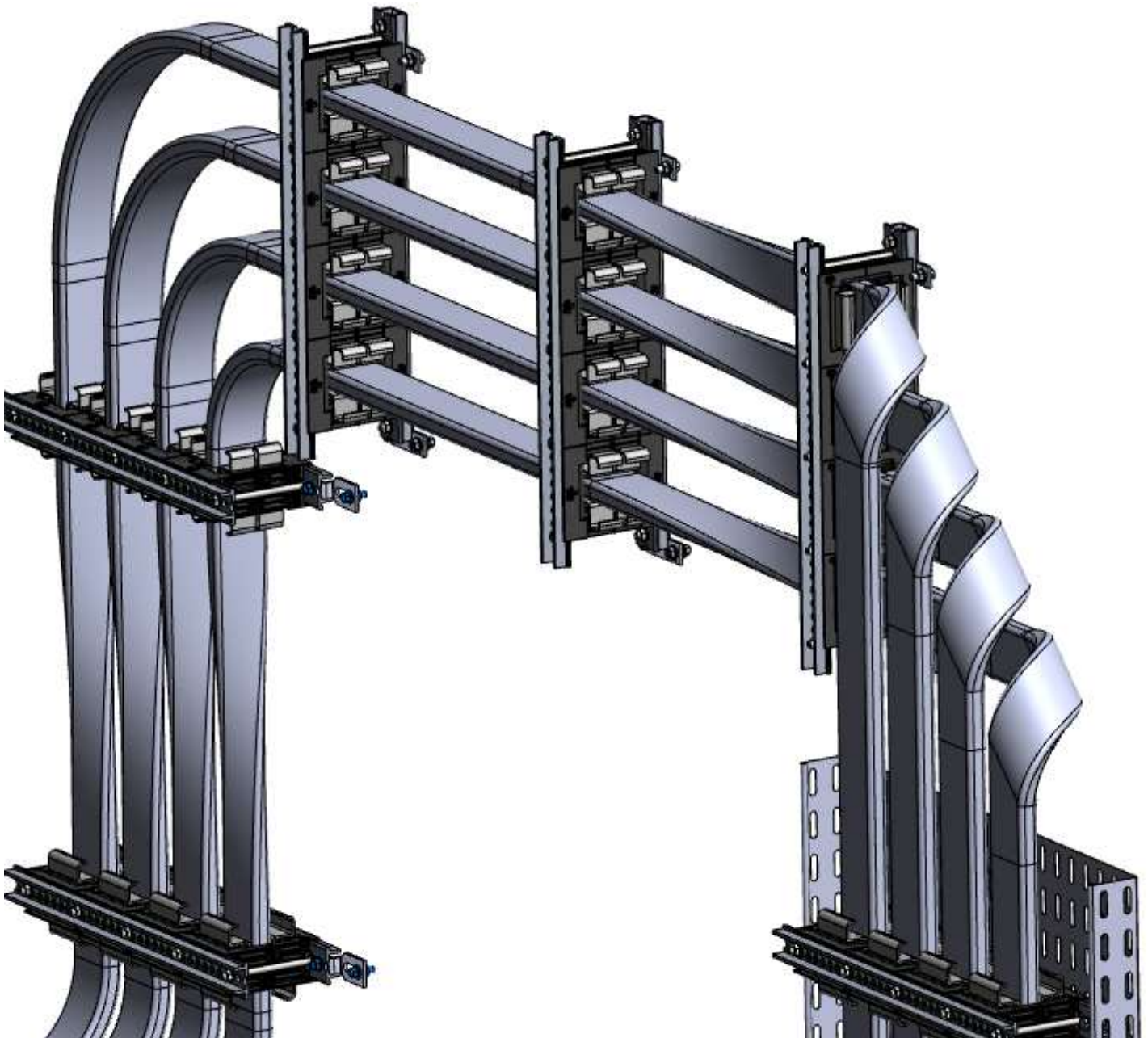


# FleXbus System

3D design of a FleXbus pathway



### **1) Bending radii of Flexbus conductors :**

The objective of this document is to support the computer-aided design (CAD) and/or the installation of Flexbus conductors by listing the different bending options and their dimensional values.

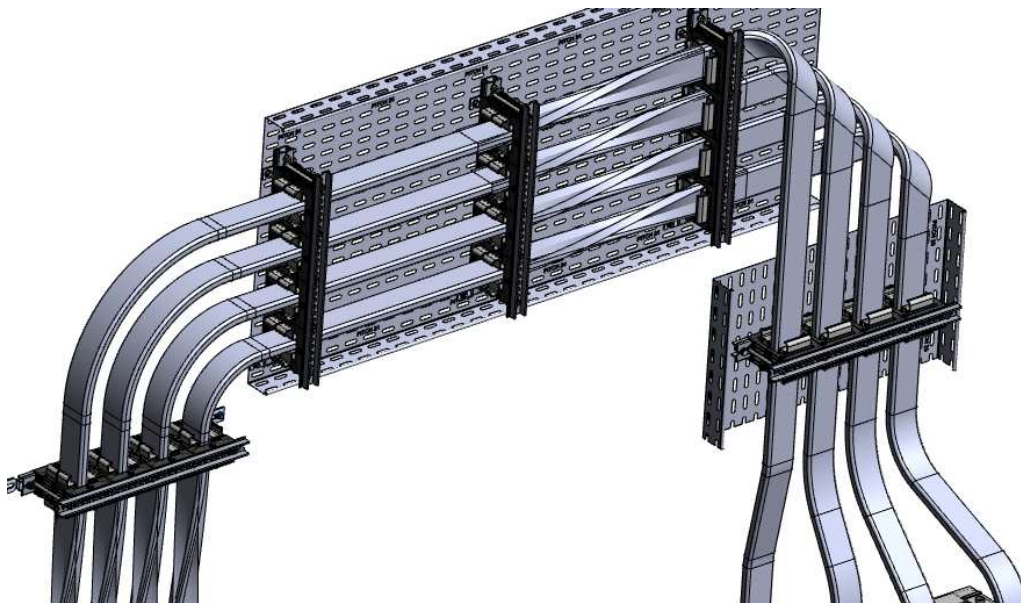
Due to its composition, the flexibility of the Flexbus conductor allows the design of pathways in narrow environments. The Flexbus Advanced conductor is manufactured with strands of 0.2 mm diameter wire braided. This allows for a radius of curvature much lower than traditional cable, compact electrical connections, and reduced space and potentially cost of the room where it will be installed (electrical room / substation). Moreover, the flexibility of the Flexbus conductor considerably reduces the mechanical forces applied on the areas on which it is connected. For example, too high of a load on the palms of an oil-filled transformer can generate oil leaks.

Flexbus conductors have a rectangular section. It is generally bent through the thickness of the conductor.

Flexbus conductors are available in several cross-sections (from 220mm<sup>2</sup> to 1810mm<sup>2</sup>). The possible bending radii vary according to the cross-section. The larger the cross-section of the conductor, the more important the bending radius.

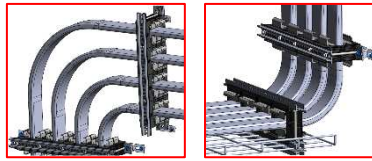
A bend on Flexbus conductor is located between two supports or between a support and its connection point. The greater the distance between supports, the greater the bending radius of the conductor will naturally be.

Note : There is no minimum bending radius in the strict sense of the term because the Flexbus insulation sleeve will not be deteriorated by this type of mechanical stress thanks to its high elongation strength, superior to 500%. The values of bending radius are provided for practical installation and for reasonable force applied when folding the material. They are therefore "recommended" values. It is possible to go beyond these values but the mechanical effort to constrain the conductor should be considered - it would be challenging to achieve by the installer.



There are three possible features to make the Flexbus pathway:

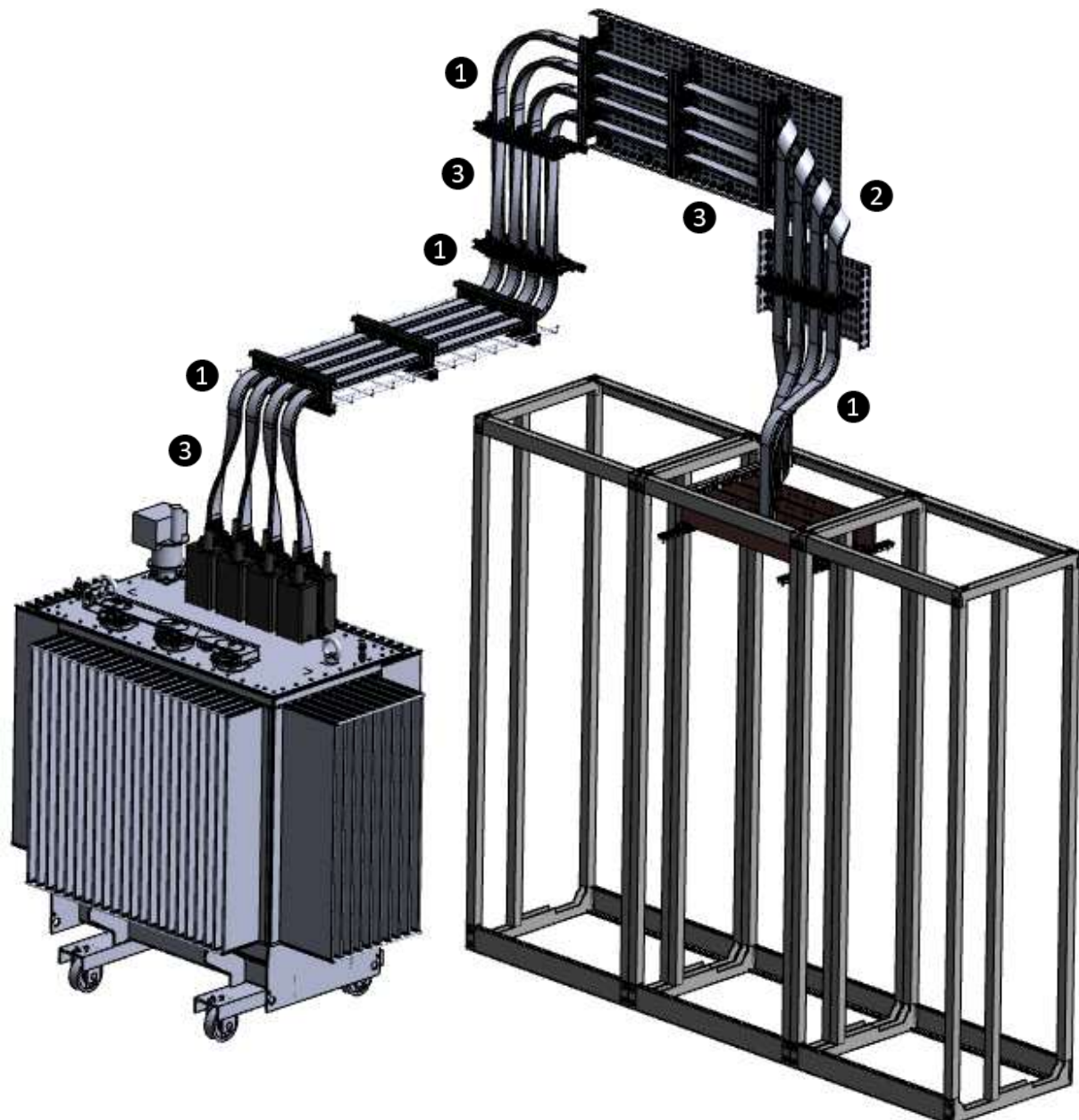
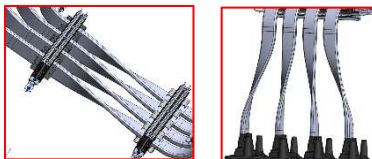
① Bend



② Fold



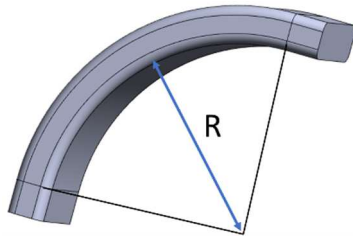
③ Twist



For each type of feature, the tables below provide 3 dimensional values:

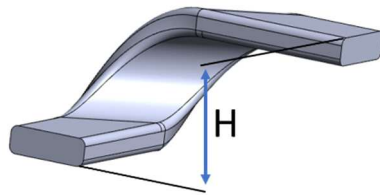
- **S: minimum** values that can be used when it is not possible to do otherwise.
- **M : average** values corresponding to a classic installation.
- **L: natural** values of the product that cause the least effort during assembly.

### 1-2) Radius of curvature of edge bends - R



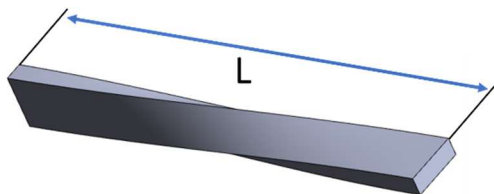
	Flexbus conductor Cross section							
Radius of edge bends	220 mm <sup>2</sup>	360 mm <sup>2</sup>	545 mm <sup>2</sup>	640 mm <sup>2</sup>	800 mm <sup>2</sup>	960 mm <sup>2</sup>	1280 mm <sup>2</sup>	1810 mm <sup>2</sup>
S	30mm	30mm	50mm	50mm	60mm	60mm	80mm	120mm
M	50mm	100mm	150mm	150mm	200mm	200mm	300mm	300mm
L	150mm	200mm	300mm	300mm	400mm	400mm	500mm	600mm

### 1-3) Folding Thickness - H



	Flexbus conductor Cross section							
Folding thickness	220 mm <sup>2</sup>	360 mm <sup>2</sup>	545 mm <sup>2</sup>	640 mm <sup>2</sup>	800 mm <sup>2</sup>	960 mm <sup>2</sup>	1280 mm <sup>2</sup>	1810 mm <sup>2</sup>
S	60mm	80mm	100mm	100mm	100mm	100mm	200mm	200mm
M	120mm	150mm	200mm	200mm	200mm	200mm	300mm	300mm
L	250mm	300mm	300mm	300mm	300mm	300mm	400mm	500mm

### 1-4) Length of the twists at 90° (1/4 turn) – L



	Flexbus conductor Cross section							
Length 1/4 turn twist	220 mm <sup>2</sup>	360 mm <sup>2</sup>	545 mm <sup>2</sup>	640 mm <sup>2</sup>	800 mm <sup>2</sup>	960 mm <sup>2</sup>	1280 mm <sup>2</sup>	1810 mm <sup>2</sup>
S	150mm	200mm	250mm	250mm	300mm	300mm	300mm	400mm
M	300mm	400mm	500mm	500mm	500mm	500mm	500mm	600mm
L	600mm	700mm	800mm	800mm	800mm	800mm	900mm	1000mm

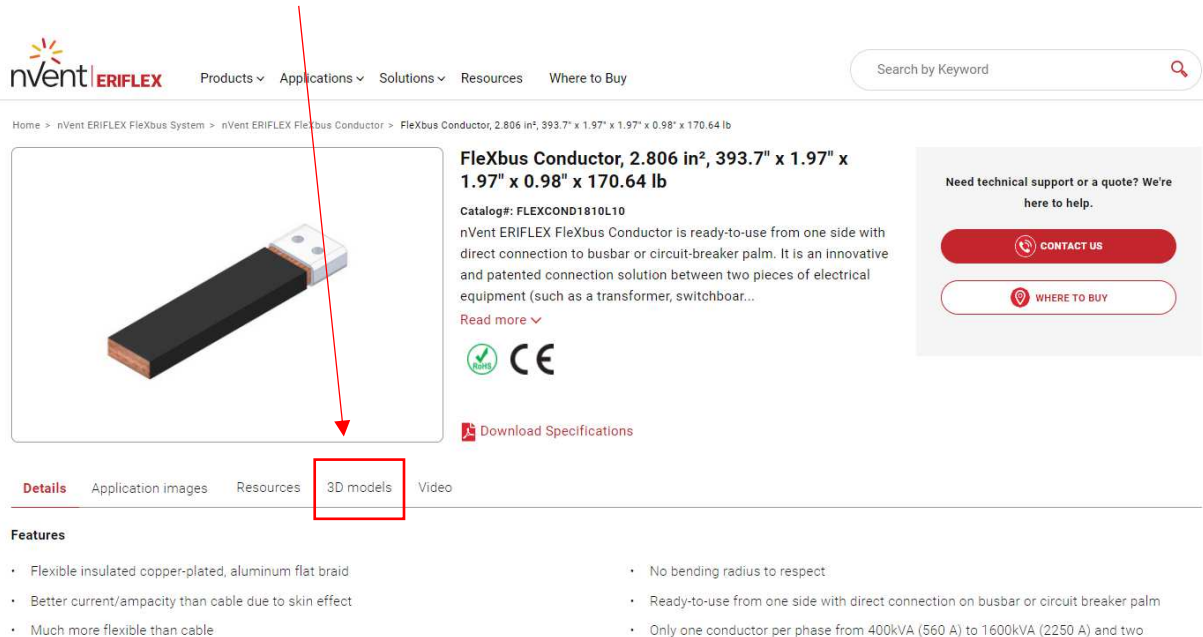


## 2) 3D models of conductors and other components

The 3D models of the Flexbus system are available on our website.

<https://www.nvent.com/en-gb/eriflex/products/nvent-eriflex-flexbus-system>

To get the 3D models of Flexbus conductors, click on the category "Flexbus conductor", then click on the reference of the desired part.  
then click on the "**3D Models**" tab.



The screenshot displays the product page for the Flexbus Conductor on the nVent ERIFLEX website. The page includes a navigation bar with links to Products, Applications, Solutions, Resources, and Where to Buy. A search bar is located in the top right corner. The main content area features a 3D model of the conductor, its specifications (2,806 in², 393.7" x 1.97" x 1.97" x 0.98" x 170.64 lb), and a list of features. A red arrow points from the '3D Models' tab to the 3D model image. The '3D Models' tab is highlighted with a red box.

**Flexbus Conductor, 2,806 in<sup>2</sup>, 393.7" x 1.97" x 1.97" x 0.98" x 170.64 lb**

Catalog#: FLEXCOND1810L10

nVent ERIFLEX Flexbus Conductor is ready-to-use from one side with direct connection to busbar or circuit-breaker palm. It is an innovative and patented connection solution between two pieces of electrical equipment (such as a transformer, switchboard...

Read more ▾

Download Specifications

**Features**

- Flexible insulated copper-plated, aluminum flat braid
- Better current/ampacity than cable due to skin effect
- Much more flexible than cable
- No bending radius to respect
- Ready-to-use from one side with direct connection on busbar or circuit breaker palm
- Only one conductor per phase from 400kVA (560 A) to 1600kVA (2250 A) and two

Follow the same steps for the other components of the Flexbus system, as for the supports for example.

It is also possible to download the 3D models of the Flexbus system on the website of traceparts :

[https://www.traceparts.com/en/search/nvent-eriflex-low-voltage-power-and-grounding-connections-nvent-eriflex-flexbus-system?CatalogPath=NVENT\\_ERIFLEX%3ASG4402480100003655](https://www.traceparts.com/en/search/nvent-eriflex-low-voltage-power-and-grounding-connections-nvent-eriflex-flexbus-system?CatalogPath=NVENT_ERIFLEX%3ASG4402480100003655)

For each conductor cross-section, downloads the 3D models in a large number of extensions are available, depending on the CAD software you use.

In each 3D model package per cross-section of Flexbus conductor is the set of features in the 3 dimensional values described in this document, as well as a straight length and the connection range of the conductor:

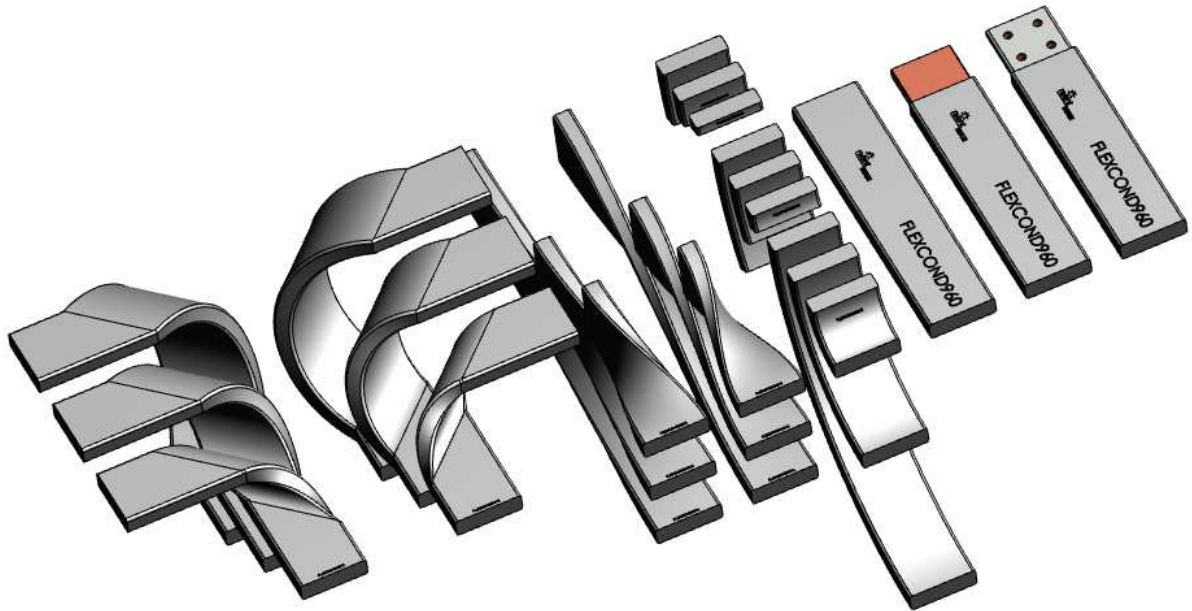
- **S: minimum** values that can be used when it is not possible to do otherwise.
- **M : average** values corresponding to a classic installation.
- **L: natural** values of the product that cause the least effort during assembly.

To create a conductor path, assemble the various lengths and features proposed in your CAD software.

It is also possible to download the 3D models of the other products of the Flexbus range such as the supports, by following the same step on our website.

Examples of 3D models provided in a Flexbus conductor file:

- Right and Left folds with S/M/L Values
- Right and Left ¼ turn twists with S/M/L Values
- Edge Bends at 15, 30 and 90° with S/M/L Values
- Straight lengths, stripped and with crimped palm



Example of a 3D model of an edge support kit - 3 poles.



Example of a path made from an assembly of 3D models on our website.

