



Energy Division

Mechanical connectors,  
lugs and repair sleeves  
for medium voltage cable  
accessories up to 42 kV

 **Tyco Electronics**  
Our commitment. Your advantage.

## Features & benefits

- Wide application range
- Compact design
- Can be used with almost every type of conductor and material
- Torque-controlled shear-head bolts guarantee a good electrical contact
- Easy installation with standard socket spanner
- Pre-engineered design for perfect fit in medium voltage cable accessories up to 42 kV
- Tested according to IEC 61238-1 class A

## General description

Mechanical connectors, lugs and repair sleeves are designed for use in low and medium voltage applications. Only three sizes cover conductor sizes from 25 mm<sup>2</sup> to 400 mm<sup>2</sup>

All products consist of a tin-plated body, shear-head bolts and inserts for small conductor sizes.

## Body

Connector and lug bodies are made of a high-tensile, tin-plated aluminium alloy. The internal surfaces of the conductor holes are grooved.

Connectors are chamfered at the edges and available with or without oil barrier (as blocked and unblocked types) depending on the application requirements.

Lugs are suitable for outdoor and indoor applications and are available with different palm hole sizes.



## Contact bolts

Made of a special aluminium alloy, these contact bolts are double shear-head bolts with hexagon heads. The bolts are treated with a highly lubricating agent and equipped with a special contact ring. Contact bolts are irremovable once their heads have been sheared off.



## Inserts

Lugs and connectors are provided with inserts for smaller conductors.

These inserts have lengthwise striations and a positioning guide.



**Features & Benefits****Functions****of mechanical lugs and connectors**

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Wide application range	Only three sizes cover conductor cross-sections from 25 mm <sup>2</sup> to 400 mm <sup>2</sup> and can be used for almost every type of conductor and material
Bodies made of a high-tensile, tin-plated aluminium alloy Bolts made of special aluminium alloy	Good contact properties Connection between copper and aluminium conductors is possible
Compact design	Requires little installation space, particularly for large sizes
Conductor connection hole with crosswise and lengthwise grooves	Good electrical performance Conductor oxide film is disrupted
Centered hole and inserts	Conductors of every size are centered Height of the step between the conductor insulation and connector surface is reduced Same cut-back length even when centering insert is used Wires are not distorted when bolts are tightened
Shear bolts with predetermined shear torque, hexagon head and specially shaped contact ring	No torque wrench necessary Head shears off when a specific level of torque is applied High tensile strength
Lubricated bolts	Reduces friction Converts tightening torque into contact force for maximum effect
No elongation during installation	Easier to design relevant accessories

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**Special features of mechanical connectors**

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Chamfered edges	Suitable for up to 42 kV and adaptable to existing joint designs
Available with and without oil barrier	Oil stop when used in transition joints

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**Special features of mechanical lugs**

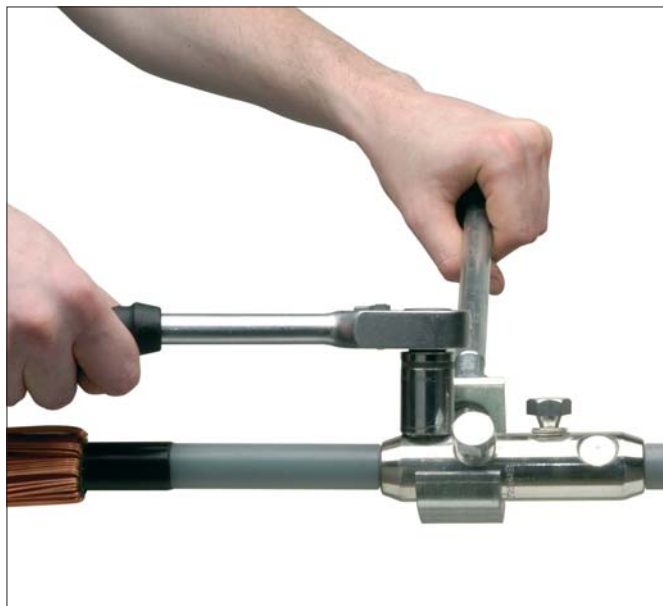
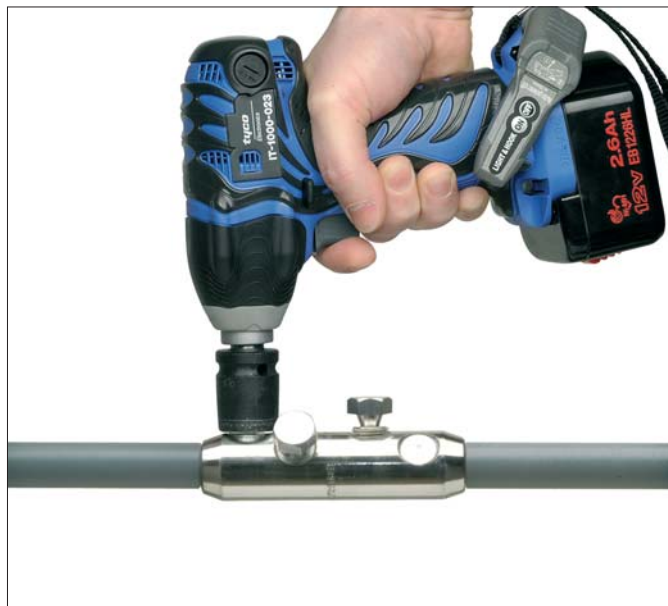
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Long shank	Extra-long for moisture barrier
Lengthwise seal	For indoor and outdoor applications

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## Installation

- Easy and secure installation without special tools
- All it takes to tighten bolts is a wrench and hexagon socket
- Same cut-back length for each type
- Inserts are included
- Shear head bolts with predetermined torque ensure a reliable and secure contact
- The use of a support tool is recommended (see accessories) to prevent conductor bending
- Separate installation instructions included with every connector or cable lug



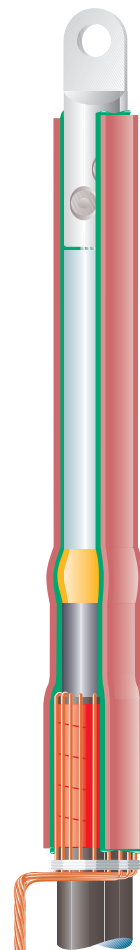
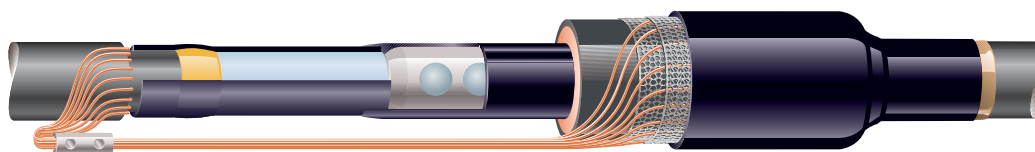
## Use in cable accessories

The bolted fittings featured herein were developed especially for use in medium voltage cable accessories up to 42 kV. They may also be used in the 1 kV range. Before using mechanical connectors in cable accessories, confirm that they are suitable for the given application and, if necessary, consult the manufacturer.

Together with bolted connectors for cable accessories, Tyco Electronics offers an extensive range of cable accessories tested in accordance with CENELEC HD 629.1 and HD 629.2 standard.

The range includes all required connectors.

Further information are available on request.



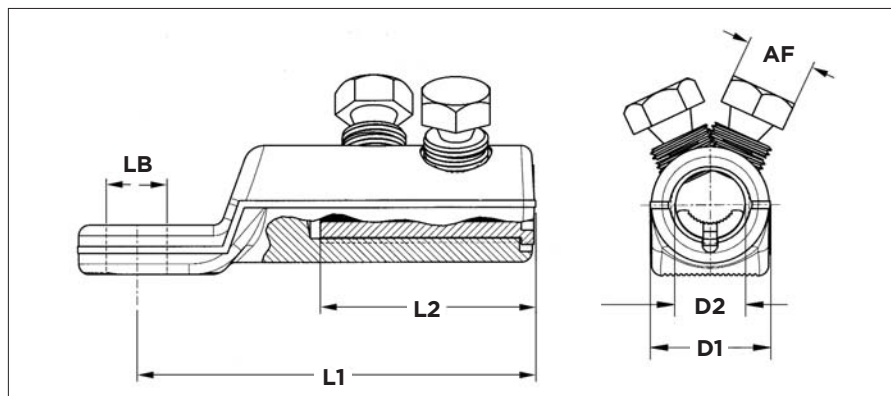
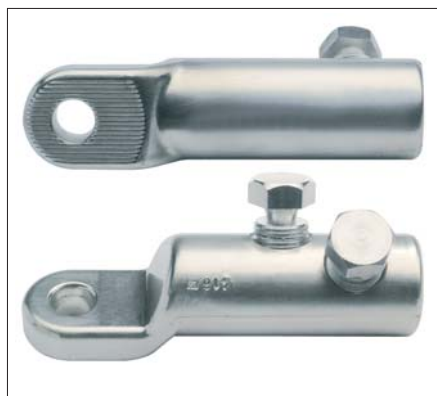
## Tested quality

Mechanical connectors and lugs have been tested to IEC 61238-1 class A. Detailed test reports available on request.



## Ordering information - Dimensions - Selection tables

### Mechanical lugs



#### Dimensions

Product reference	Cross-sectional range mm <sup>2</sup>	Palm hole diameter mm LB	Dimensions mm				Contact bolts	
			L1	L2	D1	D2	Quantity	Head size AF mm
BLMT-25/95-13	25-95	13	60	30	24	12.8	1	13
BLMT-25/95-17	25-95	17	60	30	24	12.8	1	13
BLMT-35/150-13	35-150	13	86	35	28	15.8	1	17
BLMT-35/150-17	35-150	17	86	35	28	15.8	1	17
BLMT-95/240-13	95-240	13	112	60	33	20	2	19
BLMT-95/240-17	95-240	17	112	60	33	20	2	19
BLMT-120/300-13	120-300	13	115	65	37	24	2	22
BLMT-120/300-17	120-300	17	115	65	37	24	2	22
BLMT-185/400-13	185-400	13	137	80	42	25.5	3	22
BLMT-185/400-17	185-400	17	137	80	42	25.5	3	22
BLMT-185/400-21	185-400	21	137	80	42	25.5	3	22
BLMT-500/630-13	500-630	13	150	95	50	33	3	27
BLMT-500/630-17	500-630	17	150	95	50	33	3	27
BLMT-500/630-21	500-630	21	150	95	50	33	3	27

#### Selection and application table

Product reference	Application range	Conductor type						
		Al circular stranded	Al circular solid	Al sector stranded	Al sector solid	Cu circular stranded	Cu circular solid	Cu sector stranded
BLMT-25/95-XX	Cross-sectional range (mm <sup>2</sup> )	25-95	25-95	25-70		16-95	10-50	25-70
	Cross-sectional range (mm <sup>2</sup> )			95**				95**
	Conductor diameter (mm)	5.7-12.5	5.5-11			4.8-12.5	3.6-8	
BLMT-35/150-XX	Cross-sectional range (mm <sup>2</sup> )	35-150	35-150	50-95	50-120	35-150	35-50	50-95
	Cross-sectional range (mm <sup>2</sup> )			120*-150**				120*-150**
	Conductor diameter (mm)	6.8-15	6.5-14			6.6-15	6.5-8	
BLMT-95/240-XX	Cross-sectional range (mm <sup>2</sup> )	95-240	95-240	95-150	95-150	95-240		95-150
	Cross-sectional range (mm <sup>2</sup> )			185*-240**	185(90°)			185*-240**
	Conductor diameter (mm)	11-19.2	10.5-18			11-19.2		
BLMT-120/300-XX	Cross-sectional range (mm <sup>2</sup> )	120-300	150-300	120-185	120-240	120-300		120-185
	Cross-sectional range (mm <sup>2</sup> )			240*-300**				240*-300**
	Conductor diameter (mm)	12.7-23.1	12.9-19.8			12.7-22.6		
BLMT-185/400-XX	Cross-sectional range (mm <sup>2</sup> )	185-400	185-400	185-240	185-240	185-400		185-240
	Cross-sectional range (mm <sup>2</sup> )			300*-400**	300(90°)			300*-400**
	Conductor diameter (mm)	15.5-24.6	14.8-24.6			15.5-24.6		
BLMT-500/630-XX	Cross-sectional range (mm <sup>2</sup> )	500-630	500-630			500-630		
	Cross-sectional range (mm <sup>2</sup> )							
	Conductor diameter (mm)	25.3-32.5	24.0-28.6			25.3-32.5		

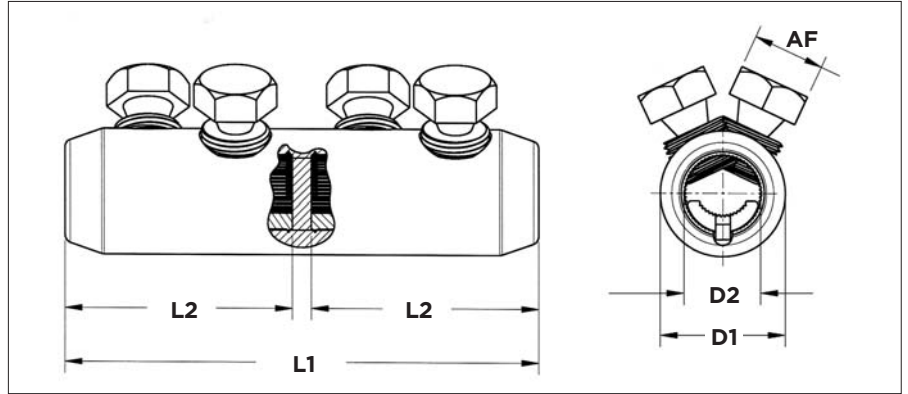
\* - slightly rounded with pliers

\*\* - pressed round

XX - Palm hole

## Ordering information - Dimensions - Selection tables

### Mechanical connectors



#### Dimensions

Product reference	Cross-sectional range mm <sup>2</sup>	Blocked	Dimensions mm				Contact bolts	
			L1	L2	D1	D2	Quantity	Head size AF mm
BSMB-10/35	10-35	yes	45	20	19	8.5	2	10
BSM-25/95	25-95	yes	65	30	24	12.8	2	13
BSMU-25/95-U	25-95	no	65		24	12.8	2	13
BSMB-35/150	35-150	yes	80	35	28	15.8	2	17
BSMU-35/150	35-150	no	80		28	15.8	2	17
BSM-95/240	95-240	yes	125	60	33	20	4	19
BSMU-95/240-U	95-240	no	125		33	20	4	19
BSMB-95/240-34	95-240	yes	125	60	34	22	4	19
BSMB-120/300	120-300	yes	140	65	37	24	4	22
BSMU-120/300	120-300	no	140		37	24	4	22
BSM-185/400	185-400	yes	170	80	42	25.5	6	22
BSMU-185/400-U	185-400	no	170		42	25.5	6	22
BSMB-500	500	yes	190	90	46	30	6	27
BSMU-500	500	no	190	90	46	30	6	27
BSMB-630	630	yes	200	95	50	33	6	27

## Ordering information – Selection tables

### Mechanical connectors



#### Selection and application table

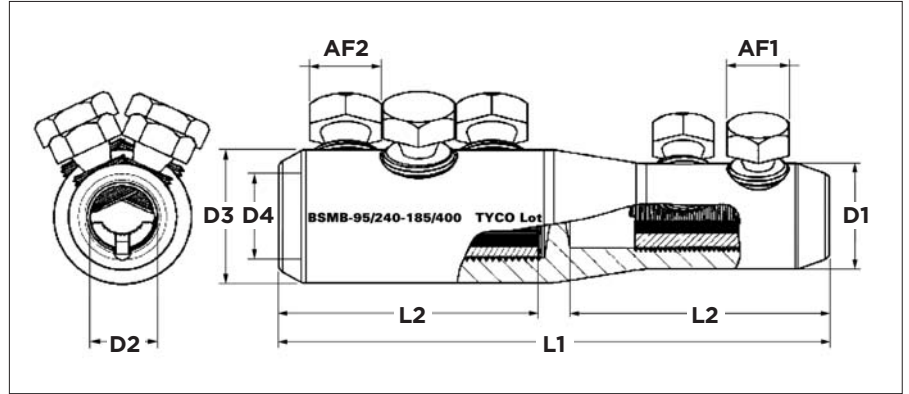
Product reference		Application range						
		Conductor type						
		Al circular stranded	Al circular solid	Al sector stranded	Al sector solid	Cu circular stranded	Cu circular solid	Cu sector stranded
BSMB-10/35	Cross-sectional range (mm <sup>2</sup> )	10-35	10-50	10-25	10-35	10-35	10-35	10-25
	Cross-sectional range (mm <sup>2</sup> )			35**				35**
	Conductor diameter (mm)	3.7-7.5	3.4-7.8			3.7-7.5	3.4-6.7	
BSM-25/95	Cross-sectional range (mm <sup>2</sup> )	25-95	25-95	25-70		16-95	10-50	25-70
BSM-25/95-U	Cross-sectional range (mm <sup>2</sup> )			95**				95**
	Conductor diameter (mm)	5.7-12.5	5.5-11			4.8-12.5	3.6-8	
BSMB-35/150	Cross-sectional range (mm <sup>2</sup> )	35-150	35-150	50-95	50-120	35-150	35-50	50-95
BSMU-35/150	Cross-sectional range (mm <sup>2</sup> )			120*-150**				120*-150**
	Conductor diameter (mm)	6.8-15	6.5-14			6.6-15	6.5-8	
BSM-95/240	Cross-sectional range (mm <sup>2</sup> )	95-240	95-240	95-150	95-150	95-240		95-150
BSM-95/240-U	Cross-sectional range (mm <sup>2</sup> )			185*-240**	185(90°)			185*-240**
	Conductor diameter (mm)	11-19.2	10.5-18			11-19.2		
BSMB-95/240-34	Cross-sectional range (mm <sup>2</sup> )	95-240	95-240	95-150	95-185	95-240		95-150
	Cross-sectional range (mm <sup>2</sup> )			185-240*				185-240*
	Conductor diameter (mm)	11-20.8	10.5-18			11-19.2		
BSMB-120/300	Cross-sectional range (mm <sup>2</sup> )	120-300	150-300	120-185	120-240	120-300		120-185
BSMU-120/300	Cross-sectional range (mm <sup>2</sup> )			240*-300**				240*-300**
	Conductor diameter (mm)	12.7-23.1	12.9-19.8			12.7-22.6		
BSM-185/400	Cross-sectional range (mm <sup>2</sup> )	185-400	185-400	185-240	185-240	185-400		185-240
BSM-185/400-U	Cross-sectional range (mm <sup>2</sup> )			300*-400**	300(90°)			300*-400**
	Conductor diameter (mm)	15.5-24.6	14.8-24.6			15.5-24.6		
BSMB-500	Cross-sectional range (mm <sup>2</sup> )	500	500			500		
BSMU-500	Cross-sectional range (mm <sup>2</sup> )							
	Conductor diameter (mm)	25.3-28.9	24-25.1			25.3-28.6		
BSMB-630	Cross-sectional range (mm <sup>2</sup> )	630	630			630		
	Cross-sectional range (mm <sup>2</sup> )							
	Conductor diameter (mm)	28.7-32.5	27.3-28.4			28.7-32.5		

\* - slightly rounded with pliers

\*\* - pressed round

## Ordering information - Dimensions - Selection tables

### Reduction connectors



#### Dimensions

Product reference	Cross-sectional range		Blocked	Dimensions						Contact bolts Quantity	Head size AF mm	Contact bolts Quantity	Head size AF mm
	mm <sup>2</sup> Side1	mm <sup>2</sup> Side2		L1	L2	D1	D2	D3	D4				
BSMB 25/95-95/240	25-95	95-240	yes	125	60	24	12.8	33	20	1	13	2	19
BSMB 95/240-185/400	95-240	185-400	yes	170	80	33	20	42	25.5	2	19	3	22
BSMB 185/400-500	185-400	500	yes	190	90	42	25.5	46	30	3	22	3	27
BSMB 185/400-630	185-400	630	yes	200	95	42	25.5	50	33	3	22	3	27
BSMB 500-630	500	630	yes	200	95	46	30	50	33	3	27	3	27



## Ordering information – Dimensions – Selection tables

### Reduction connectors

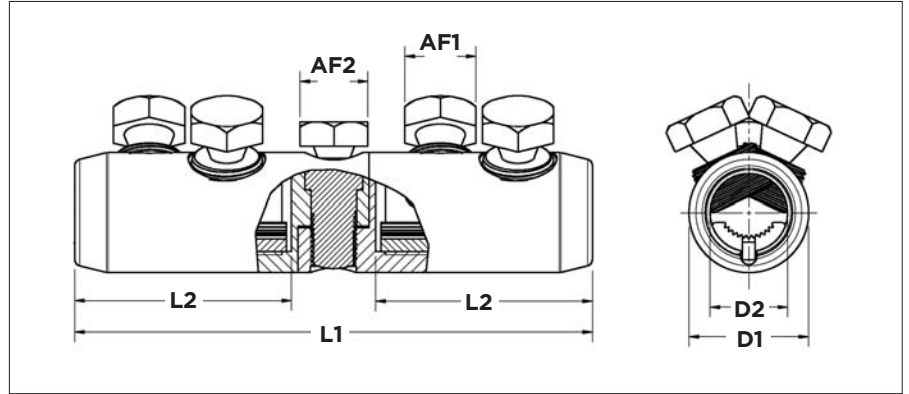
#### Selection and application table

Product reference BSMB 25/95-95/240		Application range						
		Conductor type		Al	Al	Cu	Cu	Cu
		Al circular stranded	Al circular solid	Al sector stranded	Al sector solid	Cu circular stranded	Cu circular solid	Cu sector stranded
25-95mm <sup>2</sup> Side	Cross-sectional range (mm <sup>2</sup> )	25-95	25-95	25-70		16-95	10-50	25-70
	Cross-sectional range (mm <sup>2</sup> )			95*				95*
	Conductor diameter (mm)	5.7-12.5	5.5-11			4.8-12.5	3.6-8	
95-240mm <sup>2</sup> Side	Cross-sectional range (mm <sup>2</sup> )	95-240	95-240	95-150	95-150	95-240		95-150
	Cross-sectional range (mm <sup>2</sup> )			185*-240*	185(90°)			185*-240*
	Conductor diameter (mm)	11-19.2	10.5-18			11-19.2		
Product reference BSMB 95/240-185/400								
95-240mm <sup>2</sup> Side	Cross-sectional range (mm <sup>2</sup> )	95-240	95-240	95-150	95-185	95-240		95-150
	Cross-sectional range (mm <sup>2</sup> )			185*-240*	185(90°)			185*-240*
	Conductor diameter (mm)	11-19.2	10.5-18			11-19.2		
185-400mm <sup>2</sup> Side	Cross-sectional range (mm <sup>2</sup> )	185-400	185-400	185-240	185-240	185-400		185-240
	Cross-sectional range (mm <sup>2</sup> )			300*-400*	300(90°)			300*-400*
	Conductor diameter (mm)	15.5-24.6	14.8-24.6			15.5-24.6		
Product reference BSMB 185/400-500								
185-400mm <sup>2</sup> Side	Cross-sectional range (mm <sup>2</sup> )	185-400	185-400	185-240	185-240	185-400		185-240
	Cross-sectional range (mm <sup>2</sup> )			300*-400*	300(90°)			300*-400*
	Conductor diameter (mm)	15.5-24.6	14.8-24.6			15.5-24.6		
500mm <sup>2</sup> Side	Cross-sectional range (mm <sup>2</sup> )	500	500			500		
	Cross-sectional range (mm <sup>2</sup> )							
	Conductor diameter (mm)	25.3-28.9	24-25.1			25.3-28.6		
Product reference BSMB 185/400-630								
185-400mm <sup>2</sup> Side	Cross-sectional range (mm <sup>2</sup> )	185-400	185-400	185-240	185-240	185-400		185-240
	Cross-sectional range (mm <sup>2</sup> )			300*-400*	300(90°)			300*-400*
	Conductor diameter (mm)	15.5-24.6	14.8-24.6			15.5-24.6		
630mm <sup>2</sup> Side	Cross-sectional range (mm <sup>2</sup> )	630	630			630		
	Cross-sectional range (mm <sup>2</sup> )							
	Conductor diameter (mm)	28.7-32.5	27.3-28.4			28.7-32.5		
Product reference BSMB 500-630								
500mm <sup>2</sup> Side	Cross-sectional range (mm <sup>2</sup> )	500	500			500		
	Cross-sectional range (mm <sup>2</sup> )							
	Conductor diameter (mm)	25.3-28.9	24-25.1			25.3-28.6		
630mm <sup>2</sup> Side	Cross-sectional range (mm <sup>2</sup> )	630	630			630		
	Cross-sectional range (mm <sup>2</sup> )							
	Conductor diameter (mm)	28.7-32.5	27.3-28.4			28.7-32.5		

\* - pressed round

## Ordering information - Dimensions - Selection tables

### Split connectors



#### Dimensions

Product reference	Cross-sectional range mm <sup>2</sup>	Blocked	Dimensions mm				Contact bolts		Central bolt	
			L1	L2	D1	D2	Quantity	Head size AF1 mm	Quantity	Head size AF2 mm
BSMV-120/300	120-300	yes	160	65	37	24	4	22	1	21
BSMV-185/400	185-400	yes	190	80	42	25.5	6	22	1	19

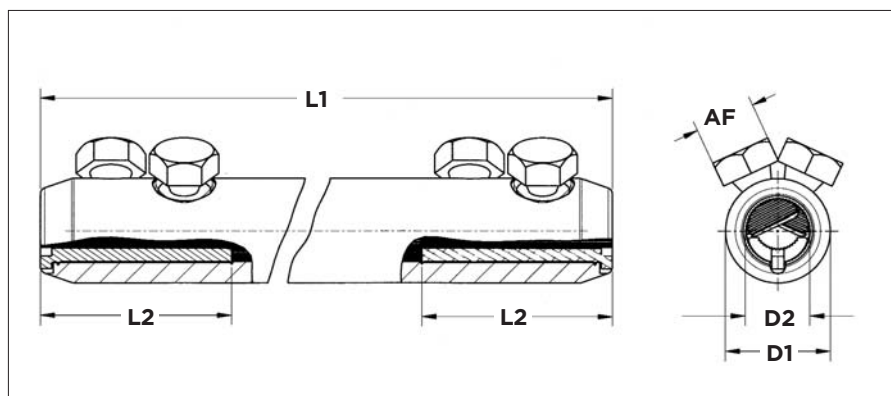
#### Selection and application table

Product reference	Application range	Conductor type						
		Al circular stranded	Al circular solid	Al sector stranded	Al sector solid	Cu circular stranded	Cu circular solid	Cu sector stranded
BSMV-120/300	Cross-sectional range (mm <sup>2</sup> )	120-300	150-300	120-185	120-240	120-300		120-185
	Cross-sectional range (mm <sup>2</sup> )			240*-300*				240*-300*
	Conductor diameter (mm)	12.7-23.1	12.9-19.8			12.7-22.6		
BSMV-185/400	Cross-sectional range (mm <sup>2</sup> )	185-400	185-400	185-240	185-240	185-400		185-240
	Cross-sectional range (mm <sup>2</sup> )			300*-400*	300(90°)			300*-400*
	Conductor diameter (mm)	15.5-24.6	14.8-24.6			15.5-24.6		

\* - pressed round

## Ordering information - Dimensions - Selection tables

### Mechanical repair sleeves



#### Dimensions

Product reference	Cross-sectional range mm <sup>2</sup>	Blocked	Dimension mm				Contact bolts Quantity	Head size AF mm
			L1	L2	D1	D2		
BSM-25/95-U-L440	25-95	no	440	30	24	12.8	2	13
BSM-95/240-U-L440	95-240	no	440	60	33	20	4	19
BSMU-95/240-34-L440	95-240	no	440	60	34	22	4	19
BSMU-120/300-L440	120-300	no	440	65	37	24	4	22
BSM-185/400-U-L440	185-400	no	440	80	42	25.5	6	22
BSMU-500-L440	500	no	440	90	46	30	6	27

#### Selection and application table

Product reference	Application range	Conductor type						
		Al circular stranded	Al circular solid	Al sector stranded	Al sector solid	Cu circular stranded	Cu circular solid	Cu sector stranded
BSM-25/95-U-L440	Cross-sectional range (mm <sup>2</sup> )	25-95	25-95	25-70		16-95	10-50	25-70
	Cross-sectional range (mm <sup>2</sup> )			95*				95*
	Conductor diameter (mm)	5.7-12.5	5.5-11			4.8-12.5	3.6-8	
BSM-95/240-U-L440	Cross-sectional range (mm <sup>2</sup> )	95-240	95-240	95-150	95-150	95-240		95-150
	Cross-sectional range (mm <sup>2</sup> )			185*-240*	185(90°)			185*-240*
	Conductor diameter (mm)	11-19.2	10.5-18			11-19.2		
BSMU-95/240-34-L440	Cross-sectional range (mm <sup>2</sup> )	95-240	95-300	95-150	95-185	95-240		95-150
	Cross-sectional range (mm <sup>2</sup> )			185*-240*				185*-240*
	Conductor diameter (mm)	11-20.8	10.5-19.8			11-19.2		
BSMU-120/300-L440	Cross-sectional range (mm <sup>2</sup> )	120-300	150-300	120-185	120-240	120-300		120-185
	Cross-sectional range (mm <sup>2</sup> )			240*-300*				240*-300*
	Conductor diameter (mm)	12.7-23.1	12.9-19.8			12.7-22.6		
BSM-185/400-U-L440	Cross-sectional range (mm <sup>2</sup> )	185-400	185-400	185-240	185-240	185-400		185-240
	Cross-sectional range (mm <sup>2</sup> )			300*-400*	300(90°)			300*-400*
	Conductor diameter (mm)	15.5-24.6	14.8-24.6			15.5-24.6		
BSMU-500-L440	Cross-sectional range (mm <sup>2</sup> )	500	500			500		
	Cross-sectional range (mm <sup>2</sup> )							
	Conductor diameter (mm)	25.3-28.9	24-25.1			25.3-28.6		

\* - pressed round

## Ordering information - Dimensions - Selection tables Accessories

### Support tool



Product reference

IT 1000-019

Description

Support tool for mechanical connectors and lugs  
Grip length: 205 mm  
For diameters ranging from 16 to 60 mm

### Cordless impact wrench



Product reference

IT-1000-023

Description

Installation tool for shear-head bolt  
connectors and lugs

### Filling mastic



Product reference

EPPA-048-Clay-Pack

Description

Mastic for profiling over bolt area  
Quantity 30 3 5 g

All of the above information, including drawings, illustrations and graphic designs, reflects our present understanding and is to the best of our knowledge and belief correct and reliable. Users, however, should independently evaluate the suitability of each product for the desired application. Under no circumstances does this constitute an assurance of any particular quality or performance. Such an assurance is only provided in the context of our product specifications or explicit contractual arrangements. Our liability for these products is set forth in our standard terms and conditions of sale. Raychem, Simel, TE Logo and Tyco Electronics are trademarks.

**Energy Division - economical solutions for the electrical power industry: cable accessories, connectors & fittings, electrical equipment, instruments, lighting controls, insulators & insulation enhancement and surge arresters.**

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