Base Load Power Hub (BLPH)

DATA SHEETS - CABLE CLEATS AND ACCESSORIES

Document Number: 1724002000-EL-DS-00005

Document Class: Class 3

02	09/10/2025	Issue for Information (IFI)	T. Papadimitriou	P. Maniatis	G. Keser
01	19/11/2024	Issue for Information (IFI)	T. Papadimitriou	P. Maniatis	G. Keser
00	04/11/2024	Issue for Information (IFI)	T. Papadimitriou	P. Maniatis	G. Keser
Rev.	Date	Description	Prepared	Reviewed	Approved

reynard HIGH VOLTAGE SOLUTIONS

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

Revision / Change Log

Rev.	Description
00	Issue for Information (IFI)
01	Issue for Information (IFI)
02	Issue for Information (IFI)

HOLDS LIST

No.	Description
1	
2	
3	
4	

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

Table of contents

1 INTRODUCTION 5

1.1 PROJECT OVERVIEW 5

1.1.1 Project Location 5

1.1.2 Project Concept 6

2 DOCUMENT SCOPE 8

2.1 REFERENCES 8

2.2 DEFINITIONS AND ABBREVIATIONS 8

3 KOZ Cable Clamp STC 36-52 DATA SHEET (SINGLE) 9

4 KOZ CABLE CLAMP TRI ECT 47-66 DATA SHEET (TREFOIL) 11

5 RSTF FIXING FRAME DRAWING 13

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

List of Figures

Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map 5
Figure 2 - Wind Park Details 6
Figure 3 – BLPH Concept 6

List of tables

Table 1 - Reference Documents 8
Table 2 - Definitions and Abbreviations 8

List of Attachments

None

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

1 INTRODUCTION

1.1 PROJECT OVERVIEW

Crosswind, a Shell and Eneco joint venture, was awarded the tender to develop the offshore Hollandse Kust Noord (HKN) wind farm, located 18.5km off the coast of Netherlands near the town of Egmond aan Zee. The consortium plans to have HKN operational in 2023 with an installed capacity of 759MW generating at least 3.3TWh per year. This is sufficient renewable power to supply more than 1 million Dutch households with green electricity.

Offshore wind farms produce intermittent electricity and balancing these dips and peaks and integrating this electricity into the national energy system requires new technologies. For this reason, the offshore wind farm will include several new technologies that could be implemented at full-scale in the future. The new technologies being explored include a floating solar park, a short-duration battery storage as well as long-term storage via green hydrogen produced by water electrolysis and subsequently consumed in a fuel cell. The combination of these individual measures, herein referred to as the Base Load Power Hub (BLPH) will ensure a continuous power supply regardless of the wind situation.

1.1.1 Project Location

The Hollandse Kust Noord (HKN) wind farm is located 18.5km off the coast of the Netherlands near the town of Egmond aan Zee.

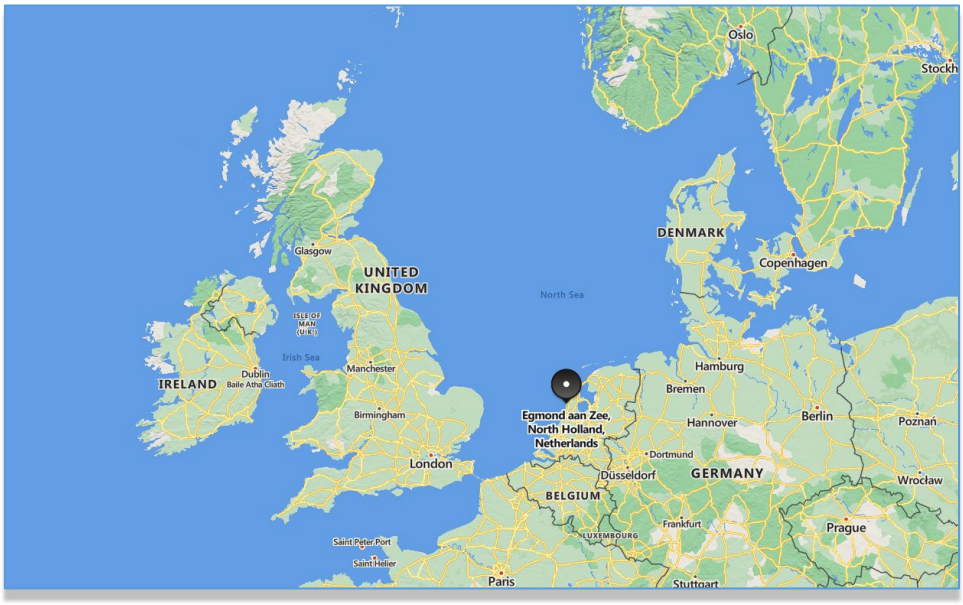


Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map

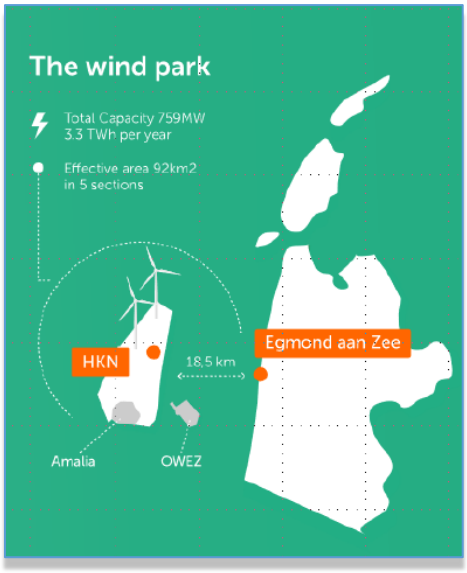


Figure 2 - Wind Park Details

The wind farm will consist of No. 69 x 11.5MW wind turbine generators each to be installed on a dedicated monopile structure. A 70th monopile located on coordinates E 590719.1, N 5841602.3 is reserved for installing the platform accommodating the BLPH. The monopile structure was designed and installed by Van Oord Offshore Wind (VooW) and therefore not part of the BLPH scope.

1.1.2 Project Concept

All components included in the BLPH will be integrated onshore on a topsides and installed in an offshore location within the boundaries of the HKN wind farm. At its simplest, the BLPH will store energy during periods of high electricity generation from renewable sources (a wind turbine generator and the floating solar PV farm) and release it during periods of low generation. In practice. It is expected that the energy stored will supplement generation from renewable sources to ensure that at least 1.0MW of power is exported to the electrical grid regardless of wind/solar availability.

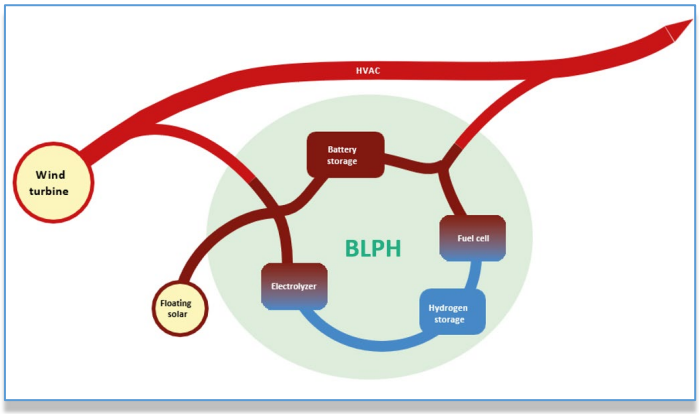


Figure 3 – BLPH Concept

Electricity in the BLPH will be stored in the form of electrons in a battery energy storage system (BESS) as well as converted into green hydrogen via water electrolysis. When the power output from the connecting wind turbine drops to below 1 MWe, the BLPH will return its stored energy to supplement the remaining power output. This will be by discharging the BESS, while stored hydrogen will be converted back into electricity using a fuel cell to extend the discharge duration.

The purpose of the BLPH s to function as a testbed for the integration of energy storage technologies with renewable generation. It is expected that equipment installed on the BLPH will operate as Normally Unmanned Installation for at least two (2) years with no or minimal maintenance and it will have its own independent control room with the ability to communicate with Crosswind's control room.

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

2 DOCUMENT SCOPE

Providing the technical specifications of the cable cleats that are going to be installed for the HOLLANDSE KUST NOORD WIND PARK Project. The document also references to applied standards and (Employer) requirements.

2.1 REFERENCES

Doc. No.	Description
1724002000-EL-DA-00006	GENERAL ARRANGEMENT AND DIMENSIONAL DRAWINGS - HV CABLE, T-CONNECTORS, CABLE CLEATS AND ACCESSORIES

Table 1 - Reference Documents

2.2 DEFINITIONS AND ABBREVIATIONS

COMPANY or Client (CPY):	Crosswind
CONTRACTOR (CTR):	ROSETTI MARINO S.p.A.
PROJECT:	HOLLANDSE KUST NOORD WIND PARK Project

Table 2 - Definitions and Abbreviations

3 KOZ CABLE CLAMP STC 36-52 DATA SHEET (SINGLE)

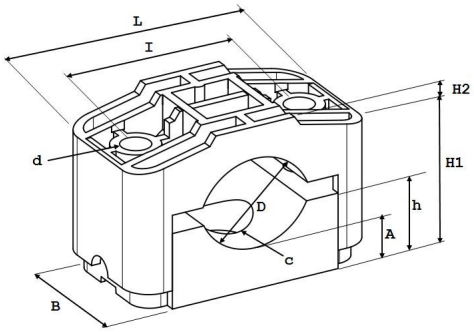
This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

SPECIFICATION KOZ CABLE CLAMP STC 36-52

Application:	Suitable for mounting single- and multiple-conductor low- medium- and high voltage cables.
Range:	For cables with a nominal outer diameter of 36 up to 52 mm.
Material:	Black polyamide (PA66), fibreglass-reinforced, virgin material.
Fire resistance:	UL94 V-0 and classification standard EN 45545-2: 2020 – Railway applications. Requirement set R22,R23 / Hazard level HL1,HL2.
Standards:	Certified in accordance with the international standard NEN-EN-IEC 61914:2021.
Temperature:	Permanent application from -80˚C to +120˚C. Short-term heating of up to +220˚C.
Advantages:	Resistant to oils, greases, frost, heat, UV, ozone, salt water, salts, acids and aggressive chemicals. Non-oxidizing, non-corrosive, non-magnetic and non-conductive. Halogen-free and no sharp edges. Lifetime warranty, easy assembly and available worldwide.
Extra possibilities:	The central fastening hole in the bottom part of this STC clamp enables more installation possibilities for e.g. masts, poles, concrete or fitting rails.







Initial torque for fastening fixing material : 5 – 8 Nm.
(depends on cable manufacturer's prescription).

Tests have been performed by KEMA, SGS, KU Leuven, UL and Schneider.

The product listed in this datasheet is produced in conformity with the latest EU Directive 2011/65 / EU (RoHS), and complies with all legal obligations in accordance with REACH.

DIMENSIONS IN MILIMETERS

Type	DØ	L	B	I	dØ	H1	H2	h	A	C	Kracht (N)
KOZ STC 36-52	36-52	107	60	75	12,5	57-72	12	33	18	12,5	45.300

NO RIGHTS MAY BE DERIVED FROM THIS DOCUMENT. KOZ PRODUCTS B.V. RESERVES THE RIGHT TO IMPLEMENT ANY CHANGES WITHOUT NOTICE. SEE OUR WEBSITE FOR MORE INFORMATION. NO PART OF THIS PUBLICATION MAY BE REPRODUCED OR USED FOR OTHER PURPOSES WITHOUT KNOWLEDGE OR SPECIFIC PERMISSION OF KOZ PRODUCTS B.V.

4 KOZ CABLE CLAMP TRI ECT 47-66 DATA SHEET (TREFOIL)

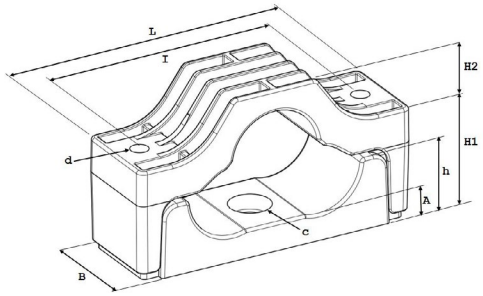
This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

SPECIFICATION KOZ CABLE CLAMP TRI ECO 47-66

Application:	Suitable for mounting 3 single- and multiple-conductor low- medium- and high voltage cables.
Range:	For cables with a nominal outer diameter of 47 up to 66 mm.
Material:	Black polyamide (PA66), fibreglass-reinforced, virgin material.
Fire resistance:	UL94 V-0 and classification standard EN 45545-2: 2020 – Railway applications. Requirement set R22,R23 / Hazard level HL1,HL2.
Standards:	Certified in accordance with the international standard NEN-EN-IEC 61914:2021.
Temperature:	Permanent application from -80˚C to +120˚C. Short-term heating of up to +220˚C.
Advantages:	Resistant to oils, greases, frost, heat, UV, ozone, salt water, salts, acids and aggressive chemicals. Non-oxidizing, non-corrosive, non-magnetic and non-conductive. Halogen-free and no sharp edges. Lifetime warranty, easy assembly and available worldwide.
Extra possibilities:	The central fastening hole in the bottom part of this TRI eco clamp enables more installation possibilities for e.g. masts, poles, concrete or fitting rails.







Initial torque for fastening fixing material : 5 – 8 Nm.
(depends on cable manufacturer's prescription).

Tests have been performed by KEMA, SGS, KU Leuven, UL and Schneider.

The product listed in this datasheet is produced in conformity with the latest EU Directive 2011/65 / EU (RoHS), and complies with all legal obligations in accordance with REACH.

DIMENSIONS IN MILIMETERS

Type	DØ	L	B	I	dØ	H1	H2	h	A	C	Strength (N)
KOZ TRI eco 47-66	3x47-66	205	70	170	13	80-120	38	51	19	13	22.300

NO RIGHTS MAY BE DERIVED FROM THIS DOCUMENT. KOZ PRODUCTS B.V. RESERVES THE RIGHT TO IMPLEMENT ANY CHANGES WITHOUT NOTICE. SEE OUR WEBSITE FOR MORE INFORMATION. NO PART OF THIS PUBLICATION MAY BE REPRODUCED OR USED FOR OTHER PURPOSES WITHOUT KNOWLEDGE OR SPECIFIC PERMISSION OF KOZ PRODUCTS B.V.

5 RSTF FIXING FRAME DRAWING

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy



RSTF FIXING FRAME (RSTF-F)

STRUCTURE FOR FIXING RSTF CONNECTIONS

KEY FEATURES

- Compatible with RSTF 72,5 kV
- Allows safe fixing of inline connections
- Stepless adjustable fixation
- 13 mm holes available for fixing to rail or structure
- Made in stainless steel, for Offshore application
- Wide range of cable clamps
- Allows quick and easy installation

TE Connectivity's (TE) Raychem RSTF Fixing Frame is designed for fixing a single phase assembly of RSTF (Raychem Screened T-Connectors 72,5kV for Interface F) Base Connector and Coupling connector in multiple angles, providing mechanical stability.

The materials are specially selected for offshore applications. Whether it´s in a straight position, 90° or intermediate angles, the frame can be repositioned according to the application with a stepless adjustable fixation. Embedded wide range cable clamps allows different cable diameters to be connected. Several fixing holes, 13 mm diameter are available for fixing the frame to a rail or structure and be used for grounding.

Designed in order to be used with all common cable constructions: copper wires and metallic laminate, smooth welded aluminium sheath, and others.

The structure is composed by 2 arms articulated in the center, cable clamps in both ends and dead plug bushing. It can be used for emergency and failure fixing. This frame provides grounding points for the whole arrangement.

Customers can count on consistent, high quality products, driven by TE's proven innovation and backed by our extraordinary customer support.

RSTF Fixing Frame (RSTF-F)



MECHANICAL DATA	
Frame weight	Approx. 17 kg
Material	EN 1.4404 / AISI 316L
Total length	1800 mm
Length lower leg	950 mm
Length upper leg	850 mm
Distance between center of bushing and cable clamp	760 mm
Fixing holes	13 mm
Width	142 mm
Thickness of plates	3 mm
Connection angle	90° up to 180°

CABLE OUTER DIAMETER RANGE	REFERENCE FOR ORDERING	PART NUMBER
26 - 38 mm	RSTF-F-Size1	ER2203-000
38 - 50 mm	RSTF-F-Size2	ER2204-000
50 - 75 mm	RSTF-F-Size3	ER2205-000

Kit contains: Metal parts, cable clamps and Dead Plug.
T connectors are not included.



Learn more: TE.com/energy

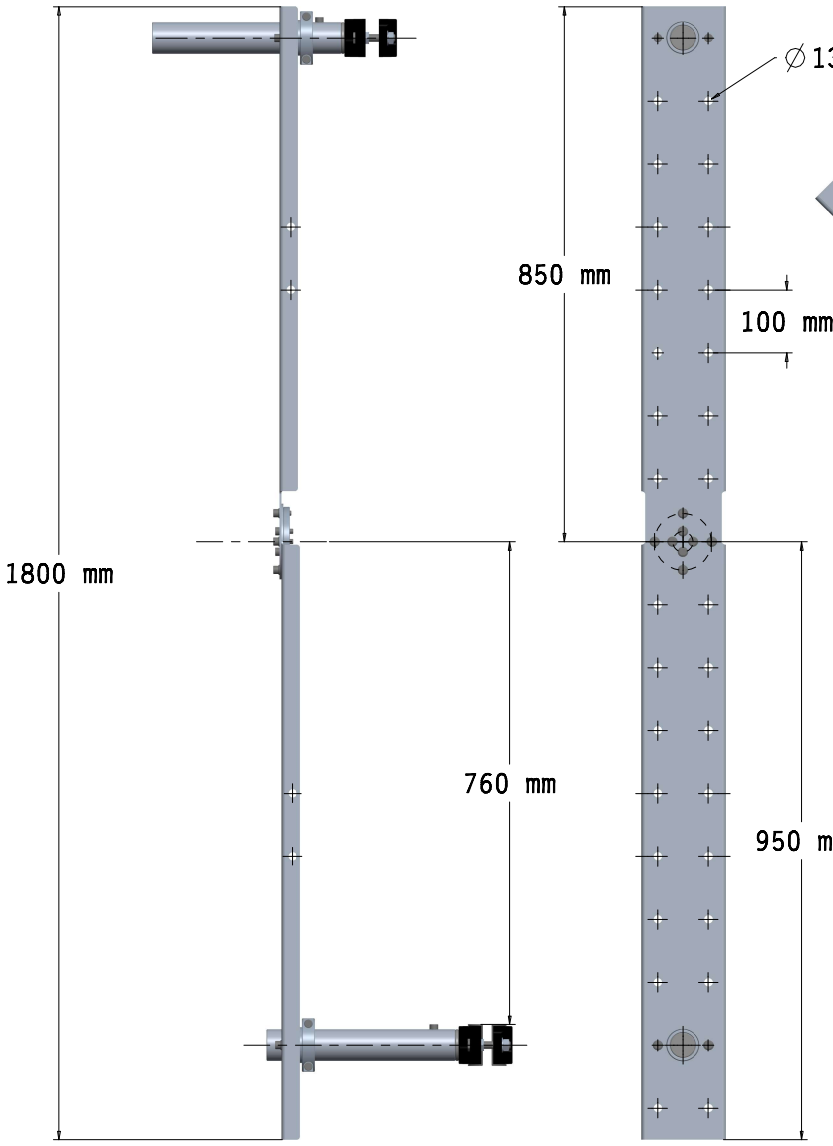
© 2021 TE Connectivity. All Rights Reserved. EPP

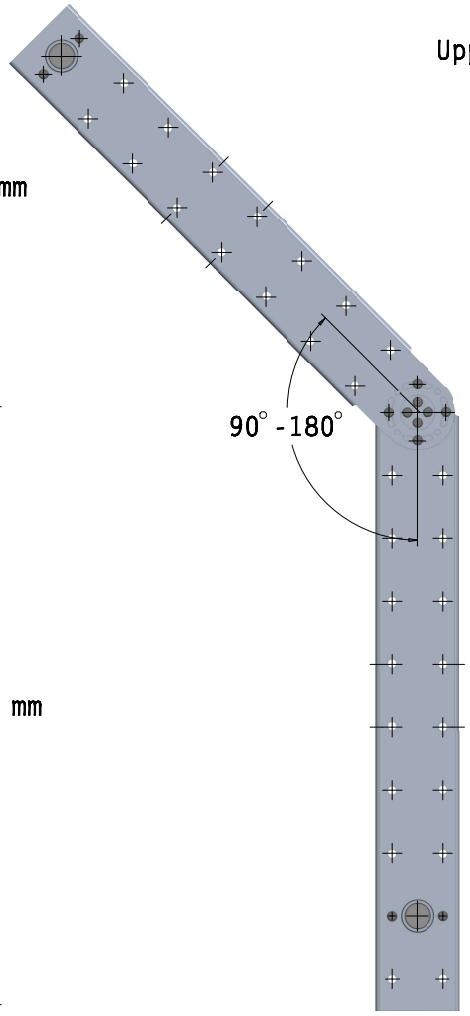
TE, TE Connectivity, TE connectivity (logo), EVERY CONNECTION COUNTS are trademarks owned or licensed by TE Connectivity. Other logos, product and company names mentioned herein may be trademarks of their respective owners. While TE has made every reasonable effort to ensure the accuracy of the information in this brochure, TE does not guarantee that it is error-free, nor does TE make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. TE reserves the right to make any adjustments to the information contained herein at any time without notice. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. TE expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. The dimensions, specifications, and/or information contained herein are for reference purposes only and are subject to change without notice. Consult TE for the latest dimensions, specifications, and/or information. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

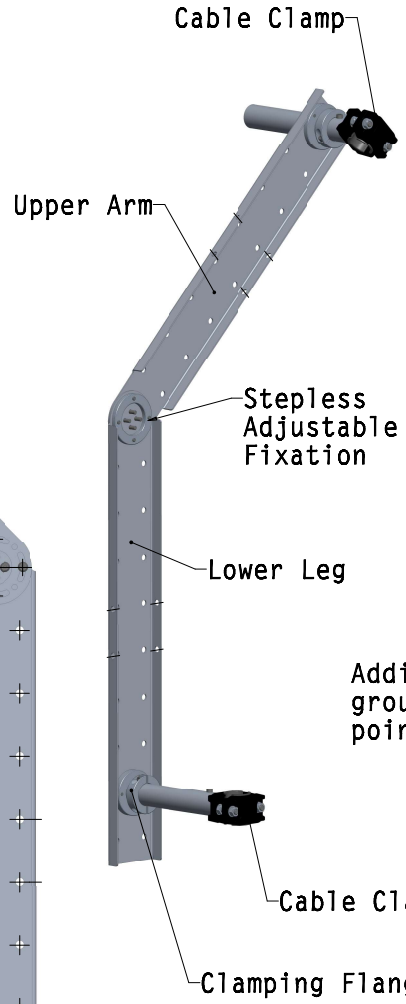
Connect with us:

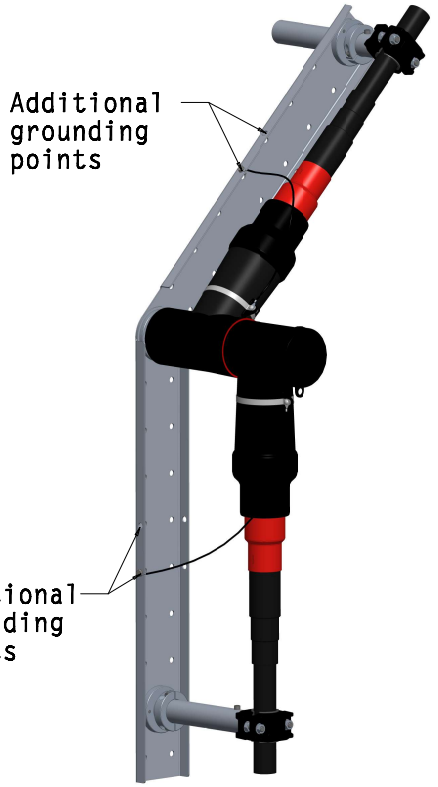
TE.com/energy-contact

While TE Connectivity (TE) has made every reasonable effort to ensure the accuracy of the information in the catalog, TE does not guarantee that it is error free, nor does TE make any other representation , warranty or guarantee that information is accurate, correct, reliable or current. TE reserves teh right to make any adjustments to the information contained herein at any time withoutnotice. TE expressly deisclaims all implied warranties regarding the information contained herein, including, but notlimited to, any implied warranties or merchantability or fitness for a particular purpose. The dimensions in this catalog are for reference purpose only and are subject to change without notice. Specifications are subject to change without notice. Consult TE for the latest dimensions and design specifications.









CABLE OUTER DIAMETER RANGE	REFERENCE FOR ORDERING
26-38 mm	RSTF-F-Size1
38-50 mm	RSTF-F-Size2
50-75 mm	RSTF-F-Size3

RSTF FIXING FRAME STRUCTURE FOR FIXING RSTF CONNECTIONS

RSTF-F
OFFER DRAWING

TE connectivity

Raychem High Voltage Cable Accessories

TE Connectivity drawing no: EPD-204-2338-00

REV. 1