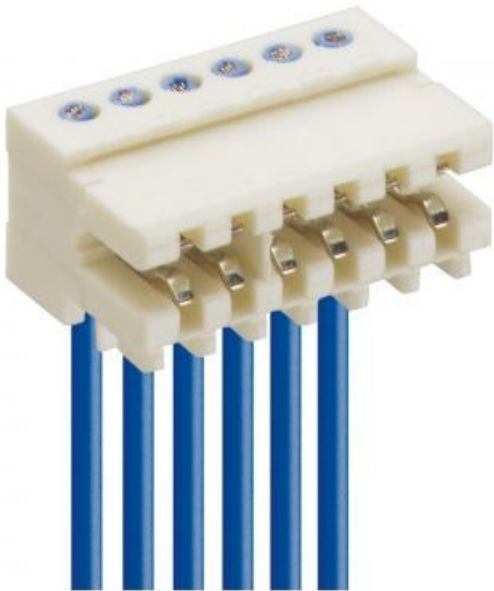


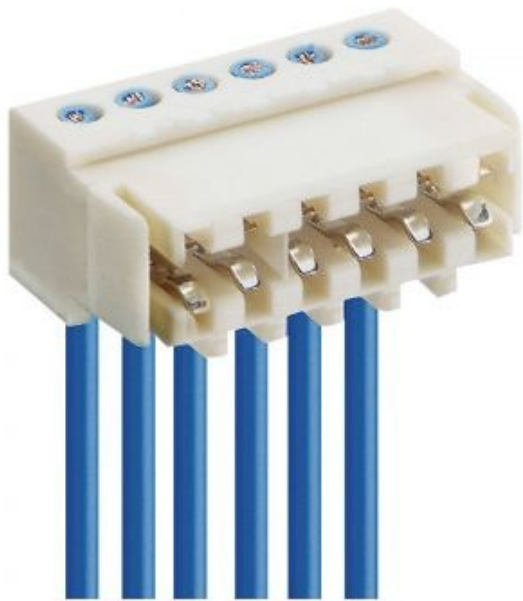
3510 / 3511

(not illustrated)



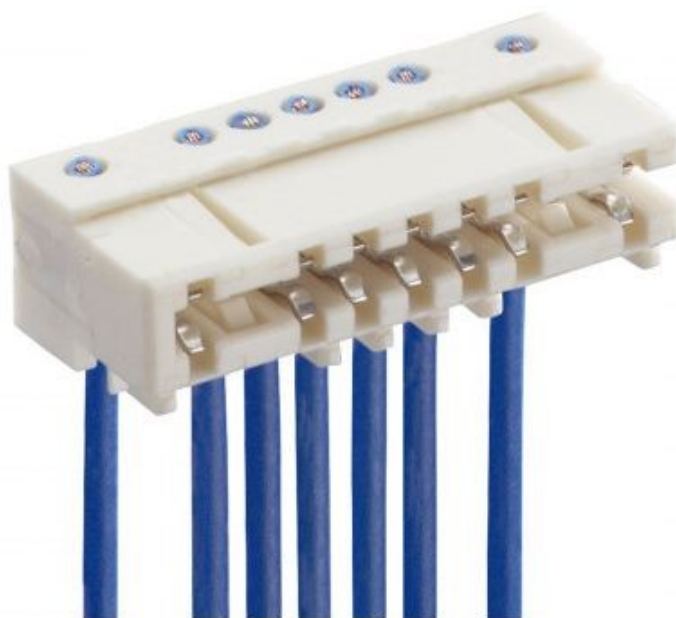
3512 / 3513

(not illustrated)

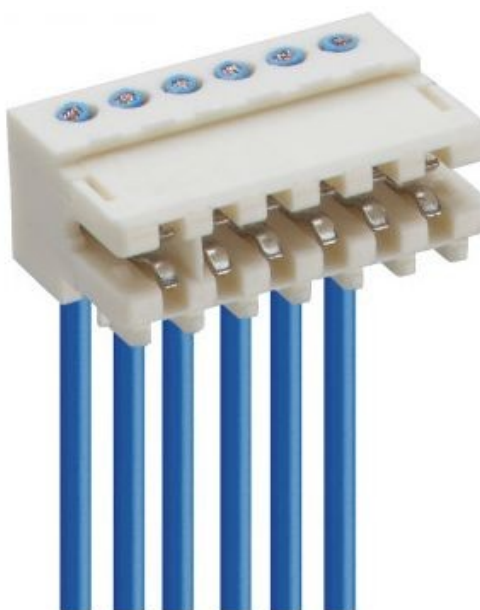


	Date	Name	Edition	7	8	9	10	11	12
Author	05.05.03	str	Name	jvoss					
Checked	20.11.24	sve	Date	20.11.24					

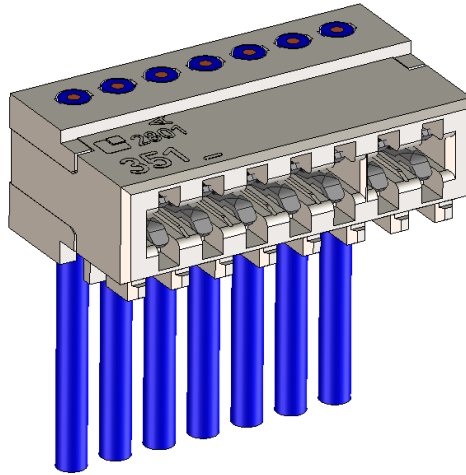
3515 / 3516 (not illustrated)



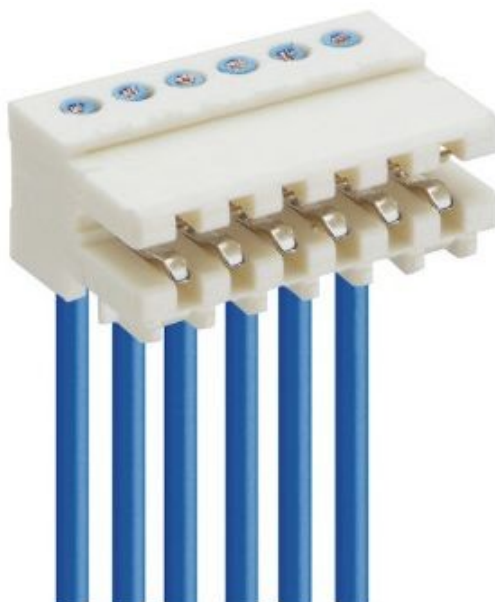
3517 / 3518 (not illustrated)



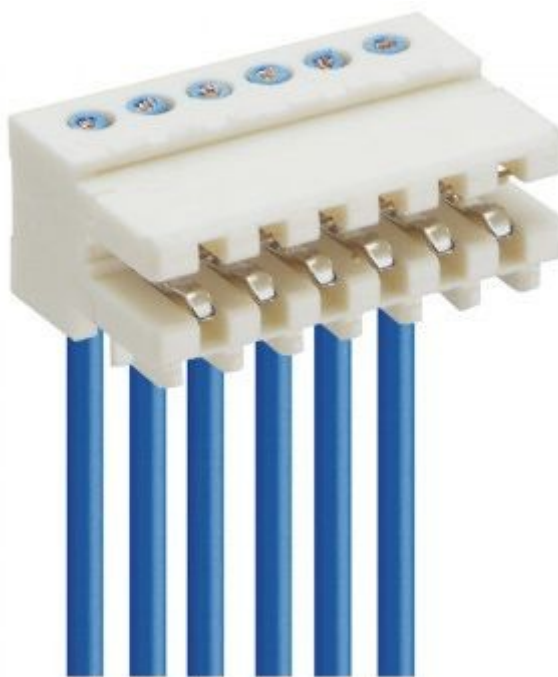
3510-6




3520 / 3522 (not illustrated)



3521 / 3523 (not illustrated)



<div>LUMBERG CONNECT GMBH</div> <div>Im Gewerbepark 2 58579 Schalksmühle</div>	<div>Processing Instruction</div> <div>Connector RAST 2.5</div>	<div>Lumberg </div> <div>passion for connections</div> <div>35V01EN</div> <div>Page 6 of 28</div>
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1. Product description

Direct or indirect connectors in insulation displacement technology (IDT) acc. to RAST 2.5

Material of the connector: PBT
PA

Connectable wire in insulation displacement area

for 4 A

2....20-pole

351x (-1,-2)

cross section for connection 0,22 mm²....0,38 mm²

351x (-1,-2) S01

cross section for connection 0,34 mm²

351x (-1,-2) S02

cross section for connection 0,14 mm²....0,22 mm²

351x (-1,-2) S03

special application, e.g. varnished wire

352x (-1,-2)

cross section for connection 0,22 mm²....0,38 mm²

352x (-1,-2) S01

cross section for connection 0,34 mm²

352x (-1,-2) S02

cross section for connection 0,14 mm²....0,22 mm²

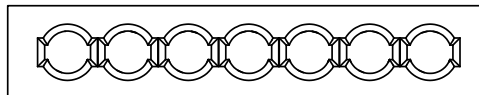
352x (-1,-2) S03

special application, e.g. varnished wire

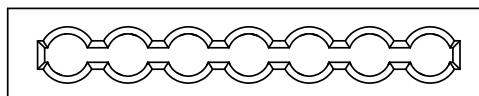
V = finishing variant

max. Insulation diameter Ø 1,6 mm

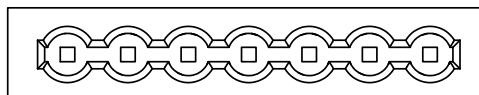
standard design



design -1 for bus capable flat cable



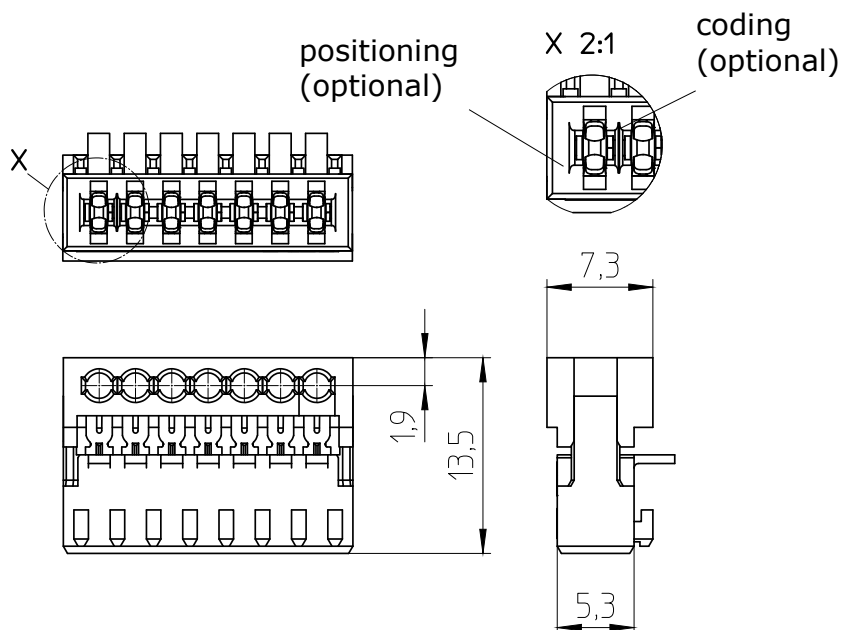
design -2 for flat cable



1.1. Product types

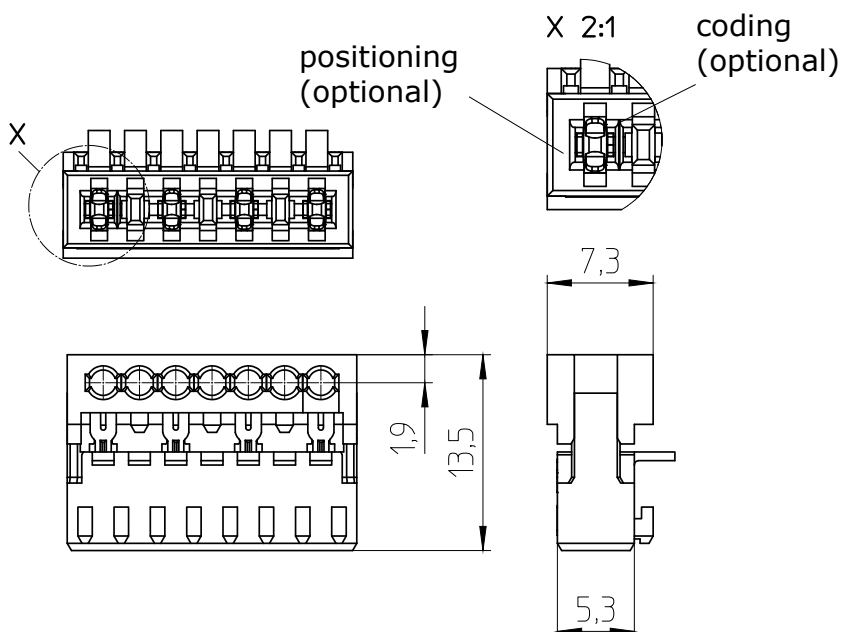
Direct connector 3510

Pitch 2,5 mm
acc. to data sheet 3510 xx



Direct connector 3511

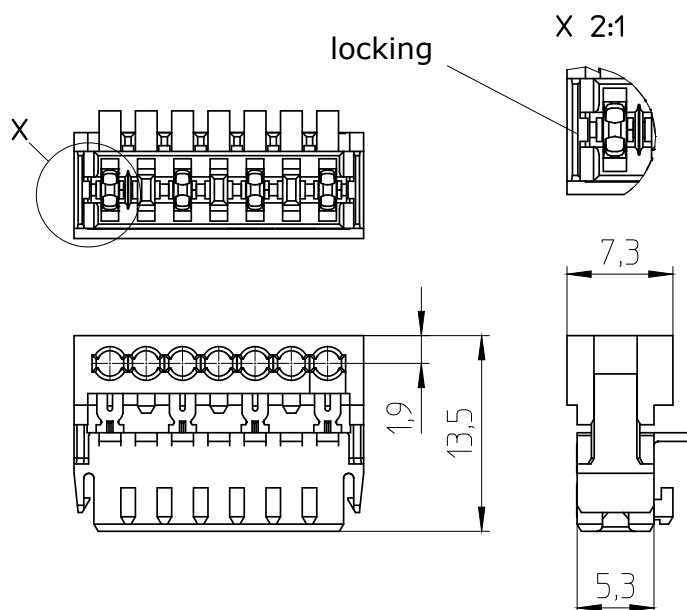
Pitch 5,0 mm
acc. to data sheet 3511 xx



Direct connector 3512

Pitch 2,5 mm

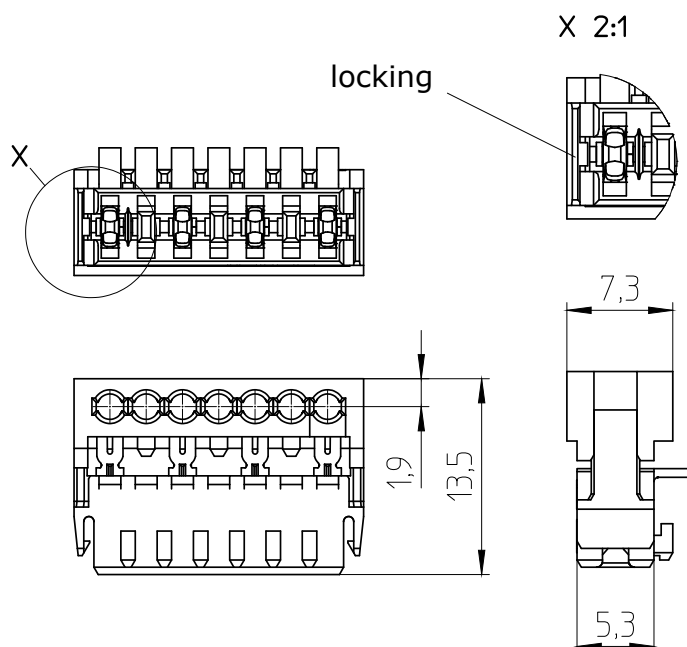
acc. to data sheet 3512 xx

**For each number of poles
a special die is required**

Direct connector 3513

Pitch 5,0 mm

acc. to data sheet 3513 xx

**For each number of poles
a special die is required**

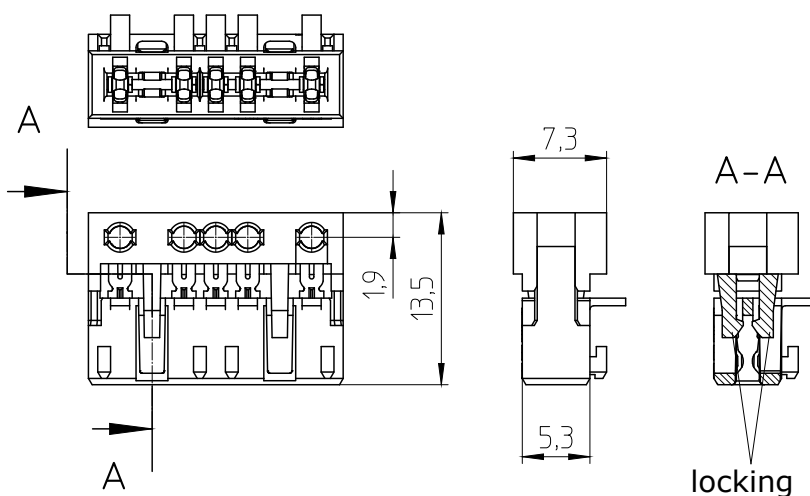
**Connector
RAST 2.5****35V01EN**

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Direct connector 3515

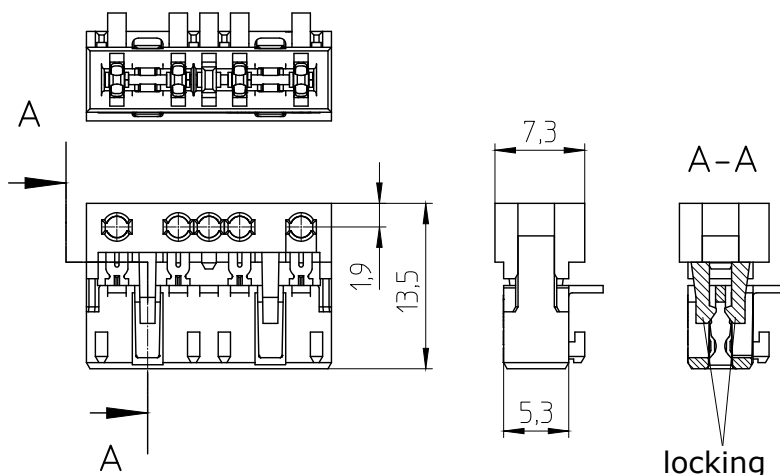
Pitch 2,5 mm

acc. to data sheet 3515 xx

**For each number of poles
a special die is required****Direct connector 3516**

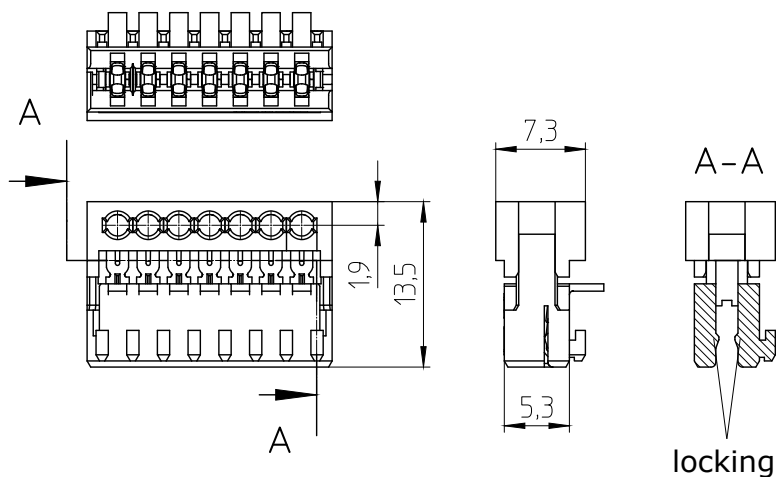
Pitch 5,0 mm

acc. to data sheet 3516 xx

**For each number of poles
a special die is required****Direct connector 3517**

Pitch 2,5 mm

acc. to data sheet 3517 xx

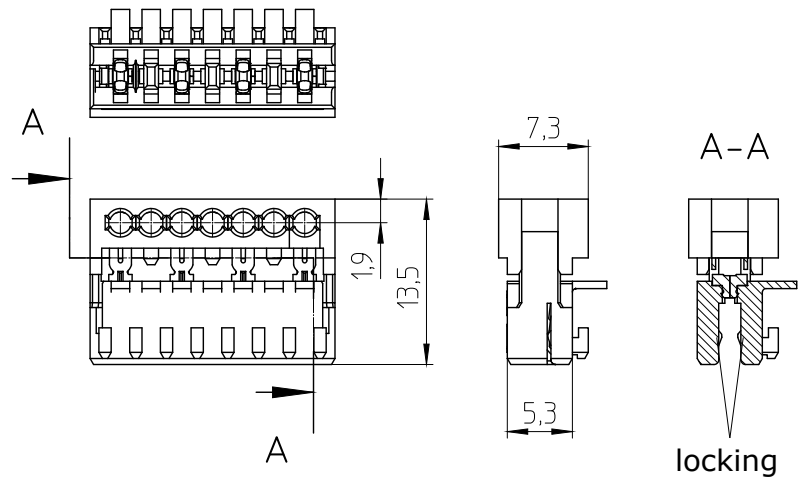
**For each number of poles
a special die is required**

**Connector
RAST 2.5****35V01EN**

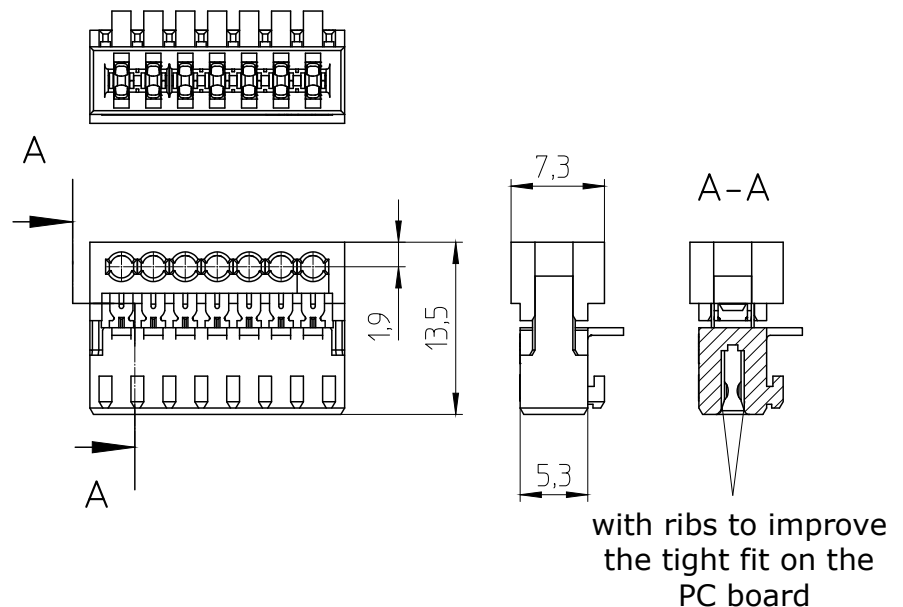
Page 11 of 28

Direct connector 3518

Pitch 5,0 mm
acc. to data sheet 3518 xx
**For each number of poles
a special die is required**

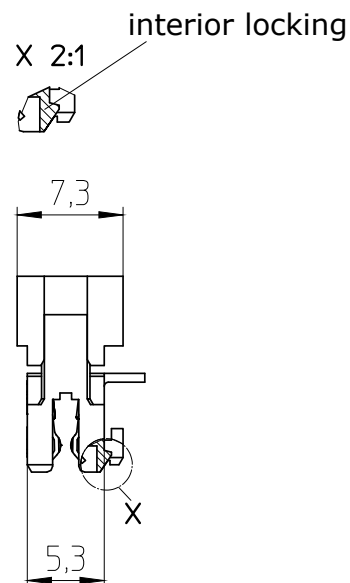
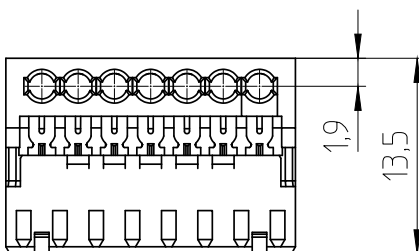
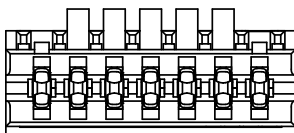
**Direct connector 3510-6**

Pitch 2,5 mm
acc. to data sheet 3510 xx



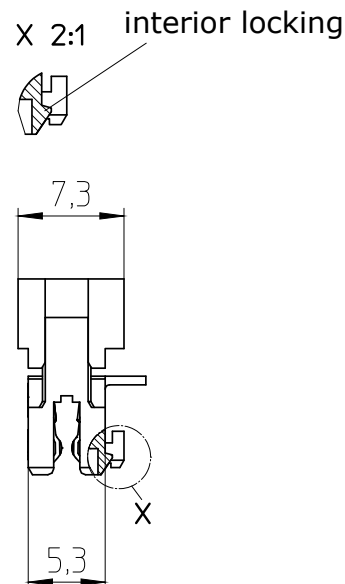
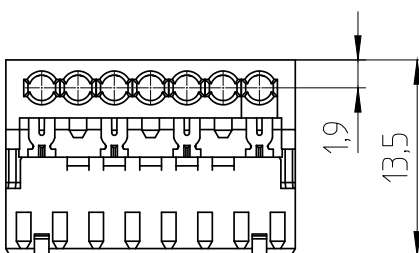
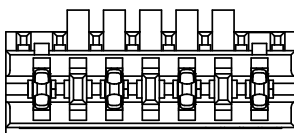
Indirect connector 3520

Pitch 2,5 mm
acc. to data sheet 3520 xx



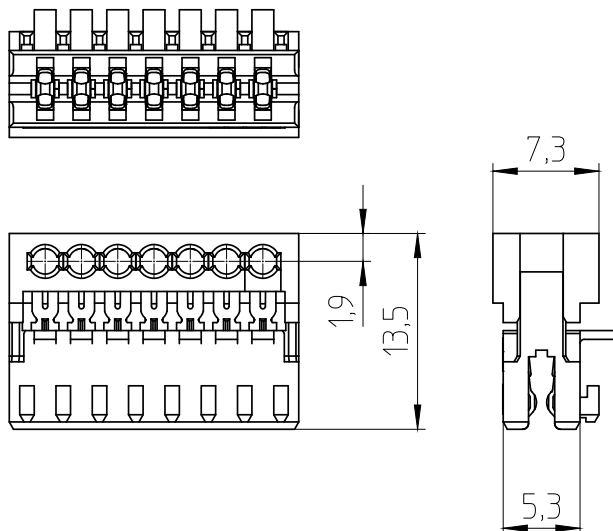
Indirect connector 3522

Pitch 5,0 mm
acc. to data sheet 3522 xx



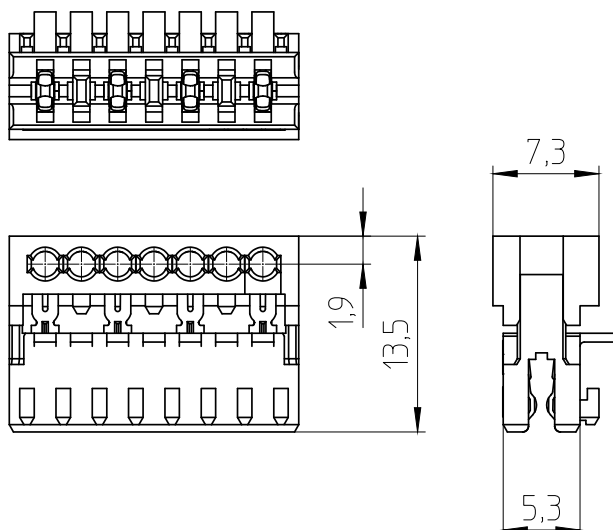
Indirect connector 3521

Pitch 2,5 mm
acc. to data sheet 3521 xx



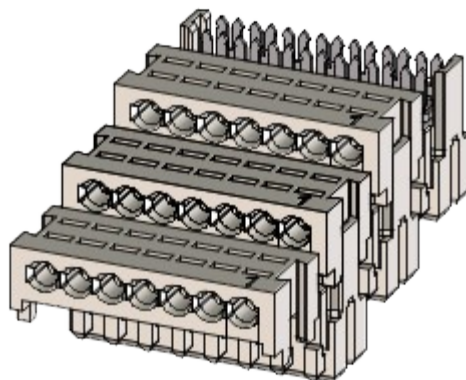
Indirect connector 3523

Pitch 5,0 mm
acc. to data sheet 3523 xx

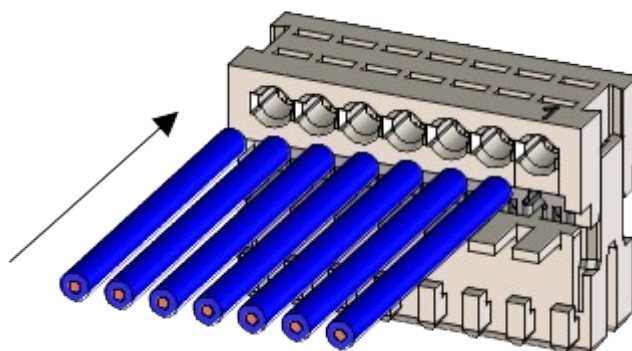


2. System features

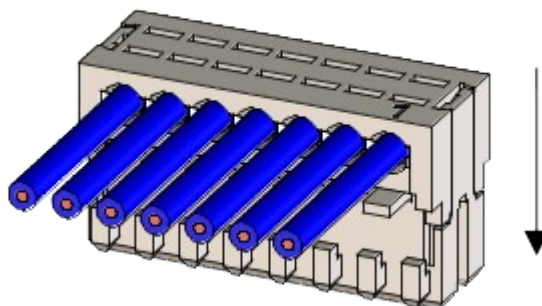
Two-part body
Supplied in following stacks



Wire termination

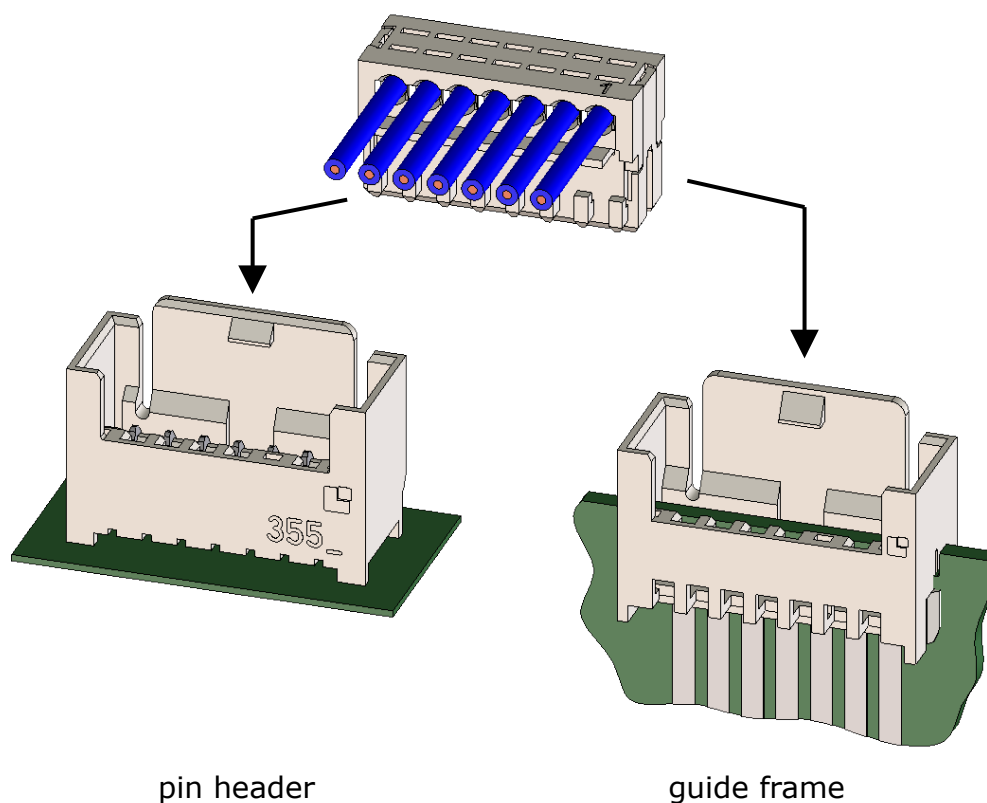


Insulation displacement connection by pressing the top
Wire exit 90°

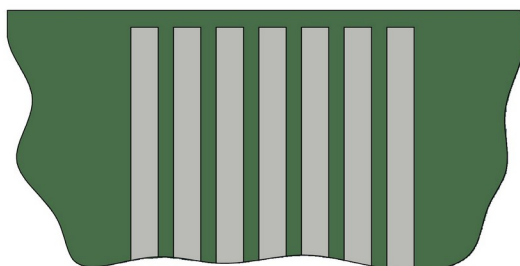


The connectors are used with pin headers as indirect connectors or with guide frames as direct connectors (edge connectors).

connector acc. to RAST 2.5

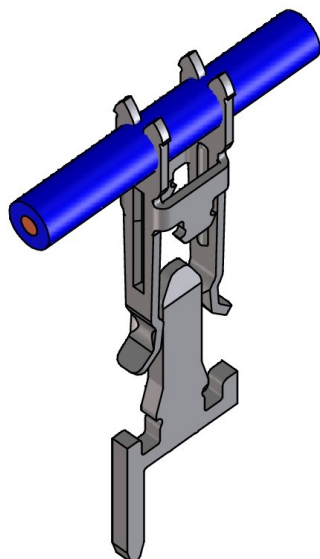


PCB



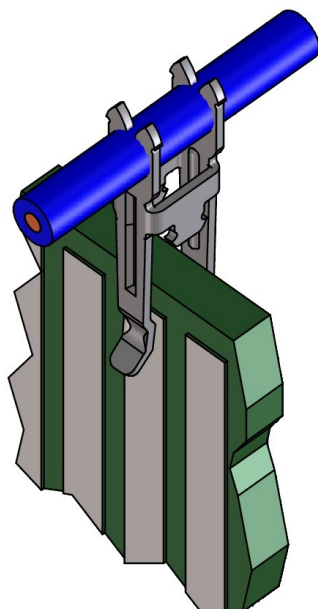
3. Contact principle

Indirect mating on the contact pin



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

Direct mating on the PCB



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

4. Cutting-off coding keys

The cutting-off coding keys acc. to RAST 2.5 standard at the termination machine. The allocation of connector, color marking and cutting-off coding keys are the sole responsibility of the customer.

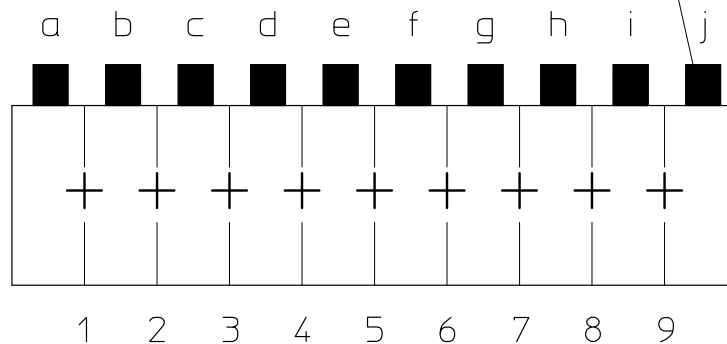
Caution !

Connectors, pin headers and guide frames are always shown in mating direction.

4.1. Coding acc. to RAST 2.5


basic connector in mating direction

coding



4.2. Cutting blades

To ensure a correct cutting-off of the coding keys, use only Lumberg cutting blades. A minimal remaining burr is permitted.

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5. 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.

Manual processing tool

For assembling connectors designed for single-unit and small series production.

Manual processing device

For assembling connectors designed for small series production.

Pneumatic processing device


Pneumatically assisted processing device with manual wire feed and connector feed. Designed for small and middle series production.

Semi-automatic processing device

For cost-effective assembling of automatic connector feed and manual wire feed. Designed for serial production.

Automatic processing device

For optimal assembling of automatic wire feed and connector feed. Designed for industrial mass production.

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6. Wire specification

The wire specification must be kept. Any deviation must be discussed and approved by Lumberg.

6.1. Wire specifications cross section for connection 0,20...0,22 mm²

Technical data sheet 902 01 ribbon cable	=0,20 mm²
Technical data sheet 902 03 ribbon cable	=0,22 mm²
Technical data sheet 902 04 ribbon cable	=0,22 mm²

6.2. Wire specifications cross section for connection 0,38 mm²

Technical data sheet 908 14 PVC-stranded wire	=0,38 mm²
---	-----------

6.3. Wire specifications cross section for connection 0,35 mm²

Technical data sheet 908 32 FLR-stranded wire	=0,35 mm²
---	-----------

6.4. Wire specifications cross section for connection 0,14 mm²

Technical data sheet 908...	=0,14 mm²
-----------------------------	-----------

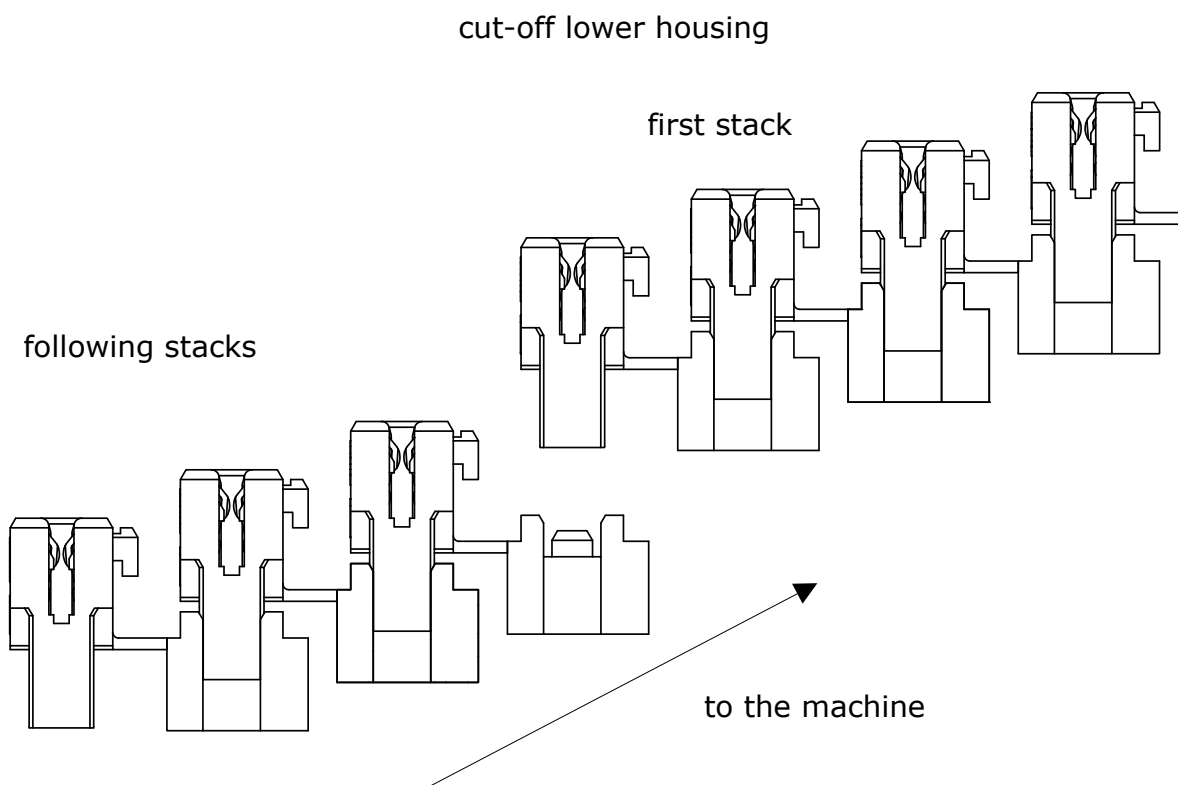
Other approved wire see Lumberg release list in the internet at www.lumberg.com

7. Assembly

Connector and cross section should be adapted with each other acc. Lumberg specification (see technical data sheet).

7.1. Connector feed

The lower housing must be cut off before the first stack of connectors is fed into the termination machine. To feed a new stack into the machine the upper housing of the first stack must be placed into the lower housing of the following stack. The cutting-off of the single connectors from the stack is done by the machine. The links will typically remain on the connector. These links can be removed if the customer requires it.



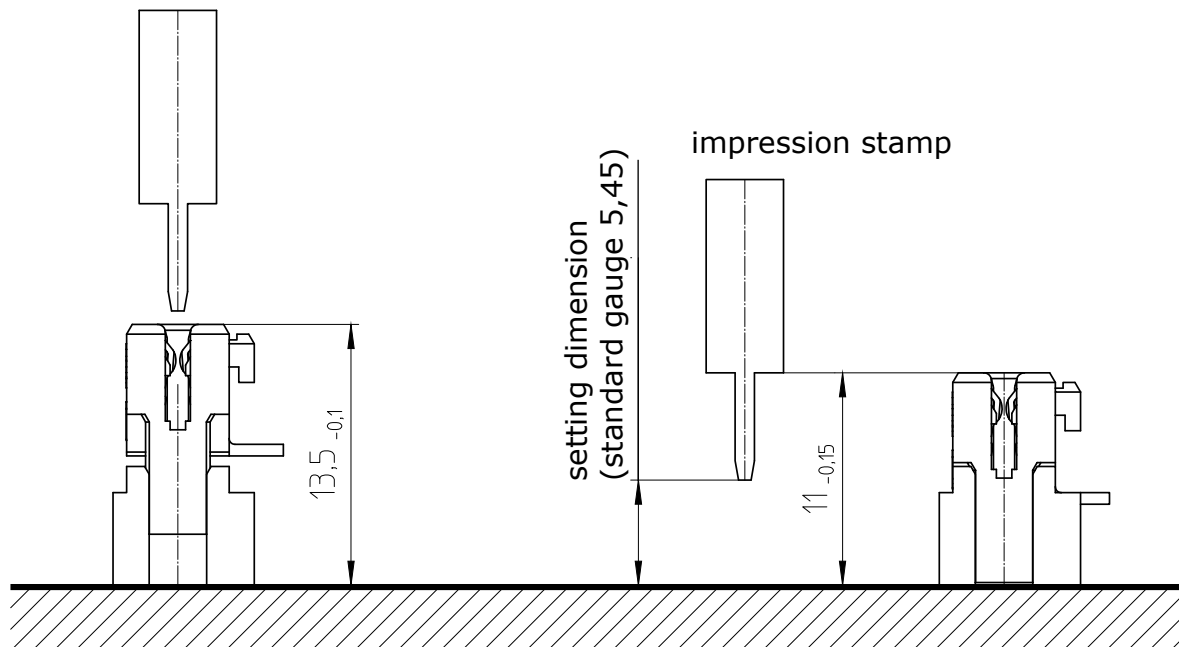
7.2. Impression stamp

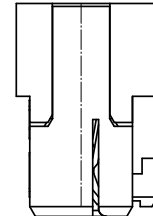
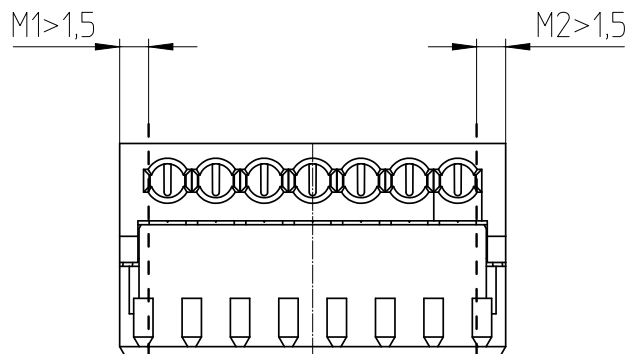
Only use impression stamps from Lumberg.

Impression stamps: free of lubricants and sliding agents.

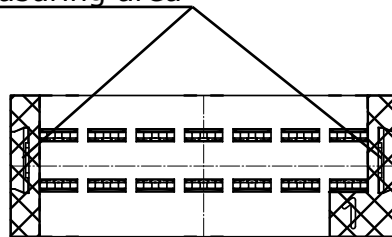
7.3. Setting dimension of the termination machine

An important feature for the function of the connector is the connector height, measured after assembling. The shut height is determined by the setting dimension of the termination machine.





no measuring area

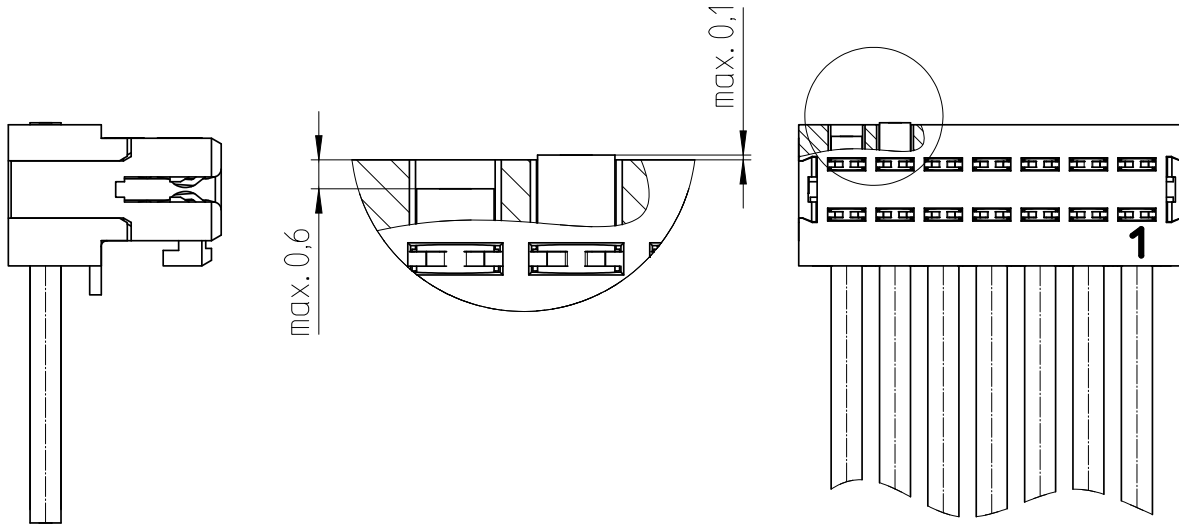


The shut height has to be measured on both sides and in the center area.

If a depth gauge is used for measuring, the connector must lay flat with its mating face downwards. A measuring tip of at least $\varnothing 3$ mm is required. Make sure that the measurement is not distorted by a protruding dovetail guide, pole number marking or similar.

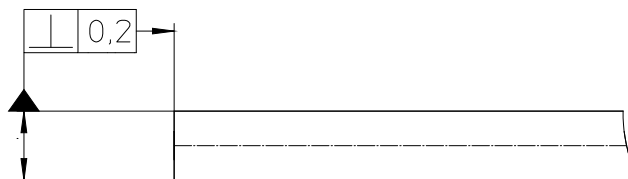
7.4. Wire end position

The correct position of the wire guarantees the mating of both ID slots. After termination no wire protrusion is allowed at the connector in order to ensure a correct mating and dismating of the connection. The correct position of the wire ensures the mating of both ID slots. The insulation offset inwards is only permitted within the specified dimension range.

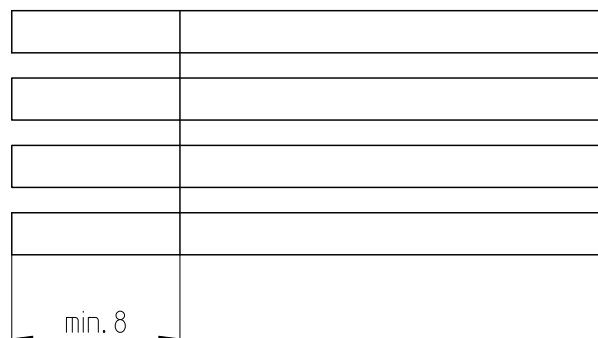


7.5. Wire (stranded wire / ribbon cable)

The wires must be cut off without burr and deformity. No cuts in the insulation are allowed in wire exit direction (visual check). Insulation cuts are permitted between the ID slots of the contact.



Ribbon cables must be punched out.



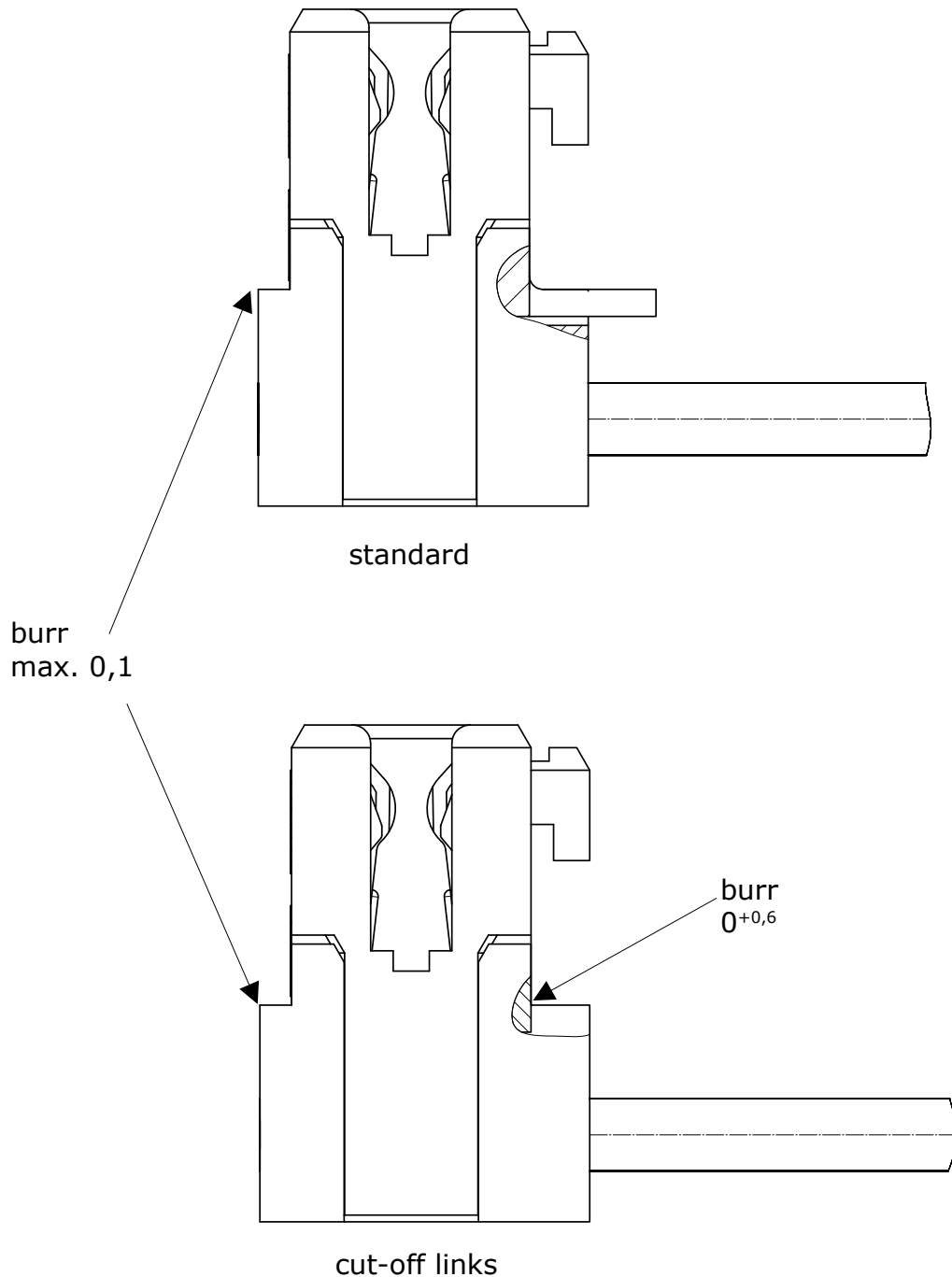
7.6. Housing

After termination no visual damages of the housing are allowed (visual check).


The links must be cut off without burr.

The mating function must be guaranteed (functional test).

The contact must be in correct position in the housing (visual check).

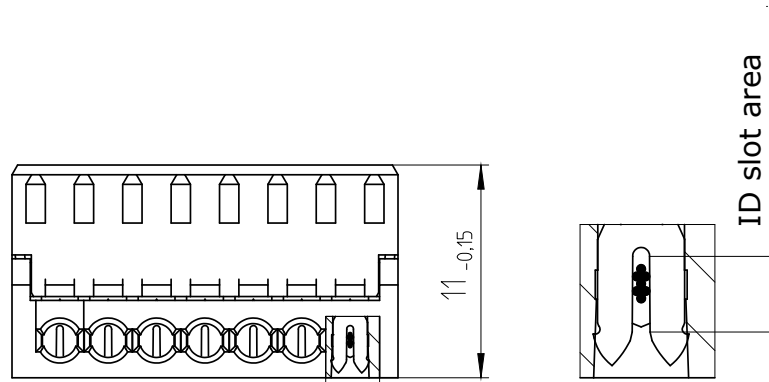


Make sure that the cut-off links do not adhere to the component and that they do not remain in the connector after they are cut off.

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<p>8. Quality assurance</p> <p>For all working and processing steps and alterations (e.g. product launch, changes of the wire, changes of the tool or machine ...), which may affect the product quality, the responsible departments have to take care for appropriate quality assurance steps.</p> <p>8.1. Quality features</p> <p>The following quality features must be taken into consideration:</p> <p>8.2. Quality features / IDC</p> <ul style="list-style-type: none"> • ID slot width • Symmetry of the ID slot • Wire quality • Conductor insertion depth • Wire end position • Electrical testing <p>8.3. ID slot width</p> <p>Lumberg guarantees correct ID slot.</p> <p>8.4. Symmetry of the ID slot</p> <p>Symmetry of the ID slot, tolerance $\pm 0,1$ mm, is guaranteed by the body.</p> <p>8.5. Wire quality</p> <p>The wire must meet Lumberg specification acc. to point 6. Customized wires, which are listed in the release lists, have to correspond with the available data sheets. Only Lumberg released wires have to be used. The customer bears full responsibility for the correct mating when wires are used which are not listed in the release lists.</p> <p>The user must ensure that all approved wires are delivered in an adequate quality. The wire cross-section, concentricity, micro Shore hardness and the termination (lay) length should all be checked.</p>		

8.6. Contact insertion depth

The conductor insertion depth is determined by the height of the body.
All single strands must be in the ID slot area.



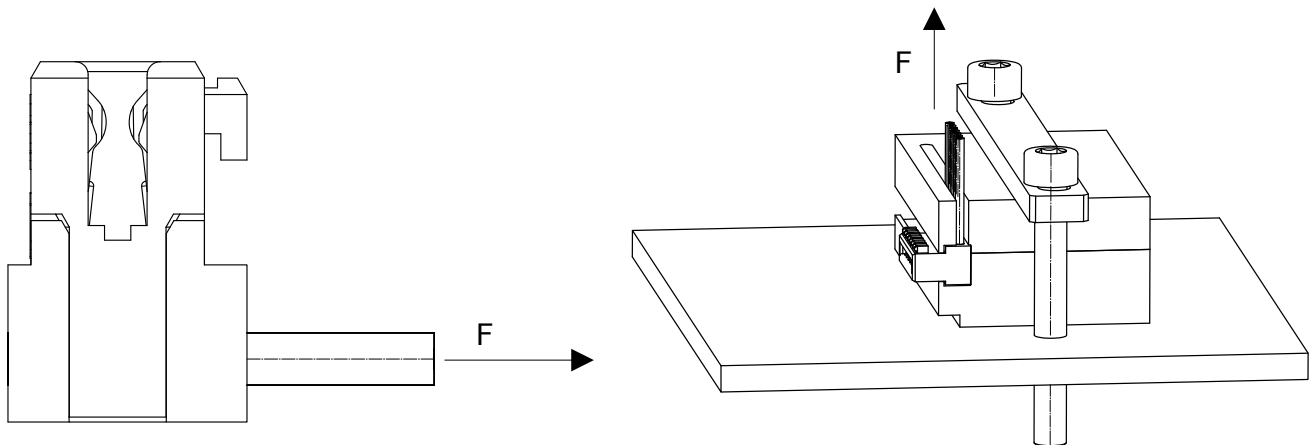
8.7. Wire end position

The wire protrusion acc. to point 7.4 must be kept. A deeper offset of the wire inwards the housing leads to an incorrect connection.

8.8. Retention force of the wire

Minimum retention force of the wire out of the insulation displacement contact:

PVC – stranded wire: $0,38 \text{ mm}^2 > 50 \text{ N}$

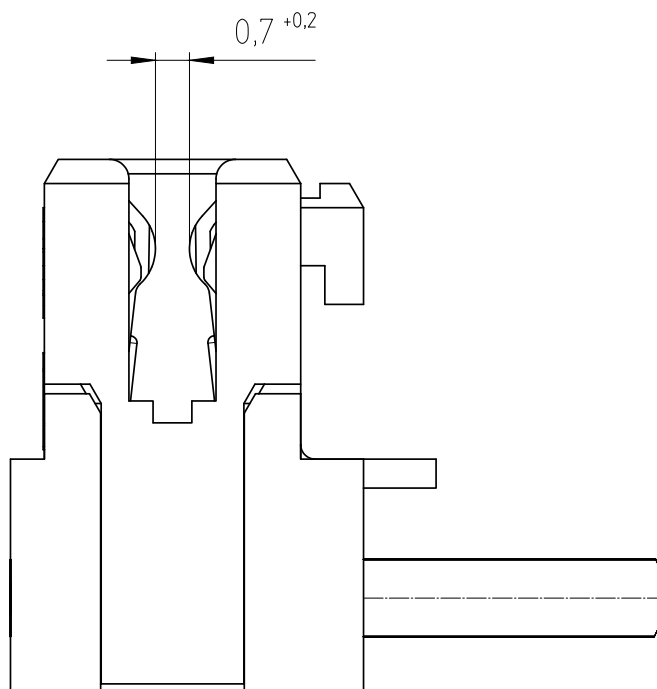


The stated value for the wire pull-out force is a typical value, established during a test with a standard $0,38 \text{ mm}^2$ wire. All values were determined under laboratory conditions and serve as a reference.

A speed of 50 mm/min is used to determine the extraction force.


8.9. Contact gap

Contact gap after termination.



8.10. 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.

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<p>9. Storage</p> <p>Due to physical processes, surface finished components are subject to aging processes, which can have a negative effect on further processability. To ensure optimum processability, the following instructions should be observed and ensured during further processing steps:</p> <p>Storage conditions:</p> <p>The parts should ideally be stored in the closed original packaging, at a constant temperature of 21 – 25° C and 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).</p> <p>Due to the physical properties of the parts the storage times should be reduced as short as possible. Silver-plated components have to be processed within half a year and tin-plated components within one year after delivery.</p> <p>For components that are soldered due to their application, it is necessary to use a commercially available suitable flux.</p> <p>These specifications are based on experience, using components stored under optimal conditions. They do not constitute and binding commitment for the fulfillment of any characteristics.</p> <p>Ask Lumberg for more information about alternative packaging options for other temperatures and environmental conditions.</p>		