for the types MICAL and MICALD.

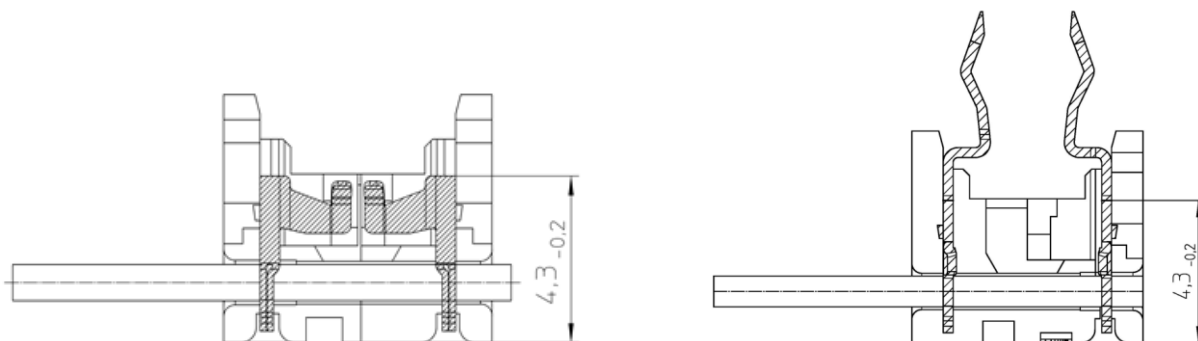
5.4 Adjustment height of the processing machine and connector height after assembly

In order to guarantee a correct insulation displacement connection and the mating with suitable MICS tab headers, the contact insertion depth must comply. Attention must be paid on the correct shut height dimension of the LUMBERG application equipment. The shut height dimension of the termination head is $6,4 - 0,05$ mm. This is the height of the contacts in the pre-latching position (measured from the upper edge of the contacts to the area of support).



The height of the connector is a decisive factor for the functionality of the connector. It is determined by the adjustment dimension on the processing machine. The crimp height must be determined no more than 30 minutes after the crimping process. For the acceptance of the processing machine, it must achieve a $cmk > 1.67$, and a $cpk > 1.33$ for series production. We recommend setting the crimping dimension to the tolerance center for the configuration of the processing machine. When measuring the crimp height, a plate micrometer gauge should be used with a plate diameter of 20 mm. The crimp height should be measured at both ends and in the middle.

The press-in dimension of the contact is 4.3 mm (measured with a depth gage from the contact's top edge to the contact surface).

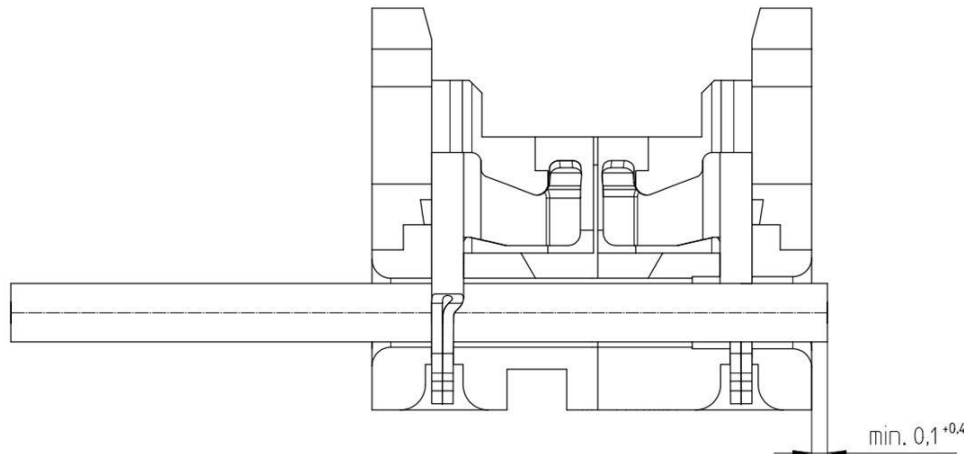


MICA

MICAL / MICALD

5.5 Wire end position

The proper conductor overhang ensures that both cutting shanks achieve contact. The proper wire end position must be considered when processing the connectors. This position must be properly checked after the connector assembly. The conductor insulation may only be removed from the specified area.



5.6 Cable

No damaged insulation of the cable in direction wire exit is allowed (visual check). The ends of the cable must be cut off without burr and deformity.

5.7 Housing

After the termination no visual damages of the housing are allowed (visual check). The mating function must be guaranteed (functional check). The contact must be in correct position in the housing (visual check).

6 Guarantee against incorrect mating

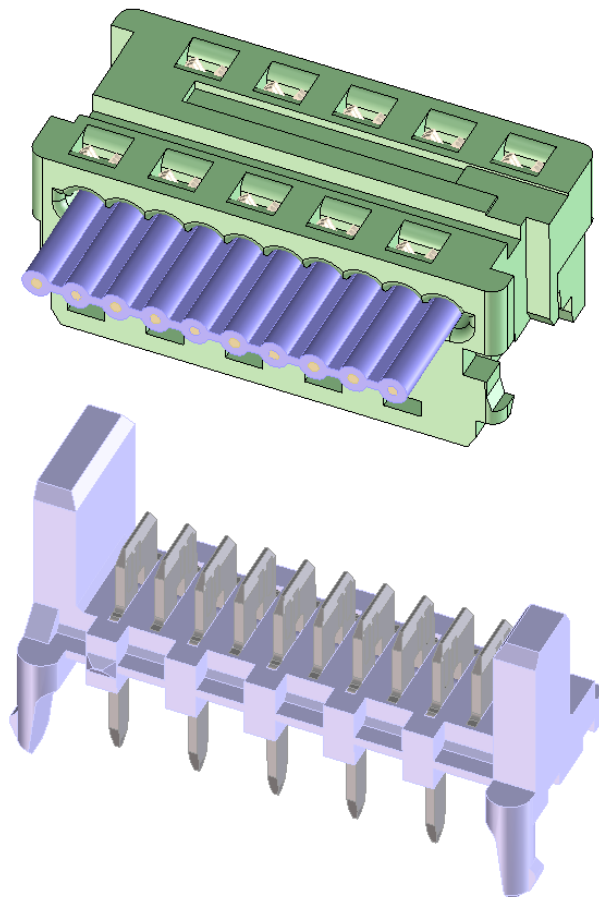
6.1 Coding

Not available.

6.2 Torsion safety

Available

Incorrect mating of the type MICA is avoided through various wide grooves at the beginning and the end of the connector. The grooves are positive-fit with the MICS tab headers.



6.3 Colour coding

Not available.

7 Quality assurance

For all working and processing steps and alterations (e. g. product launch, changes of the cable, changes of the tool or machine ...), which can affect the product quality, the responsible departments have to take care for appropriate quality assurance steps.

7.1 Quality features

The following quality features must be taken into consideration:

7.2 Quality features / IDC

- ID slot width
- Symmetry of ID slot
- Cable quality
- Contact insertion depth
- Cable protrusion

7.3 ID slot width

LUMBERG guarantees correct ID slot.

7.4 Symmetry of ID slot

Symmetry of ID slot and cable tolerance $\pm 0,1$ is guaranteed by the body.

7.5 Cable quality

The cable must meet LUMBERG specification acc. to point 4.1.

Customized cables, which are listed in the release lists, have to correspond with the available specification sheets.

Only LUMBERG released cables are to be used. The customer bears full responsibility for the correct mating when cables are used which are not listed in the release lists.

The user must ensure that all approved conductors and cables meet the quality requirements. The conductor cross-section, concentricity, micro Shore hardness and the termination (lay) length should all be checked.

7.6 Contact insertion depth

The contact insertion depth determines the position of the conductor in the ID slot area.

The locking hook of the contact spring must be concentric in the locking window. All single conductors must be in the ID slot area.

7.7 Cable protrusion

The cable protrusion according to point 5.5 must be kept. A protrusion of the cable in the housing leads to an incorrect mating. An exceeding of the maximal cable protrusion leads to uncertainties when actuating the connection.

7.8 Retention force of the wire

Specification regarding the retention force of the wire from the body on request.

7.9 Electrical testing

Electrical testing shall be performed in accordance with IPC/WHMA-A-620. The nature and extent of the electrical tests (short circuit testing, continuity testing, insulation testing, high voltage testing, etc.) should be specified depending on the application and the processing machine.

8 Storage

Tin-plated and silver-plated surfaces can undergo a physical aging process that may negatively affect their ability to be soldered. In order to maintain the best connection characteristics, make sure that the following instructions are closely followed during additional processing steps:

Storage conditions:

The parts should ideally be stored in the original packaging, at a constant temperature of 21 – 25° C, with a relative humidity of no more than 55%. The components should not be exposed to direct light. They should also be protected from any extreme ambient conditions (such as air pollution).

The storage time should be kept as short as possible, especially for silver-plated components and for solder connections in general. Our experience is that tin-plated components can be soldered for about a year after delivery when using the proper conventional flux. Silver-plated components, owing to their physical characteristics, should be processed within about six months of delivery.

These specifications are based on experience using components stored under optimal conditions. They do not constitute a binding commitment for the fulfillment of any characteristics.

Ask Lumberg for more information about alternative packaging options for other temperatures and environmental conditions.