



HEAT-SHRINKABLE BREAKOUTS

FOR LOW VOLTAGE INSULATION AND SEALING OF POWER CABLES

KEY FEATURES

- Reliable sealing on cable cores as well as on all types of cable jackets
- Approved for use on plastic and paper insulation as well as on lead or aluminium metal sheath
- Excellent electrical performance with high mechanical strength and impact resistance
- Halogen-free material content, non-corrosive and non-toxic smoke in event of fire
- Compliant to RoHS and REACH regulations
- Stabilized against UV Irradiation

TE Connectivity's (TE) Raychem heat-shrinkable low voltage breakouts are mainly designed for insulation, sealing and protection on low voltage cable accessories, but also for sealing and protection on medium voltage cable accessories.

TE's Raychem low voltage breakouts are an easily installed, light weight insulation for sealing the crutches of plastic, paper and rubber insulated cables up to 1 kV. Requiring no special tools or skills, installation is completed within minutes by simply heating the breakout. The diameter then reduces to tightly grip the outer jacket and the cores. At the same time, the precoated sealant melts and reliably seals the cable crutch against moisture and the environment. The heat-shrinkable feature also means smaller inventories, as each breakout size will shrink to fit several different sizes and types of cables. Made from semi-rigid cross-linked halogen free polyolefin, these medium wall breakouts also offer resistance to abrasion, weathering, and atmospheric pollution.

As one of the world's leading manufacturers of heat-shrinkable materials, we offer a wide range of tubings and moulded parts for any application where a sealed, protective, insulating or fluid resistant cover is required over uniform or irregularly shaped objects. Our products are available in a wide variety of materials to meet the demands of the modern electrical power industry.

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

Heat-shrinkable Breakouts



TESTING

Physical Characteristic	Test Method	Material Requirements
Tensile strength	ISO 37	10 MPa min
Ultimate elongation	ISO 37	300% min
Density	ISO 1183 Method A	1.0-1.3 g/cm ³
Hardness	ISO 868	≥ 40 shore D
Accelerated ageing 7 days at 150°C ± 2°C Tensile Strength Ultimate elongation	ISO 37 ISO 37	8 MPa min. 100% min.
Low Temperature Flexibility	ASTM D 2671 procedure C	no cracking, 4 h at -30°C ± 3°C
Dielectric Strength	IEC 60243 Part 1 and 2	≥ 10 kV/mm min.
Volume Resistivity	IEC 60093	1 x 10 ¹⁰ Ω cm min
Dielectric Constant	IEC 60250	8.0 max
Water Absorption	ISO 62 Method 1	≤ 0.5 % max after 14 days at 23°C ± 2°C
Weathering	The material from which the breakouts are manufactured contains carbon black (≥ 2,5%) to protect it from ultra-violet light.	
Application characteristics		
Operating temperature range	- 30°C up to + 100°C	
Installation/ shrinking temperature	> 120°C	
Low temperatures flexibility	down to - 30°C	
Shrink ratio	> 2,5 : 1	
Longitudinal shrinkage free recovered	≤ - 10 %	

Characteristics at a glance

- Cross-linked polyolefin, thick wall
- Coated with Hot melt adhesive
- Colour black, shrinkage ratio > 2,5 : 1
- Stabilized against UV rays
- Halogen-free, non-corrosive, free of lead and aluminium
- High tensile strength and mechanical robustness

Applications in

- Low voltage insulation
- Protection against moisture
- Mechanical protection

PRODUCT SELECTION INFORMATION

Description	Dimensions										
	H		J		K		P	R	S	HW	JW/KW
	a. min	b. max	a. min	b. max	a. min	b. max	b ±10%	b ±10%	b ±10%	b ±20%	b ±20%
for 2-core cables											
302K333/S	28	9,2	15	4,1	-	-	90	20	25	3,2	1,6
302K224/S	48	32	22	7	-	-	172	-	70	2	2
302K466/S	86	42	40	17	-	-	200	-	75	2,5	2,5
for 3-core cables											
402W533/S	38	13	16	4,2	-	-	103	45	28	2,7	1,5
402W516/S	63	22	26	9	-	-	180	85	40	3,5	1,5
402W520/S	70	25	25	9.5	-	-	159	107	52	4	2
402W525/S	85	33	32	12	-	-	180	130	50	3	2,5
402W526/S	95	28	44	13	-	-	205	90	45	3,5	2,5
402W248/S	115	45	52	22	-	-	240	100	60	4	2,5
402W439/S	170	60	60	30	-	-	252	90	66	4,2	2,6
402W545/S	124	58	51	22	-	-	239	188	51	3	3,2
for 4-core cables											
502S013/S	23	9,5	7	2	-	-	60	-	17	2	1,2
502K033/S	45	16,5	14	3,4	-	-	97	73	25	2,5	1,9
502K046/S	45	19	20	7	-	-	165	75	40	3,5	2
502K016/S	75	25	25	9	-	-	217	100	44	3,5	2
502K026/S	100	31	40	13,5	-	-	223	103	51	3,5	2,5
502R810/S	170	60	50	23	49	19	255	90	65	4	3,5
for 4+1 core cables											
603W035/S	68	26	30	7	20	6	182	75	40	3,2	2,2
603W040/S	85	26	33	7	27	6	182	75	40	3,2	2,2

a = expanded/ as supplied

b = shrunk/ after free recovery

ORDERING INFORMATION

All Breakouts are coated with holt melt adhesive /S

Material: Semi-rigid thermoplastic material, electrically insulating, weather, corrosion and impact resistant

Adhesive: /S (239) - Hot Melt adhesive provides water tight and environmental seal.

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