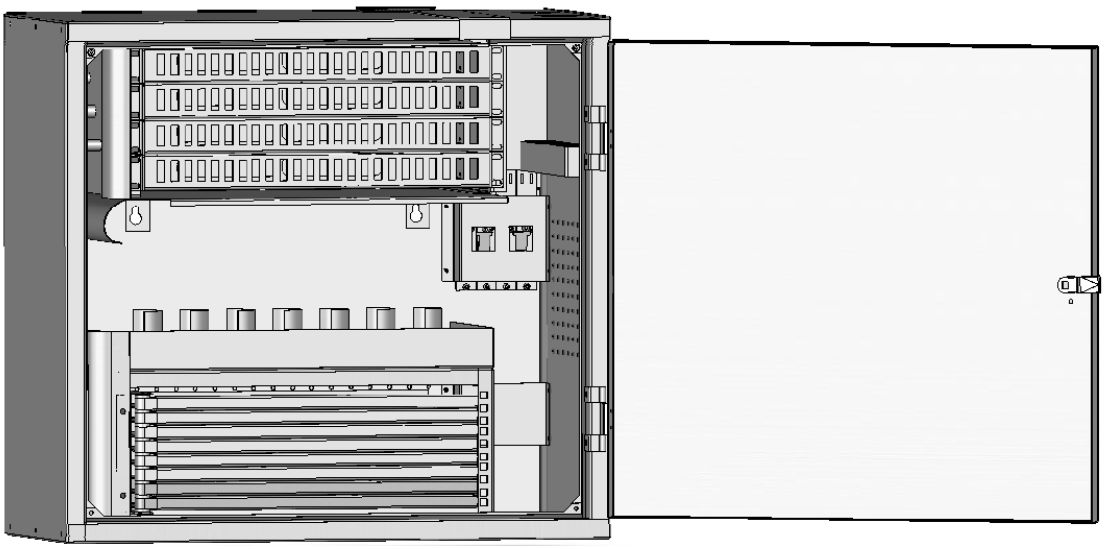
INSTALLATION INSTRUCTION
MO036D

N-HNS

BUILDING NODE CABINET



Nexans
ELECTRIFY THE FUTURE

N-HNS (BUILDING NODE CABINET)

Contents

Page

Product description..... 3-5
- Technical data.....3
- ODF.....4
- Splice module 4
- Cabling organisation.....5
- Cable/tube/fibre handling 5
- Other 5

Installation 6-14
- Prep – connecting cable.....6
- Prep – cable from ODF.....8
- Splicing (cable) 8
- Splicing 10
- Microducts 11
- Splicing(pigtails) 11
- Cabling organisation.....14

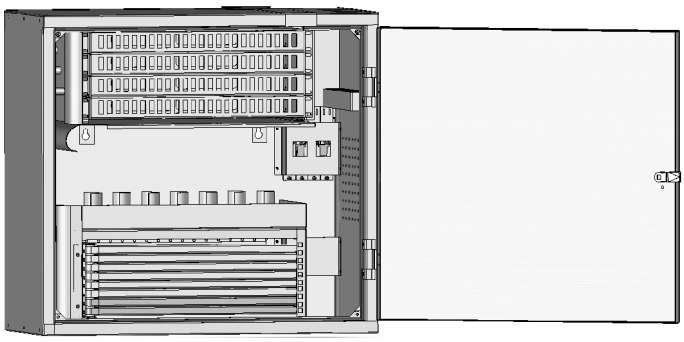
Accessories and ordering information 15

Product description

The N-HNS cabinet is suitable for use in building nodes.
The cabinet is lockable, using a customer-selected lock cylinder.

The cabinet performs four different functions:
patching, splicing, cabling organisation and cable/tube/fibre handling.

The upper part of the cabinet has space for four ODFs (one height unit per box) with 48 fibres each. The lower part has space for one splice module that can handle 384 single fibres or 768 fibres in ribbon form. The centre and left of the cabinet contains a store and guides for organising cabling. All incoming cables and tubes are organised on the right.



N-HNS

Technical data

The basic version of the cabinet includes:

- 19″ rack for boxes and splice module
- Cabling store and guides
- Four cable clamps and tube strain reliefs with associated cover
- Base unit of splice module + two splice cassettes
- Rear and side panel for organising cables and fibres
- Door with handle, excluding lock cylinder

External dimensions:

- Width, 700 mm
- Height, 650 mm
- Depth, 320 mm
- Weight, basic version 32 kg
-

Capacity:

- Patching, max 384 fibres (LC connectors)
- Splicing, max 768 fibres (ribbon)
- Incoming tubes, max 96 (diam. 5 mm)
- Strain relief for four incoming supply cables

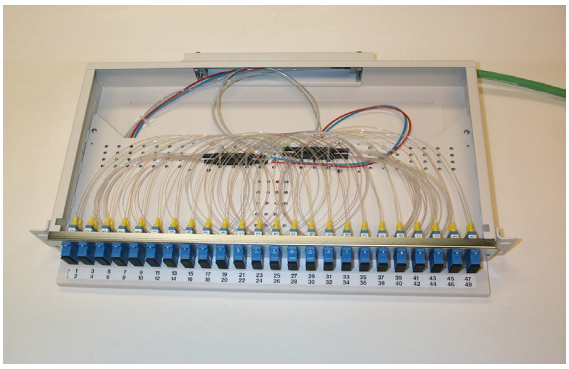
ODF

The cabinet is designed primarily for pre-terminated ODFs.
Direct termination is possible provided there is enough cable to allow the work to be done outside the cabinet. There is no space for cable coils inside the cabinet, so all excess cable must be located elsewhere.

The ODFs are ordered with short stub cable (spliced to the supply cable in the cabinet) or with the length of cable required for splicing in the access node (area node).

The box is of type KB112B or KB201 with these external dimensions:

- Width, 445 mm
- Height, 45 mm
- Depth, 190 mm



Pre-terminated ODF

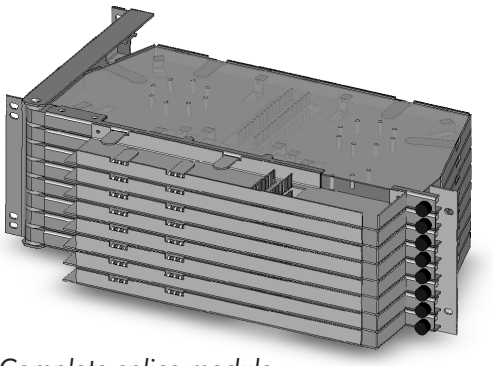
KB112B/KB201

Splice module

The splice module consists of a base unit with hinged attachment arms. One splice cassette is attached to each attachment arm. The basic version includes 2 splice cassettes. More cassettes can be ordered as required.

In each cassette, 48 fibres can be spliced in singe fibre form, or 96 fibres in ribbon form. Each cassette has a plastic cover to protect the spliced fibres. The cassettes are fixed in place on the right of the module using captive screws.

In the case of pigtail splicing (cabling in the cabinet), an extension can be fitted to the front of the cassettes.



Complete splice module

Cabling organisation

A store and various radius limiters and guides are provided for excess cabling.
The purpose of these components is to handle the cabling installed between the splice module and the patch boxes. The excess cabling is fed into the store and laid around the relevant radius limiter.

Cable/tube/fibre handling

All incoming tubes and cables are managed in the right-hand side of the cabinet.
The tubes are held in special strain-relieving combs on the right of the cabinet. The combs are protected with a cover.

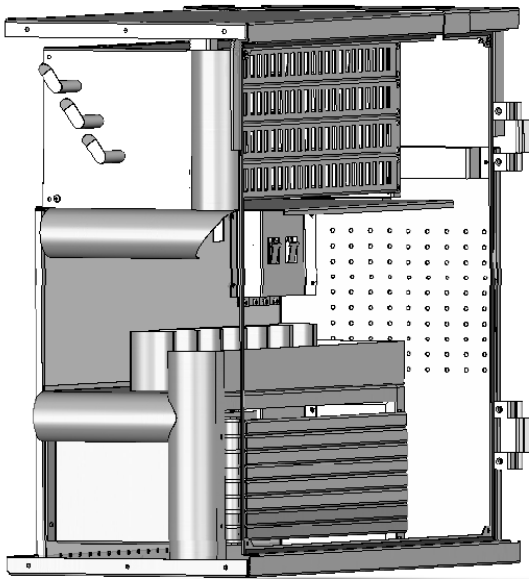
Below the combs and behind the spice module, the metal panel is perforated with holes for plastic clips, used to guide fibres into the splice module.

To the right of the ODFs there are four strain-relieving cable clamps for incoming cables, protected by a cover.
The cover has fasteners to hold the stub cables coming from the ODFs.

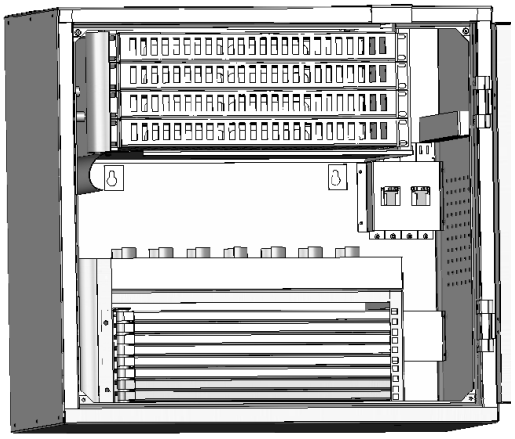
The stub cables and the tubes of the incoming cables are fed under the lower cover, eventually reaching the two lower cassettes for splicing.

Other

For more information about the materials used in the cabinet, see "Accessories and ordering information" on page 14.



Left of the cabinet viewed without metal panel



Installation

On the rear of the cabinet there are four holes for fixing the cabinet to the wall. There are two holes just below the ODFs and two behind the splice module.

Mark the fixing points on the wall where the cabinet will be installed. Secure the screws to the wall and hang the cabinet on them (the holes have a keyhole shape).

Preparing the connecting cable

Remove the panel covering the gap at the top of the cabinet.

Place the cable in its eventual permanent location. Using a felt-tip pen for example, mark the cable where the sheath will be stripped. Remove the cable from the cabinet and prepare it as follows.

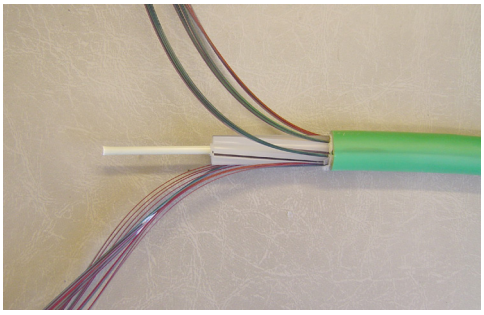
Cut the cable 2900 mm from the mark. Carefully make a ring cut at the mark. To expose the tear thread (Nexans cables), carefully strip 10 – 15 cm of the sheath at the end. Split the sheath using the tear thread and remove it. Remove the plastic tape and any thread and cut them at the end of the sheath.

Remove the ribbons/tubes from the slots. If Vaseline cable is used, clean the ribbon/tubes with isopropanol.

Using a felt-tip pen for example, mark the ends of the ribbons/tubes with the correct slot number.

Cut the slotted core 7 cm from the end of the sheath, and strip

Stripping cable using the tear thread

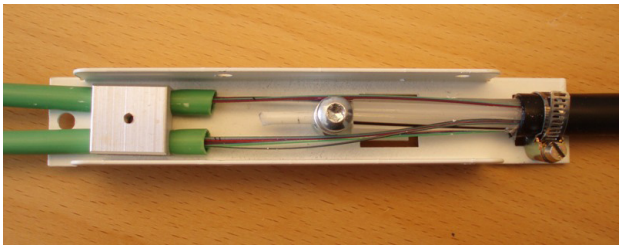


Slot element, cut and stripped

the slotted element from the central element 4 cm from the end of the sheath.

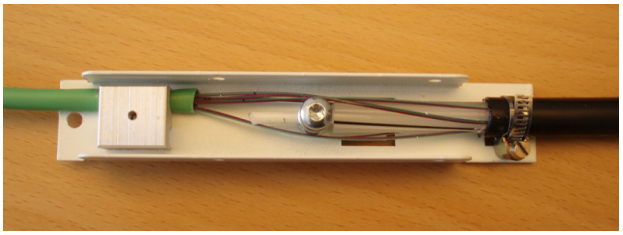
Unscrew the cover (inside the cabinet) of the cable clamps and remove the cable clamp that will be used.
Position the cable in the cable clamp so that the cable will not be subject to any internal stresses when it is installed in the cabinet later. Secure the cable using the screw.

If ribbon cable is used, tubes are passed over the ribbon. The number of tubes depends on the number of fibres in the cable and the number of fibres that will be spliced in each cassette. If 96-fibre cable is used and all fibres will be spliced in the same cassette, there will only be one tube.



Cable clamp with 2 tubes

Use left-over sheaths from the cables running from the ODFs as tubes.



Cable clamp with 1 tube

Use the cassettes at the bottom of the splice module, leaving the upper cassettes free for later splicing of the premises network and the pigtails.

The tube length must be 1100 mm. The tubes are secured in the cable clamps using the aluminium attachment supplied or, if preferred, using cable ties.

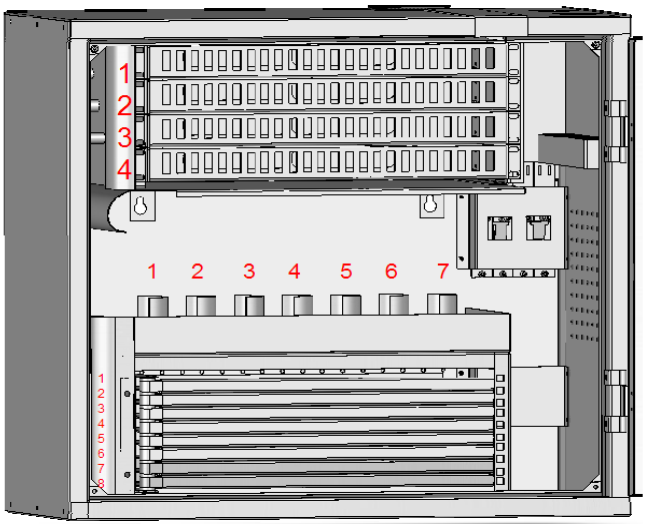
Position the cable clamps by pushing the punched-out tags on the rear of the clamps into the corresponding notches on the back of the cabinet.

Use the screws supplied to secure the clamps.

If there are no more cables to prepare, replace the cover.

Preparing cable coming from ODFs

Place the first box to be installed in position 4, see the diagram.



Use cable ties to attach the cable to the cover above the cable grips.

Tighten the cable ties with care, because the fibres are directly below the sheath.

The cable length measurement from the fasteners (on the cover) must be 2450 mm.
Strip the sheath 1100 mm from the fasteners (the sheath will be used as tubes for the connecting cables).

Pull the tubes from the ribbon. If necessary, wash the ribbon with isopropanol.

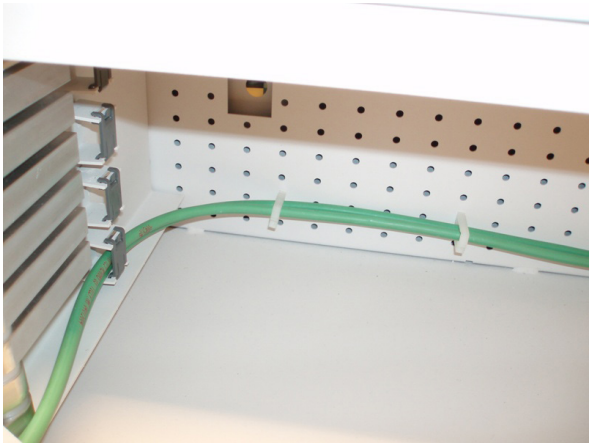
Unscrew the lower cover in the cabinet, lay the cables and tubes from the connecting cable under the cover, then secure the cover again.

Splicing the connecting cable and cables from ODFs

The splice module consists of hinged cassettes. With all the cassettes open, there is unrestricted access to the tubes along the back of the cabinet.

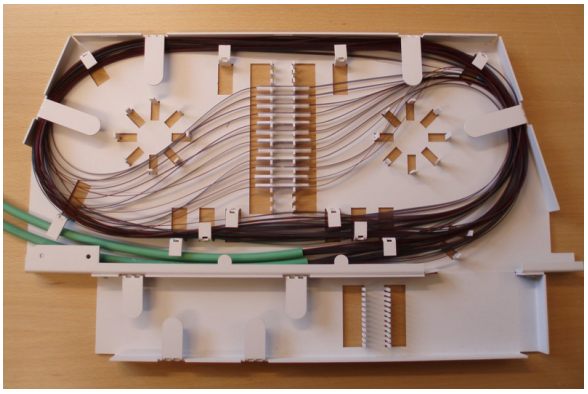
The cable from the ODF and the tubes from the connecting cable are passed from the lower cover (the cover in line with the splice module), turning back towards the splice module with a gentle radius.

The panel behind the splice module is perforated with holes allowing the desired number of plastic clips to be installed. The tube passes through these plastic clips towards the entry point in the splice cassette.



Tubes spliced in the two lower cassettes are fastened using the lower of the four loop ties. Arrange the tubes so they have a gentle bending radius from the cabinet to the loop tie and from there to the splice cassette.

Start by installing the tubes in the lower cassettes. Place the tubes in the grips in the module.



The tube with the shortest fibre length is placed closest to the splice holders so that the ribbon is not twisted when it is coiled into the cassette.

With the cassette closed in the splice module, the length of the tubes should be as shown in the diagram.

If the sheath of the tubes is too long, carefully make a ring cut using a tube stripper.

The length of the ribbon from the end of the tube sheath must be 1350 mm at the tube closest to the splice holder, and the length of the ribbon at the other tubes must be 1800 mm.

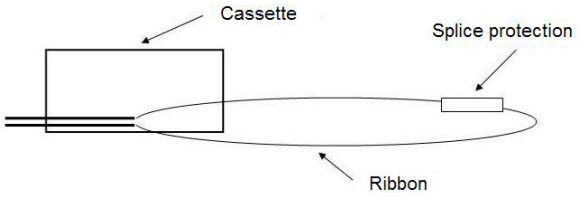
Loop the fibres into the cassette.
Repeat the process with the remaining tubes and cassettes.

So that no tubes and ribbons are left hanging out of the cabinet, it is a good idea to prepare all cassettes before starting to splice.

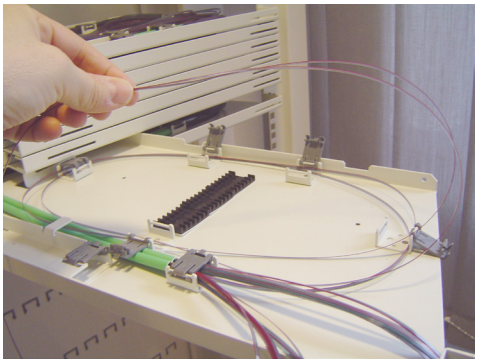
The ribbon in the splice module is long enough to allow splicing with the splice module fitted in the cabinet.

Splicing

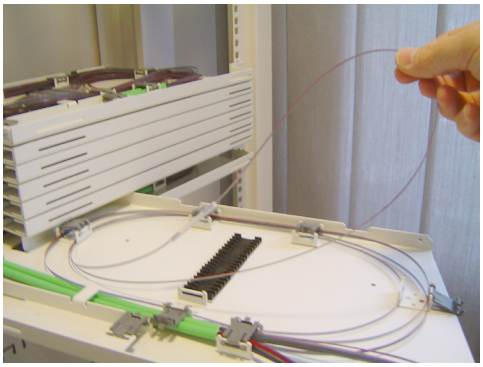
Before starting to splice, check that the ribbon is not twisted and that the colour coding faces the same direction.
Start splicing if the ribbon has a single long loop and the colours are arranged correctly.



After splicing, once the splice protection has cooled down, loop both ribbons in the same direction in the cassette, avoiding twisting and internal stresses.



With one turn of the loop remaining, place the splice fitting on the splice holder and secure it.



Microducts
The top of the cabinet has a rectangular hole with a rubber cloth, which is the entry point for the microducts/multiducts. Below the rectangular hole there are special strain-relieving combs for each individual microduct. The comb is protected with a cover.

During installation, the cover is removed and each microduct is connected by pressing it into the comb.

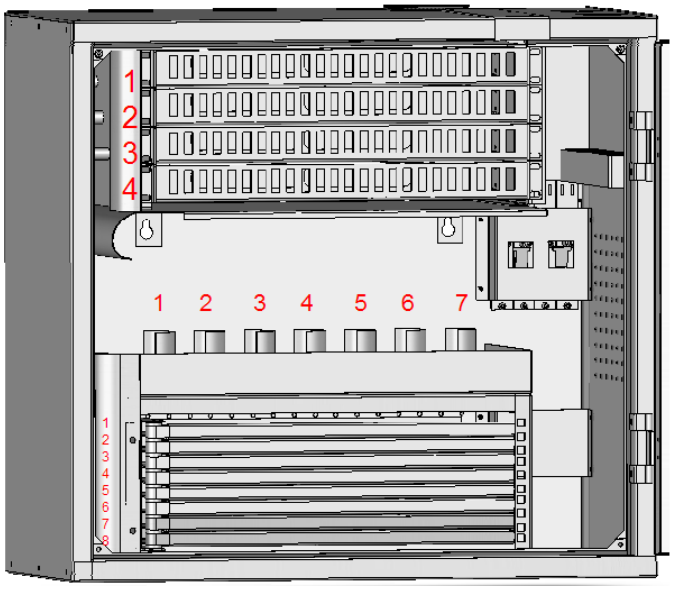
The length of the microducts can be cut to different lengths below the comb. In this case, the microduct farthest into the comb should be the longest, with the microducts becoming progressively shorter along the comb.

The markings on the microducts are determined by the person placing the order.
When the microducts are installed, replace the cover.

Splicing fibres from microducts (premises network) to pigtails
In order simplify installation and make it easier to install new connections and change existing ones, a systematic approach must be used.

To prevent blown fibre/microcable from the microducts crossing each other, it is a good idea to use the upper cassettes to splice cables coming from microducts farthest inside the cabinet.

Because 48 fibres are spliced in each cassette and the two lower cassettes are used for splicing the

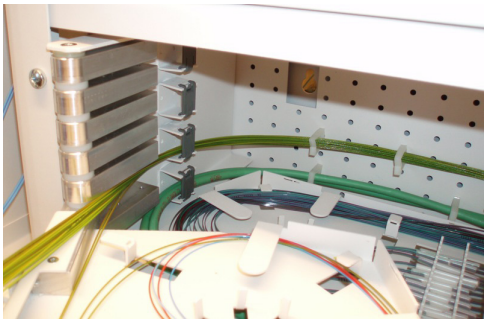


connecting cable to the ODF cable, start by installing the cassette in position 3 of the base unit of the splice module, see the diagram. The pigtails from the cassette installed in position 3 are connected to the ODF box installed in position 4, and the cassette in position 4 is connected to the box in position 3, etc. (to prevent the pigtails crossing).

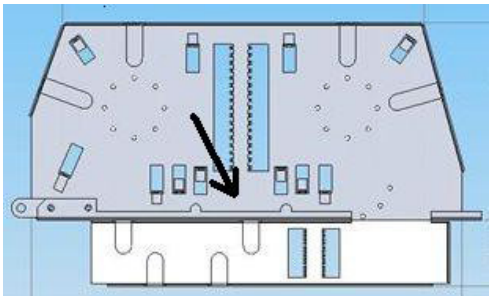
To do this, the microducts in the comb should be arranged in a way that minimises the crossing of cables and cabling.

Measuring from the end of the microducts (under the comb) there must be 2500 mm of blown fibre or microcable.

The blown fibre/microcable is held in plastic clips (fitted to the perforated holes) along the side of the cabinet and guided over the panel behind splice module, before finally reaching the cassette.

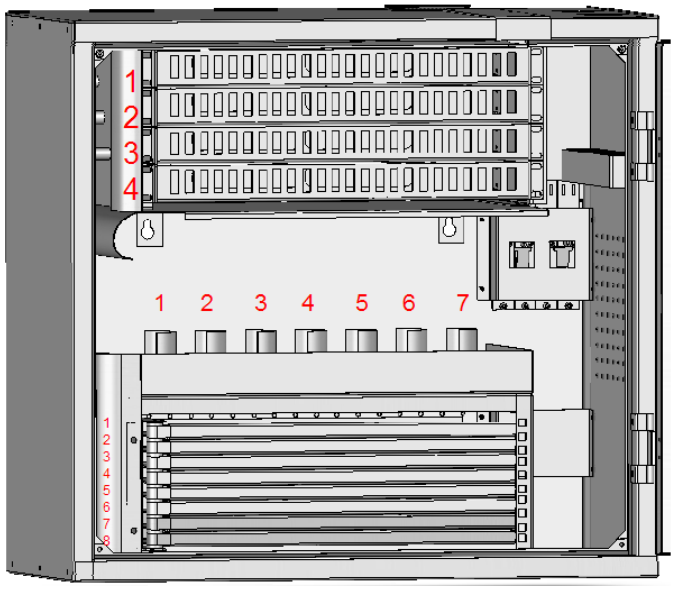


Install the cassette and fasten the shelf to it – this is used for strain relief of the pigtails. There are four loop ties with a plastic cover inside the base unit of the splice module. The upper loop tie is for the top two cassettes, the next is for cassettes 3 and 4 and so on.



The fibres must be arranged with an appropriate radius all the way to the cassette in the splice module.

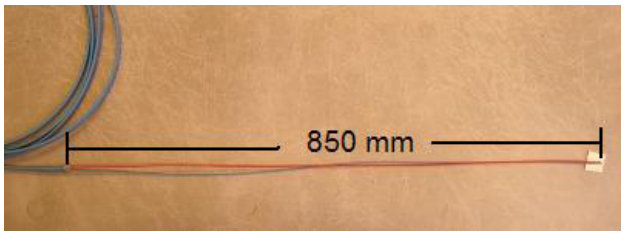
The length of the fibres, measuring from the centre of the cassette, must be 1300 mm, see the arrow in the diagram.
If blown fibres are being installed, 350 mm of acrylate must be stripped from the end of the fibre.



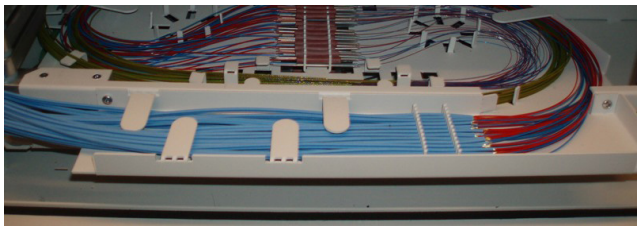
The length of the pigtails depends on the position of the ODF.
For boxes installed in positions 1 and 2 (see the diagram) a total pigtail length of 2650 mm is required, measuring from the rear of the boot. For boxes installed in positions 3 and 4 a total length of 2950 mm is required, measuring from the rear of the boot.
Excess cabling from boxes 1 and 2 are held in radius limiters 2 to 4 in the cabling store, and cabling from boxes 3 and 4 are held in radius limiters 5 to 7 in the store, see the diagram.

If the above instructions are followed, the cabling will not cross at any point.

Strip the secondary coating 850 mm.



The pigtails are held by strain reliefs in the cassette as shown.

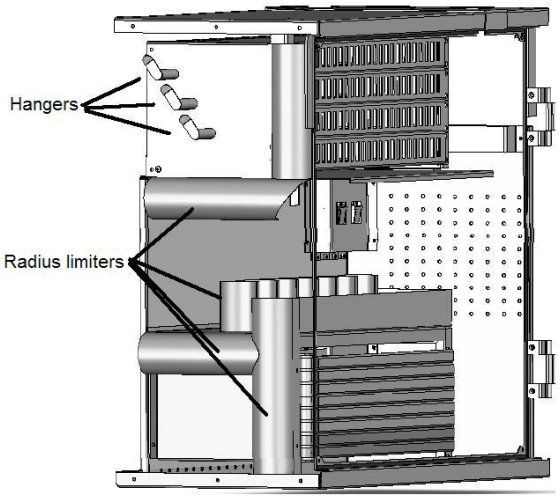


Splicing is done according to the principles explained on page 13.

Cabling organisation

The cabling (pigtails) is passed around the radius limiters on the left of the splice module and up to the cabling store. Depending on the length of the cabling, it is passed around one of the vertical radius limiters in the cabling store and then led up to the lowest hanger (for the two lowest ODFs), finally reaching the correct adapter.

The cabling must not be stretched around the radius limiter next to the splice module, because the fibres must have some slack when the cassettes are opened and closed.



Accessories and ordering information

Product no.	Product	Note
30780509	Building node cabinet, complete S	Two pieces 30782109 and one 307831 included
30782009	Splice module for ETSI/19" max 8 cassettes	
30782109	Splice module for ETSI/19" max 4 cassettes	
30783009	Cassette for splice module left with shelf	2 per pack
30782309	Cassette for splice module universal	2 per pack
30005709	LWS-A-3-01	Plastklipps
28138009	ODF, 48 fibre stub cable	3 m cable
28138109	ODF, 24 fibre stub cable	3 m cable
48505509	Pigtail SC/UPC	3 m

Nexans Sweden AB

514 81 GRIMSÅS
www.nexans.se

Kontakta oss:
ccc.se@nexans.com
+46 325 80 000

ELECTRIFY THE FUTURE