



Medium voltage

# Hybrid 1-Core Straight-through Joints for 42 kV Applications

$U_o/U(U_m)$  - 20,8/36(42) kV

Type-tested according to the latest HD 629.1 S3:2019 standard

**We connect your energy**

[www.cellpack.com](http://www.cellpack.com)

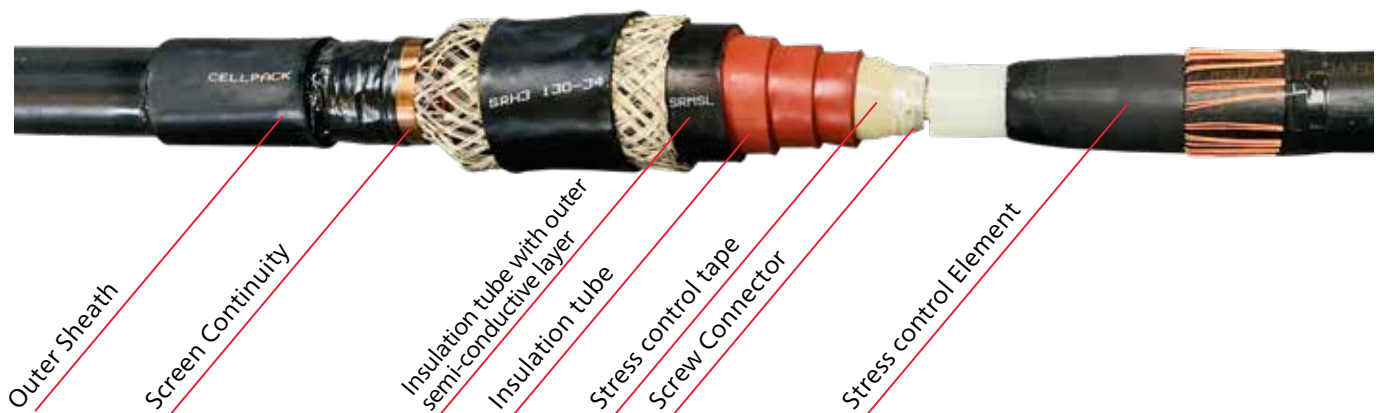
D1044 | SAP-No. 426198 | 0121

# 42kV Hybrid Straight-through Joints – We make your connection safe

Over the last few years, projects delivering energy from renewable energy sources, especially wind and solar energy, have significantly increased. This in turn has amplified not only the global demand for 42 kV cables and cable accessories, but also technical requirements associated with it. BBC Cellpack Electrical Products, which has long been a reliable partner to the renewable energy sector, continues to contribute by providing reliable products and a comprehensive range of services.

With our new portfolio of 42 kV Hybrid Straight through joints, type-tested according to the latest CENELEC HD 629.1 S3:2019 Standards, we comply with the industry set norms and guarantee a secure connection with high network reliability. The cable joints are enhanced to ensure an operationally reliable conductor connection, excellent stress control, adequate insulation level and exceptional resistance against all environmental influences. Assembly is safe, quick, and easy.

## TESTED ACCORDING TO LATEST CENELEC HD 629.1 S3:2019 STANDARDS



### Product Features:

- Reliable stress control due to flexible silicone stress control elements.
- Suitable for both copper and aluminium conductors
- Suitable for all cables with wire or tape screen
- Wide cross-section range
- Ready for immediate operation
- Suitable for a wide range of applications due to screw connector
- Made in Germany
- Type-tested (CENELEC HD 629.1 S3)

### Voltage Level:

- $U_o/U(U_m)$  20,8/36(42) kV

### Application / Suitability:

- Indoor
- Outdoor
- Underground
- Water
- Installation Ducts

### Test Standards:

- CENELEC HD 629.1 S3
- IEC 61238-1, Class A

# Creating value to our customers

The 42kV Hybrid straight-through joints are suitable for all 1-core polymeric-insulated cables (PVC, PE, XLPE, EPR). They allow the connection of cables with different cross sections and conductor materials even with different cable designs concerning the semi-conductive layer (graphite-coated, removable, or strippable) and screen design (wire or tape screen).

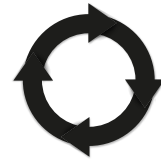
## SIMPLE AND EASY INSTALLATION



The 42kV CHM..V joints require no special tools, reducing installation time and errors.

- Simple and easy mounting steps aids in fault tolerant installation.
- The joints can be energised immediately after installation
- Immediate energization benefits the customer in faster network availability

## RANGE TAKING



The components of the 42kV CHM..V joints are designed to cover wide cross-section ranges to benefit the customer with following advantages.

- Helps customers to reduce the number of products and cover all application needs.
- Results in reduced inventory saving storage related costs to customer.

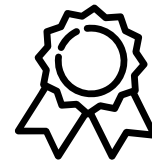
## WITHSTANDS TOUGH ENVIRONMENTS



Our heat shrink outer protective tubes with high mechanical strength and chemical resistant properties makes it suitable for harsh environments.

- Thick wall ensures superior electrical & mechanical properties
- Stabilized against UV Rays
- Halogen Free

## HIGH QUALITY



One key feature of Cellpack is its strong commitment to quality. Cellpack takes great care to ensure that consistently high-quality products are made available to customers.

- Type-tested acc to latest CENELEC HD 629.1 S3:2019 standards
- Production locations hold valid certificates based on globally accepted quality standards such as ISO 9001:2015

## ECONOMICAL SOLUTION



- Short parking position of the product benefits customers to install the joints with reduced excavations, thereby reducing the cost for excavating pits.

## CUSTOMIZED SOLUTIONS



- As a reliable technology partner to our customer, we understand the individual customer needs and offer customized products to meet their requirements

# 42kV Hybrid Straight-through Joints – Compact, robust and long lasting

The 42 kV hybrid cable joints combine components made from silicone rubber with high voltage resistant heat shrink products. It's simple and space saving design reduces the associated assembly, storage, and transportation costs to the energy supplier. Rigorous quality control as well as routine tests during production ensures the technical reliability of all our cable joints.

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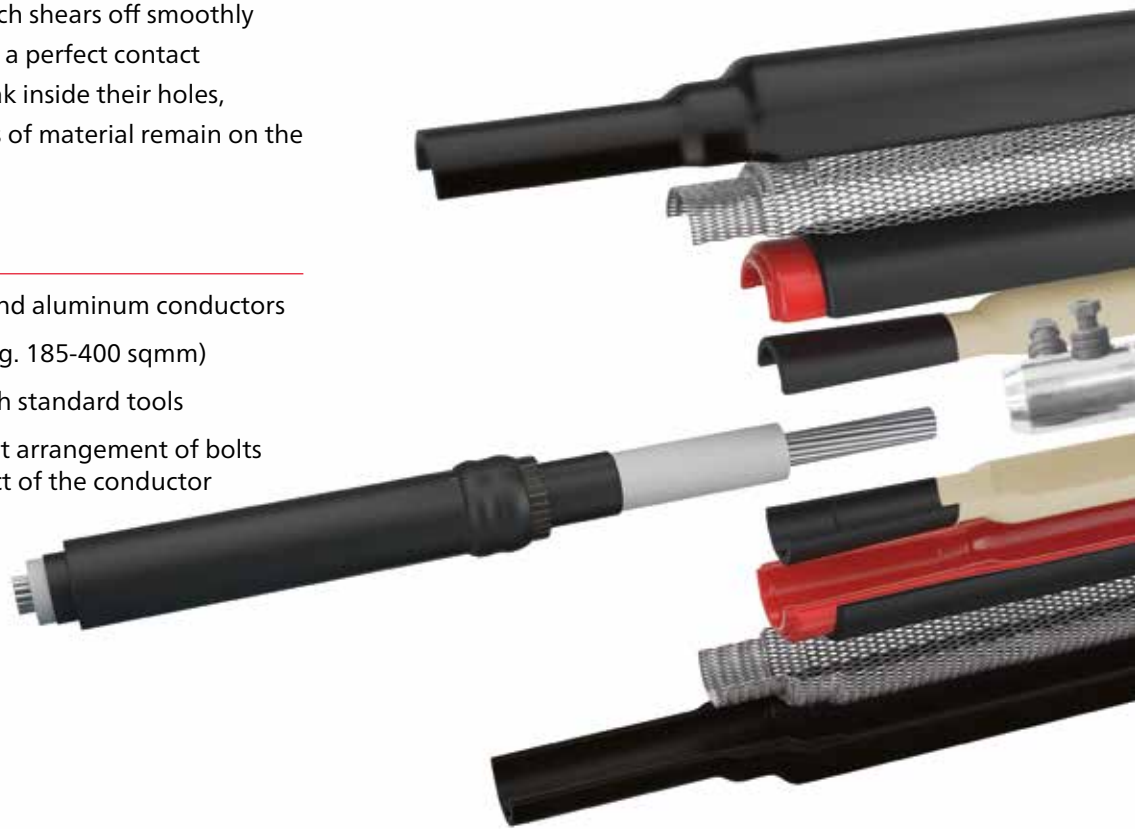
## SCREW CONNECTORS:

The electrical continuity of the cable is made through mechanical connectors tested according to IEC 61238-1, Class A. The connectors include shear off bolts with pre-set torque which shears off smoothly when it is tightened ensuring a perfect contact pressure. The shear bolts break inside their holes, assuring no sharp protrusions of material remain on the connector surface.

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### Features:

- Suitable for both copper and aluminum conductors
- Wide application range (e.g. 185-400 sqmm)
- Fast & Easy installation with standard tools
- Internal grooves and off set arrangement of bolts ensure an optimum contact of the conductor



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## INSULATION TUBES:

The dimensions of the insulation tubes are selected to ensure a defined insulation wall thickness for the appropriate voltage level and cable cross-section. For easy and error free installation, 3 numbers of heat shrinkable insulation tubes (SRMS) and 1 number of insulation tube with outer semi-conductive layer (SRMSL) in telescoped form are included in the Kit. The insulation materials are manufactured from high-performance polymeric materials.

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### Features:

- High dielectric strength, low dielectric constant and low loss factor ensures optimum insulation
- The tubes do not deteriorate during high voltage stresses and electric discharges
- The tubes are flexible enabling fast and uniform shrinking
- High tensile strength and durability ensures excellent mechanical properties

## ELECTRIC STRESS CONTROL :

Stress control at the cable ends (edge of outer conductive layer of cable) is realized by our in-house developed refractive stress control elements (FSE) manufactured from Silicon. Refractive stress control is based on the fact that the permittivity of the refractive material is always much higher than that of the cable insulation and of the surrounding environment. In the area where the cable insulation and refractive FSE element meet, there is a change in the electrical field distribution. This results in a targeted reduction of the original field strength.



Stress control in the connector area is realized by our in-house developed stress control mastic tapes. These mastic tapes with high dielectric strength, permittivity & self-adhesion properties equilibrate the electrical field and reduces the field strength around the mechanical connectors. The mastics also fills in voids and gaps in the connector area to avoid partial discharges.

### Features of mastic tape:

- High dielectric strength & high permittivity of the mastic tape offers excellent stress controlling property
- Fills gaps and cavities avoiding partial discharges
- Aluminum package offers enhanced protection from influence of humidity and impurities
- Excellent adhesion
- Label-Free

## SCREEN CONTINUITY:

The cable screen continuity is achieved by 35 mm<sup>2</sup> copper braided tube inserted around the joint area, and connected to the wire and/or tape screen using pressure springs. These pressure springs ensures the required contact force and reliable electrical continuity between the cable screens and copper braided tube.

### Features:

- Solder-free electrical connection of metal cable components
- Suitable for cables with either tape screen or wire screen
- No tools required for screen continuity

## EXTERNAL PROTECTION SHEATH:

The heat shrink outer protection tubes from BBC Cellpack offers equal level of protection as the cable sheath itself. The heat shrink tubes are integrated with hot-melt adhesive which ensures perfect contact with the outer sheath of the cable, thereby eliminating the need for additional sealing tapes. This enables the joints to be watertight thereby preventing water penetration during operation.

### Features

- Resistance to chemical agents
- Stabilized against UV rays
- Non-corrosive
- High tensile strength and robustness withstand high mechanical stresses.
- Resistance to cold flow (thermally stable)



**CHM 42kV...V**

**1-core straight-through joint**

with screw connector, for 1-core polymeric cables

Type		L mm	Ø over core insulation after removal of the outer conductive layer (min. - max.) mm	42kV Nominal cross section mm <sup>2</sup>	Art. No.
U <sub>o</sub> /U(U <sub>m</sub> ) 20,8/36 (42)kV					
CHM 42kV	50-150 V	700	25.5 - 33.0	50-150	421451
	95-240 V	700	28.5 - 36.9	95-240	414884
	185-400 V	700	33.0 - 42.1	185-400	421453
	400-630 V	850	40.5 - 48.7	400-630	421454

**Assembly video**



For visual clarification, a very detailed assembly video of a “42kV, 240 sqmm CHM..V cable joint” was made to support the installer with an additional source of information to carry out the installation in the field. Besides cable preparation, it also shows connector connection, slipping-in of FSE elements, shrinking of insulation tubes, screen continuity and outer protection.

Should the content of the videos not correspond to the assembly instructions, then please follow the written assembly instructions.



Grid of red dots for notes.

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