Ordering Guide

for LSA PLUS HD180 product range

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1. TE Connectivity

1.1 About TE Connectivity

TE Connectivity is a leading international company with total sales of USD 12.1 billion. TE Connectivity develops and produces over 500,000 high-tech solutions that integrate and protect energy and data streams in everyday products.

The 100,000 TE Connectivity employees work closely with customers in virtually every industry, including consumer electronics, the energy sector, medical technology, the automobile industry, the aviation industry and the communication industry, and combine products using smarter, faster and better technologies that create new opportunities.
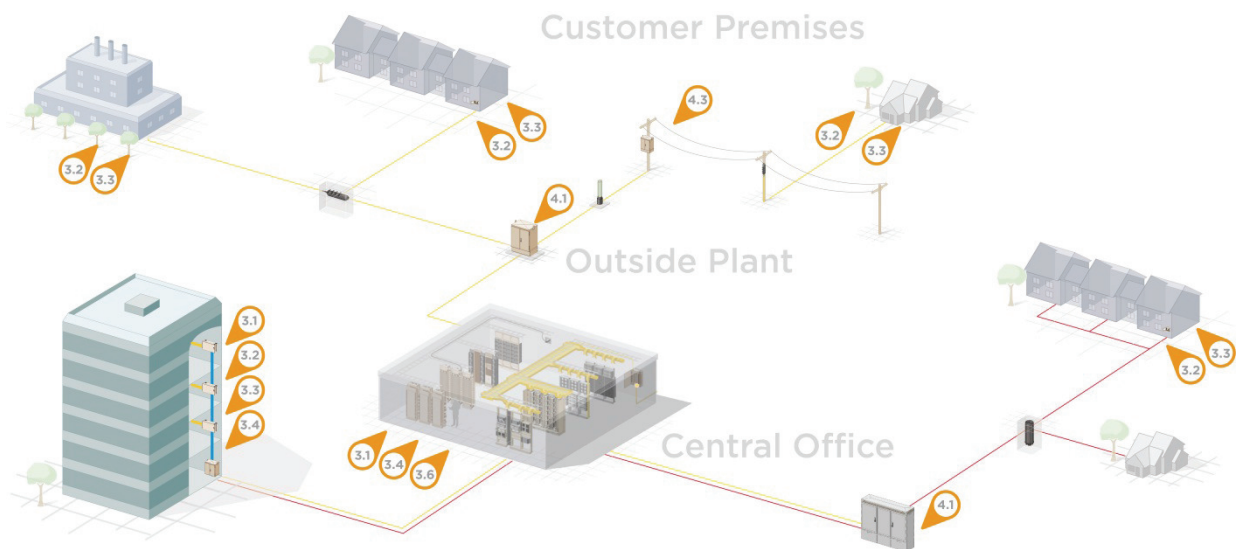
1.2 Subscriber access network

Constantly increasing customer bandwidth makes it necessary to move active equipment (DSLAM or MSAN) closer to customers in order to reduce the length of copper subscriber lines.

The expansion of existing networks, extended services from network operators, and the introduction of IP-based services require additional space in the network structures and subscriber lines – the "last mile" to the customer. Several providers need to accommodate their equipment and the associated cabling in a limited space. The biggest priority is to achieve the highest degree of reliability while increasing circuit density.

2. LSA-PLUS HD180 connection and disconnection modules

2.1 Description

LSA-PLUS contacts ensure optimal and durable transmission properties without maintenance expense. The LSA-PLUS HD180 connection and disconnection modules also fulfill the requirement for higher circuit density. Using the LSA-PLUS HD180 modules, up to twice as many terminations can be fitted in the available space as with conventional technology. They can be used without restriction for services presently available and available in future, such as POTS, ISDN, xDSL and VoIP.
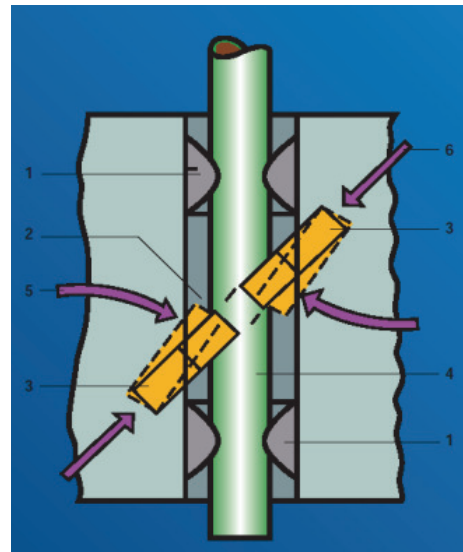

3.1 Type 800 distribution frame

3.2 Indoor distribution frame, plastic

3.3 Wall distribution units

3.4 Standing distribution units

3.6 Distribution systems / Main distribution frame 91 M

4.1 FlexCab polycarbonate outdoor enclosures

4.2 FlexCab Migration outdoor enclosures

4.3 Outdoor distribution frame enclosures, plastic

2.2 Working principle of LSA-PLUS contacts

All LSA-PLUS contacts work on the same basic principle, regardless of which KRONE modules they are used in. Using the LSA-PLUS wiring tool (5), the plastic-insulated copper wire or jumper wire (4) is pushed into the contact slot (2) between insulation displacement contacts (3) arranged at 45° to the wire direction. The contacts spring back in the axial direction with a twisting motion, cut through the wire insulation, and notch into the wire material **offset on both sides**. The combination of the material displacement of the copper wire and the persistent torques and restoring forces (6, 7) of the insulation displacement contacts produces two durable, **gas-tight** contact surfaces that prevent subsequent wire motion. Additional protection of the contact sites against vibration and tensile stress is provided by plastic ribs (1) formed in the routing channel of the module, which are pressed against the insulation of the wire when it is pushed in and clamp it in place. After the connection is made, the LSA-PLUS wiring tool trims the wire to the right length in the same operation. If rewiring is necessary, the wires can be loosened from the contacts using the fold-out pulling hook of the LSA-PLUS wiring tool, withdrawn and reterminated.

2.3 Features and benefits of LSA-PLUS HD180 modules

Features

Disconnection modules

- 10-pair modules with disconnection contacts for opening or isolating the line (normally closed contact)

- Housing color: cream white
- For click-fitting to profile rod system with 12 mm diameter and 95 mm rod spacing

Connection modules

- 10-pair modules with connection contacts (only parallel tapping possible) for clicking into mounting brackets with predefined positioning to achieve maximum circuit density.
- Housing color: grey

- Alternating contact rows for assured access in distribution systems

- Optimal circuit density with 13.5 mm mounting grid

- Connection module with test tap for permanent connection between incoming and outgoing copper cables

- Surge protection is available. The active equipment can be protected against overvoltage by surge protection magazines. This results in significant cost savings, and the high service availability enhances the customer image.

- Supplied in packages of 10 pieces

- Can be wired using the standard LSA-PLUS wiring tool

Benefits

- Optimized operational costs during the product life cycle
- Existing cabinets for more customers / resp. free space for active equipment
- Smart installation procedures due to use of existing frame structures
- Long term stability and high performance for harsh OSP environments
- Cost savings and simplified logistics due to higher packing density
- Product life time extension and reduced active & passive hardware damages
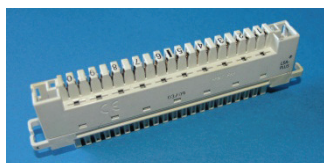
2.4 Product Specifications

Electrical Properties

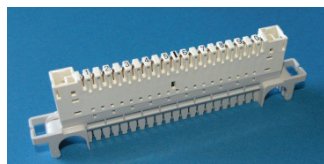|	
Insulation resistance:	$\geq 5 \times 10^4$ MΩ at 500 V
Alternating voltage strength:	2 kVrms
Impulse resistance voltage (1.2/50 µs):	3.6 kV
Contact resistance:	Insulation displacement contact: <2.5 mΩ
Conductor diameter, equipment wire:	0.35 mm to 0.8 mm
Surge voltage protection:	Can be inserted from the front
Flammability (module) acc. to UL94:	V0

Mechanical Properties

Total module height:	33 mm / 38 mm
Vertical grid dimension:	13.5 mm
Material:	PBT
Contact surface:	Silver-plated
Standards:	ETS 300 019-1-1 Class 1.1
	(weather-protected, partially temperature-controlled storage)
	IEC 60721 Part 3-3 usage (weather-protected, stationary
	IEC 60352-4, solder less non-accessible insulation displacement
	Connections

2.5 LSA-PLUS HD180 ordering information

Package quantity: 10

	Description		Catalogue number
	LSA-PLUS HD180 connection module	1 pc	LSA-7014 2 200-00
	LSA-PLUS HD180 disconnection module for Profil 95mm mounting	1 pc	LSA-7014 2 250-00

Package quantity: 1

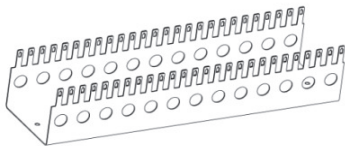| Description		Catalogue number
200 pair cable head with 20 LSA-PLUS HD180 connection modules	1 pc	LSA-7014 1 200-10
200 pair cable head with 20 LSA-PLUS HD180 disconnection modules	1 pc	LSA-7014 2 202-10

2.6 Mounting bracket for LSA-PLUS HD180 connection and disconnection modules

Mounting brackets are used to ensure a fixed module layout in distribution units. The LSA-PLUS mounting brackets are made from U-shaped corrosion-proof sheet metal. This makes them very sturdy and ensures secure mounting. Four types of mounting bracket are available for LSA-PLUS HD180 modules:
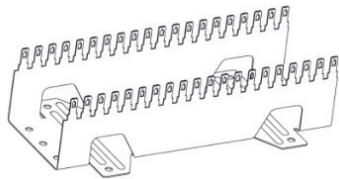
1. Mounting bracket for LSA-PLUS HD180 connection modules
2. Mounting bracket for cable heads for use with LSA-PLUS HD180 connection modules
3. Mounting bracket for LSA-PLUS HD180 disconnection modules
4. Mounting bracket for cable heads for use with LSA-PLUS HD180 disconnection modules

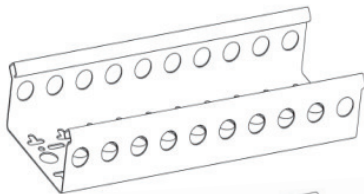### 2.6.1 Mounting bracket for LSA-PLUS HD180 connection modules

Package quantity: 1

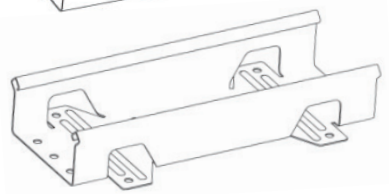| Description	Catalogue number
Mounting bracket for 10 LSA-PLUS HD180 connection modules (100 pairs)	LSA-7014 3 325-10
Mounting bracket for 20 LSA-PLUS HD180 connection modules (200 pairs)	LSA-7014 3 340-20
Mounting bracket for cable heads for 20 LSA-PLUS HD180 connection modules (200 pairs)	On request

2.6.2 Mounting bracket for LSA-PLUS HD180 disconnection modules

Package quantity: 1

Description	Catalogue number
Mounting bracket for 10 LSA-PLUS HD180 disconnection modules (100 pairs)	LSA-7014 3 625-10
Mounting bracket for 20 LSA-PLUS HD180 disconnection modules (200 pairs)	LSA-7014 3 640-20
Mounting bracket for cable heads for 20 LSA-PLUS HD180 disconnection modules (200 pairs)	LSA-7014 3 232-10

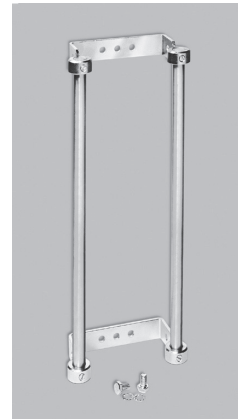# 2.7 Profile frame for LSA-PLUS HD180 disconnection modules

2.7.1 Profile frame 95/46

The profile frame enables universal fitting of different types of modules
in various enclosures and distribution frames.
It is preassembled with a profile rod spacing of 95 mm and is
suitable for use with LSA-PLUS HD180 modules.

A profile frame consists of two profile rods (stainless steel) with a diameter
of 12 mm and a sufficient number of profile holders with a depth of 46 mm.
The rods are secured in the profile holders by grub screws.

No predefined installation space is necessary for fitting, and the profile frames
can be arranged as needed.

Ordering information

Description		Catalogue number
Profile frame 95/46		
with profile rod length 299 mm, 2 profile holders 95/46	1 pc	6577 2 812-01
with profile rod length 574 mm, 2 profile holders 95/46	1 pc	6577 2 812-02
with profile rod length 861 mm, 3 profile holders 95/46	1 pc	6577 2 812-03
with profile rod length 1,136 mm, 3 profile holders 95/46	1 pc	6577 2 812-04
with profile rod length 1,423 mm, 4 profile holders 95/46	1 pc	6577 2 812-05
with profile rod length 1,698 mm, 4 profile holders 95/46	1 pc	6577 2 812-06

2.7.2 Modular profile frame

Profile frames can also be configured from modular components.

Deeper versions of profile holders are also available for this purpose.

Deep profile frames are primarily used with cable brackets
and cable guides.

The profile holders fit with all profile rods (see ordering data for variable lengths)
with a diameter of 12 mm.

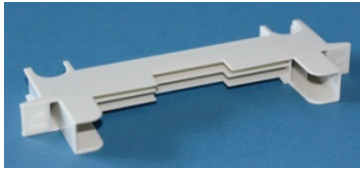It is recommended to fit an additional profile holder every 500 mm.

Ordering information

Description		Catalogue number
Profile holder		
Depth 46 mm, profile rod spacing 95 mm	1 pc	6577 2 834-00
Depth 86 mm, profile rod spacing 95 mm	1 pc	6577 2 860-00
Depth 140 mm, profile rod spacing 95 mm	1 pc	6577 2 868-00
Depth 190 mm, profile rod spacing 95 mm	1 pc	6577 2 844-00
Profile rod		
Length 299 mm, diameter 12 mm, solid, no thread	1 pc	6577 3 835-01
Length 447 mm, diameter 12 mm, solid, no thread	1 pc	6577 3 835-25
Length 574 mm, diameter 12 mm, solid, no thread	1 pc	6577 3 835-02
Length 750 mm, diameter 12 mm, solid, no thread	1 pc	6577 3 835-16
Length 861 mm, diameter 12 mm, solid, no thread	1 pc	6577 3 835-03
Length 1,136 mm, diameter 12 mm, solid, no thread	1 pc	6577 3 835-04
Length 1,260 mm, diameter 12 mm, solid, no thread	1 pc	6577 3 835-08
Length 1,423 mm, diameter 12 mm, solid, no thread	1 pc	6577 3 835-05
Length 1,698 mm, diameter 12 mm, solid, no thread	1 pc	6577 3 835-06
Length 1,800 mm, diameter 12 mm, solid, no thread	1 pc	6577 3 835-07
Length 2,000 mm, diameter 12 mm, solid, no thread	1 pc	6577 3 835-14
Length 2,450 mm, diameter 12 mm, solid, no thread	1 pc	6577 3 835-21

2.8 Accessories for LSA-PLUS HD180 modules

The TE portfolio includes a variety of accessories to enable or facilitate quick and reliable maintenance and service of distribution frames.

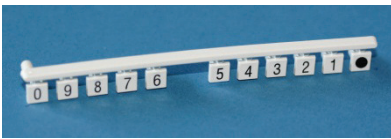|	Description	Catalogue number
	Hinged label holder for LSA-PLUS HD180 modules, with clear cover and blank paper label	LSA-7014 2 058-00
	Mounting aid for LSA-PLUS HD180 disconnection modules	LSA-7014 3 252-00
	Disconnection plug for LSA-PLUS HD180 disconnection modules, red	LSA-7014 3 221-00

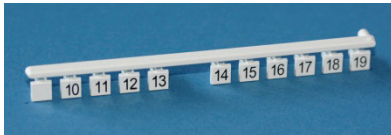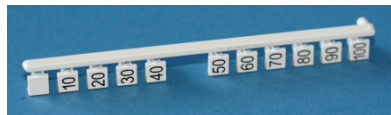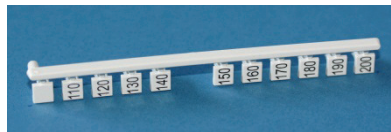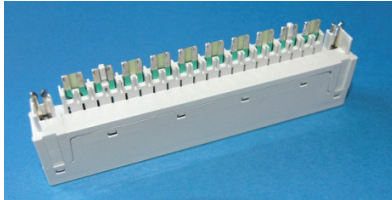|		
	Dummy plug for LSA-PLUS HD180 modules, black	LSA-7014 3 249-00
	Marker cap for LSA-PLUS HD180 modules, red	6196 3 042-00
	Number Flags (marking: 1, 2, 3, 4, ... 9, 0 for left side)	6089 3 023-14
	Number Flags (marking: 10, 11, 12, 13, ... 19 for left side)	LSA-6089 3 023-71
	Number Flags (marking: 10, 20, 30, ... 90, 100 for right side)	LSA-6089 3 023-73
	Number Flags (marking: 110, 120, 130, ... 190, 200 for right side)	LSA-6089 3 023-72
	LSA-PLUS HD180 test cord 2-pin Length: 0.2 m Suitable for LSA-PLUS HD180 connection and disconnection modules	7014 2 003-00
	LSA-PLUS HD180 test cord 4-lead parallel tap for individual testing in both directions Length: 0.2 m Suitable for LSA-PLUS HD180 disconnection modules	7014 2 004-00

Test cord (7052)   6089 2 141-00
2-lead with 4-mm double jack socket
Suitable for LSA-PLUS HD180 connection and disconnection modules

Always handy when the existing tap port of the module is already
occupied by another plug or for blocks without a specific tap port.
The spring-loaded contacts of this test cord mate directly with the
wired LSA-PLUS contacts. Special retainer claws grasp the plastic
tower of the LSA-PLUS contact to ensure secure plug seating.

180 V Overvoltage protection magazine,   PRO-7019 2 222-00
10 pairs with 3-pole arresters and fail-safe, only for disconnection
modules
330 V Overvoltage protection magazine,   PRO-7019 2 222-20
10 pairs with 3-pole arresters, only for disconnection modules

LSA-PLUS insertion tool   6417 2 055-01

3. LSA-PLUS HD180 modules in indoor distribution frames

3.1 Frame 800 distribution frame

Description

Fame 800 is designed for conventional central office applications as well as building distribution applications.

Suitable for installation of 1,400 pairs.

Product benefits:

- Flexible use in free-standing version; back-to-back mounting or wall mounting
- Easy expansion
- Room for easy termination, wiring and jumper management
- Enables easy mix-and-match mounting of all LSA-PLUS modules for profile rod system
- Low delivery cost (flat pack)

Wire guides for horizontal or vertical jumpers provided in sufficient quantity. Frame grounding provided by customer. Ceiling supports and kick bars not included. Surge protection components can be used.

Technical data

Dimensions per bay (WxHxD):	251 x 2200 x 309 mm
Material (frame):	galvanized steel with epoxy coating, color: grey
Material (round bars):	stainless steel (diameter 12 mm)
Contact resistance:	< 10 mΩ (between frames or in frame)
Usable profile bar length:	
	upper section 853 mm
	lower section 1,022 mm

Ordering information

Description	Catalogue number
Distribution frame 800 Capacity 1,400 pairs	DFO-7081 1 001-00
LSA-PLUS HD180 disconnection module,1 pc Package quantity: 10 See page 8 for more information and accessories.	LSA-7014 2 250-00

TE Connectivity products deliver a competitive
advantage by meeting stringent demands for
performance and reliability.
Innovative TE Connectivity components and
systems are used in telecommunications,
electronics, transportation, infrastructure and
energy networks markets throughout the world.