



# 電力配電事業部

## **Raychem** 產品型錄

**RST** 汎武事業股份有限公司  
RST ENTERPRISE CO., LTD.

工業/商辦/住宅 能源用電 安全節能 整體解決方案

# 目錄

## Catalogue

---

美規 ( HVT ) 5-35KV熱縮式電纜頭 .....	1
歐規 ( IXSU-F ) 24-42 KV熱縮式電纜頭 .....	5
美規 ( HVS ) 5-35KV熱縮式中間接續 .....	9
5-35KV匯流排套管 ( BBIT, BPTM ) .....	13
5-25KV/1000V匯流排膠帶 ( HVBT,LVBT ) .....	17
5-8KV/1000V高、低壓馬達封套 ( MCK ) .....	19
1000V ( WCSM ) 熱縮絕緣套管 .....	21
72KV電纜終端匣 .....	25
72KV 電纜接續匣 .....	29
69/245KV電纜被覆保護裝置 ( CCPU ) .....	33
69KV雷擊計數器 ( SC12、SC13 ) .....	35
歐規 ( RSRB、RCAB ) 5-15KV 肘型封套 .....	37
歐規12-42KV冷縮預撐電纜頭 .....	38
美規 ( TFT ) 5-35KV冷縮式電纜頭 ( 預撐型 ) .....	42
歐規 ( CSJA ) 12-36KV冷縮式中間接續 .....	44
歐規 ( MXSU ) 12-36KV熱縮式中間接續 .....	46
歐規 ( RSTI ) 12-42 KV 630-1250A T型接頭 .....	48
美規 ( ELB ) 15/28KV 600-900A 肘型接頭 .....	68
美規 ( ELB ) 35KV 600-900A 肘型接頭 .....	70
歐規 ( RPIT ) 12-42 KV 800-1250A 插入式電纜頭 .....	72
1000V ( ESC ) 電纜末端熱縮封套 .....	74

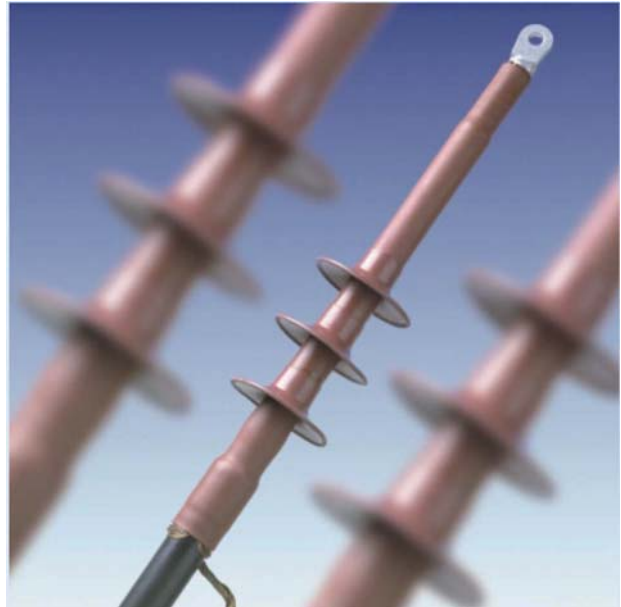


# Raychem

## HVT (美規)

**5-35KV Class  
Heat Shrinkable Termination  
For Solid Dielectric Shielded  
Single Conductor,  
Polymeric Cable**

**5-35KV等級 單芯  
遮蔽電力電纜應用之  
熱縮型末端處理組件**



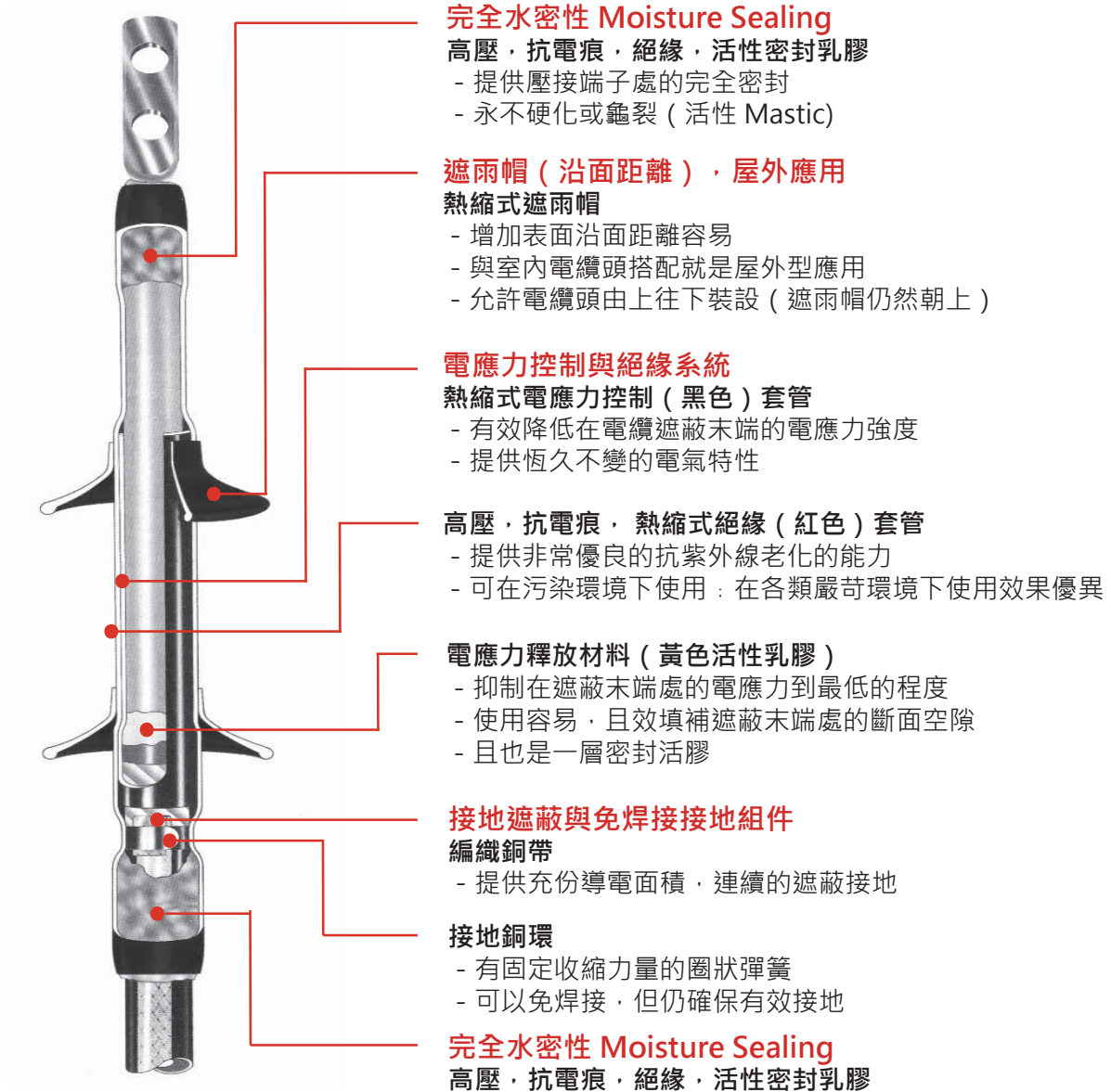
發展的5-35KV等級電纜末端處理組件，是用熱縮的方式將單芯遮蔽型電力電纜在端頭部位，提供符合IEEE-48,Class I標準的末端處理。

組件中之熱縮套管經過交連技術製造而成，材質本身除具備有熱縮記憶外，由於Raychem特殊配方添加物，強化了材質的耐高溫、耐紫外線、耐臭氧腐蝕、耐鹽霧害、化學污染，以及自清附著物之防電痕等特性。

由於Raychem熱縮末端處理材料有以上特殊特性，致使產品在組合上能快速的收縮，緊密的與電纜本體縮合，無虞空氣殘留在介面之中。組合後的產品，最適合應用在屋外鹽害、化學污染嚴重地區。由於組合完成之體積細長，重量輕巧，更能徹底接在屋內開關箱內、變壓器端頭隔間里及馬達箱內，減少因空間擁擠與施工不易造成的困擾。

經過測試資料顯示，在90°C的溫度保留極限延伸率100 %的情況下，其材質壽命可長達40年之久。長週期加壓循環實驗證明Raychem 提供的熱縮末端處理組件在與電纜本體組合後，其相容性遠超過其它末端處理材料，達到長期運轉的經濟效益。

## 特性及優點



## 材料組件

1. 紅色防電痕絕緣套管 ( Red , Non-tracking Tube)
2. 黑色電應力控制套管 ( Black, Stress Control Tube)
3. 黃色電應力疏緩膠 ( Yellow, Stress Relief Mastic Strip)
4. 紅色防水膠 ( Red, Sealant Mastic Strip)
5. 接地配件包 ( Ground Clamp Spring)
6. 紅色遮雨帽 ( Red, Skirts) - - - ( 屋外型使用 )
7. 施工說明書 ( Installation Instruction)

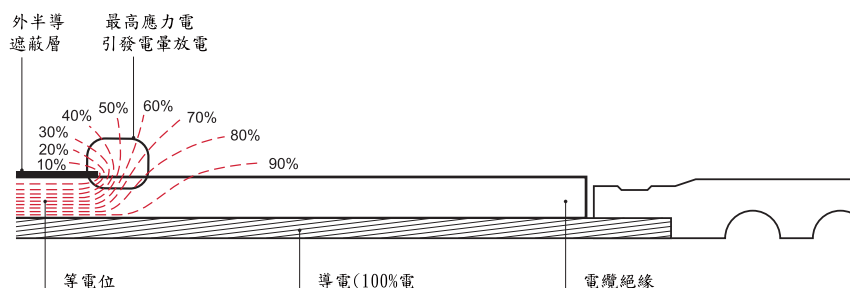
## 電氣特性

測試項目說明	HVT-80 (5-8kV)	HVT-150 (15kV)	HVT-250 (25kV)	HVT-350 (35kV)
交流耐壓 1 分鐘(kV)	35	50	65	90
直流耐壓 15 分鐘(kV)	65	75	105	140
部分放電, 3pc (最小電壓)	9	15.6	25.8	36
衝擊耐壓, 1.2x50 μs, (室外)	80-95	110	150	200
濕耐壓, 10 秒 kV rms	30	45	60	80
乾耐壓, 6 小時 kV rms	25	35	55	75
連續電流額定	與電纜的電流額定相同			

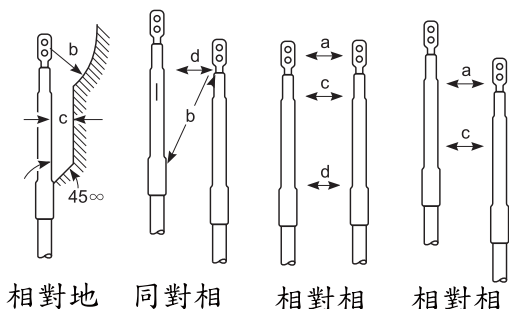
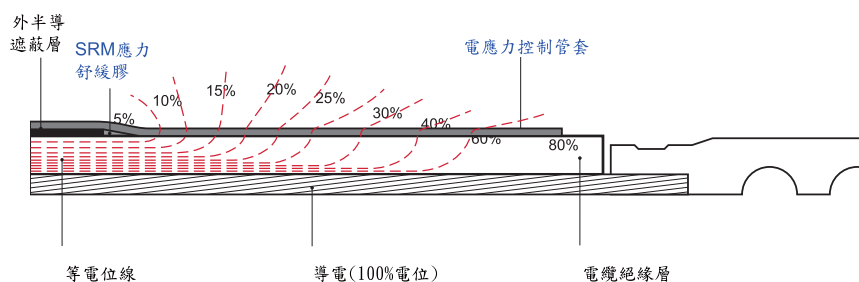
依 IEEE-48 標準

## 電應力控制

### 沒有電應力控制裝置時的電應力分佈情形



### 有加上Raychem特有電應力控制系統的電應力分佈情形



系統電壓 kV	a 火相對火相	b 火相對地	c 絕緣相對相 ·地對相	d
5-8kV	160mm	60mm	30mm	20mm
15kV	175mm	100mm	35mm	23mm
25kV	225mm	150mm	40mm	25mm
35kV	325mm	225mm	50mm	35mm

美規 IEEE-48 (Class)電纜末端處理頭選用表

屋內型	屋外型	導體尺寸 mm	絕緣外徑 mm 最小-最大	最大電纜 外徑 mm
5KV 等級銅帶／銅線遮蔽單芯電力電纜				
HVT-80-G	HVT-80-GS	22 -50	9-15	24
HVT-81-G	HVT-81-GS	60-125	15-24	30
HVT-82-G	HVT-82-GS	150-250	20-32	38
HVT-83-G	HVT-83-GS	300-900	28-44	53
HVT-84-G	HVT-84-GS	1000-1250	41-62	70
8KV 等級銅帶／銅線遮蔽單芯電力電纜				
HVT-80-G	HVT-80-GS	14-33	9-15	24
HVT-81-G	HVT-81-GS	38-120	15-24	30
HVT-82-G	HVT-82-GS	125-250	20-32	38
HVT-83-G	HVT-83-GS	300-900	28-44	53
HVT-84-G	HVT-84-GS	1000-1250	41-62	70
15KV 等級銅帶／銅線遮蔽單芯電力電纜				
HVT-151-G	HVT-151-GS	22-60	15-24	30
HVT-152-G	HVT-152-GS	65-185	20-32	38
HVT-153-G	HVT-153-GS	200-500	28-42	53
HVT-154-G	HVT-154-GS	600-1250	41-62	70
25KV 等級銅帶／銅線遮蔽單芯電力電纜				
HVT-252-G	HVT-252-GS	30-125	20-32	38
HVT-253-G	HVT-253-GS	150-400	28-43	53
HVT-254-G	HVT-254-GS	500-900	41-62	70
HVT-255-G	HVT-255-GS	1000-1250	52-76	88
35KV 等級銅帶／銅線 遮蔽 單芯電力電纜				
HVT-352-G	HVT-352-GS	38-60	20-32	38
HVT-353-G	HVT-353-GS	65-300	28-43	53
HVT-354-G	HVT-354-GS	325-900	41-62	70
HVT-355-G	HVT-355-GS	1000-1250	52-76	88
1. 以上組件並”不”包含壓接端子。				
2. 標準包裝是每一個硬紙盒內裝三組單芯電纜頭組件。				

# Raychem

IXSU-F (歐規短式)

**24-42 KV Class  
Heat Shrinkable Termination  
For Solid Dielectric  
Shielded, Single Conductr,  
Polymeric Cable**

**24-42 KV等級 單芯  
遮蔽電力電纜應用之  
熱縮型末端處理組件**

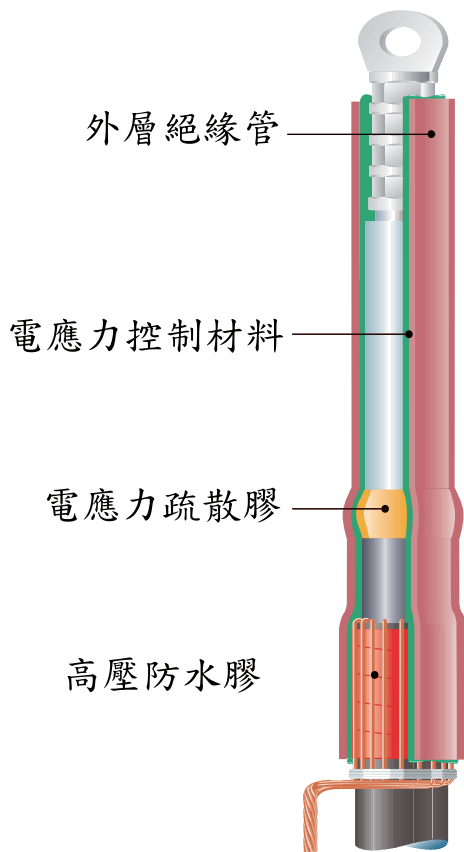


Raychem熱縮式電纜末端產品已運轉超過三十年，其經驗充份展現出瑞侃公司於材料科學之領先地位，公司以此項條件不斷的研發出新一年代之產品。

IXSU-F之設計可滿足所有氣候條件且可應用至42KV等級。組件滿足末端之電力特性、電應力控制及防水性之各項要求。

瑞侃公司了解高分子與合成絕緣材料之差異性，運用各種材料特性組成之基礎配方及添加材料，讓其發揮各項所期望之特性，以達到熱縮電纜末端處理組件之各項優秀特性。

IXSU-F所選用之材料乃經過多年研發單位心血結晶所得到符合電氣與環境要求之材料。此材料配方是經過多年改良，具數十年之穩定性與長期運轉所展現出抗電痕、抗機械應力，適用於嚴苛環境與高絕緣強度等各項特性。

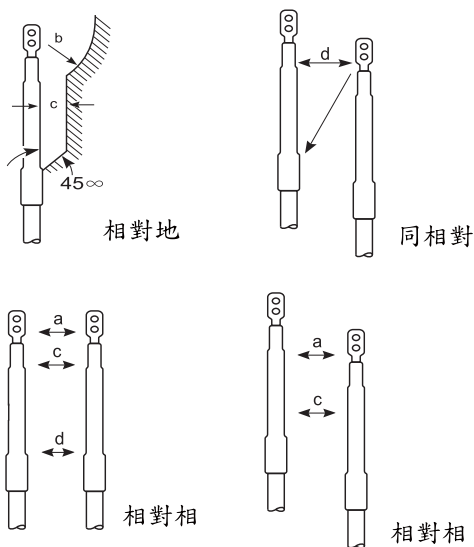


## 產品特色

- 高功能性電纜處理材料
- 新的電應力控制系統
- 電應力控制系統一體整合
- 提供乳膠Mastic防水膠片
- 針對熱縮設計
- 精實緊密的一體設計
- 符合所有尺寸
- 施工簡易

## 產品優勢

- 超級抗紫外線UV能力
- 無可比擬的抗電痕和耐腐蝕性能
- 高斥水性
- 優良的高壓絕緣材料
- 超高耐雷擊的表現
- 真正有效防止水氣進入
- 有效節省空間



## 最小空間距離

系統電壓 kV	a 火相對火相	b 火相對地	c 絕緣相對相 · 地對相	d
5-8kV	160mm	60mm	30mm	20mm
15kV	175mm	100mm	35mm	23mm
25kV	225mm	150mm	40mm	25mm
35kV	325mm	225mm	50mm	35mm



## 技術資料

### IXSU-F的完整測試及資料

熱縮式高壓電纜末端處理，完全符合IEEE-48及IEC-60502-4、CENELEC HD629.1第一等級電纜頭的要求。提供了長壽命、無故障的終身服務品質。獨立試驗及客戶的使用紀錄、評價與我們的經驗，在在證明這個IXSU-F系統，甚至於在嚴重污染的環境下，都可以維持一貫長期的耐久性、可靠性和穩定性。

抗電痕外層絕緣套管，因為在面對環境的污染及嚴苛的長期電應力壓力下，功效不會降低而久負盛名。這個抗電痕絕緣套管不需要任何的維修及週期性的清潔維護。另外，廣泛的負載循環試驗（Load - cycle testing）確保了此電纜頭系統與電纜之間的“熱—機械相容性”（Thermo-mechanical compatibility）

#### TECHNICAL INFORMATION

Voltage class	(kV)	12	17.5	24	36	42
Cable insulation diameter	(mm)	13.7-50.0	15.7-44.5	17.9-56.0	24.0-61.2	27.0-45
Cross section range	(mm <sup>2</sup> )	10-1200	25-800	25-1200	25-1200	35-630
Max system voltage Um	(kV)	12	17.5	24	36	42
Basic impulse level	(kV)	95	95	125	194	200
Partial discharge at 2 U <sub>0</sub>	(pC)	<2	>2	<2	<2	<2
AC Voltage withstand, 5min	(kV)	29	39	57	81/94	94
DC Voltage withstand, 15min	(kV)	38	52	76	108/120	120

依CENELEC HD629.1

### 建議參考規範

電力電纜處理頭組件必須完全在原廠工程設計、製造，以符合應用需求。這組套件必須包含熱縮式 High-permittivity，及符合ASTMD2303標準具有紫外線UV穩定和無電炭痕特性(Nontracking)的外絕緣套管與雨帽(室外應用)。採用不硬不裂的熱促進活性乳膠(Mastics)作為密封材料，以確保濕氣沒有滲入的可能。抗污染性也可以加以要求，電纜頭應符合或超過IEEE-48及VDE-0278一級電纜頭的最低要求。

### 多芯電力電纜處理頭組件

多芯電纜投必須考慮到如何將多芯電纜外拉所產生的拉應力控制住，所以除了每相所需的店裡處理頭外，必須包含有，內層在出廠前已經塗佈了熱封膠的熱縮式電纜分歧封套(Cable breakoutboot)，來達成拉應力舒緩及密封的目的。另外，每組套件應包含足夠長度的熱縮絕緣保護套管，用來防止位於分歧套管(Boot)與每相電纜頭之間外露的遮蔽層上，發生腐蝕及移位等現象。

## 選用表

型號		24/25 KV	35/36 KV	42 KV
屋內	屋外	導體尺寸 mm <sup>2</sup>	導體尺寸 mm <sup>2</sup>	導體尺寸 mm <sup>2</sup>
IXSU-F-5121	OXSU-F5121	22-60		
IXSU-F-5131	OXSU-F5131	70-185		
IXSU-F-5141	OXSU-F5141	200-325		
IXSU-F-5151	OXSU-F5151	400-800		
IXSU-F-5121-L		22-60		
IXSU-F-5131-L		70-185		
IXSU-F-5141-L		200-325		
IXSU-F-5151-L		400-800		
IXSU-F-6131	OXSU-F6131		50-120	
IXSU-F-6141	OXSU-F6141		150-400	
IXSU-F-6151	OXSU-F6151		500-800	
IXSU-F-7121	OXSU-F-7121			35
IXSU-F-7131	OXSU-F-7131			50-120
IXSU-F-7141	OXSU-F-7141			150-300
IXSU-F-7151	OXSU-F-7151			400-630

※ IXSU-F51XX-L為沿面距離加長型+雨帽屋外型。

# Raychem

## HVS

**5-35KV Class  
Heat Shrinkable Splice  
For Single Conductor  
Shielded Power Cable**

**5-35KV等級 單芯  
遮蔽電力電纜應用之  
熱縮型中間接續組件**



Raychem製造的5-35 KV等級電纜中間接續組件，以熱縮的方式將單芯遮蔽型電力電纜在中間接續部位，提供符合IEEE404標準的直線接續處理。

組件中之熱縮材料經由先進交連技術製造而成，材質本身除具有熱縮記憶外，由於Raychem特殊配方添加物，導至材質在耐高溫、耐磨損、耐化學腐蝕及密閉防水等特性上，都顯著超越同類型之其它產品。

由於先進交連技術，Raychem熱縮中間接續組件組合時，能因加熱施工而快速的在直徑方向收縮，達到材料與電纜本體緊密的縮合，無虞空氣殘留在介面之中。且因組件中之熱縮套管都已通過嚴格品管之工程設計厚度與誤差許可等要求，因此於施工加熱後，材料均勻收縮，無虞施工者因經驗不足或微量尺寸誤差而造成缺失。

與電纜組合後之中間接續處理組件，完全符合綜合電氣特性，甚至超越IEEE-404電力電纜之接續標準。應用範圍最適合在水下、直埋、管溝內及無需張力要求之架空直線接續處理。

### 1. 電場應力控制：

用有精確阻抗特性的熱縮應力控制管與SRM應力疏緩膠撫平了集中在壓接器Connector上與遮蔽末端的強勢電場。施工中的收縮作用力逼使低黏度有活性的SRM應力疏緩膠發生填補空隙的作用，收縮時把套管旁所有的空隙都補平。

### 2. 絕緣系統：

最內的高壓絕緣套管與在遮蔽管內層的絕緣橡膠層，提供充份導體絕緣厚度。工廠一體製造的熱縮，彈性記憶絕緣體，確保了所需要的厚度。

### 3. 絕緣與遮蔽：

一支單獨的雙層管，讓紅色內絕緣層與黑色的半導體遮蔽層（外黑內紅）一次收縮完成。如此，除了節省時間外，在絕緣層與遮蔽層間形成無缺點的接合面（沒有空隙產生），且能充分吸收電纜絕緣層膨脹系數。

### 4. 金屬遮蔽隔離保護：

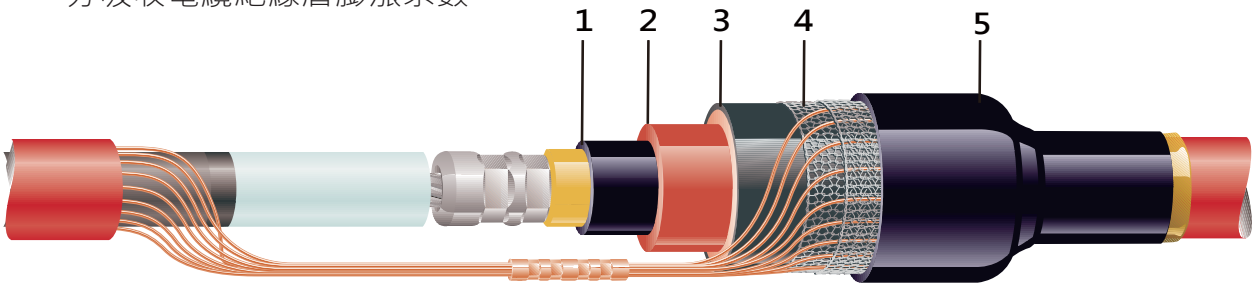
用鍍錫銅網或鍍錫銅編織網帶提供充足導電截面積的遮蔽續接，同時與外遮蔽層有良好的電氣接觸。

### 5. 外層密封套管隔離濕氣：

用加厚、耐重負載、內層含熱促進封膠的套管作外層保護。收縮時的熱會讓此黏膠融化流動，提供最後一道密封層及外皮防蝕等保護作用。此外層套管亦可改成低煙無毒套管。

### 施工程序：

把所有接續組件滑入剝好的電纜上，把導體連接起來後，套管按照壓接套管(sleeve or connector)定位後加以完全加熱收縮。然後按電纜結構施以遮蔽復原，並收縮外層套管或按需要加上鎧裝甲層等。



## 材料組件

1. 紅色絕緣套管 (Red. Insulating Tube)
2. 外黑內紅雙層套管 (Black/Red, Dual Wall Tube)
3. 黑色電應力控制套管 (Black, Stress Control Tube)
4. 黑色外被覆套管 (Black, Outer Jacketing Tube)
5. 黃色電應力疏緩膠 (Yellow, Stress Relief Mastic Strip)
6. 紅色防水膠 (R側, Sealant Mastic Strip)
7. 遮蔽銅網 / 帶 (Shielding Braid and Mesh)
8. 施工說明書 (Installation Instruction)

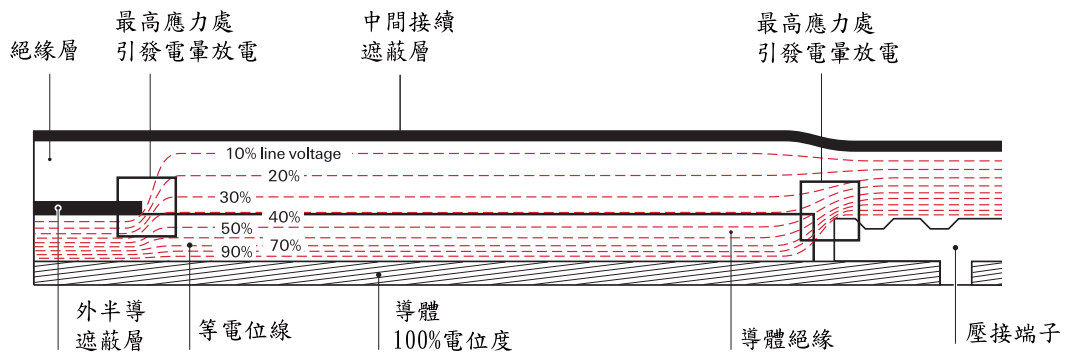
## 電氣特性

測試項目說明	HVS-8xx (5-8KV 等級)	HVS-15xx (15KV 等級)	HVS-25xx (25KV 等級)	HVS-35xx (35KV 等級)
部分放電，3pc(最小 KV 電壓)	7	13	22	30
交流耐壓，1 分鐘(KV)	23	35	52	69
交流耐壓，1 小時(KV)	25	53	78	104
交流耐壓，5 小時(KV)	23	35	52	69
直流耐壓，15 分鐘(KV)	45	70	100	125
衝擊耐壓，1.2 x 50 $\mu$ s	95	110	150	200
水密性	通過	通過	通過	通過
連續電流額定	與電纜的電流額定相同			

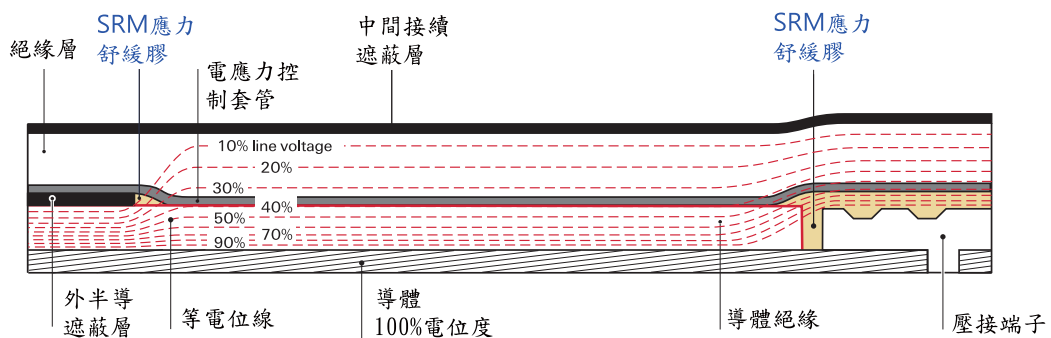
依IEEE 404 標準

## 電應力控制

沒有電應力控制裝置時的電應力分佈情形



有加上Raychem特有電應力控制系統的電應力分佈情形



## 美規IEEE-404電纜中間接續選用

型號	導體尺寸 mm <sup>2</sup>	絕緣外徑mm 最小-最大	最大電纜 外徑mm	完成後 長度 mm	施工需要 空間mm
5kV等級 單芯電力電纜					
HVS-821S	16-70	9-17	20	610	1118
HVS-822S	80-150	14-23	29	610	1143
HVS-823S	175-400	20-32	46	686	1270
HVS-824S	500-800	25-41	58	762	1422
8kV等級 單芯電力電纜					
HVS-821S	14-35	9-17	20	610	1118
HVS-822S	38-120	14-23	29	610	1143
HVS-823S	125-220	20-32	46	686	1270
HVS-824S	240-375	25-41	58	762	1422
HVS-825S	375-500	33-57	62	762	1422
15kV等級 單芯電力電纜					
HVS-1521S	30-120	17-27	32	686	1372
HVS-1522S	125-220	23-33	38	711	1422
HVS-1523S	240-375	28-41	47	762	1499
HVS-1524S	375-600	32-46	53	864	1702
HVS-1525S	625-1000	41-64	71	1016	1880
25kV等級 單芯電力電纜					
HVS-2521S	38-150	23-31	38	1016	1422
HVS-2522S	175-300	31-38	50	1016	1524
HVS-2523S	375-500	38-46	61	1016	1575
35kV等級 單芯電力電纜					
HVS-3521S	50-100	24-34	39	1016	1346
HVS-3522S	110-300	31-43	53	1118	1575
HVS-3523S	300-500	39-55	71	1118	1702

# Raychem

## BPTM / BBIT

**25KV / 35KV Class  
Heat Shrinkable  
Busbar Insulation Tubing**

**25KV / 35KV等級  
熱縮型  
匯流排絕緣套管**



Raychem製造的高壓匯流排絕緣套管，是用熱縮的方式將裸露匯流排做整體之緊密包覆，達到絕緣保護及縮短安全距離等功效。

25KV 等級的BPTM和35KV等級的 BBIT熱縮型匯流排絕緣套管都可以產生有效的絕緣強化和閃絡保護效果。兩者也都適用於銅質或鋁質的圓形或方形的匯流排，絕緣厚度由熱縮過程來決定。

經由各項國際測試標準顯示出Raychem提供之高壓匯流排保護套管在裝置時，能有效縮減匯流排之相對相與相對之安全距離。換句話說，在匯流排架設空間上，可縮小距離與降低材料成本，進而消除電弧與耐壓不夠等現象。

裝置高壓匯流排保護套管之另一特色是防止在系統維修期間，因人為因素或蟲獸的接觸，造成之意外橋接現象。時下之匯流排系統往往因為沒有做絕緣保護，或應之以低層次之絕緣保護材料，造成系統停頓或破壞等重大損失事件。

## 產品應用

BPTM和BBIT在工廠內用加溫爐、瓦斯噴燈或熱空氣都很容易執行大規模的生產作業。

與傳統方式相比，採用熱縮式絕緣套管不會增加設備的投資，但絕緣效果卻會大幅提高。

當加熱時，這種套管開始收縮並緊密的貼附在匯流排的外表上，強大的收縮力量讓套管與匯流排之間，幾乎不會有間隙殘留，這樣才可確保有效的電氣效果

Raychem特殊的配方，可以在戶外長期使用，不需擔心功能的退化。

## 材料特性

材料特性	測試方法	測試數據
電氣性		
體積電阻	ASTM D-257 ,IEC 93	$1 \times 10^{13}$ ohm-cm
介質強度	ASTM D-150 ,IEC 250	5.0 (最大)
絕緣強度	ASTM D-149 ,IEC 243	500V/mil(1.5mm)最小
耐熱	IEEE 1-1969 , IEC216	105°C (最小)
加速老化測試(120°C ,168小時)	IOS 188	保持原抗張強度及極限伸長率
可燃性	ANSI C 37.20	不燃
吸水率(23 °C , 14天)	ISO / R 62 步驟A	不吸水
低溫可撓性(-40 °C , 4小時)	ASTM D2671 , 步驟C	不破裂
抗張強度	ASTM D-638 , IOS 37	1450 psi (<4mm), 1150 psi (>4mm)
極限延伸率	ASTM D-638 , IOS 37	300%

## 產品特色

### 1. 適用範圍廣

高收縮比套管對室內外各種匯流排都有優良通用性，簡化選用和庫存。

### 2. 長期的可靠性

高溫穩定的特殊聚合配方，在連續高溫下不軟化融解並保持完整的絕緣。

### 3. 高溫的承載表現

熱發散性特優，可緊密貼附於匯流排上，不會降低電流承載能力。

### 4. 防火安全性

焰阻和無自燃材料在發生火災時，大幅降低毒素，確保安全。

### 5. 耐久性

可抗溶劑、抗紫外線與不良氣候、機械撞擊及一般性的撕裂性外力，具、防腐蝕能力。



## 匯流排安全距離

### 圓形匯流排的絕緣空間需

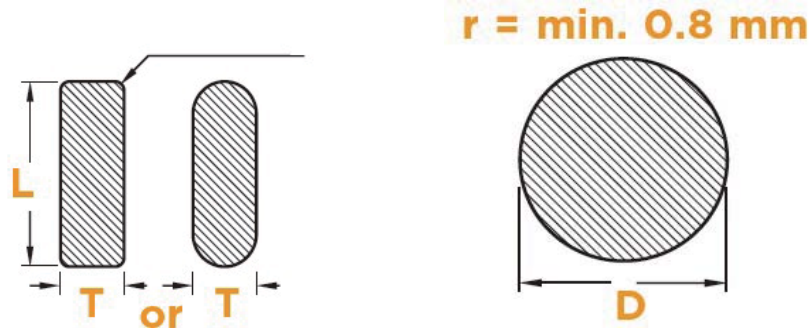
系統電壓	加上BBIT後的空間距離		加上BPTM ,HVBT或HVIS後所需空間距離		沒有絕緣的空間距離 (按IEC71-2要求)
	相對相	相對地	相對相	相對地	相對地
KV					
12KV	30mm	40mm	55mm	65mm	120mm
17.5KV	45mm	60mm	70mm	85mm	160mm
24KV	60mm	90mm	95mm	125mm	220mm
36KV	100mm	160mm	150mm	205mm	320mm

### 方型匯流排的絕緣空間需

系統電壓	加上BBIT後的空間距離		加上BPTM ,HVBT或HVIS後所需空間距離		沒有絕緣的空間距離 (按IEC71-2要求)
	相對相	相對地	相對相	相對地	相對地
KV					
12KV	35mm	45mm	65mm	75mm	120mm
17.5KV	55mm	65mm	85mm	105mm	160mm
24KV	70mm	100mm	115mm	150mm	220mm
36KV	140mm	190mm	200mm	285mm	320mm

註:空間絕緣間隙需按客戶在廠內實際測試結果為主，如有不規則或銳角會需要比較寬的絕緣間隙

## 選用表



型號	收縮範圍內徑(mm)		厚度(mm)		L+T(mm)		D (mm)		標準包裝
	最小	最大	最小	最大	最小	最大	最小	最大	
<b>BPTM(25KV等級)</b>									
BPTM-15/6 - A/U	15	6	1.1	2.0	12	18	6.5	12	30M
BPTM-30/12 - A/U	30	12	1.1	2.2	22	38	14	25	30M
BPTM-50/20 - A/U	50	20	1.1	2.35	36	65	22	43	30M
BPTM-75/30 - A/U	75	30	1.1	2.35	55	95	33	63	20M
BPTM-100/40 - A/U	100	40	1.1	2.35	70	130	44	86	25M
BPTM-120/50 - A/U	120	50	1.3	2.8	90	165	55	105	25M
BPTM-175/70 - A/U	175	70	1.3	2.8	125	235	80	150	15M
BPTM-205/110 - A/U	205	110	1.3	2.8	200	276	127	190	10M
BPTM-235/130 - A/U	235	130	1.5	3.1	235	315	150	220	20M
<b>BBIT ( 35 KV 等級 )</b>									
BBIT -25/10 -A/U	25	10	1.6	3.6	17	28	11	20	25M
BBIT -40-16 -A/U	40	16	1.6	3.6	28	45	18	32	20M
BBIT -65/25 -A/U	65	25	1.6	3.6	44	69	28	47	15M
BBIT -100/40 -A/U	100	40	1.6	3.6	69	102	44	72	15M
BBIT -150/60 -A/U	150	60	1.6	3.6	102	148	65	105	15M
BBIT -175/80 -A/U	175	80	1.6	3.6	133	196	85	125	10M

# Raychem

## HVBT / LVBT

**5-25KV / 1000V**  
**Heat Shrinkable**  
**Busbar Insulation Tape**



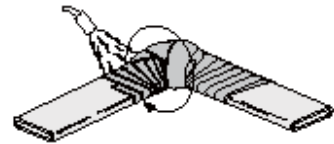
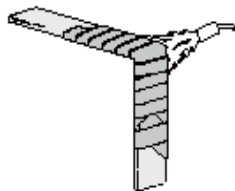
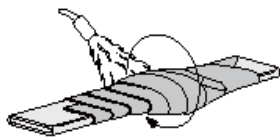
Raychem 所製造含有熱融膠的熱縮式絕緣膠帶，是為了補充絕緣套管的完整性而設計。熱縮式絕緣膠帶產品，有包紮纏繞能力。施工容易，特別是針對不規則型狀及套管受限制之處。單層HVBT提供的閃絡保護到17.5KV，雙層則可到達25KV。

纏繞式施工在加熱後，熱融膠層融化並與重疊的部位融合在一起。當膠帶收縮完成，就形成有密封效果的包紮圍繞式包覆保護。處理套管無法施作的匯流排連接處，以及修補增進絕緣強化效果都是非常理想的方式。

### 產品特色

- 1. 低施工成本**  
用工廠現成設備即可直接快速施工。
- 2. 多樣應用性**  
用包紮方式可涵蓋多數的型體尺寸。
- 3. 產品品質高**  
精密控制的絕緣厚度與其熱融膠層，允許只用極少材料就可包覆複雜型體，並提供充足絕緣厚度，散熱效果極佳。
- 4. 拆除容易**  
確實的密封效果，但不會黏死於金屬上，在維護時可以輕鬆剝離。

選用表



HVBT		
型號	寬度(mm)	長度(m)
HVBT-1-R	25	7.5
HVBT-2-R	50	7.5
HVBT-4-R	100	7.5
HVBT-12-A	25	10
HVBT-14-A	50	10
HVBT-16-A	100	10
LVBT		
LVBT-1-R	25	7.5
LVBT-2-R	50	7.5
LVBT-3-R	100	7.5

# Raychem

## MCK-5 / MCK

**5-8KV / 1000V Class  
Heat Shrinkable  
Motor Connection Kit**

**5-8KV / 1000V等級  
馬達引線絕緣封套**



MCK-5 (5-8KV) 和MCK (1000V) 是專為馬達引線設計的封套，以螺栓鎖接後，一種最快速，最可靠的接頭絕緣方式。

有Type V和Type L兩種型式。

Type V用於末端V型鎖接絕緣。總共三種尺寸，可廣泛地用於8mm<sup>2</sup> ~ 500mm<sup>2</sup> 之馬達引出線



## 產品特色

1. MCK (1000V)通過ANSI-C119.1及ICEA試驗標準。MCK-5含有耐高壓的膠質，密封效困良好，絕對防潮、防塵並且可在90°C高溫下連續運轉。通過IEEE-48電力電纜接頭，交流耐壓及衝擊電壓等試驗標準。
2. 施工簡易、快速：  
在數分鐘內即可施工完畢，省去了纏繞膠帶及灌填充劑的時間。

### 3. 拆卸簡單

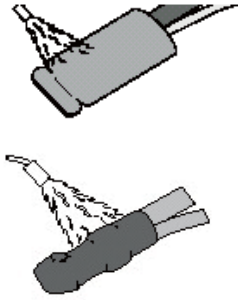
短時間即可輕易拆除，且不留餘渣

### 4. 完全密封

保證防潮、防塵、耐久、耐壓，全部通過最嚴密之試驗。

### 5. 厚壁、超耐磨、不鬆脫

不需要另加保護，可以耐馬達運轉時震動磨擦力，二不破損。



## 材料組成：

1. 熱縮絕緣帽套 x 3
2. 螺栓套管 x 3
3. 密封黏膠 x 3
4. 施工說明書

## 選用表

<b>MCK- 5 (5-8kV) Type V</b>	
MCK-5-1V-00	8 – 38
MCK-5-2V-00	42 – 125
MCK-5-3V-00	150 – 350
<b>MCK- 5 (5-8kV) Type L</b>	
MCK-5-1L-00	8 – 125
MCK-5-2L-00	150 – 500
<b>MCK (1000V) Type V</b>	
MCK-1V	2 – 5.5
MCK-2V	3.5 – 22
MCK-3V	38 – 100
MCK-4V	125 – 500
<b>MCK (1000V) Type L</b>	
MCK-1L	8 – 100
MCK-2L	125 – 500

# Raychem

## WCSM

**1000V  
Heat Shrinkable  
Heavy Wall Tubing**

**1000V 熱縮型  
低壓絕緣套管  
重厚絕緣套管**



WCSM是Raychem專為任何低壓電纜接頭的絕緣、封密防水特性而設計製造的重厚套管。此種套管具有良好的耐磨性及防腐性，厚度平均在0.7mm ~ 4.3 mm之間。

WCSM最適合用於地下電纜系統，可深潛於水中、直埋或用於其它任何需要最大機械應力保護之電力絕緣系統上。套管內加一層特殊的熱融膠，當套管熱縮時，熱融膠立即融化而流向四周，達到完全密封效果。可以黏著於大多數的電纜表皮上，包括 PVC, XLPE, Neoprene, Polyolefin, EPR，以及鉛、鋁、鋼等金屬表皮上，達到密封、防潮及絕緣要求。

## 產品特色

### 1. 高熱縮率，包容力廣

近3.5：1高收縮率，單一套管應用廣

### 2. 機械性強

耐磨、耐割、耐撞、耐撕裂。

### 3. 頂級防水密封能力

特殊交連熱融膠，提供完美防水性能。

### 4. 可抗化學侵蝕

可抗曲直及油質污染，符合ANSI C119.1、UL486D、CSA C22.2、WUG Guide

### 5. 厚度夠可承受重載

WCSM管壁加厚，超NEMA或ICEA等電纜規格要求。

## 材料特性

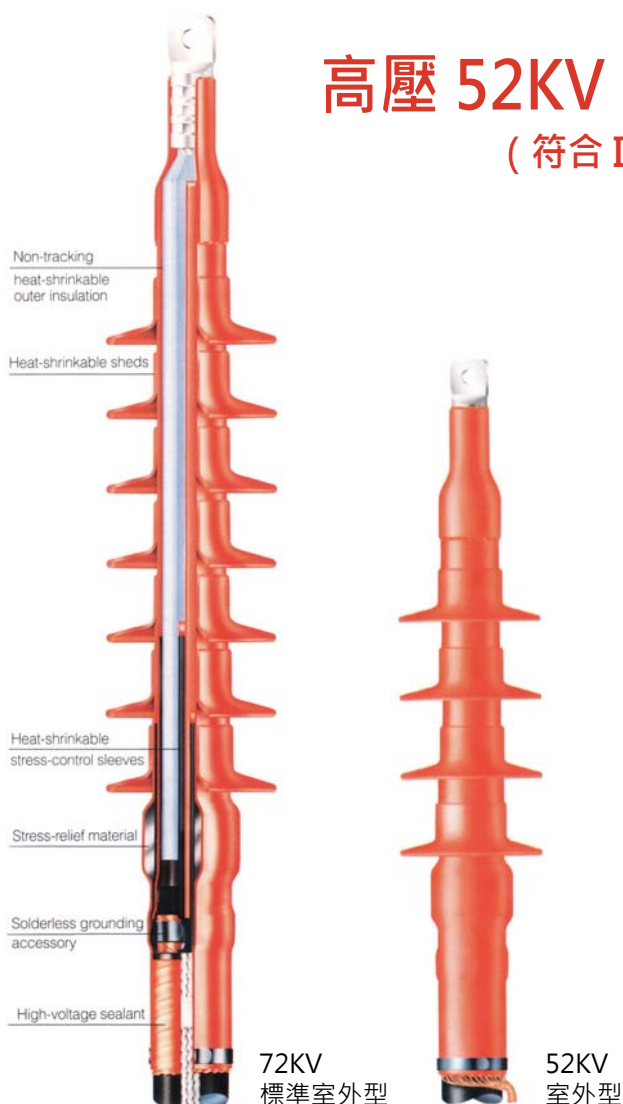
物理性	試驗方法	標準
抗張強度	ASTM D412	最小 1500psi
伸長率	ASTM D412	最小 350%
熱老化(121°C, 168 小時)	ASTM D2671	保持原抗張強度及伸長率之 80%
熱振擊(200°C, 4 小時)	ASTM D2671	不流動或破裂
低溫可撓性(-55°C, 4 小時)	ASTM D2671	不破裂
電氣性		
絕緣強度	ASTM D149	最小 200v/MIL
體積電阻	ASTM D257	最小 $10^{13}$ ohm-cm
化學性		
腐蝕效應(150°C, 16 小時)	ASTM D2671	無腐蝕
吸水率(25°C, 24 小時)	ASTM D570	最大 0.5%
密封性	ANSIC-119.1	通過
冷擊(-55°C)	ASTM D746	不破裂

## 選用表

型號	應用管圍 電纜直徑(mm)	適用電纜導體 尺寸(mm <sup>2</sup> )	熱縮後的厚度 (mm)
WCSM-12/3-1200(S20)	3.5-10	2-8	0.7-2.0
WCSM-16/4-1200(S20)	4.5-14	5-33	0.8-2.4
WCSM-24/6-1200(S20)	6.5-22	14-95	0.8-2.7
WCSM-34/8-1200/S(S10)	9-31	32-240	1.2-4
WCSM-48/12-1200/S(S10)	13-44	60-300	1.3-4.5
WCSM-56/16-1200/S(S10)	17.5-50	125-500	1-4.4
WCSM-70/20-1200/S(S5)	22-63	250-725	1-4.4
WCSM-90/25-1200/S(S5)	27-81	325-800	1-4.3
WCSM-110/30-1200/S(S5)	33-100	400-1000	1-4.3
WCSM-130/35-1200/S(S5)	38-118	750-1250	1-4.3
WCSM-160/50-1200/S(S5)	55-144	925-1600	1-4.3
WCSM-180/50-1200/S(S5)	55-162		1-4.3



## 高壓 52KV 與 72KV 電纜末端處理 (符合 IEEE-48 一級電纜處理標準)



### 產品優點

- 電應力分散設計精良
- 加上特殊高分子配方
- 抗環境污染
- 抗濕氣
- 抗鹽害等性能特佳



### 選用表 Selection Chart

(適用於單芯,銅線遮蔽,電力電纜)

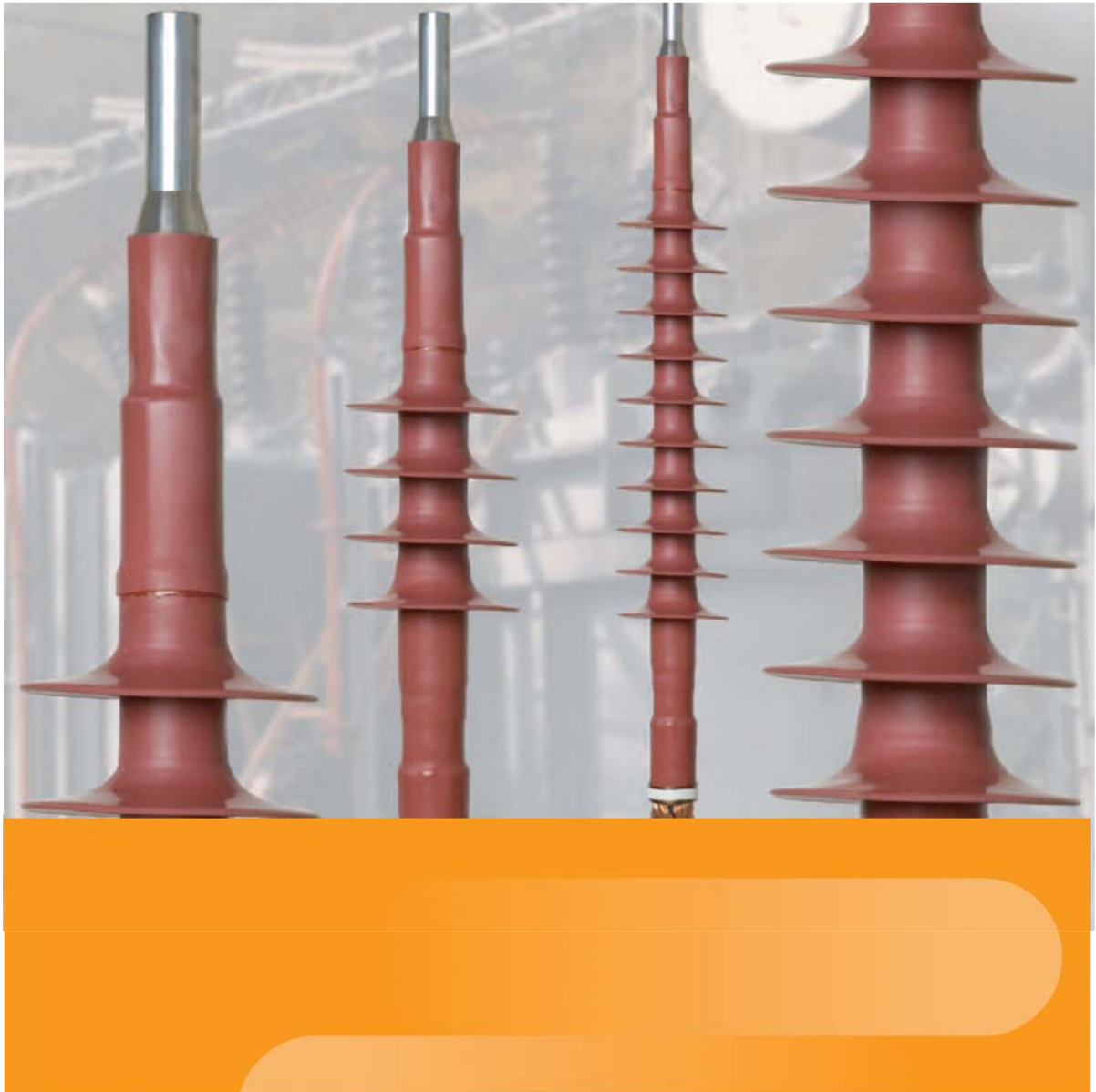
室內型	室外型	沿面加長型	絕緣外徑mm 最小-最大	容許最大 電纜外纜mm	適用導體 尺寸範圍mm
52 kV			(大約值·需按實際電纜尺寸來選)		
IHV-52HW-1N	OHVT-52HW-1N		30-45	60	100-150
IHV-52HW-2N	OHVT-52HW-2N		38-55	70	150-240
IHV-52HW-3N	OHVT-52HW-3N		48-65	85	240-500
IHV-52HW-4N	OHVT-52HW-4N		58-77	100	600-1000
72 kV			(大約值·需按實際電纜尺寸來選)		
IHVT-72HW-2N	OHVT-72HW-2N	LHVT-72HW-2N	38-55	70	120-200
IHVT-72HW-3N	OHVT-72HW-3N	LHVT-72HW-3N	48-65	80	250-400
IHVT-72HW-4N	OHVT-72HW-4N	LHVT-72HW-4N	58-77	100	500-1000
IHVT-72HW-5N	OHVT-72HW-5N	LHVT-72HW-5N	70-86	110	1200-1600

## 72kV熱縮式 高分子電纜末端處理與瓷礙管電纜終端匣 功能比較表

	熱縮型電纜末端處理	瓷管型電纜終端匣
體積	完成外徑略大於電纜	龐大
重量	材料部份約15KGS	約150-200 KSG
耐污染性	有自清作用的高分子材料	陶製製成無自清作用
抗污染維護性	抗電痕，符合ASTM D2303免礙洗	污染嚴重時，需活線礙洗
與其它設備搭配性	適合室內、屋外污染環境下使用	適合室內、室外、氣封和浸油設備
與電纜相容性	皆由 Polymer 聚合，相容性高	陶瓷與電纜本質不同，須特別處理
施工速度	平均4-5小時，一般熱縮施工技術	平均心12小時，特殊礙管施工技術
機械強度特性	耐磨損，不碎裂，不怕外霧撞擊	易破裂
電氣特性	符合，甚至超過IEEE-48標準	符合IEEE-48標準

## 72kV熱縮式 電纜直線中間接續與纏繞型電纜中間接續 功能比較表

	熱縮型電纜末端處理	瓷管型電纜終端匣
體積	完成外徑略大於電纜	龐大
重量	材料部分約15KGS	較重
機械強度特性	放射交連，耐磨損，不會老化	化學處理膠帶易老化
與電纜相容性	皆由Polymer聚合，相容性高	可
施工工具	噴燈及電纜剝除工具	大型膠帶纏繞機具，重叉佔空間
施工時間	平均5-6小時，加強熱縮施工技術	平均10-12小時，需特別施工技術
遮蔽與絕緣厚度	絕緣厚度與均勻度，靠現場施工決定	絕緣厚度與均勻度，靠現場施工決定
防水效果	活性熱促進高壓乳膠，不硬化龜裂	由膠帶老化程度及施工技巧決定
電氣特性	符合IEEE, IEC, EDF 國際標準	符合IEEE標準
Cross-Bonding	標準特裝材料，不需特殊施工	複雜施工程序
接線盒	合高分子避當器，價格合理。用單芯地線	價格高，採用同軸地線。施工複雜



Raychem Heat Shrink Terminations for  
Polymeric Cables 52/72kV

**52/72kV電纜終端匣**

## Raychem Termination Systems for Polymeric Insulated Cables 52/72kV

### Application

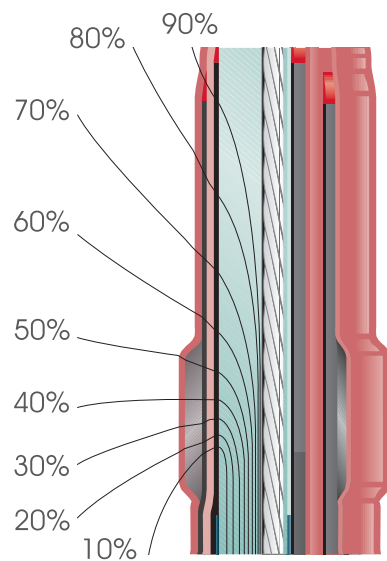
The TE Connectivity Raychem 52/72kV terminations are suitable for all climates, areas and environments, even severely polluted areas, and for all installation conditions, including top feed installation.

Our heat shrink accessories have been used by utilities and industrial companies around the world for more than 35 years. This ongoing field experience has made TE Energy a leader in materials science and technology for high-voltage applications. TE Energy materials technology is at the core of the development of our heat shrink terminations. The materials used in TE Raychem cable accessories have been extensively optimized with respect to product design and function, manufacturing and expected service environments.



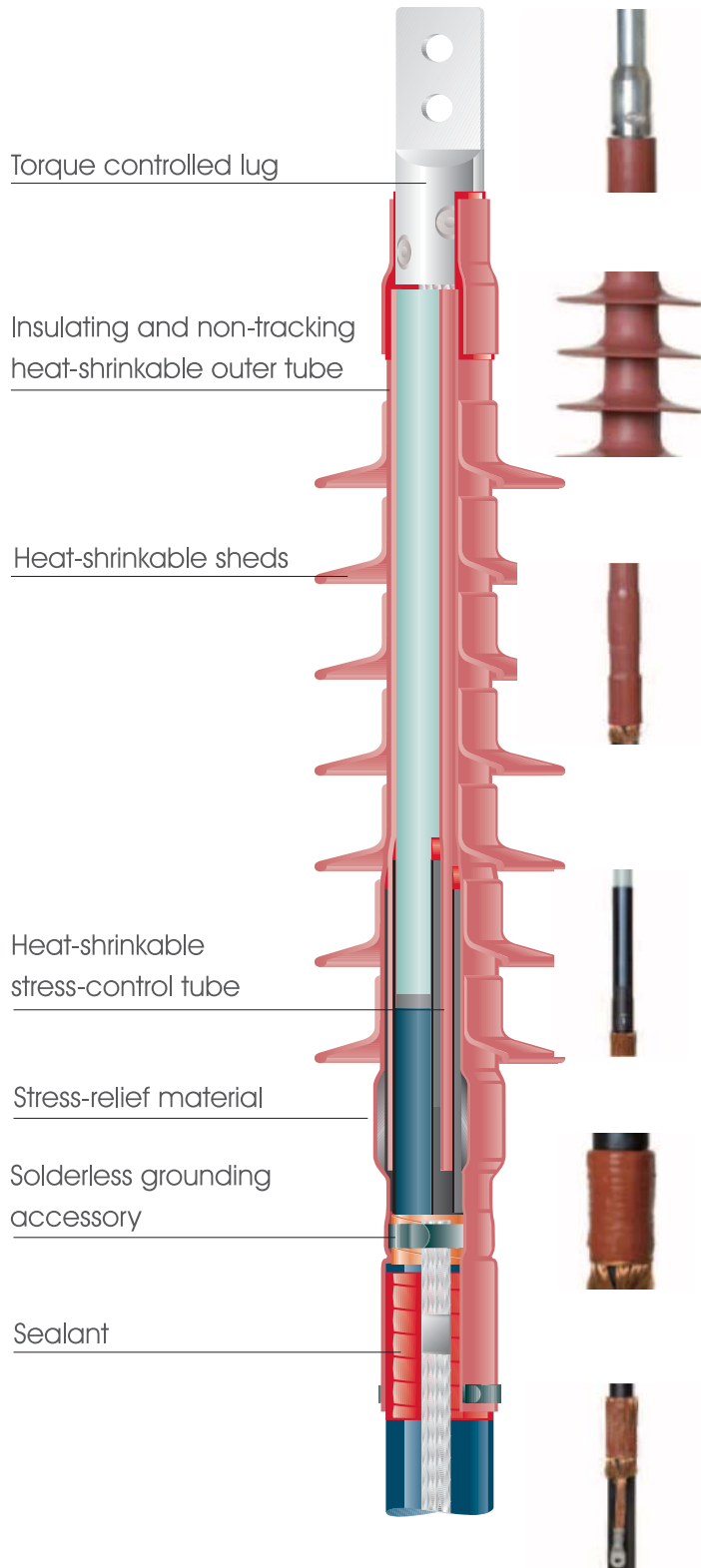
### Features

- Compact and modular design
- Heat-shrinkable stress control sleeves
- Non-tracking, heat-shrinkable outer insulation
- Water- and corrosion-resistant
- Different creepage distances available
- Easy to install
- Suitable for compression and mechanical lugs
- No special or expensive tools
- Lightweight components
- Unlimited shelf life under normal storage conditions
- No oil or compound filling
- Reduced waste for disposal
- Tested in accordance to IEEE 48 and IEC 60840
- Manufactured according to ISO 9001 and ISO 14001



## Construction and design

### 72kV Outdoor termination



#### Torque-controlled lug

- Variety of different rods/palms available
- Body made of tinned aluminum alloy
- Torque-controlled shear-off bolts
- Suitable for aluminum and copper conductors (see brochure EPP-0850)

#### Sheds

- Due to the installation of several numbers of sheds creepage lengths above 40mm/kV are available and covering the most common and also extreme pollution levels
- Sheds have excellent tracking and erosion resistance characteristics

#### Insulating and non-tracking tube

- Insulating tubes are UV- and water-resistant and perform reliably even when exposed to sudden temperature variations
- Insulating materials conform to Tracking and Erosion Tests as per ASTM D2303 and IEC 112  
Insulating tubes have an excellent tracking and erosion resistance characteristics

#### Electrical stress control tube

Electrical stress control tubes are used to smooth out the electrical field at the cable end; this is achieved by the unique resistive and capacitive properties of the heat-shrink material

#### Sealant

Track-resistant sealant that melts during shrinking process results in a reliable barrier against moisture

#### Solderless grounding connection

- Solderless connection is used to connect metal shields
- Solderless connection can be provided for each available cable construction e.g. copper wires, metal sheath, CAS

## Application range 52/72kV termination kits

	Diameter over prepared cable insulation	Diameter over cable sheath
size 1*	30-45 mm	≤ 60 mm
size 2	38-55 mm	≤ 70 mm
size 3	48-65 mm	≤ 80 mm
size 4	58-77 mm	≤ 100 mm
size 5**	70-86 mm	≤ 110mm

\*No 72kV Long Creepage termination kit available for this size

\*\* Not available for 52kV

## Application data 52/72kV termination kits

Standard terminations	52kV Indoor	52kV Outdoor	72kV Indoor	72kV Outdoor	72kV Long creepage
Termination length	70 mm	850 mm	950 mm	1200 mm	1500 mm
Approx. creepage length	1220 mm	1430 mm	1600 mm	2200 mm	3000 mm
Number of sheds	2	4	4	7	10
Approx. kit weight	6 kg	6.5 kg	7 kg	7.5 kg	9.5 kg

## Technical data 52/72kV termination

Standard terminations	52kV	72kV
Maximum voltage to ground	26kV	40kV
Basic impulse level	250kV	325kV
Max. continuous conductor operating temperature	90°C	90°C
Max. conductor emergency temperature	130°C	130°C
Conductor short circuit temperature	250°C	250°C

### Tools for XLPE cables

Tools required for cable preparation can also be purchased or rented at TE Energy. (See brochure EPP-0756 and EPP-0071)



### Add-on

Fiber optic kit  
(See brochure EPP-1623)



Cable clamps



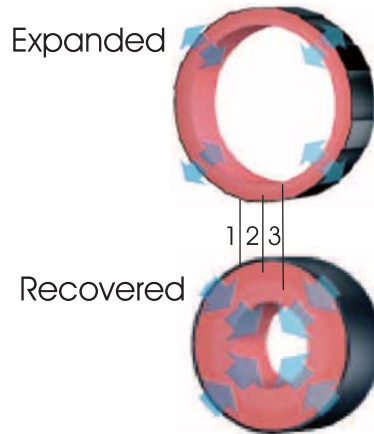


Raychem Heat-Shrink Joint up to 72.5 kV  
52/72kV電纜接續匣

## Raychem Heat-Shrink Joint up to 72.5 kV

### The Raychem Heat-Shrink Joint EHVS

The joint is based on a heat-shrink design for voltage classes up to 72.5 kV. Polymeric insulated cables of various designs can be adapted with respect to shielding and metal sheath. Our heat-shrink accessories have been used by utilities and industrial companies around the world for more than 35 years. This ongoing field experience has made TE Connectivity a leader in materials science and technology for high-voltage applications. The TE Energy materials technology is at the core of the development of our heat shrink joints. The materials used in our cable accessories have been extensively optimized with respect to product design and function, manufacturing and expected service environments. Furthermore the system is suitable for paper and polymeric cable constructions and is also designed to accommodate modern jointing requirements such as mechanical shear bolt connectors.



### Heat-Shrink Technology

The conductive outer layer (1) together with the insulating middle layer (2) represents the heat shrinkable hold out for the inner elastomeric layer (3) of the joint body. During the shrinking process the stored recovery force of the elastomeric layer is released and adds up to the recovery force generated by the heat shrinkable outer layers of the joint body. The resulting high compression forces as well as the perfect ability of geometrical adjustment provides tight

electrical interfaces and a perfect seal against moisture ingress. The elastomeric properties of the inner insulation layer of the joint body allow for any cable diameter compensation and adjustment resulting from the load cycling of the cable. At the same time the two outer heat shrinkable layers provide a tight and rigid belt for the joint body representing a high level of mechanical protection against outer environmental influences.

### Cable shielding

Grounding kits for commonly used cable constructions like lead sheath, corrugated aluminum sheath, copper tape, wire screens and combinations are available.



### Size transition

The size transition connector is able to link cables with different conductor and/or insulation diameter.



### Cable insulation

The joint is suitable to handle cables with different insulation layers like XLPE, EPR or Paper MIND.

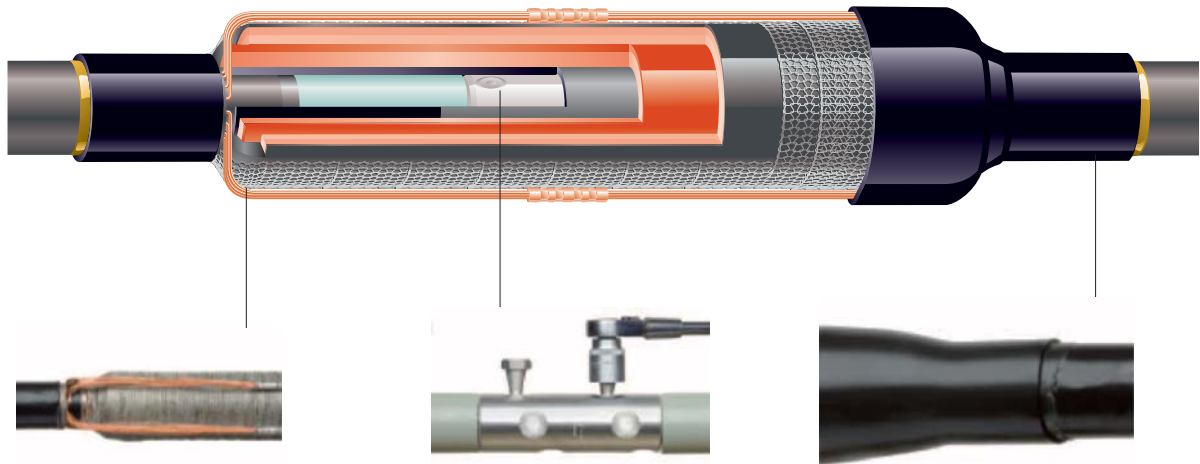


### Connector

The mechanical connector with torque controlled shear-off bolts is suitable for all common conductors made out of aluminum or copper. A special connector construction allows also the jointing of cables with small insulation thickness.







**Shield connectivity**

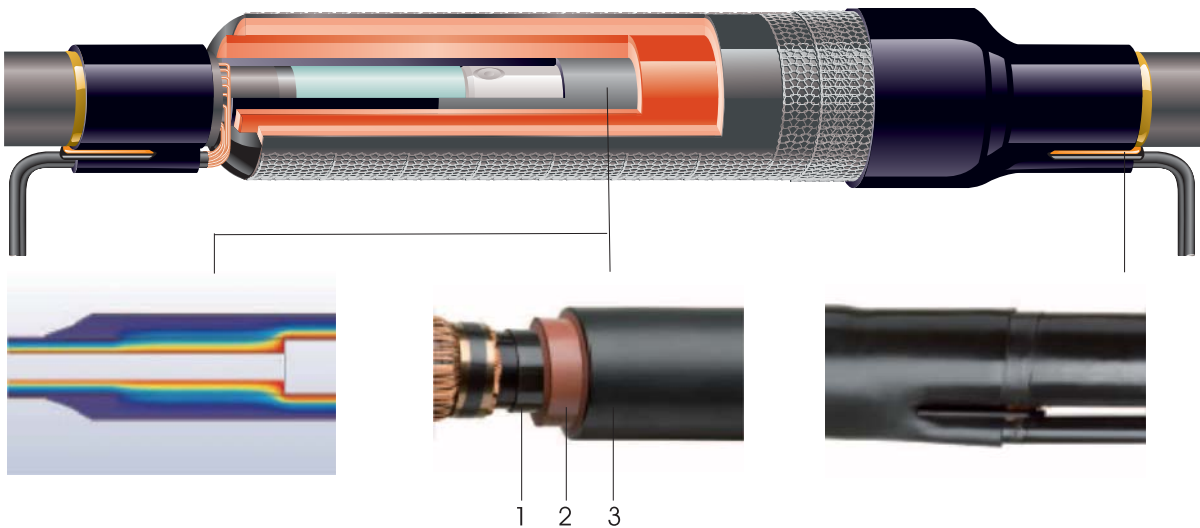
Solderless connections are used to connect the metallic –shields, -sheaths or –armours of the cables. The components continue the correct cross section across the connection area, even for different metallic layers. In addition a layer of copper mesh is applied around the joint, to assure safe contact and protection.

**Mechanical connector**

The mechanical connector is designed for all common conductor types, made of aluminium or copper. Bolts with a predetermined shear-off torque ensure reliable contact and easy handling at every installation.

**Outer joint protection**

A heat-shrinkable tube with a strong wall thickness and internally pre-coated with adhesive, provides the outer protection and a lasting moisture sealing.



**Electrical field control**

The stress control tube (1) has a pre-cisely defined impedance characteristic which smoothes the electrical field over the connector and cable screen ends. High voltage insulating tube (2)

and the inner wall of the screened tube (3) restore the conductor insulation. The elastic memory of the heat-shrink components ensures the correct wall thickness is obtained.

**Shield continuity**

Shield break, straight through and grounding connections are possible.

**Technical data:**

		52 kV	72.5 kV
Relevant standards	IEC 60840 / IEEE 404		
Rated voltage $U_0/U$ ( $U_m$ )	kV	24/26(52)	36/66(72.5)
Basic impulse level	kV	250	325
Max. continuous operating temperature	°C	90	90
Max. conductor emergency temperature	°C	130	130
Conductor short circuit temperature	°C	250	250
Short circuit current (sheath)	kA / 1 sec	10	10

**For shield break joints:**

DC voltage between metallic sheaths/screens	kV	20	20
DC voltage between metallic sheath/screen and earthed exterior	kV	20	20
Lightning impulse voltage between metallic sheath/screen	kV	60	60
Lightning impulse voltage between metallic sheath/screen and earthed exterior	kV	30	30

**Application Range:**

Conductor	mm <sup>2</sup>	2500	2500
Diameter over insulation	mm	30 - 86	30 - 86
Diameter over jacket	mm	100	100

For special applications and bigger cable sizes please contact your TE Energy representative.

**Tools**

Tools required for cable preparation can also be purchased or rented from TE Energy. (See brochure EPP-0756 and EPP-1543)



Cable stripper



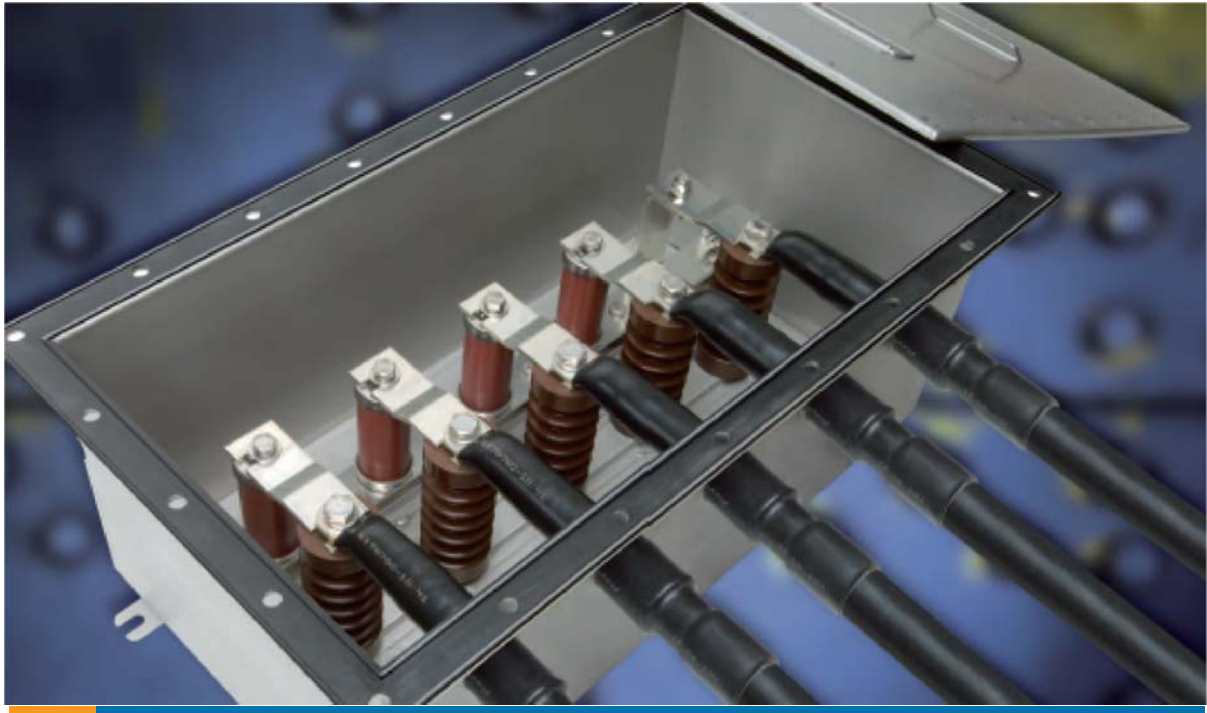
Gas torch

Straightening  
slide rails

Tool box



Heating blanket



## HIGH VOLTAGE LINK BOX FOR HIGH VOLTAGE CABLE SYSTEMS UP TO 245 kV 69/245 kV 電纜被覆保護裝置 ( CCPU )

### KEY FEATURES

- Stainless steel box
- Easy installation of non-compression connection
- Install on wall or underground
- 1-phase and 3-phase boxes available
- With or without ZnO surge arresters (SVL)
- With or without removable links

TE Connectivity's (TE) high voltage link boxes are used for earthing and bonding cable sheaths of single core cables to eliminate or reduce induced voltages and circulating currents.

Single core cables in operation carry alternating currents and induced voltage in the metallic sheath of the cable. These currents may cause, depending on different sheath bonding, circulating currents flowing in the cable sheath which reduce the transmission capacity of the cable and cause an additional heating.

## PRODUCT SELECTION INFORMATION

Description	1/3 Phase	SVL Earthing Option	Configuration	Cable Size	Application Voltage
HVLB-E-S-0-1-1	single phase	direct earthing	1 in, 1 out	300 mm <sup>2</sup>	66 kV, 110 kV, 220 kV
HVLB-E-S-2-1-1	single phase	SVL protection	1 in, 1 out	300 mm <sup>2</sup>	110 kV
HVLB-E-S-0-3-1	three phase	direct earthing	3 in, 1 out	300 mm <sup>2</sup>	66 kV, 110 kV, 220 kV
HVLB-E-S-2-3-1	three phase	SVL protection	3 in, 1 out	300 mm <sup>2</sup>	110 kV
HVLB-C-C-2-3-1	three phase	SVL protection	3 in, 1 out	300 mm <sup>2</sup>	110 kV
HVLB-E-S-3-3-1	three phase	SVL protection	3 in, 1 out	400 mm <sup>2</sup>	220 kV
HVLB-C-C-3-3-1	three phase	SVL protection	3 in, 1 out	400 mm <sup>2</sup>	220 kV

## ORDERING INFORMATION

Description	Part Number
HVLB-E-S-0-1-1	2197360-1
HVLB-E-S-2-1-1	2197363-1
HVLB-E-S-0-3-1	2197295-1
HVLB-E-S-2-3-1	2197296-1
HVLB-C-C-2-3-1	2197297-1
HVLB-E-S-3-3-1	2197296-2
HVLB-C-C-3-3-1	2197297-2

## Surge Counters Type SC12 & SC13

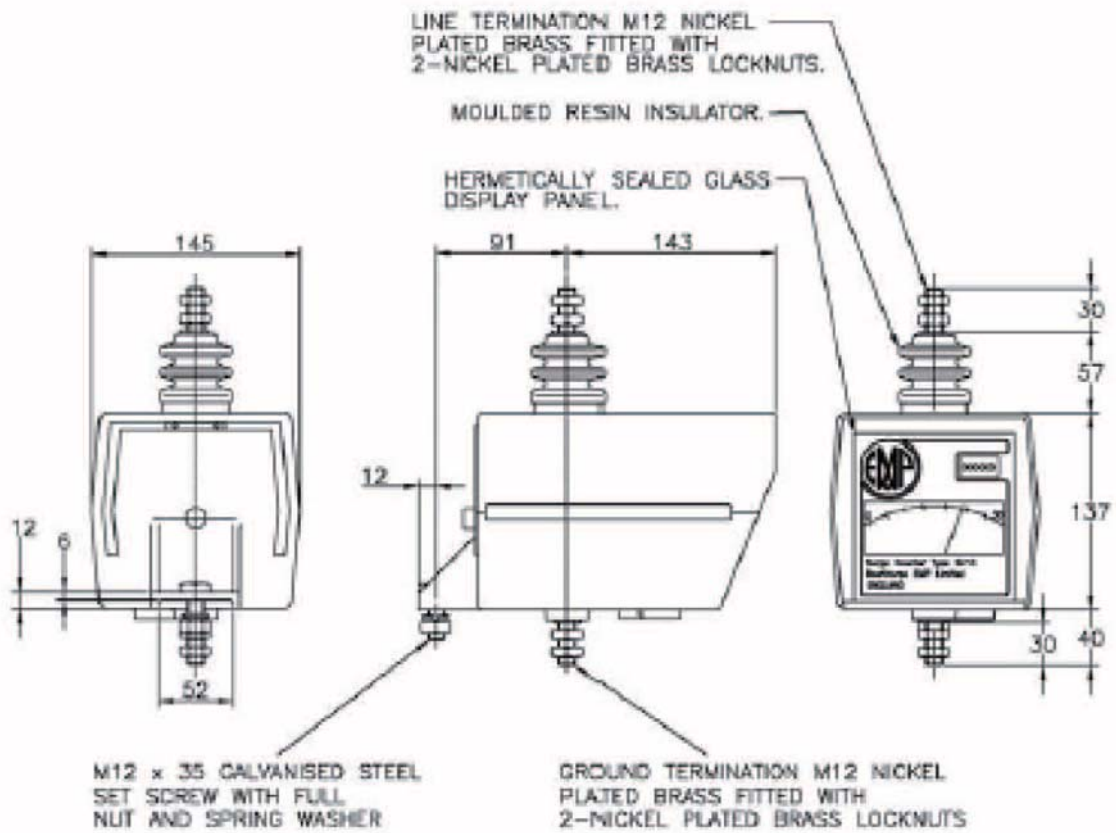


### 69 kV雷擊計數器 ( SC12 、 SC13 )

The Bowthorpe EMP range of Surge Arrester monitoring instruments are fully tested for use with any manufacturers surge arrester. The SC12 is a Surge Counter only, whilst the SC13 provides the additional measurement of total leakage current. The analogue instrument provides a means of monitoring the current through the arrester and the leakage current over the surface of the arrester housing. Significant changes after installation may indicate a deterioration in the arrester or a build up of surface contamination.

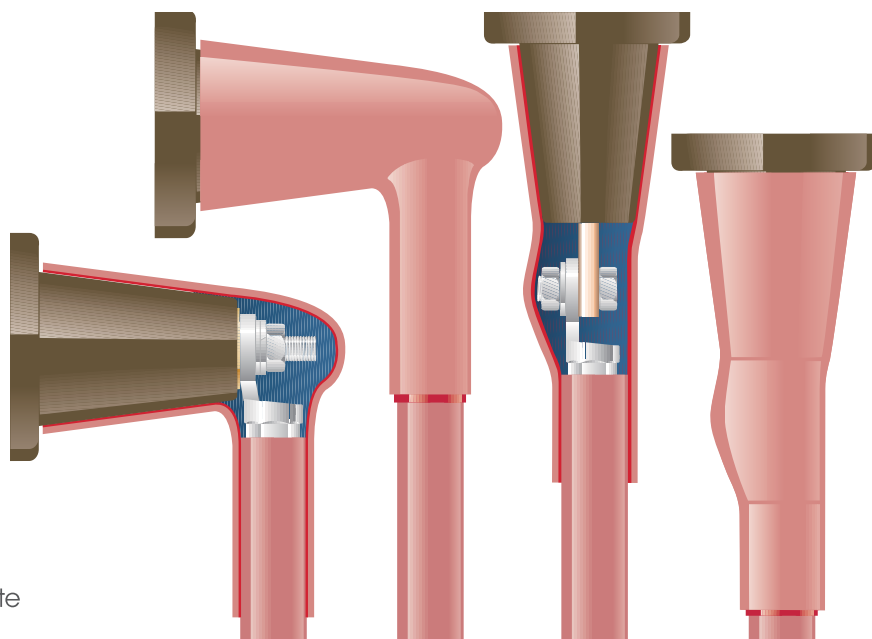
These instruments, which require no auxiliary supply, are designed for installation in the earth connections of a single surge arrester or alternatively the SC12 may be used with the common earth of a three phase set. Fully weatherproofed and sealed for life they are housed in a one piece gravity die cast aluminium case coated to enhance its already high degree of resistance to surface corrosion. The glass viewing window is sealed in place, using a silicon rubber adhesive, and a desiccator is enclosed to ensure any residual moisture trapped during sealing is absorbed for the service life of the counter. Mounting is effected by means of an integrally cast lug at the rear of the case providing a single clearance hole for the galvanised steel M12 bolt supplied.

The SC12 and SC13 are service proven and require no special maintenance or servicing apart from general cleaning of the glass viewing window and the moulded epoxy resin line terminal bushing.



- Meter : 6 digit cyclometer at least 5 counts/second
- Minimum count current : 200 A 8/20 microsecond wave
- Maximum High Current Withstand : 100 kA 4/10 microsecond wave
- Nominal Residual Voltage at : 5 kV peak
- 100 kA with 4/10 Microsecond Wave
- Meter scale : 0 - 30 mA  $\sqrt{\frac{\text{Peak}}{2}}$  (bilinear scale) Ref SC13
- SC13 leakage : 0 - 50 mA  $\sqrt{\frac{\text{Peak}}{2}}$  (bilinear scale) Ref SC13L

Both counters can be supplied with an auxiliary contact rated 1.0 A 250V for connection to remote signalling equipment. If required put suffix AC e.g. SC12/AC



Example:  
EPKT-17C3MOH3-B07  
This kit comes complete  
with straight boots.

## Heat-shrinkable Boots

### 歐規 ( RSRB 、 RCAB ) 5-15 kV 肘型封套

Insulating boots are moulded parts which are shrunk over the connection between the cable lug and bushing to insulate them. They are used in switchgear and transformers with compound filled boxes where the clearances are insufficient for operation in air or to protect against flash over due to rodents or extreme humidity.

A full range of insulating boots are available up to 17.5 kV. These can be ordered separately by quoting the part number or with the termination by adding a mod code to the end.

Application range	Straight boots		Right angle boots long		Right angle boots short	
	Mod Code	Part Number	Mod Code	Part Number	Mod Code	Part Number
10 - 35 mm <sup>2</sup>	B05	RSRB 4022	B08	RSRB 4042	B15	RSRB 4062
50 - 95 mm <sup>2</sup>	B06	RSRB 4024	B09	RSRB 4044	B16	RSRB 4064
120 - 300 mm <sup>2</sup>	B07	RSRB 4026	B10	RSRB 4046	B17	RSRB 4066

#### Note:

1. Long boots are 110 mm long over the bushing. The short boots are 90 mm long.
2. Insulating boot kits are also available for up to 36 kV applications.  
For such requirements please refer to your local sales representative.



## COLD SHRINK TERMINATION (CSTI/CSTO)

For Polymeric Insulated Cables up to 42 kV

### 12-42kV冷縮預撐式電纜頭



Raychem terminations CSTI/O cold shrink terminations are made from a high performance, liquid silicone material which is specially formulated for excellent tracking and split resistance. The extra-long, silicone stress cone is integrated within the termination which ensures correct positioning. Moisture sealing at the lug is integrated into the termination body, eliminating the need for additional sealing tapes.



They offer a reliable, fast and easy-to-install system to ensure trouble free service and maintain high network reliability. All key components are pre-expanded on one holdout system, allowing neat installation in compact environment on the prepared cable.

Raychem terminations CSTI/O are designed to cover a wide range of applications and to accommodate the variety of cable and conductor types used in the networks. Range-taking, mechanical lugs ensuring reliable installation and service can be supplied with the kit.



## Product Features

- Easy to install spiral holdout
- Integrated sealing mastic
- Outstanding weathering, UV and Ozone Resistance
- Chemically resistant
- Resistant to fungi
- Excellent electrical properties, including good tracking resistance and high dielectric strength
- Electrical stress control of the screen cut area using integrated conductive geometrical stress cones
- Hydrophobic (water-repellent)
- Non-flammable
- Self-extinguishing
- Retains performance over wide temperature range  $\pm 45$  to  $+150^{\circ}\text{C}$
- Excellent resistance to splitting and permanent set
- Mechanical shear bolt lug and compression lug to IEC 61238-1 can be supplied
- CENELEC HD 629.1.S2, requirements which include IEC, BS, VDE and other international specifications, IEEE-48
- Manufacturing site ISO 9001 & ISO 14001 qualified

## Benefits

- Pre-expanded termination body with integrated stress control deflector and sealing mastic
- Single piece silicone termination body with optimal mechanical expansion ratio allows a wide application range
- The extra-long silicone stress cone is integrated with the termination and reduces positioning
- Moisture sealing at the lug is integrated
- Well-known and easy-to-install holdout system, rip cord pulling direction towards the lug not the bottom of the termination
- Easy to install in tight switchgear compartments
- Accommodates mechanical shear bolt lug and compression lug

## Mechanical shear bolt connectors

Raychem terminations CSTI/O can be provided with TE BLMT mechanical shear bolt lugs to ensure a reliable connection for different conductor materials, shapes and types used in today's network. The preset shear torque of the bolts ensures that the correct contact pressure is always achieved. The specially designed contact surface on the inside of the lug breaks up any oxide layer and ensures reliable service over the entire service life of the termination. Different sizes of mechanical lugs with wide application ranges are available. They have been tested in accordance with IEC-61238-1 class A.

The installation shear-head bolts can be ruptured manually by usage of ring spanner and or facilitated by the usage of a cordless impact wrench supplied (IT-1000-023).

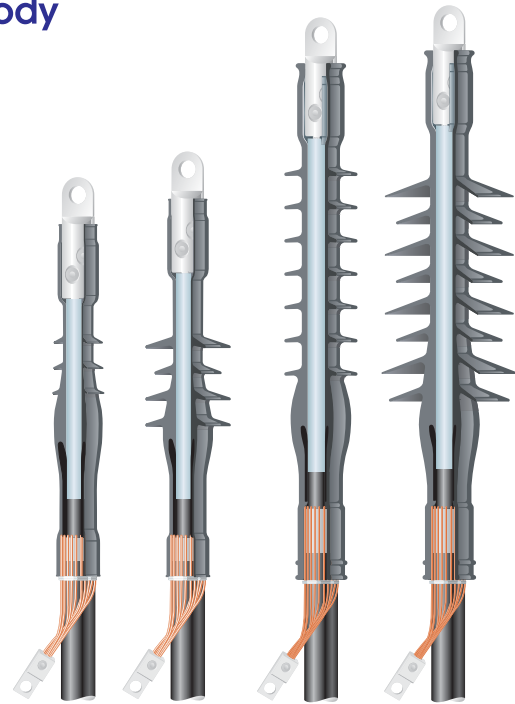
## Pre-expanded silicone termination body

The silicone termination body is delivered in a preexpanded condition on a spiral holdout system.

Silicone materials with excellent mechanical properties allow high expansion forces and therefore guarantee a wide application range.

Integrated stress control defl ector and sealing mastic on the top end of the termination provide exceptional electrical performance.

The termination body can be easily removed from the spiral holdout with low release forces, particularly designed for termination applications.



## Electrical stress control

Electrical stress control defl ector is fully integrated within the silicone termination body. Conductive cone with an exactly defi ned geometrical design over the screen cut area provide excellent electrical stress control.

## Technical data

VOLTAGE CLASS	(kV)	6.35/11(12)	8.7/15(17.5)	12.7/22(24)	19/33(36)	20.8/36(42)
Cable Insulation Diameter	(mm)	13.7-40.0	15.7-50.0	17.9-52.0	24.5-58.8	24.5-60.8
Cross Section Range	(mm <sup>2</sup> )	25-630	25-630	25-630	50-1000	50-1000
Max System Voltage U <sub>m</sub>	(kV)	12	17.5	24	36	42
Basic Impulse Level	(kV)	95	95	125	195	200
Partial Discharge at 2 U <sub>0</sub>	(pC)	<2	<2	<2	<2	<2
AC Voltage Withstand, 5 min	(kV)	28.5	39	57	86	94
DC Voltage Withstand, 15 min	(kV)	38	52	76	114	114

## ORDERING INFORMATION

VOLTAGE CLASS	KIT DESCRIPTION	APPLICATION RANGE	DIAMETER OVER INSULATION MIN	DIAMETER OVER INSULATION MAX	DIAMETER OVER SHEATH MAX
<b>6.35/11(12)kV</b>		<b>(mm<sup>2</sup>)</b>	<b>(mm)</b>	<b>(mm)</b>	<b>(mm)</b>
Indoor	CSTI-3122-ML-1-13	25-95	13.7	20.8	22
	CSTI-3132-ML-4-13	95-240	20.8	28.4	34
	CSTI-3142-ML-6-17	300-400	28.4	33.6	50
	CSTI-3152-ML-7-17	500-630	34.0	40.0	58
Outdoor	CSTO-3122-ML-1-13	25-95	13.7	20.8	22
	CSTO-3132-ML-4-13	95-240	20.8	28.4	34
	CSTO-3142-ML-6-17	300-400	28.4	33.6	50
	CSTO-3152-ML-7-17	500-630	34.0	40.0	58
<b>8.7/15(17.5)kV</b>		<b>(mm<sup>2</sup>)</b>	<b>(mm)</b>	<b>(mm)</b>	<b>(mm)</b>
Indoor	CSTI-4122	25-95	15.7	22.8	22
	CSTI-4132	95-240	20.7	30.4	34
	CSTI-4142	300-400	29.9	35.6	50
	CSTI-4152	500-630	35.9	41.9	58
Outdoor	CSTO-4122	25-95	15.7	22.8	22
	CSTO-4132	95-240	20.7	30.4	34
	CSTO-4142	300-400	29.9	35.6	50
	CSTO-4152	500-630	35.9	41.9	58
<b>12.7/22(24)kV</b>		<b>(mm<sup>2</sup>)</b>	<b>(mm)</b>	<b>(mm)</b>	<b>(mm)</b>
Indoor	CSTI-5122-ML-1-13	25-95	17.9	25.0	34
	CSTI-5132-ML-4-13	95-240	25.0	32.0	50
	CSTI-5142-ML-6-17	300-400	32.6	37.8	58
	CSTI-5152-ML-7-17	500-630	42.6	49.2	58
Outdoor	CSTO-5122-ML-1-13	25-95	17.9	25.0	34
	CSTO-5132-ML-4-13	95-240	25.0	32.0	50
	CSTO-5142-ML-6-17	300-400	32.6	37.8	58
	CSTO-5152-ML-7-17	500-630	42.6	49.2	58
<b>19/33(36)kV</b>		<b>(mm<sup>2</sup>)</b>	<b>(mm)</b>	<b>(mm)</b>	<b>(mm)</b>
Indoor	CSTI-6122-ML-1-13	50-70	24.5	28.4	42
	CSTI-6132-ML-4-13	95-150	27.8	33.5	46
	CSTI-6142-ML-6-17	185-400	32.4	42.8	56
	CSTI-6152-ML-7-17	500-630	42.6	49.2	63
	CSTI-6162-ML-8-21	800-1000	49.2	58.8	75
Outdoor	CSTO-6122-ML-1-13	50-70	24.5	28.4	42
	CSTO-6132-ML-4-13	95-150	27.8	33.5	46
	CSTO-6142-ML-6-17	185-400	32.4	42.8	56
	CSTO-6152-ML-7-17	500-630	42.6	49.2	63
	CSTO-6162-ML-8-21	800-1000	49.2	58.8	75
<b>20.8/36(42)kV</b>		<b>(mm<sup>2</sup>)</b>	<b>(mm)</b>	<b>(mm)</b>	<b>(mm)</b>
Indoor	CSTI-7122-ML-1-13	50-70	27.4	31.4	42
	CSTI-7132-ML-4-13	95-150	29.9	36.5	48
	CSTI-7142-ML-6-17	185-400	34.5	46.6	59
	CSTI-7152-ML-7-17	500-630	44.8	51.2	65
	CSTI-7162-ML-8-21	800-1000	50.6	60.8	73
Outdoor	CSTO-7122-ML-1-13	50-70	27.4	31.4	42
	CSTO-7132-ML-4-13	95-150	29.9	36.5	48
	CSTO-7142-ML-6-17	185-400	34.5	46.6	59
	CSTO-7152-ML-7-17	500-630	44.8	51.2	65
	CSTO-7162-ML-8-21	800-1000	50.6	60.8	73

The application range given in the table is based on polymeric insulated cable according to GENELEC HD 620 A2 (2004) standard with stranded circular conductors. Trifurcation system available. Please contact your sales representative



5/8 kV - 35 kV

## TOOL FREE TERMINATION (TFT-R)

### 美規 (TFT) 5-35 kV 冷縮式電纜頭 (預撐型)

#### KEY FEATURES

- Provides maintenance free, long life even in highly contaminated areas
- Material does not degrade in outdoor applications, outstanding UV stability
- Crush resistant core prevents collapsing due to rough handling
- Seals out all moisture and contamination
- Provides easier installation in confined spaces
- Fewer kits to accommodate a wider range of cable sizes

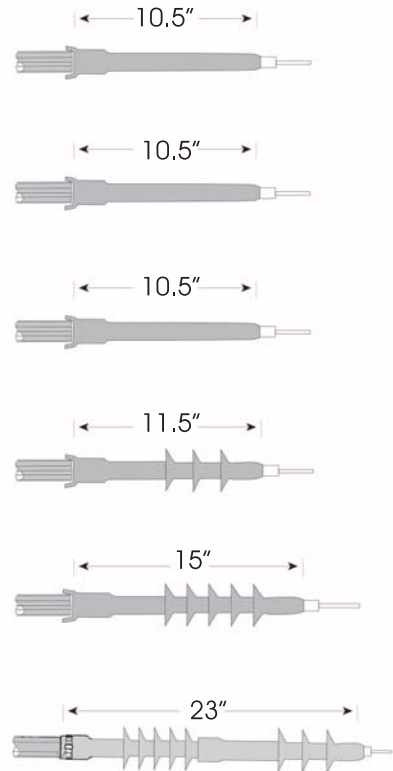
TE Connectivity's (TE) Raychem TFT-R elastomeric medium voltage cable termination is available for both shielded and non-shielded indoor and outdoor applications. TFT-R terminations are designed for customers who prefer cold applied terminations.

The TFT-R terminations feature an advanced stress control system using metal oxide matrix technology that provides superior electrical performance. They feature an outer elastomeric insulation tubing formulated for long-term performance in extreme environments. The tubing comes with a pre-lubricated, crush resistant core (holdout) for simple installation. The superior elastomeric insulation tubing, together with the positive positioned stress control system and moisture sealing mastic, provide simple, reliable, and consistent installations.

TFT-R, TFT-R-G, and TFT-R-SG terminations are designed for 5/8, 15, 25 and 35 kV single conductor shielded and non-shielded extruded dielectric cables up to 1250 kcmil.

PRODUCT SELECTION INFORMATION: DIMENSIONS IN INCHES (mm/metric)

Description	Nominal Conductor Size (5 and 8 kV)	Insulation ODs* min./max.
<b>TFT-P-R (Shielded, Indoor) PUSH ON INSTALLATION</b>		
	5 kV/8 kV	
TFT-P-80R	#6 - #2 AWG	0.39 - 0.61 (4.9 - 15.5)
<b>TFT-R (Non-Shielded, Indoor and Outdoor)</b>		
	5 kV	
TFT-50R	#2 - 3/0 AWG	0.53 - 0.80(13-20)
TFT-51R	#1 AWG - 350w kcmil	0.64 - 1.09(16-28)
TFT-52R	250 - 750 kcmil	0.85 - 1.45(22-37)
TFT-53R	500 - 1250 kcmil	1.06 - 1.70(27-43)
TFT-54R	1000 - 2000 kcmil	1.49 - 2.20(38-56)
<b>TFT-R-G (Shielded, Indoor and Outdoor)</b>		
	5 kV	
TFT-151R-G	#2/0 AWG - 500 kcmil #1/0 AWG-350 kcmil	0.64 - 1.09(16-28)
TFT-152R-G	350 - 1000 kcmil 250-750 kcmil	0.85 - 1.45(22-37)
TFT-153R-G	750 - 1250 kcmil 500-1000 kcmil	1.06 - 1.70(22-43)
<b>TFT-R-G (Shielded, Indoor)</b>		
	15 kV	
TFT-150R-G	#2 - 3/0 AWG	0.53 - 0.80 (13-20)
TFT-151R-G	#2 - 250 kcmil	0.64 - 1.09 (16-28)
TFT-152R-G	4/0 - 500 kcmil	0.85 - 1.45 (22-37)
TFT-153R-G	500 - 750 kcmil	1.06 - 1.70 (27-43)
<b>TFT-R-SG (Shielded, Outdoor)</b>		
	15 kV	
TFT-151R-SG	#2 - 250 kcmil	0.64 - 1.09 (16-28)
TFT-152R-SG	4/0 - 500 kcmil	0.85 - 1.45 (22-37)
TFT-153R-SG	500 - 750 kcmil	1.06 - 1.70 (27-43)
TFT-154R-SG	1000 - 1250 kcmil	1.49 - 2.20 (38-56)
	25 kV	
TFT-251R-SG	#1 - 3/0 AWG	1.64 - 1.09 (16-28)
TFT-252R-SG	#2/0 - 500 kcmil	0.85 - 1.45 (22-37)
TFT-253R-SG	250 - 750 kcmil	1.06 - 1.70 (27-43)
TFT-254R-SG	750 - 1250 kcmil	1.49 - 2.20 (38-56)
TFT-352R-SG	1/0 - 250 kcmil	0.85 - 1.45 (22-37)
TFT-353R-SG	4/0 - 500 kcmil	1.06 - 1.70 (27-43)
TFT-354R-SG	500 - 1250 kcmil	1.49 - 2.20*(38-56)



TEST REPORT

15 kV - Test Report: EDR-5302  
 25 kV - Test Report: EDR-5303  
 35 kV - Test Report: EDR-5299  
 Indoor - Non-shedded -Test Report: EDR-5306  
 TFT-P - Test Report: EDR-5527

Related Product Information:  
 NCTR-99-065 - Salt fog and tensile strength test report.

Packaging: Standard packaging is three terminations per box.

Available Accessories: The BRKT series of stainless steel cable mounting brackets are available. Four sizes of brackets accommodate cable diameters from 0.80 - 2.40". The MOD-3-TFT series of three conductor modification kits are available. Kits provide re-jacketing of phase conductors and breakout seals. A complete line of Utilux copper compression terminals are also available.



歐規 ( CSJA ) 12-36KV 冷縮式中間接續型錄

## STRAIGHT JOINT (CSJA)

### ALL IN ONE STRAIGHT JOINT, FOR POLYMERIC INSULATED CABLES UP TO 42 kV

- Joint body, earthing system and re-jacketing pre-expanded on one holdout system
- Single piece silicone rubber joint body with high mechanical expansion capability
- Well-known and easy-to-install holdout system
- Short parking distance required
- Easy-to-install joint system with short installation time
- Mechanical shear bolt connector to IEC 61238-1 is supplied with the kit
- Proven shield continuity concept

TE Connectivity's (TE) Raychem CSJA joints offer a reliable, fast and easy-to-install jointing system to assure and maintain high network reliability. All key components are pre-expanded on one holdout system, allowing a very short parking length during cable preparation. A silicone rubber joint body with integrated geometrical stress cones and Faraday cage provides excellent electrical stress control.

TE's Raychem CSJA joints are designed to cover a wide range of applications and to accommodate the variety of cable and conductor types in the networks. Range-taking mechanical connectors ensuring reliable installation and service are supplied with the kit

Electrical stress control is fully integrated in the silicone joint body by well defined conductive areas. The electrical stress control of the connector area is made with an integrated conductive screen performing as a Faraday cage. The coverage of voids and edges at the connection area with void fillers is not necessary.

The silicone rubber joint body is delivered in a pre-expanded condition on a spiral holdout system. Integrated stress control mechanism and conductive outer layer provide exceptional electrical performance. The joint body can be easily removed from the spiral holdout with low release forces, particularly designed for joint applications.

PRODUCT SELECTION INFORMATION: DIMENSIONS IN mm						
Description	Application Range(mm <sup>2</sup> )	Diameter Over Core Insulation	Diameter Over Outer Sheath	Diameter Over Conductor**	Admissible Connector Dimensions** Max Length	Diameter
CSJA without mechanical connector						
12kV						
CSJA-12B/1XU-1XU	95-240	18.6-28.4	26.0-39.0	-	145.0	19.0-33.0
CSJA-12C/1XU-1XU	185-300	23.2-32.6	30.3-44.0	-	145.0	23.0-37.0
CSJA-12D/1XU-1XU	240-400	25.7-33.6	33.0-45.0	-	170.0	26.0-42.0
CSJA-12E/1XU-1XU	500-800	34.4-42.2	43.0-58.0	-	200.0	34.0-45.0
24kV						
CSJA-24B/1XU-1XU	35-185	18.9-30.1	26.0-41.0	-	145.0	19.0-33.0
CSJA-24C/1XU-1XU	95-300	23.5-34.6	30.0-46.0	-	145.0	23.0-37.0
CSJA-24D/1XU-1XU	185-400	27.4-37.8	35.0-49.0	-	170.0	26.0-42.0
CSJA-24E/1XU-1XU	400-630	35.1-44.0	43.0-57.0	-	200.0	34.0-45.0
CSJA-24F/1XU-1XU	800-1000	43.9-53.2	58.5-67.0	-	200.0	41.0-50.0
36(42)kV						
CSJA-36D/1XU-1XU	70-240	26.2-37.6	34.0-48.0	-	140.0	26.0-38.0
CSJA-36E/1XU-1XU	240-630	34.9-49.2	42.0-61.0	-	200.0	34.0-50.0
CSJA-36F/1XU-1XU	500-800	42.6-53.4	51.0-66.0	-	200.0	41.0-50.0
CSJA with mechanical connector						
12kV						
CSJA-12B/1XU-1XU-M	95-240	18.6-28.4	26.0-39.0	11.0-19.2	-	-
CSJA-12C/1XU-1XU-M	185-300	23.2-32.6	30.0-44.0	15.5-23.1	-	-
CSJA-12D/1XU-1XU-M	240-400	25.7-33.6	33.0-45.0	17.8-24.6	-	-
CSJA-12E/1XU-1XU-M1	500	33.7-36.2	43.0-48.0	25.7-27.6	-	-
CSJA-12E/1XU-1XU-M2	630	38.0-40.0	47.0-52.0	29.3-32.5	-	-
24kV						
CSJA-24B/1XU-1XU-M	35-150	18.9-28.5	26.0-39.0	6.8-15.0	-	-
CSJA-24C/1XU-1XU-M1	95-240	23.5-32.6	30.3-44.0	11.0-19.2	-	-
CSJA-24C/1XU-1XU-M2	120-300	24.3-34.6	32.0-46.0	12.5-23.1	-	-
CSJA-24D/1XU-1XU-M	185-400	27.4-37.8	35.0-49.0	15.5-24.6	-	-
CSJA-24E/1XU-1XU-M1	500	37.9-40.6	46.0-52.0	25.7-27.6	-	-
CSJA-24E/1XU-1XU-M2	630	41.0-44.0	56.0-57.0	29.3-32.5	-	-
36(24)kV						
CSJA-36D/1XU-1XU-M	95-240	27.8-37.6	35.0-48.0	11.0-19.2	-	-
CSJA-36E/1XU-1XU-M1	240-400	34.9-42.8	42.0-54.0	17.8-24.6	-	-
CSJA-36E/1XU-1XU-M2	500	42.6-45.6	51.0-57.0	25.7-27.6	-	-
CSJA-36E/1XU-1XU-M3	630	45.8-49.2	56.0-61.0	29.3-32.5	-	-

\* The application range given in the table is based on polymeric insulated cables according to IEC 60502 with stranded circular conductors. Due to different conductor dimensions and/or cable constructions the minimum and maximum application range may be extendable. Please contact your local sale representative.

\*\* The diameter over conductor is needed only for kits including TE's BSM connectors. The values given in the selection table refer to aluminum circular conductors and may change for other materials and shapes.

\*\*\* Max. block thickness of connector 10 mm.



## 歐規 ( MXSU ) 12-36kV 熱縮式中間接續型錄

### JOINTING SYSTEM (MXSU) - 36 kV

#### 1-CORE JOINTING SYSTEM WITH MECHANICAL CONNECTORS

#### KEY FEATURES

- All inclusive kit
- Short and slim design
- Requires no crimping tool
- Meets HD 629

TE Connectivity's (TE) Raychem MXSU jointing system is based on a design using mechanical connectors for conductor and wire shields, which are also supplied with the kit.

MXSU kits are widely range taking, and cover most conductor constructions including their tolerances. No crimping tools or tool maintenance required

The short and space saving design for installation of the MXSU improves installation reliability. It also has an unlimited shelf life, simplified material logistics and reduced cost. TE's Raychem MXSU jointing system also avoids bulky waste and costly waste disposal.



PRODUCT SELECTION INFORMATION: DIMENSIONS IN mm							
Description	Cross Section Range[mm <sup>2</sup> ]				Diameter Conductor	Diameter Over Core Insulation	Diameter Cable Over Sheath
	12kV	17.5kV	24kV	36kV			
MXSU-3111	25-95	-	-	-	5.2-12.0	13.2-21.8	23-32
MXSU-3121	70-150	-	-	-	8.7-15.0	17.6-24.3	25-38
MXSU-3131	95-240	-	-	-	10.3-19.2	17.6-29.4	26-40
MXSU-3132	150-300	-	-	-	12.9-21.6	21.6-30.4	29-43
MXSU-3141	240-400	-	-	-	17.8-24.6	25.7-32.6	33-47
MXSU-3151	500	-	-	-	25.5-27.6	33.8-37.2	44-50
MXSU-3161	630	-	-	-	29.0-32.5	37.5-40.0	47-54
MXSU-3171	800	-	-	-	32.0-33.8	39.5-42.6	52-57
MXSU-3181	1000	-	-	-	38.5-39.2	45.0-47.6	59-64
MXSU-4111	-	50-95	-	-	7.2-12.0	17.6-24.0	24-38
MXSU-4121	-	70-150	-	-	8.7-15.0	19.9-27.5	28-39
MXSU-4131	-	120-240	-	-	11.0-19.2	22.0-31.6	28-44
MXSU-4132	-	150-300	-	-	12.9-21.6	23.5-32.6	31-45
MXSU-4141	-	240-400	-	-	17.8-24.6	28.4-36.8	35-50
MXSU-4151	-	500	-	-	25.5-27.6	36.2-39.6	48-56
MXSU-5101	-	-	10-35	-	3.7-7.5	15.0-22.0	17-33
MXSU-5111	-	-	25-95	-	5.2-12.0	17.9-26.0	25-38
MXSU-5121	-	-	50-150	-	7.2-15.0	20.2-29.5	28-41
MXSU-5131	-	-	95-240	-	10.3-19.2	23.0-33.6	30-43
MXSU-5132	-	-	150-300	-	12.9-21.6	25.0-35.5	33-48
MXSU-5141	-	-	240-400	-	17.8-24.6	29.9-38.8	35-49
MXSU-5151	-	-	500	-	25.5-27.6	37.2-41.6	48-54
MXSU-5161	-	630	630	-	29.0-32.5	39.2-44.7	50-58
MXSU-5171	-	-	800	-	32.0-33.8	44.8-46.9	58-61
MXSU-5181	-	-	1000	-	38.5-39.2	49.4-53.2	64-67
MXSU-6111	-	-	-	35-95	6.0-12.0	24.0-30.0	32-43
MXSU-6121	-	-	-	70-150	8.7-15.0	26.2-34.5	34-44
MXSU-6131	-	-	-	150-300	13.9-21.6	31.1-39.6	38-53
MXSU-6141	-	-	-	240-400	17.8-24.6	36.2-42.8	40-54
MXSU-6151	-	-	-	500	25.5-29.2	40.1-46.6	52-60
MXSU-6161	-	-	-	630	29.0-32.5	45.8-50.5	55-61
MXSU-6171	-	-	-	800	32.0-33.8	50.1-53.4	62-66
MXSU-6181	-	-	-	1000	38.5-39.2	55.7-58.8	69-73



## 歐規 ( RSTI ) 800-1250A T型接頭型錄 12-24kV(300mm<sup>2</sup>以下)

### SCREENED SEPARABLE CONNECTION SYSTEM RSTI-58 FOR 630/1250 A UP TO 24 kV

#### KEY FEATURES

- The insulation made highly modified silicone rubber
- Thin-walled screen protects the connection system
- Easily accessible rear plug with capacitive test point
- Few accessories required for system test
- Complete kit including lugs facilitates installation and storage

TE Connectivity's (TE) Raychem screened separable connectors RSTI-58 are designed to connect single- and three-core polymeric cables to medium-voltage gas insulated switchgear and other equipment using bushings type "C" (EN50180/EN50181) specified for 630/1250 A up to 24 kV.

Made of a highly modified silicone rubber and protected by a thin-walled outer conductive screen connected to earth, Raychem connectors RSTI-58 are equally suited for indoor and outdoor installation. Supporting a wide application range, the design incorporates one body and stress cone adapters to cover all cross-sections from 25 to 300 mm<sup>2</sup>. The overall cut-back dimensions are designed to take up minimum space in the terminal box.

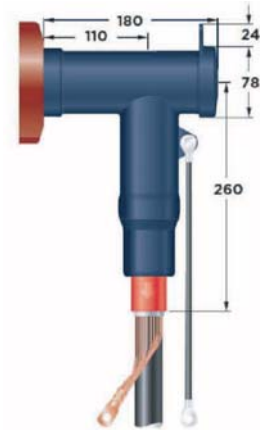
TE's Raychem connectors RSTI-58 are equipped with a capacitive test point for determining whether the circuit is energised. This test point is protected by a conductive cap. After cable preparation and lubrication, the stress control adapter is simply slid into place, followed by the screened connector body. These two components can be installed under virtually any conditions. A separable mounting system ensures easy installation of the connector onto the bushing.

All kits include high-performance multi-range mechanical or DIN compression lugs matching the design of the connector RSTI-58.

The screened cable connector RSTI-58 meets CENELEC HD 629.1 S2 requirements, which includes BS, VDE and other international specifications

TECHNICAL DATA	
Cable insulation diameter range	12.7-34.6mm
Connector cross-section range	25-300 mm <sup>2</sup>
Maximum system voltage	24kV
continuous current rating	800A
Basic impulse level	150kV
Partail discharge at 2 UO	<2pc
AC voltage withstand, 1min	57kV
DC voltage withstand, 15min	76kV
Thermal short circuit, 1s	54kV
Dynamic short circuit	125kV

PRODUCT SELECTION INFORMATION				
Description		Diameter Core Insulation(mm)		Cross Section(mm <sup>2</sup> )
Aluminum	Copper	min	max	
with DIN compression lugs 12kV				
RSTI-5810	RSTI-5830	12.7	23.4	25
RSTI-5811	RSTI-5831	12.7	23.4	35
RSTI-5812	RSTI-5832	12.7	23.4	50
RSTI-5813	RSTI-5833	12.7	23.4	70
RSTI-5814	RSTI-5834	12.7	23.4	95
RSTI-5815	RSTI-5835	12.7	23.4	120
RSTI-5826	RSTI-5846	21.2	34.6	150
RSTI-5827	RSTI-5847	21.2	34.6	185
RSTI-5828	RSTI-5848	21.2	34.6	240
RSTI-5829	RSTI-5849	21.2	34.6	300
with DIN compression lugs 24kV				
RSTI-5810	RSTI-5830	12.7	23.4	25
RSTI-5811	RSTI-5831	12.7	23.4	35
RSTI-5812	RSTI-5832	12.7	23.4	50
RSTI-5813	RSTI-5833	12.7	23.4	70
RSTI-5824	RSTI-5844	21.2	34.6	95
RSTI-5825	RSTI-5845	21.2	34.6	120
RSTI-5826	RSTI-5846	21.2	34.6	150
RSTI-5827	RSTI-5847	21.2	34.6	185
RSTI-5828	RSTI-5848	21.2	34.6	240
RSTI-5829	RSTI-5849	21.2	34.6	300
with mechanical lugs and shearbolts 12 kV				
RSTI-5851(Al or Cu)		12.7	23.4	35-95
RSTI-5852(Al or Cu)		12.7	23.4	95-120
RSTI-5853(Al or Cu)		17.0	30.1	95-240
RSTI-5854(Al or Cu)		21.2	34.6	150-240
RSTI-5855(Al or Cu)		21.2	34.6	185-300
RSTI-5856(Al or Cu)		21.2	34.6	240-400
with mechanical lugs and shearbolts 24 kV				
RSTI-5851(Al or Cu)		12.7	23.4	35-70
RSTI-5853(Al or Cu)		17.0	30.1	95-185
RSTI-5854(Al or Cu)		21.2	34.6	95-240
RSTI-5855(Al or Cu)		21.2	34.6	185-300



Kits including deep indent lugs are on request

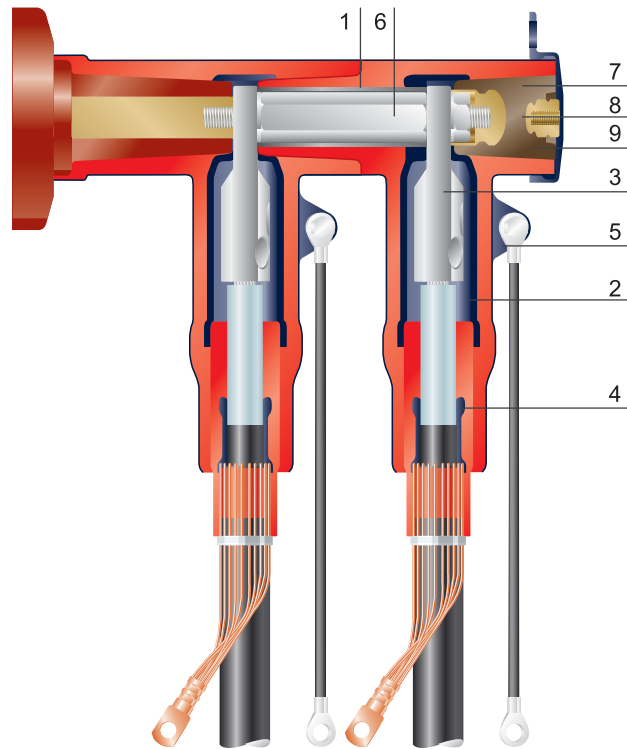


Raychem Screened, Separable Coupling System RSTI-CC-58 800 A up to 24 kV

12-24kV 雙T型 ( 300mm<sup>2</sup>以下 )

## FEATURES

- The screened coupling connector is designed to mate with the rear end of the Raychem base screened connector system RSTI-58 designed for 24 kV.
- The insulation of the coupling connector is made of a highly modified silicone rubber characterised by high tracking resistance, elongation at break and non-flammability.
- A thin-walled screen is permanently bonded onto the insulation and protects the connection system against accidental contact.
- The screened coupling connector need not be removed for oversheath testing.
- The combination of screened connector and coupling connector exceeds CENELEC HD 629.1 S2 requirements, which include BS, VDE and other international specifications.
- The combination of screened connector and coupling connector fits 630/1250 A bushings type "C" as specified by EN50180 and EN50181.
- The compact design supports the use of double "T" connections inside standard terminal boxes.
- The wide application range covers cable cross-sections from 25 to 300 mm<sup>2</sup>.
- Conductor connection with mechanical or DIN lugs.
- Easily accessible rear plug with capacitive test point.
- Few accessories required for system test and earth connection.
- Complete kit including lugs for easier installation and storage.



### 1. Screened body

A thin-walled conductive outer screen is permanently bonded to the silicone rubber insulating material of the body.

### 2. Inner screen

A conductive inner layer, as a faraday cage around the compression or mechanical lug, prevents corona at rated voltage.

### 3. Compression or mechanical lugs

Specially designed DIN compression lugs, as well as finned, mechanical lugs with shear bolts for connecting either aluminium or copper conductor cables.

### 4. Stress cone adapter

Relieves electrical stress at the point where the cable screen is cut. The insulated section, extending beyond the wire shielding, provides a convenient point for oversheath testing.

### 5. Earthing eye and ground lead

Provides a connection point for earthing the screen.

### 6. Threaded pin assembly

A threaded pin assembly together with a washer, spring washer and hex nut ensure high-performance electrical and mechanical contact with the previous installed connector.

### 7. Rear plug with test point

Removable rear plug with capacitive test point.

### 8. Test point

The test point is used to determine whether the circuit is energised; alternatively it can be used for phasing.

### 9. Conductive end cap

Electrical screen and protection of the rear end of the separable connector.

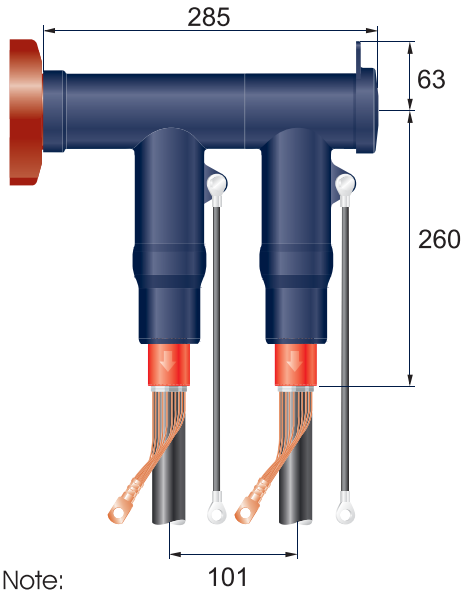
## Application

### Double connection

Material requested for 3 phases:

1 x RSTI-58xx (kits)

1 x RSTI-CC-58xx (coupling connector kit)



Note:

All applications shown in the brochure need to have a mechanical support meeting the requirements for dynamic short circuit.

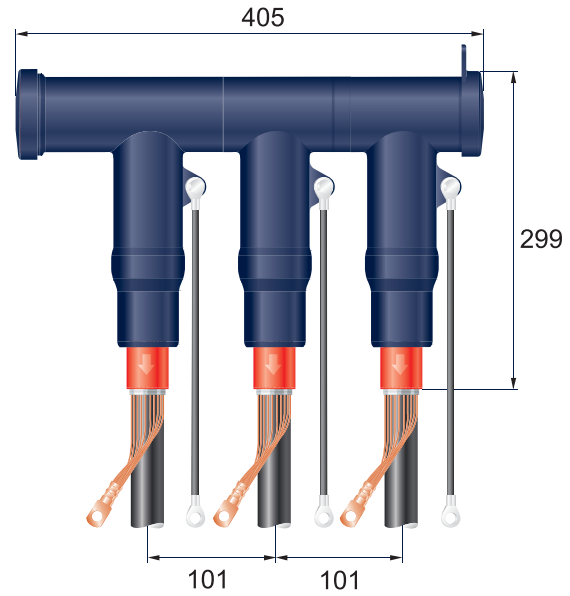
### Single core branch off

Material requested for 3 phases:

1 x RSTI-58xx (kits)

2 x RSTI-CC-58xx (coupling connector kit) 1 x

RSTI-68TP (terminating plug kit)



## Accessories

### Test rod

Ref. no.:

RSTI-68TR; Length: 310 mm

RSTI-68TRL; Length: 460 mm

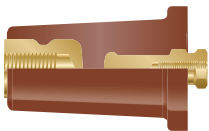
RSTI-68TRA; Kit includes

2 short and 1 long testrod



### Terminating plug

Ref. no.: RSTI-68TP

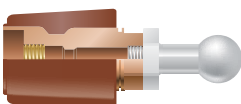


### Earthing adapter

Ref. no.:

RSTI-68EA20; Ball diameter: 20 mm

RSTI-68EA25; Ball diameter: 25 mm



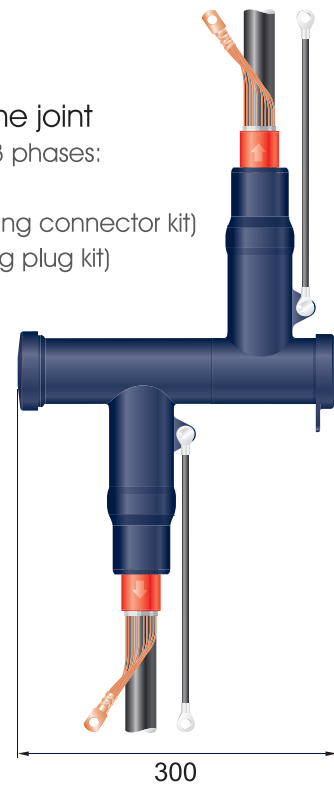
### Disconnectable inline joint

Material requested for 3 phases:

1 x RSTI-58xx (kits)

1 x RSTI-CC-58xx (coupling connector kit)

1 x RSTI-68TP (terminating plug kit)



## Technical data

Cable insulation diameter range	12.7 - 34.6 mm
Connector cross-section range	25 - 300 mm <sup>2</sup>
Maximum system voltage	24 kV
Continuous current rating	800 A
Basic impulse level	150 kV
Partial discharge at 2 U <sub>0</sub>	< 2 pC
AC voltage withstand, 1 min	57 kV
DC voltage withstand, 15 min	76 kV
Thermal short circuit, 1 s	54 kA
Dynamic short circuit	125 kA

The adapters meet the international CENELEC HD 629.1 S2 specification.

## Selection table

Screened separable coupling connection system with DIN compression lugs

Crossection	12kV Diameter core insulation		Reference number		Conductor material	Crossection	12kV Diameter core insulation		Reference number		Conductor material
	mm <sup>2</sup>	min mm	max mm	Al			Cu	mm <sup>2</sup>	min mm	max mm	
25	12.7-	23.4	RSTI-CC-5810	RSTI-CC-5830		25	12.7-	23.4	RSTI-CC-5810	RSTI-CC-5830	
35	12.7-	23.4	RSTI-CC-5811	RSTI-CC-5831		35	12.7-	23.4	RSTI-CC-5811	RSTI-CC-5831	
50	12.7-	23.4	RSTI-CC-5812	RSTI-CC-5832		50	12.7-	23.4	RSTI-CC-5812	RSTI-CC-5832	
70	12.7-	23.4	RSTI-CC-5813	RSTI-CC-5833		70	12.7-	23.4	RSTI-CC-5813	RSTI-CC-5833	
95	12.7-	23.4	RSTI-CC-5814	RSTI-CC-5834		95	21.2-	34.6	RSTI-CC-5824	RSTI-CC-5844	
120	12.7-	23.4	RSTI-CC-5815	RSTI-CC-5835		120	21.2-	34.6	RSTI-CC-5825	RSTI-CC-5845	
150	21.2-	34.6	RSTI-CC-5826	RSTI-CC-5846		150	21.2-	34.6	RSTI-CC-5826	RSTI-CC-5846	
185	21.2-	34.6	RSTI-CC-5827	RSTI-CC-5847		185	21.2-	34.6	RSTI-CC-5827	RSTI-CC-5847	
240	21.2-	34.6	RSTI-CC-5828	RSTI-CC-5848		240	21.2-	34.6	RSTI-CC-5828	RSTI-CC-5848	
300	21.2-	34.6	RSTI-CC-5829	RSTI-CC-5849		300	21.2-	34.6	RSTI-CC-5829	RSTI-CC-5849	

Kits including deep indent lugs are on request

Screened separable coupling connection system with mechanical lugs and shear bolts

Crossection	12kV Diameter core insulation		Reference number	Conductor material	Crossection	12kV Diameter core insulation		Reference number	Conductor material
	mm <sup>2</sup>	min mm				max mm	Al or Cu		
35-95	12.7-	23.4	RSTI-CC-5851		35-70	12.7-	23.4	RSTI-CC-5851	
95-120	12.7-	23.4	RSTI-CC-5852		95-185	17.0-	30.1	RSTI-CC-5853	
95-240	17.0-	30.1	RSTI-CC-5853		95-240	21.2-	34.6	RSTI-CC-5854	
150-240	21.2-	34.6	RSTI-CC-5854		185-300	21.2-	34.6	RSTI-CC-5855	
185-300	21.2-	34.6	RSTI-CC-5855						
240-400	21.2-	34.6	RSTI-CC-5856						



Raychem Screened, Separable Connection  
System RSTI-Large for Large Cross Sections  
1250 A up to 42 kV

**12-42kV T型接頭 ( 400-800mm<sup>2</sup> )**



## FEATURES

- The insulation of the connector is made of a highly modified silicone rubber characterised by high tracking resistance, elongation at break and non-flammability.
- A thin walled screen is permanently bonded onto the insulation and protects the connection system against accidental contact.
- The screened connector need not be removed for over sheath testing.
- The screened cable connector exceeds CENELEC HD 629.1 S2 requirements, which includes BS; VDE and other international specifications.
- Design fits 630 A and 1250 A bushings (Interface "C<sub>1</sub>" and "C<sub>2</sub>") as specified by EN 50180 and EN 50181.
- The compact design supports the use of double "T" connections inside standard terminal boxes.
- The wide application range covers cable cross sections from 400 to 800 mm<sup>2</sup>.
- Conductor connection with mechanical lugs.
- Easily accessible rear plug with capacitive test point.
- Complete kit including lugs facilitates

Raychem RSTI screened separable connectors are designed to connect single- and three-core polymeric cables to medium-voltage gas insulated switchgear and other equipment using CENELEC bushings Type C<sub>1</sub>=630 A and C<sub>2</sub>=1250 A, specified up to 42 kV.

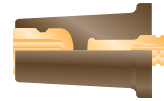
Made of a highly modified silicone rubber and protected by a thin walled outer conductive screen connected to earth, Raychem RSTI connectors are equally suited for indoor and outdoor application.

Supporting a wide application range, the design incorporates one body and three stress cone adapters to cover all cross-sections from 400 to 800 mm<sup>2</sup> and all voltage classes from 12 to 42 kV. The overall and cut back dimensions are designed to take up minimum space in the terminal box.

Raychem RSTI connectors are equipped with a capacitive test point for determining whether the circuit is energised. A conductive cap protects this test point.

## Accessories

Terminating plug  
Ref. no.: RSTI-68TP



Test rod

Ref. no.: RSTI-68TR;  
Length: 310 mm

RSTI-68TRL;  
Length: 460 mm  
RSTI-68TRA;  
Kit includes  
2 short and  
1 long testrod

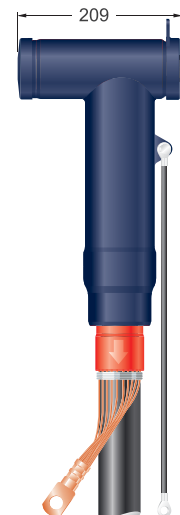
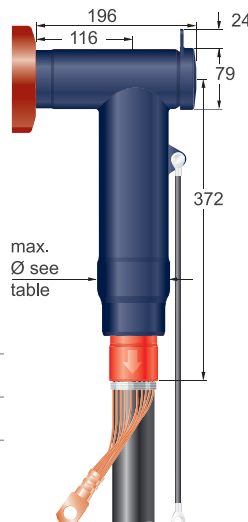


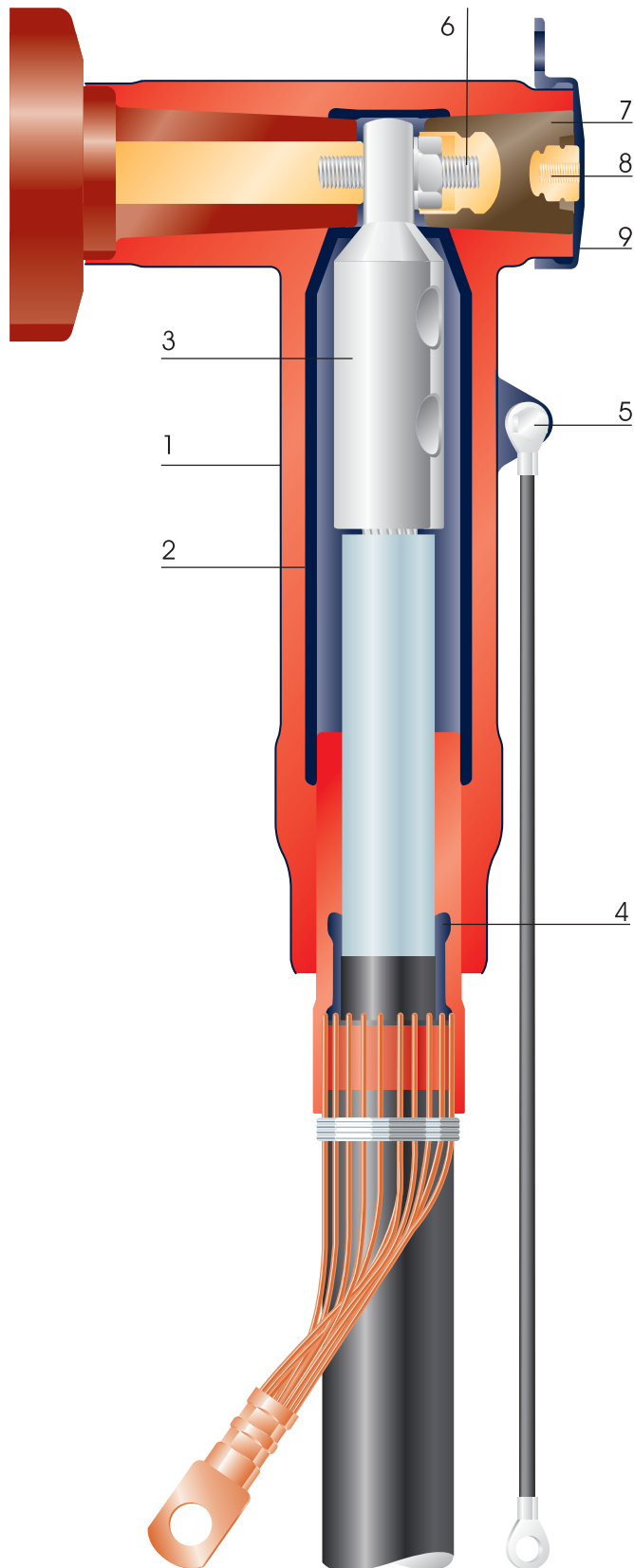
Live end seal  
Material requested  
for 3 phases:  
1 x RSTI-x9xx (kit)  
1 x RSTI-68TP  
(Terminating plug kit)

## Application

Cross Section	max. Ø		
	12kV	24kV	42kV
630	90	94	99
800	94	98	103

Single connection  
Material requested  
for 3 phases:  
1 x RSTI-x9xx (kit)





#### 1 Screened body

A thin walled conductive outer screen is permanently bonded to the silicone rubber insulating material of the body.

#### 2 Inner screen

A conductive inner layer, as a Faraday cage around the mechanical lug, prevents corona at rated voltage.

#### 3 Mechanical lug

Specially designed mechanical lugs for connecting either aluminium or copper conductor cables.

#### 4 Stress cone adapter

Relieves electrical stress at the point where the cable screen is cut. The insulated section, extending beyond the wire shielding, provides a convenient point for over sheath testing.

#### 5 Earthing eye and ground lead

Provides a connection point for earthing the screen.

#### 6 Threaded pin

A threaded pin together with a spring washer (wave type) and hex nut ensure a high performance electrical and mechanical contact with the bushing.

#### 7 Rear plug with test point

Removable rear plug with capacitive test point.

#### 8 Test point

The test point is used to determine whether the circuit is energised; alternatively it can be used for phasing.

#### 9 Conductive end cap

Electrical screen and protection of the rear end of the separable connector.

#### Note:

All applications as shown in the brochure need to have a mechanical support, based on the requirements for dynamic short circuit.

## Technical data

Cable insulation diameter range	28.9 - 59.0 mm
Connector cross-section range	400 - 800 mm <sup>2</sup>
Maximum system voltage	42 kV
Continuous current rating	1250 A*
Basic impulse level	200 kV
Partial discharge at 2 U <sub>0</sub>	< 2 pC
AC voltage withstand, 5 min	93.5 kV
DC voltage withstand, 15 min	125 kV
Thermal short circuit, 1 s	74.5 kA
Thermal short circuit, 3 s	43 kA
Dynamic short circuit	125 kA

\* 1250 A is relevant for upgraded bushing C<sub>2</sub> and cables with copper conductors  
The adapters meet the international CENELEC HD 629.1 S2 specification

## Selection table

Screened separable connection system 12 kV with mechanical lugs

Cross Sector	Diameter Core insulation		Reference number Conductor
	min mm	max mm	Al or Cu
400	28.9-	36.4	RSTI-3951
500	28.9-	36.4	RSTI-3952
630	34.0-	45.4	RSTI-3953
800	34.0-	45.4	RSTI-3954

Screened separable connection system 24 kV with mechanical lugs

Cross Sector	Diameter Core insulation		Reference number Conductor
	min mm	max mm	Al or Cu
400	34.0-	45.4	RSTI-5951
500	34.0-	45.4	RSTI-5952
630	39.1-	59.0	RSTI-5953
800	39.1-	59.0	RSTI-5954

Screened separable connection system 36 & 42 kV with mechanical lugs

Cross Sector	Diameter Core insulation		Reference number Conductor
	min mm	max mm	Al or Cu
400	34.0-	45.4	RSTI-6951
500-630	39.1-	59.0	RSTI-6952
800	39.1-	59.0	RSTI-6953



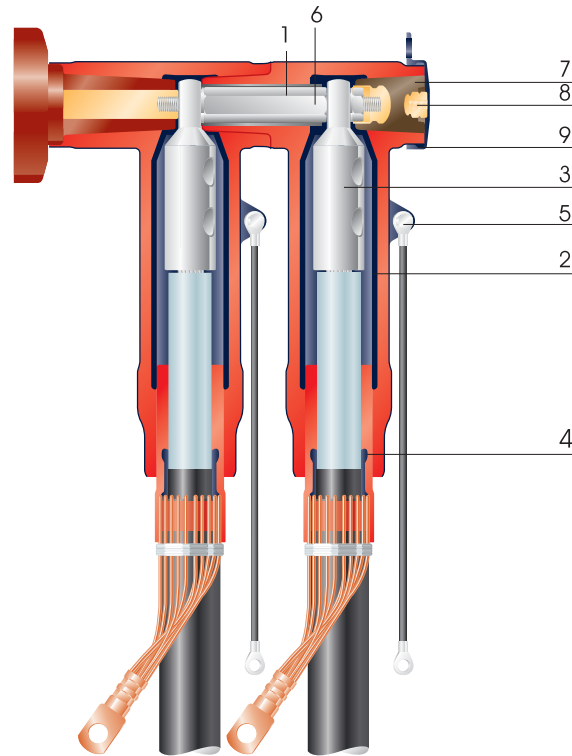
Raychem Screened, Separable Coupling  
Connection System RSTI-CC-Large  
for Large Cross Sections 1250 A up to 42 kV

**12-42 kV 雙T型 ( 400-800mm<sup>2</sup> )**

## FEATURES

- The screened coupling connector is designed to mate with the rear end of the base screened connector system RSTI designed for 42 kV.
- The insulation of the coupling connector is made of a highly modified silicone rubber characterised by high tracking resistance, elongation at break and non-flammability.
- A thin-walled screen is permanently bonded onto the insulation and protects the connection system against accidental contact.
- The screened coupling connector need not be removed for over-sheath testing.
- The combination of screened connector and coupling connector exceeds CENELEC HD 629.1 S1 requirements, which include BS, VDE and other international specifications.
- Design of combination fits 630 A and 1250 A bushings (Interface "C<sub>1</sub>" and "C<sub>2</sub>") as specified by EN 50180 and EN 50181.
- The compact design supports the use of double "T" connections inside standard terminal boxes.
- The wide application range covers cable cross-sections from 400 to 800 mm<sup>2</sup>.
- Conductor connection with mechanical lugs.
- Easily accessible rear plug with capacitive test point.
- Few accessories required for system test and earth connection.
- Complete kit including lugs for easier installation and storage.

## Design and construction



### 1 Screened body

A thin walled conductive outer screen is permanently bonded to the silicone rubber insulating material of the body.

### 2 Inner screen

A conductive inner layer, as a Faraday cage around the mechanical lug, prevents corona at rated voltage.

### 3 Mechanical lug

Specially designed mechanical lugs for connecting either aluminium or copper conductor cables.

### 4 Stress cone adapter

Relieves electrical stress at the point where the cable screen is cut. The insulated section, extending beyond the wire shielding, provides a convenient point for over sheath testing.

### 5 Earthing eye and ground lead

Provides a connection point for earthing the screen.

### 6 Threaded pin assembly

A threaded pin assembly together with a spring washer and hex nut ensure high-performance electrical and mechanical contact with the bushing.

### 7 Rear plug with test point

Removable rear plug with capacitive test point.

### 8 Test point

The test point is used to determine whether the circuit is energised; alternatively it can be used for phasing.

### 9 Conductive end cap

Electrical screen and protection of the rear end of the separable connector.

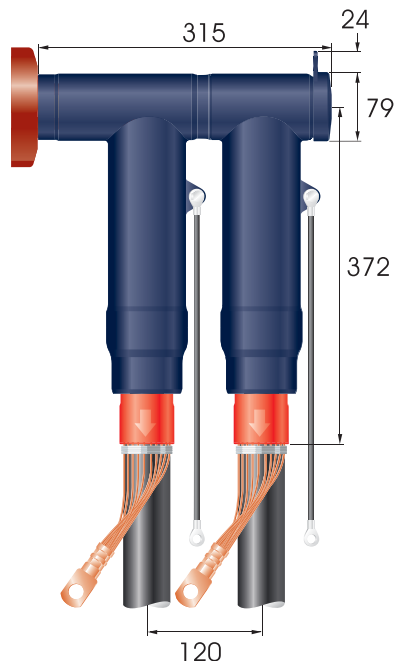
## Applications

### Double connection

Material requested for 3 phases:

1 x RSTI-x95x (Basic kit)

1 x RSTI-CC-x95x (Coupling connector kit)



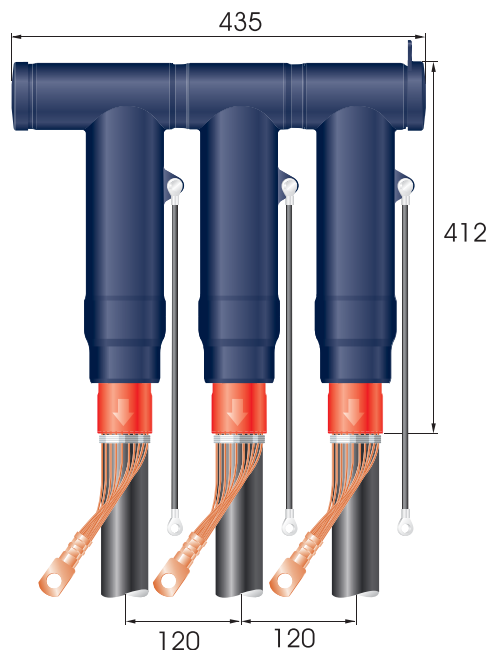
### Single core branch off

Items required for 3 phases:

1 x RSTI-x95x (Basic kit)

1 x RSTI-68TP (Terminating plug kit)

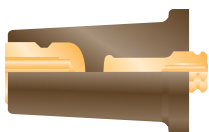
2 x RSTI-CC-x95x (Coupling connector kit)



## Accessories

### Terminating plug

Ref. no.: RSTI-68TP



### Test rod

Ref. no.: RSTI-68TR; Length: 310 mm

RSTI-68TRL; Length: 460 mm

RSTI-68TRA; Kit includes

2 short and 1 long testrod



Cross Section	max. Ø		
	12kV	24kV	42kV
630	90	94	99
800	94	98	103

### Disconnectable inline joint

Items required for 3 phases:

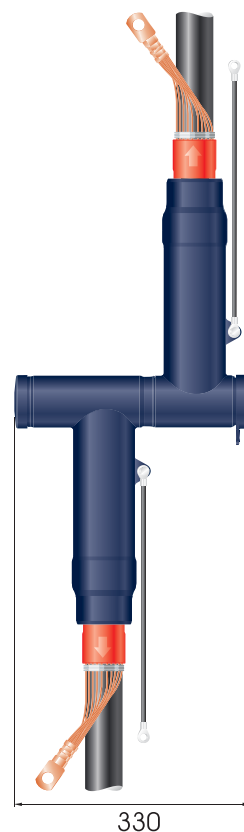
1 x RSTI-x95x (Basic kit)

1 x RSTI-68TP (Terminating plug kit)

1 x RSTI-CC-x95x (Coupling connector kit)

### Note:

All applications as shown in the brochure need to have a mechanical support, based on the requirements for dynamic short circuit.



## Technical data

Cable insulation diameter range	28.9 - 59.0 mm
Connector cross-section range	400 - 800 mm <sup>2</sup>
Maximum system voltage	42 kV
Continuous current rating	1250 A*
Basic impulse level	200 kV
Partial discharge at 2 U <sub>0</sub>	< 2 pC
AC voltage withstand, 5 min	93.5 kV
DC voltage withstand, 15 min	125 kV
Thermal short circuit, 1 s	74.5 kA
Thermal short circuit, 3 s	43 kA
Dynamic short circuit	125 kA

\* 1250 A is relevant for upgraded bushing C2 and cables with copper conductors  
The adapters meet the international CENELEC HD 629.1 S2 specification

## Selection table

Screened separable connection system 12 kV with mechanical lugs

Cross Sector mm <sup>2</sup>	Diameter Core insulation		Reference number Conductor
	min mm	max mm	
400	28.9-	36.4	RSTI-3951
500	28.9-	36.4	RSTI-3952
630	34.0-	45.4	RSTI-3953
800	34.0-	45.4	RSTI-3954

Screened separable connection system 24 kV with mechanical lugs

Cross Sector mm <sup>2</sup>	Diameter Core insulation		Reference number Conductor
	min mm	max mm	
400	34.0-	45.4	RSTI-5951
500	39.1-	45.4	RSTI-5952
630	39.1-	59.0	RSTI-5953
800	39.1-	59.0	RSTI-5954

Screened separable connection system 36 kV with mechanical lugs

Cross Sector mm <sup>2</sup>	Diameter Core insulation		Reference number Conductor
	min mm	max mm	
400	34.0-	45.4	RSTI-6951
500-630	39.1-	45.4	RSTI-6952
800	39.1-	59.0	RSTI-6953



## RSTI-68 FOR 630/1250 A UP TO 42 kV SCREENED SEPARABLE CONNECTION SYSTEM

### 36kV T型接頭 ( 300mm<sup>2</sup>以下 )

#### KEY FEATURES

- The insulation made highly modified silicone rubber
- Thin-walled screen protects the connection system
- Easily accessible rear plug with capacitive test point
- Few accessories required for system test
- Complete kit including lugs facilitates installation and storage

TE Connectivity's (TE) Raychem RSTI screened separable connectors are designed to connect single- and three-core polymeric cables to medium-voltage gas insulated switchgear and other equipment using bushings Type "C" (EN 50180/EN 50181), specified for 630/1250A up to 42 kV.

Made of a highly modified silicone rubber and protected by a thin-walled outer conductive screen connected to earth, Raychem connectors RSTI-68 are equally suited for indoor and outdoor installation. Supporting a wide application range, the design incorporates one body and two stress cone adapters to cover all cross-sections from 25 to 300 mm<sup>2</sup>. The overall and cut-back dimensions are designed to take up minimum space in the terminal box.



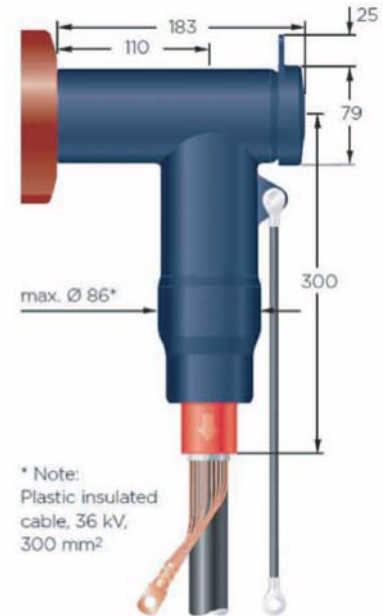
Raychem connectors RSTI-68 are equipped with a capacitive test point for determining whether the circuit is energised. This test point is protected by a conductive cap. After cable preparation and lubrication, the stress control adapter is simply slid into place, followed by the screened connector body. These two components can be installed under virtually any conditions. A separable mounting system ensures easy installation of the connector onto the bushing.

All kits include high-performance multi-range mechanical or DIN compression lugs matching the design of the Raychem connector RSTI-68.

The screened cable connector RSTI-68 meets the international CENELEC HD 629.1 S2 specification, which includes BS, VDE and other international specifications.

### TECHNICAL DATA

Cable insulation diameter range	21.0 - 42.0 mm
Connector cross-section range	25 - 300 mm <sup>2</sup>
Maximum system voltage	42 kV
Continuous current rating	800A
Basic impulse level	200 kV
Partial discharge at 2 U <sub>0</sub>	< 2 pC
Ac voltage withstand, 5min	93.5 kV
Dc voltage withstand, 15 min	125 kV
Thermal short circuit, 1 s	55 kV
Thermal short circuit, 3 s	32 kV



### PRODUCT SELECTION INFORMATION

Description		Diameter Core Insulation (mm)		Cross Section (mm <sup>2</sup> )
Aluminum	Copper	min	max	
<b>with DIN compression lugs</b>				
RSTI-6811	RSTI-6821	22.4	35.5	50
RSTI-6812	RSTI-6822	22.4	35.5	70
RSTI-6813	RSTI-6823	22.4	35.5	95
RSTI-6814	RSTI-6824	22.4	35.5	120
RSTI-6815	RSTI-6825	28.9	42.0	150
RSTI-6816	RSTI-6826	28.9	42.0	185
RSTI-6817	RSTI-6827	28.9	42.0	240
RSTI-6818	RSTI-6828	28.9	42.0	300
<b>with mechanical lugs and shearbolts</b>				
RSTI-6851 (Al or Cu)		22.4	35.5	25 - 95
RSTI-6852 (Al or Cu)		22.4	35.5	95 - 150
RSTI-6853 (Al or Cu)		28.9	42.0	120 - 240
RSTI-6855 (Al or Cu)		28.9	42.0	185 - 300

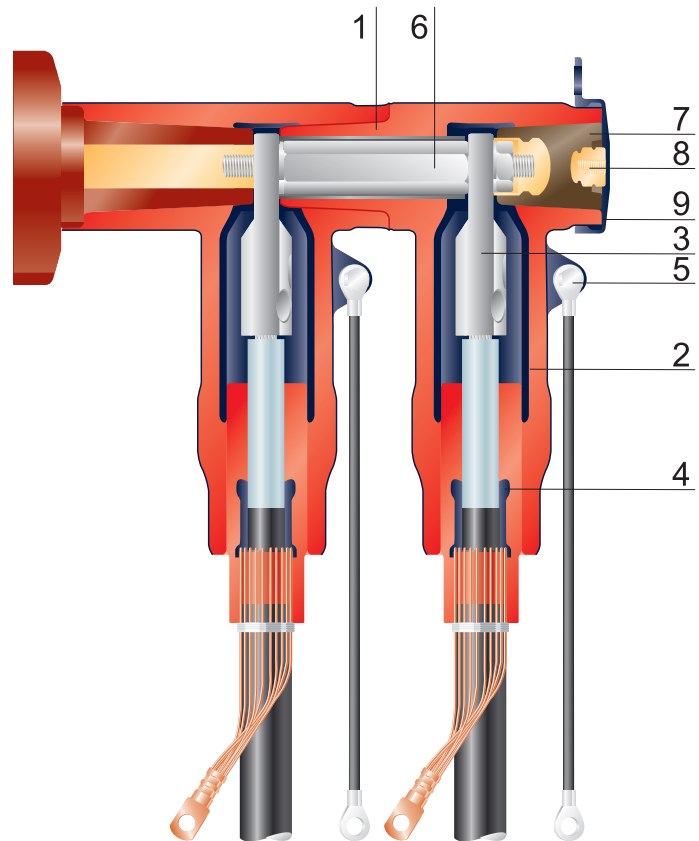


Raychem screened, separable  
coupling connection system  
RSTI-CC-68 800 A up to 42 kV

**36kV 雙T型接頭 ( 300mm<sup>2</sup>以下 )**

## FEATURES

- The screened coupling connector is designed to mate with the rear end of the base screened connector system RSTI designed for 42 kV.
- The insulation of the coupling connector is made of a highly modified silicone rubber characterised by high tracking resistance, elongation at break and non-flammability.
- A thin-walled screen is permanently bonded onto the insulation and protects the connection system against accidental contact.
- The screened coupling connector need not be removed for oversheath testing.
- The combination of screened connector and coupling connector exceeds CENELEC HD 629.1 S1 requirements, which include BS, VDE and other international specifications.
- Design of combination fits 630 A and 1250 A bushings (Interface "C<sub>1</sub>" and "C<sub>2</sub>") as specified by EN 50180 and EN 50181.
- The compact design supports the use of double "T" connections inside standard terminal boxes.
- The wide application range covers cable cross-sections from 35 to 300 mm<sup>2</sup>.
- Conductor connection with mechanical or DIN lugs.
- Easily accessible rear plug with capacitive test point.
- Few accessories required for system test and earth connection.
- Complete kit including lugs for easier installation and storage.



### 1 Screened body

A thin-walled conductive outer screen is permanently bonded to the silicone rubber insulating material of the body.

### 2 Inner screen

A conductive inner layer, as a faraday cage around the compression or mechanical lug, prevents corona at rated voltage.

### 3 Compression or mechanical lugs

Specially designed DIN compression lugs, as well as tinned, mechanical lugs with shear bolts for connecting either aluminium or copper conductor cables.

### 4 Stress cone adapter

Relieves electrical stress at the point where the cable screen is cut. The insulated section, extending beyond the wire shielding, provides a convenient point for oversheath testing.

### 5 Earthing eye and ground lead

Provides a connection point for earthing the screen.

### 6 Threaded pin assembly

A threaded pin assembly together with a spring washer and hex nut ensure high-performance electrical and mechanical contact with the bushing.

### 7 Rear plug with test point

Removable rear plug with capacitive test point.

### 8 Test point

The test point is used to determine whether the circuit is energised; alternatively it can be used for phasing.

### 9 Conductive end cap

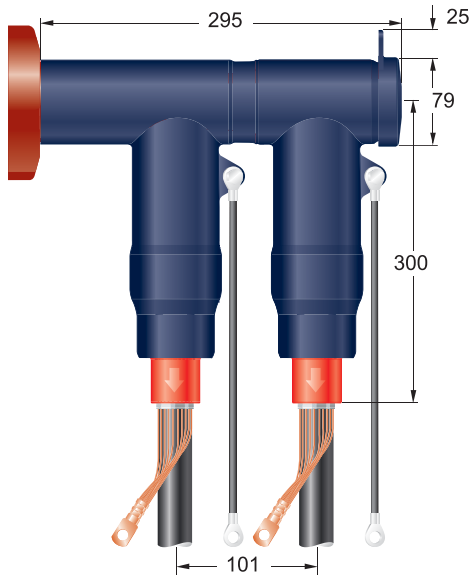
Electrical screen and protection of the rear end of the separable connector.

## Applications

### Double connection

Items required for 3 phases:

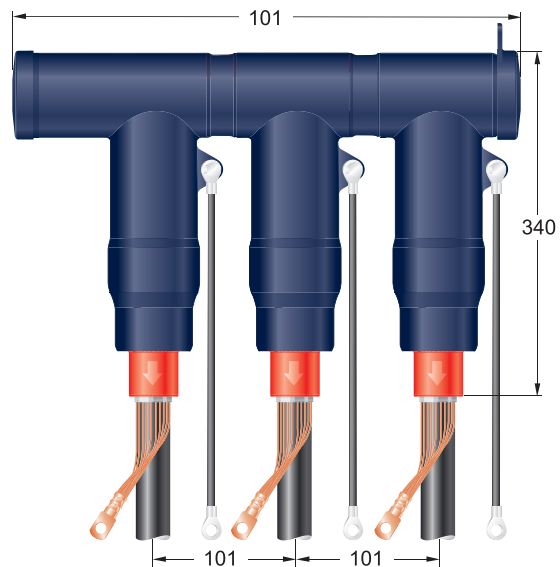
- 1 x RSTI-68xx (Basic kit)
- 1 x RSTI-CC-68xx (Coupling connector kit)



### Single core branch off

Items required for 3 phases:

- 1 x RSTI-68xx (Basic kit)
- 1 x RSTI-68TP (Terminating plug kit)
- 2 x RSTI-CC-68xx (Coupling connector kit)



## Accessories

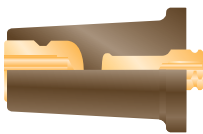
### Test rod

- Ref. no.: RSTI-68TR; Length: 310 mm
- RSTI-68TRL; Length: 460 mm
- RSTI-68TRA; Kit includes 2 short and 1 long testrod



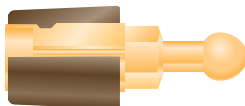
### Terminating plug

Ref. no.: RSTI-68TP



### Earthing adapter

- Ref. no.: RSTI-68EA20; Ball diameter: 20 mm
- RSTI-68EA25; Ball diameter: 25 mm



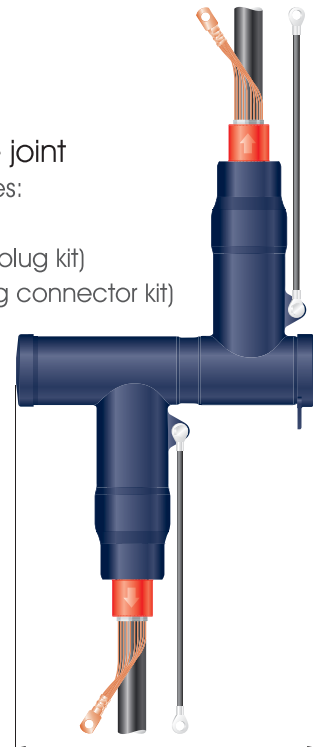
### Disconnectable inline joint

Items required for 3 phases:

- 1 x RSTI-68xx (Basic kit)
- 1 x RSTI-68TP (Terminating plug kit)
- 1 x RSTI-CC-68xx (Coupling connector kit)

### Note:

All applications as shown in the brochure need to have a mechanical support, based on the requirements for dynamic short circuit.



## Technical data

Cable insulation diameter range	22.4 - 42.0 mm
Connector cross-section range	35 - 300 mm <sup>2</sup>
Maximum system voltage	42 kV
Continuous current rating	800 A
Basic impulse level	200 kV
Partial discharge at 2 U <sub>0</sub>	< 2 pC
AC voltage withstand, 5 min	93.5 kV
DC voltage withstand, 15 min	125 kV
Thermal short circuit, 1 s	55 kA
Thermal short circuit, 3 s	32 kA
Dynamic short circuit	125 kA

## Selection table

Screened separable coupling connection system 36 kV and 42 kV  
with DIN compression lugs

Cross section mm <sup>2</sup>	Diameter Core insulation		Reference number Conductor material	
	min mm	max mm	Al	Cu
50	22.4-	35.5	RSTI-CC-6811	RSTI-CC-6821
70	22.4-	35.5	RSTI-CC-6812	RSTI-CC-6822
95	22.4-	35.5	RSTI-CC-6813	RSTI-CC-6823
120	22.4-	35.5	RSTI-CC-6814	RSTI-CC-6824
150	28.9-	42.0	RSTI-CC-6815	RSTI-CC-6825
185	28.9-	42.0	RSTI-CC-6816	RSTI-CC-6826
240	28.9-	42.0	RSTI-CC-6817	RSTI-CC-6827
300	28.9-	42.0	RSTI-CC-6818	RSTI-CC-6828

Kits including deep indent compression lugs on request.  
Contact your local sales representative.

Screened separable coupling connection system 36 kV and 42 kV  
with mechanical lugs and shear bolts

Cross section mm <sup>2</sup>	Diameter Core insulation		Reference number Conductor material
	min mm	max mm	Al or Cu
35-95	22.4-	35.5	RSTI-CC-6851
95-120	22.4-	35.5	RSTI-CC-6852
150-240	28.9-	42.0	RSTI-CC-6853
300	28.9-	42.0	RSTI-CC-6855



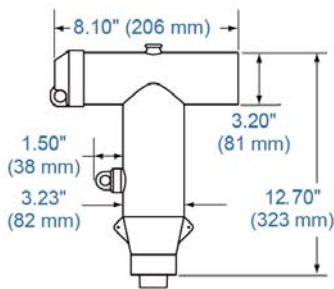
## ELB-15/28-600 Series

600/900 Amp 15/28 kV

## Class T-Body Elbow Connector

### 美規 ( ELB ) 600-900A肘型接頭型錄

#### Elbows & Accessories



The Raychem ELB-15/28-600 and ELB-15/28-610 elbows are designed to terminate underground cables to high-voltage apparatus such as transformers and switchgear. They are fully shielded and fully submersible and meet the requirements of IEEE Standard 386. They are interchangeable with other manufacturers products that conform with this industry standard.

They are designed for use on extruded (XLPE or EPR) solid dielectric cable. The conductor range is from 1/0 AWG to 1250 kcmil for aluminum or copper conductors with insulation diameters from .640" to 1.965". The ELB-15/28-610 elbow has a capacitive test point molded into the elbow body which provides a means of sensing voltage and provides an attachment point for test point fault indicators. 900A ratings can be achieved by ordering the kit with a copper shearbolt terminal.

As an option, the elbow can also be ordered with TE's Aluminum or Copper ShearBolt Terminals. These are range taking mechanical connectors that will accommodate a conductor range from #2 compact to 1250 kcmil stranded, Class B.

The ShearBolt terminal design incorporates shear head bolts, which ensures that the correct torque is applied to each bolt and consequently the optimal contact force is generated to minimize connection resistance. Eliminating the need for crimp tooling and dies, they are therefore ideal when installation space is confined.

- Peroxide cured EPDM rubber ensures low tension set and high dielectric strength
- 100% factory production tested for partial discharge and AC Hipot per IEEE 386
- Optional capacitive test point provided on elbow
- Fits 15/28 kV cables up to 1250 kcmil
- Molded semiconducting shield provides ground shield continuity per the requirements of IEEE 592
- Meets IEEE 386-2006 specification requirements
- 900A capability is available

### Selection Information

The part number for a 35 kV Elbow, 600 A with test point, an insulation OD of 1.755", and 750 kcmil stranded cable is ELB-35-610R750. (Or with AL ShearBolt ELB-15/28-610K-A3)

ELB-15/28-

1

2

3

**Current Rating/Test Point**

600 = 600 AMP WITHOUT test point on T-Body  
 610 = 600 AMP WITH test point on T-Body

**Cable Insulation O.D. Range**

Code	inches(mm)
A	.640- .760(16.3-19.3)
B	.720- .845(18.3-21.5)
C	.785- .970(19.9-24.6)
D	.910-1.065(23.1-27.1)
E	.980-1.140(24.9-29.0)
F	1.080-1.280(27.4-32.5)
G	1.220-1.420(31.0-36.1)
H	1.360-1.560(34.5-39.6)
J	1.480-1.700(37.6-43.2)
K	1.640-1.840(41.7-46.7)
L	1.780-1.965(45.2-49.9)

**Conductor Size ( Aluminum or Copper)**

Code	Str/Comp	Compact	Solid
1	1	1/0	1/0
2	2	2	2
10	1/0	2/0	2/0
20	2/0	3/0	3/0
30	3/0	4/0	4/0
40	4/0	250	—
250	250	300	—
300	300	350	—
350	350	400	—
400	400	450/500	—
450	450	500/550	—
500	500	600	—
550	550	650	—
600	600	700	—
650	650	750/800	—
750	700/750	900	—
800	800	900	—
900	900	1000	—
1000	1000	—	—
1100	1100	—	—
1250	1250	—	—

### ELB Kit Contents

Elbow, Insulating Plug\*, Cable Adapter, Stud\*, Connector\*, Silicone Lubricant, Installation Instruction, Jacket Seal (optional) \*When Copper Shear-Bolt is specified, kit will automatically include copper insulating plug and stud, therefore offering 900A capability.

**Aluminum ShearBolt | Conductor Size**

Code	Compression, Compact, Strand
-A1	2-350
-A2	350-750
-A3	750-1000
-A4	1000-1250

**Copper ShearBolt | Conductor Size**

Code	Compression, Compact, Strand
-C1	2-4/0
-C2	4/0-500
-C3	500-750
-C4	750-1000
-C5	1000-1250

### Ordering Information

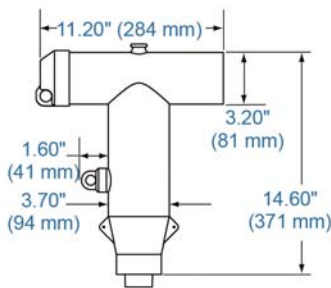
- To include a sealing kit, add "-ESA" suffix for heat-shrinkable and "-GES" suffix for cold applied Gelwrap ES closure.
- If using copper tape cable, accessory ELB-35-600-GRDx (x = 1, 2, or 3) is required and ordered separately.
- Related test reports: EDR-5482, EDR-5476, EDR-5502, EDR-5503.



## ELB-35-600 Series

# 600/900 Amp 35 kV Class T-Body Elbow Connector

美規 ( ELB ) 35kV 600/900 Amp.



### Elbows & Accessories

Raychem ELB-35-600 and ELB-35-610 elbows are designed to terminate underground cables to high-voltage apparatus such as transformers and switchgear. They are fully shielded and fully submersible and meet the requirements of IEEE Standard 386.

They are interchangeable with other manufacturers products that conform with this industry standard. They are designed for use on extruded (XLPE or EPR) solid dielectric cable. The conductor range is from 1/0 AWG to 1250 kcmil for aluminum or copper conductors with insulation diameters from .930" to 2.145". The ELB-35-610 elbow has a capacitive test point molded into the elbow body which provides a means of sensing voltage and provides an attachment point for test point fault indicators. 900A ratings can be achieved by ordering the kit with a copper shearbolt terminal. As an option, the elbow can also be ordered with TE's new line of Aluminum or Copper ShearBolt Terminals.

These are range taking mechanical connectors that will accommodate a conductor range from #2 compact to 1250 kcmil stranded, Class B.

The ShearBolt terminal design incorporates shear head bolts, which ensures that the correct torque is applied to each bolt and consequently the optimal contact force is generated to minimize connection resistance. Eliminating the need for crimp tooling and dies, they are therefore ideal when installation space is confined.

- Peroxide cured EPDM rubber ensures low tension set and high dielectric strength
- 100% factory production tested for partial discharge and AC Hipot per IEEE 386
- Optional capacitive test point provided on elbow
- Fits 35 kV cables up to 1250 kcmil
- Molded semiconducting shield provides ground shield continuity per the requirements of IEEE 592
- Meets IEEE 386-2006 specification requirements
- 900 A capability is available



## Selection Information

The part number for a 35 kV Elbow, 600 A with test point, an insulation OD of 1.755", and 750 kcmil stranded cable is ELB-35-610R750. (Or with AL Shearbolt ELB-15/28-610K-A3)

ELB-35-

1

2

3

**Current Rating/Test Point**

600 = 600 AMP WITHOUT test point on T-Body  
 610 = 600 AMP WITH test point on T-Body  
 Note: 600 AMP kit is provided with aluminum components.

**Cable Insulation O.D. Range**

Code	inches(mm)
E	.930-1.040 (23.6-26.4)
F	.980-1.115 (24.9-28.3)
G	1.040-1.175 (26.4-29.8)
H	1.095-1.240 (27.8-31.5)
J	1.160-1.305 (29.5-33.1)
K	1.220-1.375 (31.0-34.9)
L	1.285-1.395 (32.6-35.4)
M	1.355-1.520 (34.4-39.0)
N	1.485-1.595 (37.7-40.5)
P	1.530-1.640 (38.9-41.7)
Q	1.575-1.685 (40.0-42.8)
R	1.665-1.785 (42.3-45.3)
S	1.775-1.875 (45.1-47.6)
T	1.845-1.965 (46.9-50.0)
U	1.935-2.055 (49.1-52.2)
V	2.025-2.145 (51.4-54.5)

**Conductor Size ( Aluminum or Copper)**

Code	Str/Comp	Compact	Solid
1	—	1/0	1/0
10	1/0	2/0	2/0
20	2/0	3/0	3/0
30	3/0	4/0	4/0
40	4/0	250	—
250	250	300	—
300	300	350	—
350	350	400	—
400	400	450/500	—
450	450	500/500	—
500	500	600	—
550	550	650	—
600	600	700	—
650	650	750/800	—
750	700/750	900	—
800	800	900	—
900	900	1000	—
1000	1000	—	—
1100	1100	—	—
1250	1250	—	—

### ELB Kit Contents

Elbow, Insulating Plug\*, Cable Adapter, Stud\*, Connector\*, Silicone Lubricant, Installation Instruction, Jacket Seal (optional) \*When Copper Shear-Bolt is specified, kit will automatically include copper insulating plug and stud, therefore offering 900A capability.

#### Aluminum ShearBolt | Conductor Size

Code	Compression, Compact, Strand
-A1	2-350
-A2	350-750
-A3	750-1000
-A4	1000-1250

#### Copper ShearBolt | Conductor Size

Code	Compression, Compact, Strand
-C1	2-4/0
-C2	4/0-500
-C3	500-750
-C4	750-1000
-C5	1000-1250

### Ordering Information

- To include a sealing kit, add "-ESA" suffix for heat-shrinkable and "-GES" suffix for cold applied Gelwrap ES closure.
- If using copper tape cable, accessory ELB-35-600-GRDx (x = 1, 2, or 3) is required and ordered separately.
- Related test reports: EDR-5476, EDR-5482, EDR-5502, EDR-5503



## INNER CONE SYSTEMS FOR SWITCHGEARS AND TRANSFORMERS UP TO 52 KV

### RAYCHEM PLUG-IN TERMINATIONS (RPIT)

## 歐規 ( RPIT ) 800-1250A 插入式電纜頭型錄

#### KEY FEATURES

- Shielded inline connection for gas insulated switchgears and transformers up to 52 kV
- Metal-enclosed, hermetically insulated and suitable outdoor use
- Designed to be used for different conductor types in accordance with IEC 60228
- Special designs for wind power stations and offshore applications with bronze protection cover
- Optional voltage detection point

TE Connectivity (TE) has decades of experience in the field of hermetically-insulated termination systems for Medium Voltage networks and offers an inner cone termination product series that ensure reliable cable connection for switchgears and transformers up to 52 kV.

Raychem Plug-In Terminations (RPIT) separable connectors are designed for both aluminum or copper conductors in accordance with IEC 60228 and are compatible with inner cone bushings size 2 (800 A) and size 3 (1250 A) as per EN 50180/EN 50181. RPIT product series are available for system voltages from 12 kV up to 52 kV for any type of cable and are compliant with CENELEC HD 629.1.S2:2006-A1:2008 (up to 42 kV) and IEC 60840 (52 kV). In addition, RPIT terminations can be customized with an optional voltage detection point and a special material composition for harsh environments.

The inner cone termination incorporates a high-quality contact system which ensures reliable current transmission from the cable conductor to the busbar. The electrical interfaces between the silicone stress relief cone to the cable and the bushing are kept permanently sealed using a pressure component. This element is housed in the protection cover, which is sealed with heat-shrinkable tubing.

TE makes the installation and plug-in of inner cone terminations simple by using silicone component and offering an easy-to-handle installation tool, which is compatible with industry-wide standards.

In addition to RPIT inner cone terminations, TE offers a full line of RPIT accessories such as bushings, insulating caps and current testing tools to meet any needs and support you at any project stage.

TECHNICAL DATA - TESTING ACCORDING TO CENELEC HD629.1.S2			
Item	Size 2	Size 3	Requirement
$U_n/U$	20.8/36	20.8/36	
$U_m$	42	42	
DC withstand voltage 15 min (kV)	125	125	no breakdown or flashover
AC withstand voltage 5 min (kV)	93.5	93.5	no breakdown or flashover
PD at ambient temp (kV)	< 2 pC	< 2 pC	max 10 pC at 2 $U_0$
Impulse voltage at elevated temp (kV)	200	200	10 impulses of each polarity; no breakdown
Heating cycle voltage in air (kV)	52	52	63 cycles at 2.5 $U_0$ ; no breakdown
Heating cycle voltage in water (kV)	52	52	63 cycles at 2.5 $U_0$ ; no breakdown
Thermal short circuit conductor (kA)	31.8/2.93 sec	34.93/4.75 sec	2 short circuits to raise conductor to 250°C; no breakdown
Dynamic short circuit (kA)	125	125	1 short circuit at $I_d$ ; no breakdown
Disconnection/Connection	5 x pass	5 x pass	5 complete operations; no visible damage to contact
Partial discharge at elevated and ambient temp (kV)	< 2 pC	< 2 pC	max 10 pC at 2 $U_0$
Impulse voltage at ambient temp (kV)	200	200	10 impulses of each polarity; no breakdown
AC withstand voltage 15 min (kV)	52	52	no breakdown or flashover

PRODUCT SECTION INFORMATION							
Description	Size	Nominal Current (A)	System Voltage (kV)	Cross Section (mm <sup>2</sup> )	Diameter over conductor (mm)	Diameter over insulation (mm)	
RPIT - 321x	2	800	12	120-400	12.0-24.6	21.0-33.0	
RPIT - 521x	2	800	24	50-400	7.6-24.6	21.0-39.0	
RPIT - 621x	2	800	36/42	50-400	7.6-24.6	23.5-42.0	
RPIT - 331x	3	1250	12	240-630	17.0-32.5	26.0-40.0	
RPIT - 531x	3	1250	24	150-630	13.0-32.5	26.0-42.5	
RPIT - 631x	3	1250	36/42	70-630	7.6-32.5	26.0-50.0	
RPIT - 831x	3	1250	52	50-500	7.6-27.6	26.0-55.0	

RPIT terminations are available with and without test point. One kit contains a set of 3 plugs in terminations.

\* 52 kV product tested according to IEC 60840.

#### TEST REPORT

Size 2: PPR - 2940

Size 3: PPR - 3037



## End sealing caps for 1/C low-voltage power cable (1000 V)

### 1000V (ESC) 電纜末端熱縮封套

#### ESC caps:

- Shrink and compress a hot-melt adhesive on the cable jacket, forming a secure environmental seal.
- Fit easily over the cable end and shrink in seconds, leaving a compact, rugged end seal.

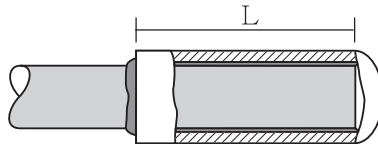
Qualified to ANSI C119.1-1986 and rated to ICEA electrical withstand test for 1000 volts. For use on standard poly- or elastomeric-insulated/ jacketed cables or lead-jacketed cables, which may include aluminum or steel armoring.

Use as a live end seal to 1000 volts.

Use as an end seal for storage and pulling of de-energized cable.

#### Selection information (dimensions in inches/millimeters)

Catalog number	Primary insulation (1000 V)		General Use range (min.-max.)	Length as Supplied	Standard package (pcs/box)
	Conductor size (AWG/kcmil)	Use range (min.-max.)			
ESC-1/A	#12- #8	0.17-0.35(4-9)	0.15-0.30(4-8)	1.0	50
ESC-2/A	#6-3/0	0.31-0.71(8-18)	0.30-0.70(8-18)	2.0	50
ESC-3/A	4/0-750	0.65-1.25(17-32)	0.65-1.25(17-32)	3.5	40
ESC-4/A	750-1500	1.08-1.94(27-49)	1.05-1.95(27-50)	5.3	20
ESC-5/A	1500-2000	1.38-2.58(35-66)	1.30-2.65(33-67)	6.7	10
ESC-6/A		1.94-3.54(49-90)	1.85-3.70(47-94)	5.6	10
ESC-7/A		3.02-4.25(77-108)	2.95-4.50(75-114)	5.4	10



#### Ordering information

1. Select the appropriate catalog number based on the conductor size or use range. Confirm selection with dimensions to assure proper sizing.
2. Each energized conductor requires a separate ESC sealing cap.
3. For applications above 1000 volts, see HVES on page 91.
4. For testing information, please see page 20.
5. Bulk options also available. Consult your Tyco Electronics representative for information.
6. Caps are coated with an adhesive.
7. Related test report: EDR-5161

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