

LSA-PLUS®

Copper Connectivity Solutions For Telecommunication Networks

KRONE LSA-PLUS® Series 2 & avaNTi Modules and Accessories



ADC LSA-PLUS® Series 2 & LSA-PLUS® avaNTi connection systems include Connection, Disconnection, Switching modules, MDF, Cable Termination blocks, Back-Mount frames, protection systems, Enclosures and other related accessories.

GENUINE
KRONE
PRODUCTS

LSA-PLUS® Overview

The LSA-PLUS® Quick Connection System offers an integrated contact for use in all line plant and private network services.

L ötfrei	No solder
S chraubfrei	No use of screws
A bisolierfrei	No insulation removal
-	
P reiswert	Cost effective
L eicht zu handhaben	Easy to use
U niversell andwendbar	Universal application
S icher und Schnell	Secure and fast

ADC LSA-PLUS® connection systems include connection and switching modules for eight or ten pairs, all featuring the patented LSA-PLUS® insulation displacement connection (IDC) technology.

LSA-PLUS® connection systems support connection, line splitting, switching and earthing of connections in telecommunication and data networks. The contact is resistant to climatic and other environmental conditions. Technical contact security results in the formation of a gas-tight connection with very low transmission resistance. Special attention to maximum contact safety regardless of climatic and ambient conditions results in high degree of technical security through gas-tight, low resistance joint. Connection is made through the special insertion tool, assuring that the connection quality is always repeatable.

A wide range of accessories, including overvoltage protection, marking caps and test cords ensures that LSA-PLUS® systems can be used throughout the local loop, in main distribution frames, cross-connect cabinets, distribution points and at the customer premises.

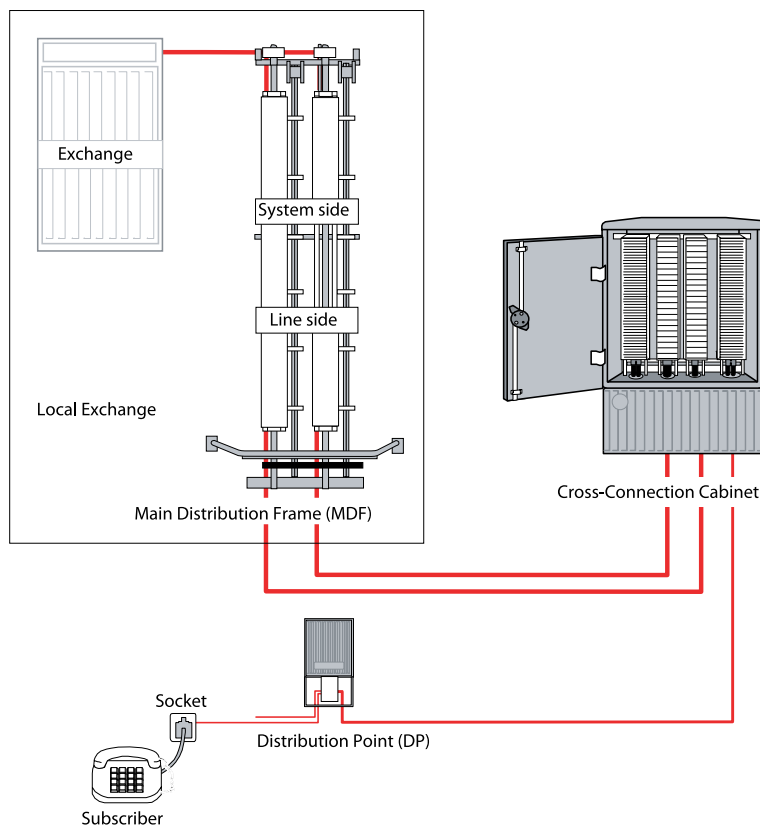
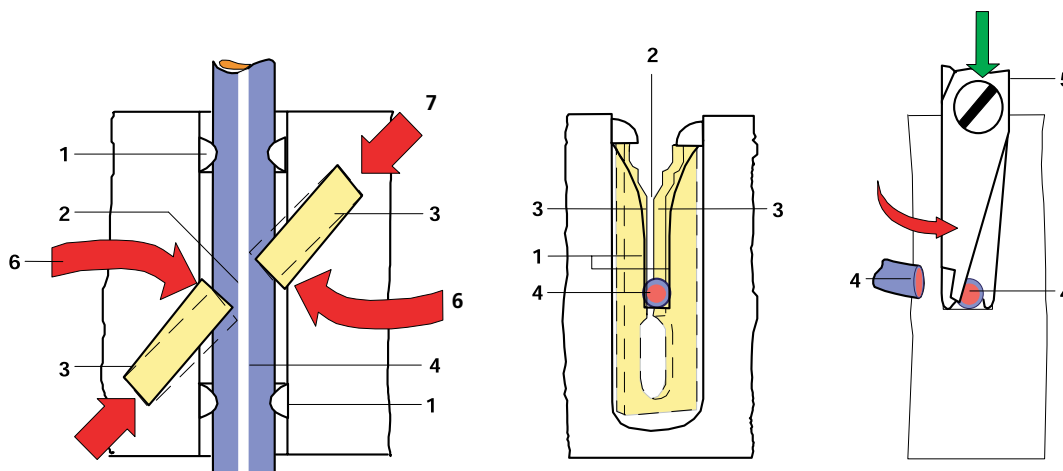


Fig- Local Loop Components

The ADC LSA-PLUS® contact functions in the same basic manner regardless of the type of module in which it is placed. Using the LSA-PLUS® insertion tool (5), the plastic insulated copper wire or jumper (4) is inserted into the contact slot (2). The contact slot contains contact tags (3) set at a 45-degree angle to the wire. Through the action of the tool, the contact tags twist in an axial movement and at the same time cut through the wire insulation and push the insulation material to both sides of the contact. Through material displacement and the subsequent torsional and restoring forces (6,7) of the contact tags, two permanent gas-tight surface areas are formed. This connection prevents any movement in the contact area that would undo the connection. For additional protection of the contact area, plastic clamping ribs (1) are provided above and below the connection area. These clamping ribs firmly grip the wire insulation, preventing any movement of the wire in the contact area. In the same termination process, the LSA-PLUS® insertion tool cuts the wire and insulation to the correct length. If the wire needs to be re-terminated, the LSA-PLUS® KRONE insertion tool has a swing-out hook, which is used to remove the wire from the contact.

The LSA-PLUS® Quick Connection Technique

The Quick Connection Technique is a highly reliable and cost effective wire connection system for modern telecommunications and data networks. It is a comprehensive system built around the widely accepted 'KRONE' termination module with its range of built-in features. This is complemented with an extensive selection of accessories for protection, circuit identification and testing. The LSA-PLUS® system uses a unique Insulation Displacement Contact (IDC) technique which eliminates the need to wire-strip, solder or make screw terminations, and dramatically increases productivity. This system is supplied for connections in various fields like telecom and structured cabling.



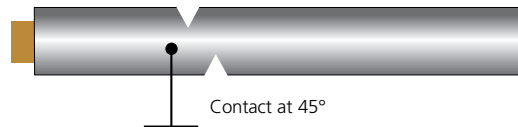
LSA-PLUS® Quick Connection Technique

1. Plastic clamping ribs
2. Contact slot
3. Contact tags
4. Wire
5. KRONE Insertion Tool.
6. Torsional forces on the contact
7. Restoring forces of the contact

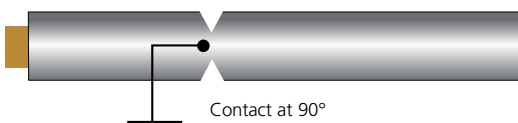
Features & Benefits

The 3-point Insulation Displacement Connection (IDC) method of termination gives durable and long lasting connections.

1. Insulation clamping ribs hold wires firmly in position and isolate the contact area from vibration and other forms of mechanical stress.
2. Flexible silver-plated contacts*, positioned at 45° angle across the axis of the wire, make a solid, gas tight connection.
3. Constant axial and torsion restoring forces, created by the unique contract and plastic housing, sustains a durable connection.



Positioning the contacts at a 45° angle leaves more wire between contact points and provides a reliable, stress resistant connection.

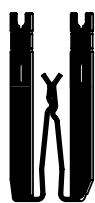


Positioning contacts at a 90° angle produces a point of weakness subject to possible breakage.

A correctly terminated IDC prevents:

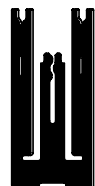
- Corrosion
- Loosening due to vibration
- High resistance connections
- Movement of the wire

If required, the connection can be redone easily and only the small portion of the wire must be removed. The connection can only be accomplished with the KRONE insertion tool, leading to greater contact security and assuring that when the connection is remade, no particles of insulation or wire remain in the connection area. Most importantly, the connection is repeatable. Every time a connection is made, the properties of the connection will be the same. The LSA-PLUS® IDC is a reliable, secure and quick contact method. The method has been proven as an electrically and mechanically sound method of connecting normal voice and data cabling.



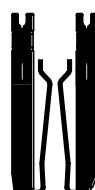
DISCONNECTION CONTACT

S2 Disconnection Modules use a two piece contact (normally closed), with a convenient disconnection feature. By inserting a disconnect plug into a wire pair, you can temporarily or permanently disconnect the circuit. A Test Cord can be inserted into a pair to test each side (look both ways) of the circuit independently. This greatly accelerates fault identification. The centre contact point can also be used for monitoring or over voltage protection.



CONNECTION CONTACT

Connection Modules have a one piece contact providing a continuous link between permanent wiring and jumper wiring, giving provision for monitoring access and overvoltage protection.



SWITCHING CONTACT

Switching Modules house individual contacts and hence the circuits are disconnected when idle. By inserting plugs, cords or over voltage protection, the circuits can be connected when necessary.



* Modules with Tin Plated contacts are also available.

Testing

ADC products and components pass through rigorous tests to maintain a high quality standard.

ADC Tests	Quality Results
<p>Contact resistance test A reliability test that indicates the reaction of the LSA-PLUS® contacts to a variety of test loads.</p>	The quality of LSA-PLUS® contact is not compromised, even after repeated and tough loads.
<p>Insulation resistance test Tests the resistance between the insulated contacts of connectors.</p>	High insulation resistance is maintained even under extremely humid conditions.
<p>Vibration resistance test Determines whether building vibrations and other load causes contact disturbance in the contacts.</p>	No contact disturbance observed. A high contact and grip force is sufficient to maintain both the connector & the connection in the defined position.
<p>Contact pressure relief test Simulates artificial ageing by storing the contacts for longer periods at higher temperatures. The quality of the contact is subsequently tested.</p>	No change in the LSA-PLUS® contact or housing that could impede functional or operational reliability
<p>Temperature shock test Test to determine if frictional corrosion occurs under extreme temperature changes and whether temperature reactions in the connector housing has avoidable effects.</p>	Contact quality is not reduced, even under these extreme conditions.
<p>Humidity resistance test Tests the effects of high humidity on contacts and insulation material.</p>	Not even high humidity affects contacts or insulation resistance.
<p>Corrosive atmosphere test Tests how the contacts react to the effect of harmful gases in an aggressive industrial atmosphere.</p>	Most aggressive constituents in the atmosphere do not affect the quality of the contacts.
<p>Long Term stability test ADC creates accelerated artificial ageing processes. This provides a solid base for highly accurate reports on the service life and behaviour of ADC contact under extreme conditions</p>	The unrestricted service life of ADC components for the normal life of a building/network is guaranteed

LSA-PLUS® Series 2

LSA-PLUS® ELECTRICAL DATA

After four days exposure to a climate of 40° C and 93% relative humidity

Insulation Resistance	≥5x10 ⁴ Ohms
Dielectric Strength	≥2000Vrms
Current Rating	≥Current carrying capacity of terminated conductor
LSA-PLUS® CONTACT	
Contact Resistance	1mΩ ≤ 5mΩ guaranteed
Total Contact Resistance including Disconnection contacts	≤ 10mΩ
Contact Spring Force for Disconnecting contacts	3N (approx. 300g)
Peak voltage (with pulses 1.2/50μ sec)	≥ 3.6 V
Impulse current (with pulses 8/20 μ sec)	5 kA
Number of Re-Terminations	≥200
Coupling Capacitance Between Wires.	≤1pF
Plastic Housing Material	Thermoplastic (PBT) UL 94, V-0
Oxygen Index	≥28%

LSA-PLUS® TECHNICAL DATA

Disconnection, Connection, Switching and Earth Modules for Plastic Insulated Copper Conductors

Copper Conductor Diameter	0.40 - 0.80mm. (AWG 26 - 20)
Multistrand Conductor	7/0.2 - 7/0.32mm
Insulation Diameter	0.70 - 1.50mm
Number of Equal Diameter Solid Conductors Per Slot	2 max. (up to 0.65mm each)
Number of Equal Diameter Multistrand Conductors Per Slot	1 max.
ENVIRONMENTAL DATA	
Environment for use	Indoors or enclosed cabinets outdoors with a minimum degree of protection to IP54 (IEC-529)
Storage temperature	-40° to +90°C
Operating temperature	-20° C - +80° C
Max. operating humidity	93% relative humidity non-condensing