

Fixed Phase and Earthing Points

SAFETY EQUIPMENT

Fixed ball points, straight and angled, ball Ø20 or 25 mm

EARTHING AND SHORT-CIRCUITING DEVICES

EN/IEC 61230 (DIN VDE 0683 Part 100) and DIN 48088 Part 1

- Suitable for fixing cable lugs or connecting busbars according to DIN 43673 Part 1
- Self-locking nut
- Formed (not cut) M12 or M16 female thread
- M12 or M16 threaded bolt



Straight fixed ball point installed on a busbar.

Technical Data

Fixed point	E-Cu/gal Sn
Threaded bolt	StSt A2-70
Hexagon nut	DIN 985-M12-8 / gal Zn; DIN 985-M16-8 / gal Zn
Tightening torque	M12: 80 Nm; M16: 150 Nm



Type	Fixed ball point Ø	Dimensions	Width A/F	Max. cable cross section	Max. short-circuit current I_k 1 s	Part No.
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A Straight, with threaded Bolt and Nut

KFP 20 M12 35 SSM	20 mm	M12 x 35 mm	24 mm	120 mm ²	23.7 kA	754 235
KFP 20 M16 45 SSM	20 mm	M16 x 45 mm	24 mm	120 mm ²	23.7 kA	754 645
KFP 25 M12 25 SSM	25 mm	M12 x 25 mm	27 mm	150 mm ²	29.6 kA	755 225
KFP 25 M12 45 SSM	25 mm	M12 x 45 mm	27 mm	150 mm ²	29.6 kA	755 245
KFP 25 M16 45 SSM	25 mm	M16 x 45 mm	27 mm	150 mm ²	29.6 kA	755 645

B Straight, with female Thread

KFP 20 M12	20 mm	M12	24 mm	120 mm ²	23.7 kA	754 200
KFP 20 M16	20 mm	M16	24 mm	120 mm ²	23.7 kA	754 600
KFP 25 M12	25 mm	M12	27 mm	150 mm ²	29.6 kA	755 200
KFP 25 M16	25 mm	M16	27 mm	150 mm ²	29.6 kA	755 600

C Angled, with Terminal Lug

KFP 20 S AL 12	20 mm	45 x 30 x 9 mm		50 mm ²	9.9 kA	706 300
KFP 25 S AL 12	25 mm	50 x 30 x 9 mm		95 mm ²	18.7 kA	756 300

Other threaded bolt lengths are available on request.

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EARTHING AND SHORT-CIRCUITING DEVICES

Fixed Phase and Earthing Points

Fixed ball points, angled,
ball Ø20 or 25 mm

EN/IEC 61230 (DIN VDE 0683 Part 100) and DIN 48088 Part 1



Angled fixed ball point.

- Suitable for fixing cable lugs or connecting busbars according to DIN 43673 Part 1
- Self-locking nut
- Formed (not cut) M12 or M16 female thread
- M12 or M16 threaded bolt

Technical Data

Fixed point	E-Cu/gal Sn
Threaded bolt	StSt A2-70
Hexagon nut	DIN 985-M12-8 / gal Zn; DIN 985-M16-8 / gal Zn
Tightening torque	M12: 80 Nm; M16: 150 Nm

Type	Fixed ball point Ø	Dimensions	Width A/F	Max. cable cross section	Max. short-circuit current I _k 1 s	Part No.
A Angled (45°), with threaded Bolt and Nut						
KFP 20 W45 M12 35SSM	20 mm	M12 x 35 mm	24 mm	70 mm ²	13.8 kA	706 235
KFP 20 W45 M16 45SSM	20 mm	M16 x 45 mm	24 mm	70 mm ²	13.8 kA	706 645
KFP 25 W45 M12 45SSM	25 mm	M12 x 45 mm	27 mm	95 mm ²	18.7 kA	756 245
KFP 25 W45 M16 45SSM	25 mm	M16 x 45 mm	27 mm	95 mm ²	18.7 kA	756 645

B Angled (45°), with female Thread

KFP 20 W45 M12	mm	M16	27 mm	95 mm ²	18.7 kA	756 600
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C Angled (90°), with threaded Bolt and Nut

KFP 20 W90 M12 35SSM	20 mm	M12 x 35 mm	24 mm	70 mm ²	13.8 kA	707 235
KFP 20 W90 M16 45SSM	20 mm	M16 x 45 mm	24 mm	70 mm ²	13.8 kA	707 645
KFP 25 W90 M12 45SSM	25 mm	M12 x 45 mm	27 mm	95 mm ²	18.7 kA	757 245
KFP 25 W90 M16 45SSM	25 mm	M16 x 45 mm	27 mm	95 mm ²	18.7 kA	757 645

D Angled (90°), with female Thread

KFP 20 W90 M12	20 mm	M12	24 mm	70 mm ²	13.8 kA	707 200
KFP 20 W90 M16	20 mm	M16	24 mm	70 mm ²	13.8 kA	707 600
KFP 25 W90 M12	25 mm	M12	27 mm	95 mm ²	18.7 kA	757 200
KFP 25 W90 M16	25 mm	M16	27 mm	95 mm ²	18.7 kA	757 600

Other threaded bolt lengths are available on request.



Fixed Phase and Earthing Points

Fixed ball points, for round conductors, ball Ø20 or 25 mm

- For round copper conductors
- Installation bolts made of stainless steel

SAFETY EQUIPMENT

EARTHING AND SHORT-CIRCUITING DEVICES

EN/IEC 61230 (DIN VDE 0683 Part 100)



Fixed ball point attached to the round copper conductor of a switchgear installation.

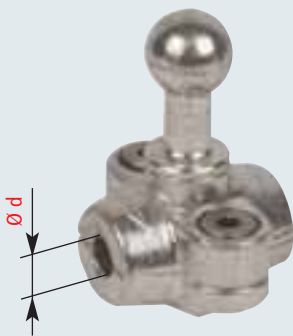
Technical Data

Ball pin	E-Cu/gal Sn
Round conductor components	Cu alloy/gal Sn
Installation bolts	Hexagon socket-head bolts, StSt

Type	Fixed ball point Ø	For round conductor Ø d	Max. short-circuit current I _k 1 s	Part No.
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A Round Conductor Ø10-20 mm

KFP 20 RL 10	20 mm	10 mm	9.9 kA	720 010
KFP 20 RL 12	20 mm	12 mm	9.9 kA	720 012
KFP 20 RL 14	20 mm	14 mm	9.9 kA	720 014
KFP 20 RL 16	20 mm	16 mm	9.9 kA	720 016
KFP 20 RL 18	20 mm	18 mm	9.9 kA	720 018
KFP 20 RL 20	20 mm	20 mm	9.9 kA	720 020
KFP 25 RL 10	25 mm	10 mm	18.7 kA	725 010
KFP 25 RL 12	25 mm	12 mm	18.7 kA	725 012
KFP 25 RL 14	25 mm	14 mm	18.7 kA	725 014
KFP 25 RL 16	25 mm	16 mm	18.7 kA	725 016
KFP 25 RL 18	25 mm	18 mm	18.7 kA	725 018
KFP 25 RL 20	25 mm	20 mm	18.7 kA	725 020



Fixed ball points for round conductors with other diameters are available on request.

Note: Please specify the conductor diameter d when placing your order!

SAFETY EQUIPMENT

EARTHING AND SHORT-CIRCUITING DEVICES

Fixed Earthing Points

Grooved ring Ø16 mm

EN/IEC 61230 (DIN VDE 0683 Part 100) and DIN 48088 Part 2



Fixed earthing point with grooved ring and earth connector.

- For connecting earth connectors or earth connecting plates according to DIN 48088 Part 2
- Self-locking nut
- Formed (not cut) M12 or M16 female thread
- M12 or M16 threaded bolt

Technical Data

Fixed point	Brass (CuNi2Si) / gal Sn
Threaded bolt	StSt A2-70
Hexagon nut	DIN 985-M12-8 / gal Zn; DIN 985-M16-8 / gal Zn
Tightening torque	M12: 80 Nm; M16: 150 Nm

Type	Dimensions	Width A/F	Max. cable cross section	Max. short-circuit current I_k 1 s	Part No.
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A Grooved Ring Ø16 mm, threaded Bolt and Nut

EFP 16 RN M12 35 SSM	M12 x 35 mm	22 mm	150 mm ²	29.6 *) kA	790 251
EFP 16 RN M16 45 SSM	M16 x 45 mm	22 mm	150 mm ²	29.6 *) kA	790 261

B Grooved Ring Ø16 mm, with female Thread

EFP 16 RN M12	M12	22 mm	150 mm ²	29.6 *) kA	790 250
EFP 16 RN M16	M16	22 mm	150 mm ²	29.6 *) kA	790 260

*) For earthing and short-circuiting devices with cable lengths ≥ 2.5 m: 18.7 kA / 1 s



Fixed Earthing Points

Connectors

SAFETY EQUIPMENT EARTHING AND SHORT-CIRCUITING DEVICES

EN/IEC 61230 (DIN VDE 0683 Part 100) and DIN 48088 Part 5

- For welding or bolting of earth connectors with wing nut or wing bolt
- Connectors with M12 or M16 threaded bolt
- M12 or M16 female thread



Earth connector with M12 threaded bolt for connection to an earthed part of the installation.



Type	Dimensions	Width A/F	Material	Part No.
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A Welding-type Connector, with threaded Bolt

AS SCHW M12 25	M12 x 25 mm		St/gal Zn	705 501
AS SCHW M16 30	M16 x 30 mm		St/gal Zn	755 501

B Welding-type Connector, with female Thread

AS SCHW M12	M12		St/gal Zn	336 020
AS SCHW M16	M16		St/gal Zn	336 025

C Bolted-type Connector, with female Thread

AS SCHR M12 M12 40	M12 / M12 x 40 mm	27 mm	Cu alloy/gal Sn	705 504
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D Bolted-type Connector, with threaded Bolt and separate hexagon Nut

AS SCHR M12 55	M12 x 55 mm	32 mm	StSt / Cu alloy/gal Sn / St/tZn	705 500
AS SCHR M16 65	M16 x 65 mm	41 mm	StSt / Cu alloy/gal Sn / St/tZn	750 500

E Bolted-type Connector, for converting from M12 to M16 threaded Bolt

AS SCHR M16 55 M12	M12 x 20 / M16 x 55 mm	41 mm	StSt / Cu alloy/gal Sn	705 510
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SAFETY EQUIPMENT

Earth Connecting Plates

EARTHING AND SHORT-CIRCUITING DEVICES

Fixed points according to EN/IEC 61230 (DIN VDE 0683 Part 100) and DIN 48088 Part 1

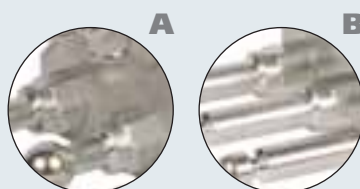


- For indoor and outdoor installations
- Connecting plate with high short-circuit carrying capacity
- Allows for individual connection of the short-circuiting cables
- For fixed ball points Ø20, Ø25 mm or grooved ring bolt Ø16 mm

Earth connecting plate with fixed ball points and ball head cap with insulated handle.

Technical Data

Fixed point	Brass (CuNi2Si) / gal Sn
Threaded bolt	StSt A2-70
Hexagon nut	DIN 985-M12-8 / gal Zn; DIN 985-M16-8 / gal Zn



Type	Fixed point Ø	Max. cable cross section	Max. short-circuit current I_k 1 s	Part No.
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A With Ball Head Cap and 3 Fixed Ball Points

EAP 3 20 KKH	20 mm	120 mm ²	23.7 kA	728 300
EAP 3 25 KKH	25 mm	150 mm ²	29.6 kA	728 500

B With Earth Connector and 3 Fixed Earthing Points, with grooved Ring

EAP 3 16 RN	16 mm	95 mm ²	18.7 kA	728 520
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Other types are available on request.



Fixed Phase Points

SAFETY EQUIPMENT

EARTHING AND SHORT-CIRCUITING DEVICES

Clamp according to DIN 48088 Part 3

- Coupling aid (clamp) for phase screw clamps
- For high-voltage installations up to 220 kV
- Other types of clamps, e.g. for twin conductors or with greater clamp widths available on request



Fixed phase point installed on an overhead line conductor.

Technical Data

Clamp	Al or Cu alloy
Screws	StSt



Type	For conductor Ø d	Clamp width b	Max. short-circuit current I_k 1 s	Part No.
A Fixed Phase Points for Al and Al/St Cables				
PFP 11 33 AL 60 82	11.0 ... 33 mm	82 mm	23.7 kA	731 011
PFP 34 48 AL 60 98	33.1 ... 48 mm	98 mm	23.7 kA	731 013
PFP 49 70 AL 60 126	48.1 ... 70 mm	126 mm	23.7 kA	731 015

B Fixed Phase Points for round Copper Conductors

PFP 11 33 CU 60 82	11.0 ... 33 mm	82 mm	23.7 kA	731 027
PFP 34 48 CU 60 98	33.1 ... 48 mm	98 mm	23.7 kA	731 037

Note: Please indicate the conductor diameter d when placing your order.