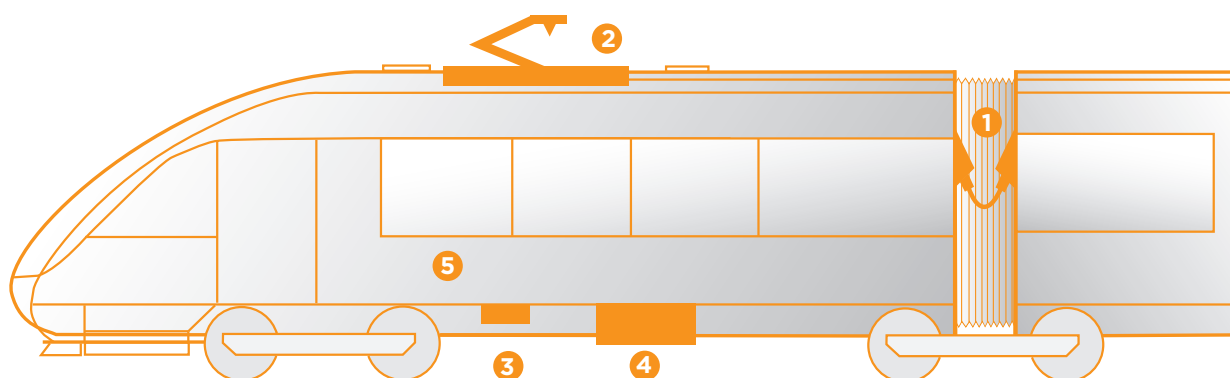




EKO SERIES

Power Connection up to 800 A

Implementation Synoptic



- 1 Outdoor dynamic applications (intervehicle)
- 2 Outdoor static applications (roof)
- 3 Outdoor static applications (underframe)
- 4 Outdoor static applications (Electrical box outlet)
- 5 Indoor static or protected applications

	EKO SERIES	Implementation					Connection Systems			Used for shielded cable
		1	2	3	4	5	Linear	Derivation	30°	
Not shielded	EKO 3-50			●	X	X	X			
	EKO 4-50			●	X	X	X			
	EKO 1-60				X	X	X			
	EKO 3-60			●	X	X	X			
Shielded	EKO 3-36S		X	X			X			X
	EKO 3-50S		X	X			X			X
	EKO 4-50S		X	X			X			X
	EKO 3-60S		X	X			X			X
Derivation	EKO 3-50 DL			●		X		X		
	EKO 3-50 DS		X	X				X		X
	EKO 3-60 DT			●		X		X		
Intervehicle	EKO A	X							X	

● Ballastless track

Contents

Implementation Synoptic	2
Linear Connection System.....	4-5
Derivation System.....	6
Intervehicle Connection System.....	6
Cross-section & Service Voltage.....	7

Linear Connection Systems - Not Shielded - 3000V

EKO 3-50.....	8
EKO 4-50.....	9
EKO 1-60.....	10
EKO 3-60.....	11

Linear Connection Systems - Shielded - 3000V

EKO 3-36 S	12
EKO 3-50 S	13
EKO 4-50 S	14
EKO 3-60 S	15

Derivation System

EKO 3-50 DL.....	16
EKO 3-50 DS.....	17
EKO 3-60 DT.....	18

Intervehicle Connection System - 3000V

EKO A	19
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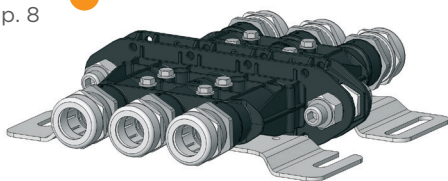
Crimping Tools	20
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Linear Connection Systems - Not Shielded

3000V

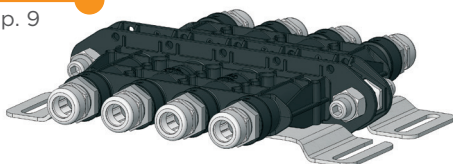
EKO 3-50

3 contacts - p. 8



EKO 4-50

4 contacts - p. 9



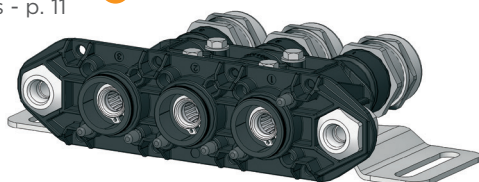
EKO 1-60

1 contact - p. 10



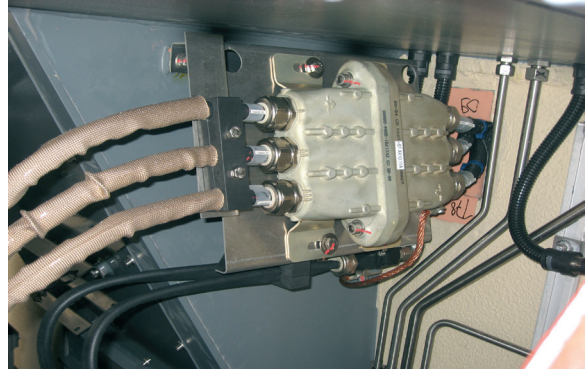
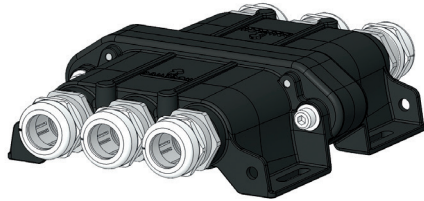
EKO 3-60

3 contacts - p. 11



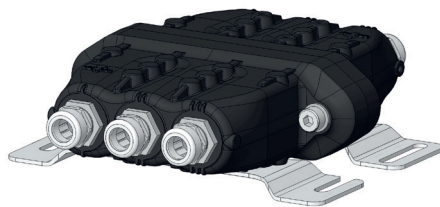
EKO 3-36S

3 contacts - p. 12



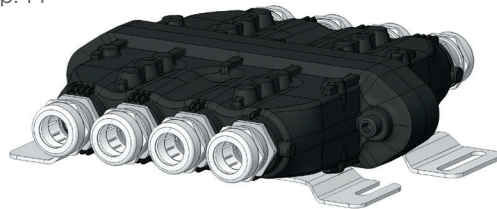
EKO 3-50S

3 contacts - p. 13



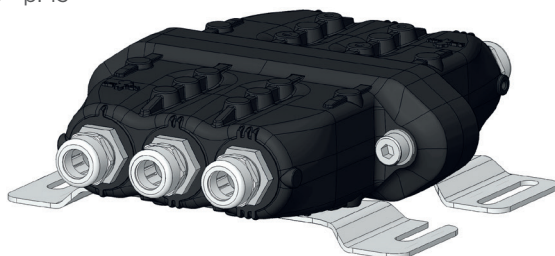
EKO 4-50S

4 contacts - p. 14



EKO 3-60S

3 contacts - p. 15

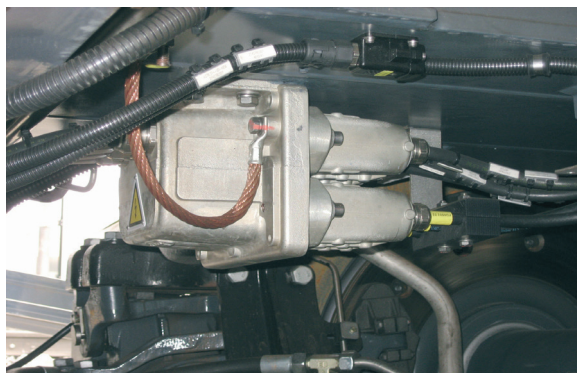
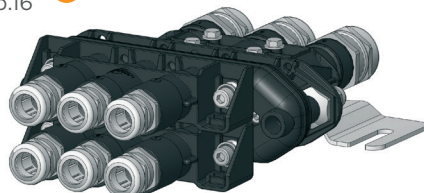


Derivation System

Specially for power connections from inverters toward motors:
Splitting device (3 lines in, 6 lines out).

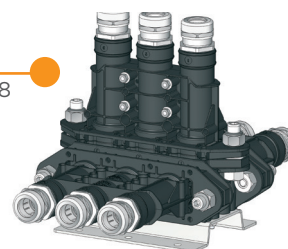
EKO 3-50 DL 1500V

3 contacts/6 contacts - p.16



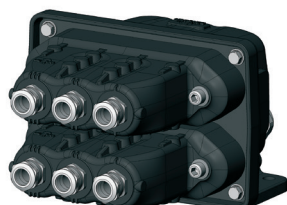
EKO 3-60 DT 3000V

3 contacts/6 contacts - p.18



EKO 3-50 DS 1500V

3 contacts/6 contacts - p.17

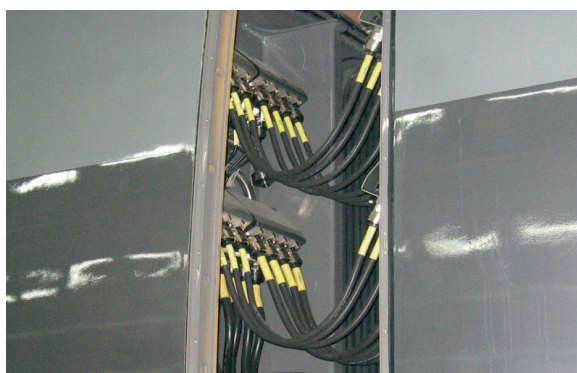
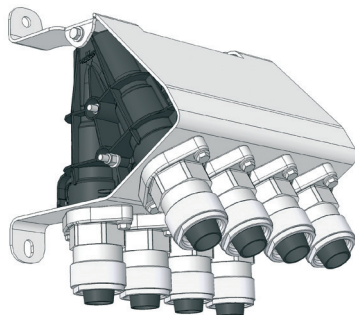


INTERVEHICLE CONNECTION SYSTEM

Modular power connection using 30° angled modules assembled into a metal frame. Adapted for power lines of train sets with common bogie design.

EKO A 3000V

From 2 to 4 modules - p.19



Cross-Section & Service Voltage

LINEAR CONNECTION SYSTEMS - NOT SHIELDED

	POLE	Serv. Voltage	25 mm ²	35 mm ²	50 mm ²	70 mm ²	95 mm ²	120 mm ²	150 mm ²	185 mm ²	240 mm ²	M12 Contact
EKO 3-50	3	3000 V			X	X	X	X				
EKO 4-50	4	3000 V			X	X	X	X				
EKO 1-60	1	3000 V					X	X	X	X	X	X*
EKO 3-60	3	3000 V							X	X	X	

* Receptacle side for terminal lug

LINEAR CONNECTION SYSTEMS - SHIELDED

	POLE	Serv. Voltage	25 mm ²	35 mm ²	50 mm ²	70 mm ²	95 mm ²	120 mm ²	150 mm ²	185 mm ²	240 mm ²	M12 Contact
EKO 3-36 S	3	3000 V	X	X	X							
EKO 3-50 S	3	3000 V			X	X	X	X				
EKO 4-50 S	4	3000 V			X	X	X	X				
EKO 3-60 S	3	3000 V							X	X	X	

DERIVATION SYSTEM - SHIELDED & NOT SHIELDED

		INLET (1x3 poles)						
OUTLET (2x3 poles)		50 mm ²	70 mm ²	95 mm ²	120 mm ²	150 mm ²	185 mm ²	240 mm ²
	25 mm ²	●	●	●	●			
	35 mm ²	●	●	●	●			
	50 mm ²	● ■	● ■	● ■	● ■			
	70 mm ²	■	■	■	■			
	95 mm ²	■	■	■	■			
	120 mm ²	■	■	■	■			
	150 mm ²					▲	▲	▲
	185 mm ²					▲	▲	▲
	240 mm ²					▲	▲	▲

- EKO 3-50 DL - 1500 V Not Shielded
- EKO 3-50 DS - 1500 V Shielded
- ▲ EKO 3-60 DT - 3000 V Not Shielded

Current values for temperature rise test up to 50 K are given for guidance only

Technical Characteristics

EKO 3-50

ELECTRICAL

3 contacts calibre 12 - 400 A max - 3000 V max

Cross-sections 50 to 120 mm²

Max. Cable insulation O.D. : 28 mm

Withstand voltage : 9500 V

Insulation strength : > 5000 MΩ

Contact resistance : < 0,5 mΩ

Creepage distance : 29 mm (EN 50124 OV2 PD2)

Clearance distance : 21 mm

MATERIAL

Shell : composite

Contacts : silver plated brass

CTI index : 600 V - Material group 1 (EN 50124)

Fire proof : NF F 16-102 requirement 2, UL94V0, EN 45545-2

ENVIRONMENTAL

Temperature range : -40°C +100°C

Protection index : IP67

Salt Spray : 96 hours (250 hours : optional)

MECHANICAL

Mating cycles : 500

Vibrations: 7.9 g (EN 61373:2000)

Shocks: 30 g - 30 ms (EN 61373:2000)

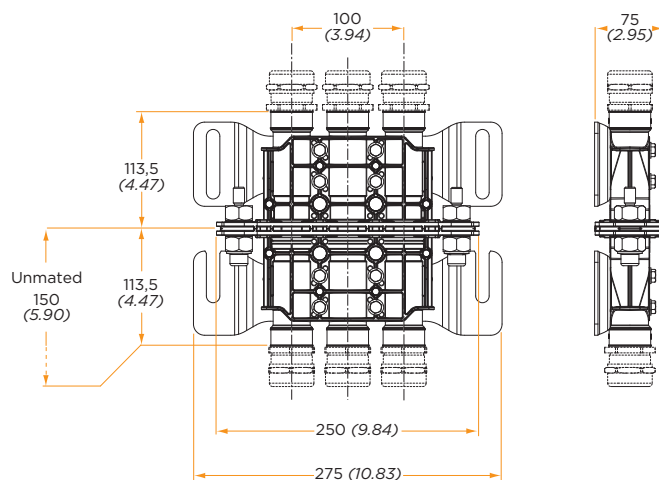
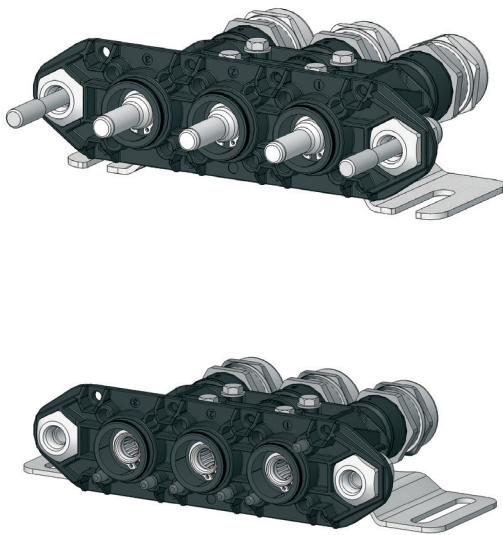
Back-thread : M32 x 1,5 - Lg 15 mm

Keying system : 20

Semi-recessed socket possible

Cable gland : optional

DIMENSIONS (mm/inch)



Technical Characteristics

EKO4-50

ELECTRICAL

4 contacts calibre 12 - 400 A max - 3000 V max

Cross-sections up to 120 mm²

Max. Cable insulation O.D. : 28 mm

Withstand voltage : > 9500 V

Insulation strength : > 5000 MΩ

Contact resistance : < 0,5 mΩ

Creepage distance : 29 mm (EN 50124 OV2 PD2)

Clearance distance : 21 mm

MATERIAL

Shell : composite

Contacts : silver plated brass

CTI index : 600 V - Material group 1 (EN 50124)

Fire proof : NF F 16-102 requirement 2, UL94V0, EN 45545-2

ENVIRONMENTAL

Temperature range : -40°C +100°C

Protection index : IP67

Salt spray : 96 hours (250 hours : optional)

MECHANICAL

Mating cycles : 500

Vibrations: 7.9 g (EN 61373:2000)

Shocks: 30 g - 30 ms (EN 61373:2000)

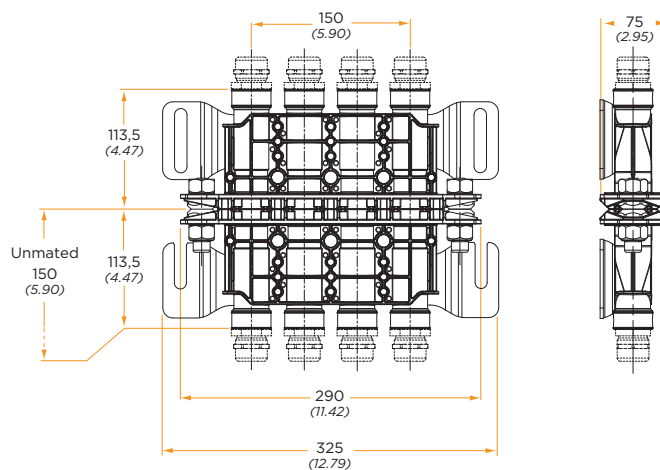
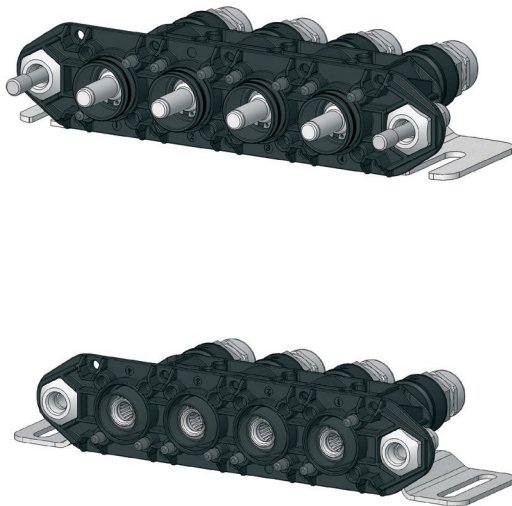
Back-thread : M32 x 1,5 - Lg 15 mm

Keying system : 20

Semi-recessed socket possible

Cable gland : optional

DIMENSIONS (mm/inch)



Technical Characteristics

EKO 1-60

ELECTRICAL

1 contact calibre 20 - 700 A max - 3000 V max

Cross-sections up to 240 mm²

Max. Cable insulation O.D. : 29 mm

Withstand voltage : > 9500 V

Insulation strength : > 5000 MΩ

Contact resistance : < 0,5 mΩ

Creepage distance : 50 mm (EN 50124 OV2 PD2)

Clearance distance : 32 mm

MATERIAL

Shell : composite

Contacts : silver plated brass

CTI index : 600 V - Material group 1 (EN 50124)

Fire proof : NF F 16-102 requirement 2, UL94V0, EN 45545-2

ENVIRONMENTAL

Temperature range : -40°C +100°C

Protection index : IP66

Salt spray : 250 hours

MECHANICAL

Mating cycles : 500

Vibrations: 7.9 g (EN 61373:2000)

Shocks: 30 g - 30 ms (EN 61373:2000)

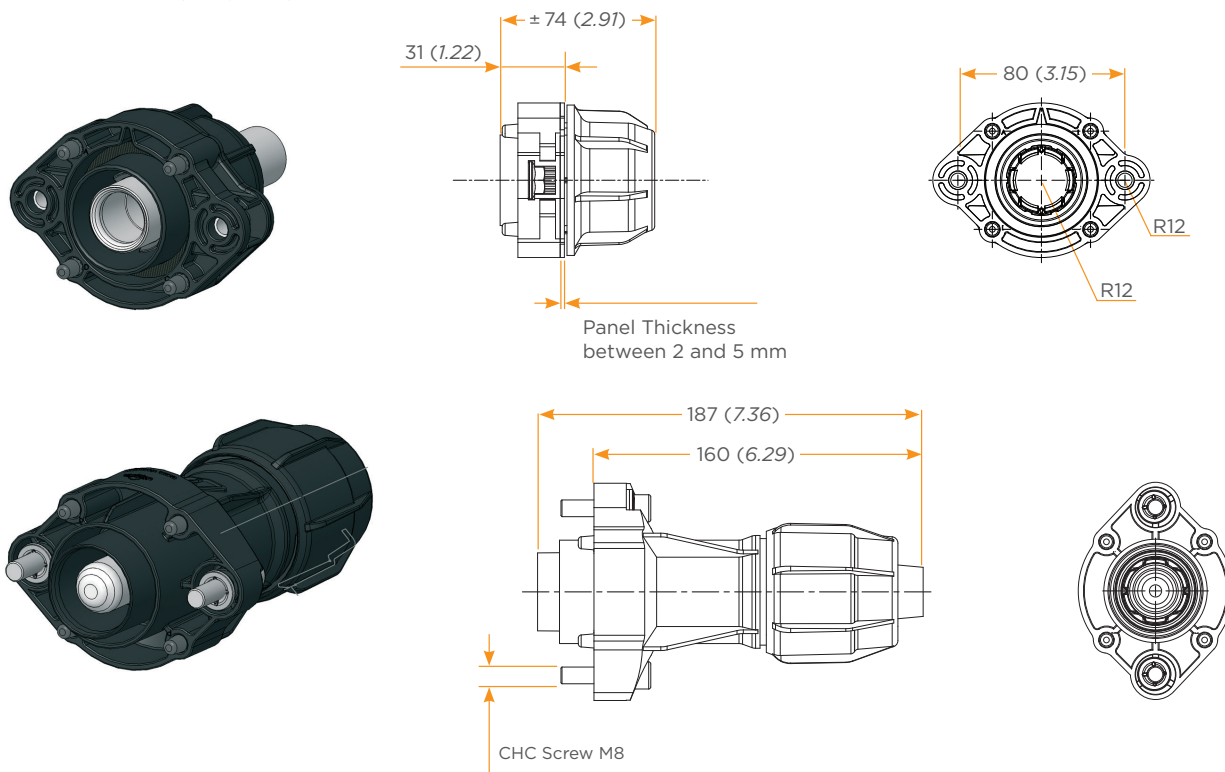
Back-thread : M32 x 1,5 - Lg 15 mm

Keying system : 6 coding pins

Screwing contact : M12 x 1,75 (receptacle side)

Crimp contact (plug side)

DIMENSIONS (mm/inch)



Technical Characteristics

EKO3-60

ELECTRICAL

3 contacts calibre 20 - 800 A max - 3000 V max

Cross-sections up to 240 mm²

Max. Cable insulation O.D. : 36 mm

Withstand voltage : > 9500 V

Insulation strength : > 5000 MΩ

Contact resistance : < 0,5 mΩ

Creepage distance : 29 mm (EN 50124 OV2 PD2)

Clearance distance : 18 mm

MATERIAL

Shell : composite

Contacts : silver plated brass

CTI index : 600 V - Material group 1 (EN 50124)

Fire proof : NF F 16-102 requirement 2, UL94V0, EN 45545-2

ENVIRONMENTAL

Temperature range : -40°C +100°C

Protection index : IP67

Salt spray : 96 hours (250 hours : optional)

MECHANICAL

Mating cycles : 500

Vibrations: 7.9 g (EN 61373:2000)

Shocks: 30 g - 30 ms (EN 61373:2000)

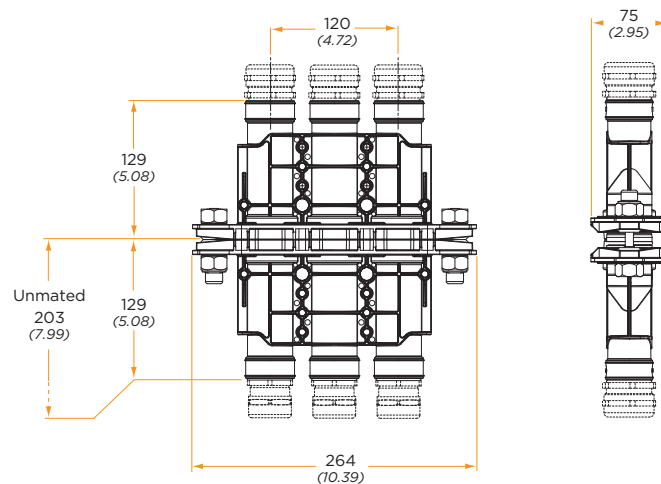
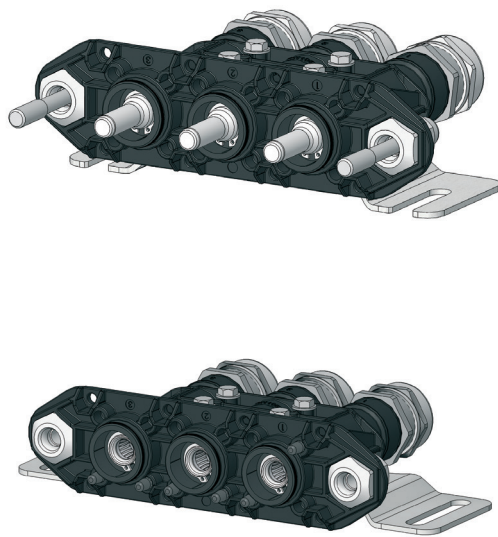
Back-thread : M40 x 1,5 - Lg 15 mm

Keying system : 20

Semi-recessed socket possible

Cable gland : optional

DIMENSIONS (mm/inch)



Technical Characteristics

EKO 3-36S

ELECTRICAL

3 contacts calibre 7 - 175 A max - 3000 V max

Cross-sections 25 to 50 mm²

Max. Cable insulation O.D. : 19 mm

Withstand voltage : 9500 V

Insulation strength : > 5000 MΩ

Contact resistance : < 0,5 mΩ

Creepage distance : 18 mm (EN 50124 OV2 PD2)

Clearance distance : 18 mm

MATERIAL

Shell : aluminium

Insert : composite

Contacts : silver plated brass

CTI index : 600 V - Material group 1 (EN 50124)

Fire proof : NF F 16-102 requirement 2, EN 45545-2

ENVIRONMENTAL

Temperature range : -40°C +100°C

Protection index : IP67

Salt Spray : 96 hours (250 hours : optional)

MECHANICAL

Mating cycles : 500

Vibrations: 7.9 g (EN 61373:2000)

Shocks: 30 g - 30 ms (EN 61373:2000)

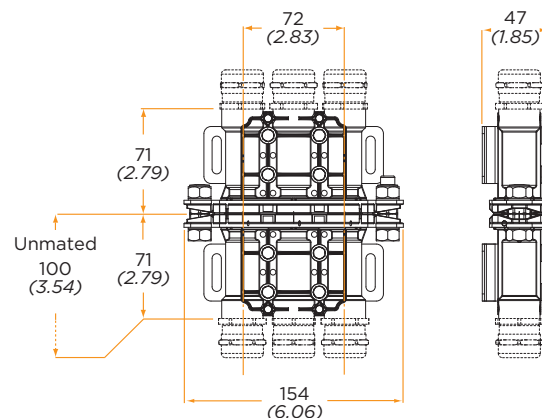
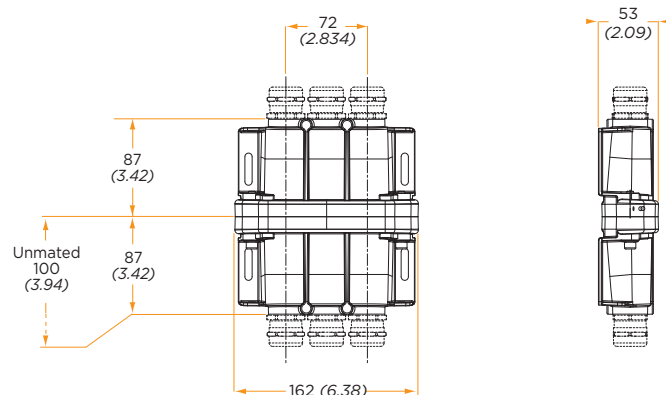
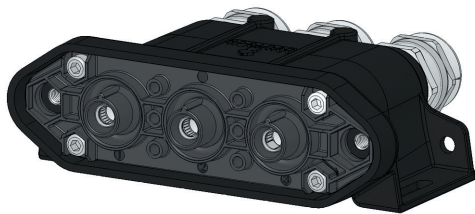
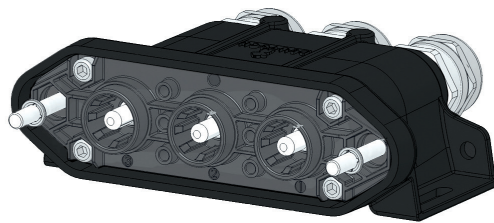
Back-thread : M20 & M25 x 1,5 - Lg 11 mm

Keying system : 20

Semi-recessed socket possible

Cable gland : optional

DIMENSIONS (mm/inch)



Technical Characteristics

EKO3-50S

ELECTRICAL

3 contacts calibre 12 - 400 A max - 3000 V max

Sections 50 - 70 - 95 - 120 mm²

Max. Cable insulation O.D. : 28 mm

Withstand voltage : > 9500 V

Insulation strength : > 5000 MΩ

Contact resistance : < 0,5 mΩ

Creepage distance : 29 mm (EN 50124 OV2 PD2)

Clearance distance : 21 mm

Shielding : according to VG 95373

MATERIAL

Shell : aluminium

Insert : composite

Contacts : silver plated brass

CTI index : 600 V - Material group 1 (EN 50124)

Fire proof : NF F 16-102 requirement 2, UL94VO, EN 45545-2

ENVIRONMENTAL

Temperature range : -40°C +100°C

Protection index : IP67

Salt spray : 96 hours (250 hours : optional)

MECHANICAL

Mating cycles : 500

Vibrations: 7.9 g (EN 61373:2000)

Shocks: 30 g - 30 ms (EN 61373:2000)

Back-thread : M25, M32 x 1,5 - Lg 15 mm

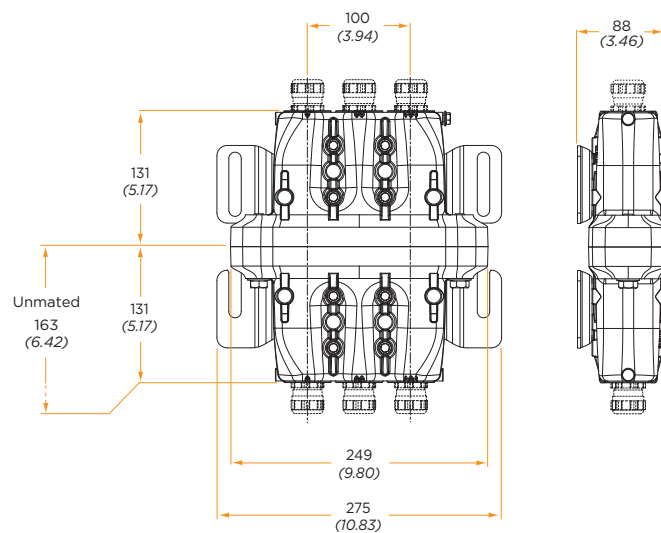
Keying system : 20

Semi-recessed socket possible

M6 earth connection on the fixed part

Cable gland : optional

DIMENSIONS (mm/inch)



Technical Characteristics

EKO 4-50S

ELECTRICAL

4 contacts calibre 12 - 400 A max - 3000 V max

Cross-sections up to 120 mm²

Max. Cable insulation O.D. : 28 mm

Withstand voltage : > 9500 V

Insulation strength : > 5000 MΩ

Contact resistance : < 0,5 mΩ

Creepage distance : 29 mm (EN 50124 OV2 PD2)

Clearance distance : 21 mm

MATERIAL

Shell : aluminium

Insert : composite

Contacts : silver plated brass

CTI index : 600 V - Material group 1 (EN 50124)

Fire proof : NF F 16-102 requirement 2, UL94VO, EN 45545-2

ENVIRONMENTAL

Temperature range : -40°C +100°C

Protection index : IP67

Salt spray : 96 hours (250 hours : optional)

MECHANICAL

Mating cycles : 500

Vibrations: 7.9 g (EN 61373:2000)

Shocks: 30 g - 30 ms (EN 61373:2000)

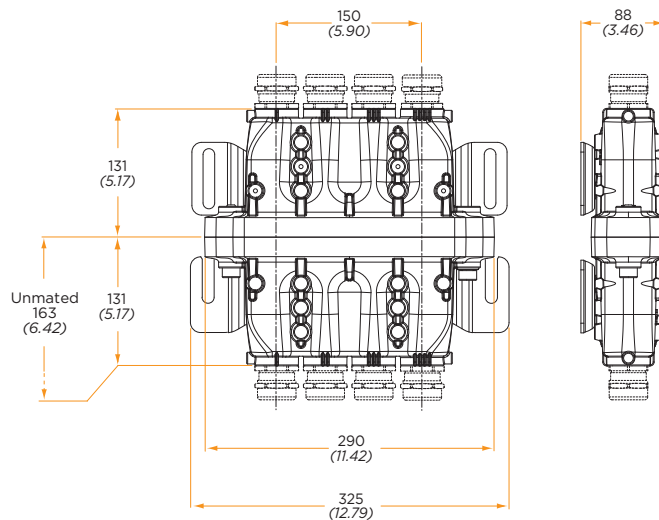
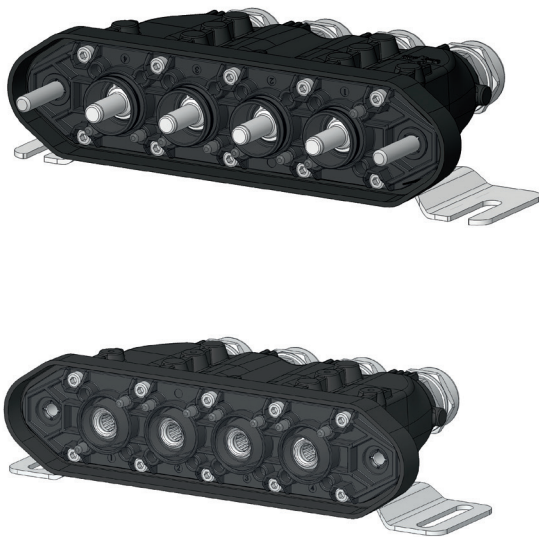
Back-thread : M32 x 1,5 - Lg 15 mm

Keying system : 20

Semi-recessed socket possible

Cable gland : optional

DIMENSIONS (mm/inch)



Technical Characteristics

EKO3-60S

ELECTRICAL

3 contacts calibre 20 - 800 A max - 3000 V max

Cross-sections up to 240 mm²

Max. Cable insulation O.D. : 36 mm

Withstand voltage : > 9500 V

Insulation strength : > 5000 MΩ

Contact resistance : < 0,5 mΩ

Creepage distance : 29 mm (EN 50124 OV2 PD2)

Clearance distance : 18 mm

MATERIAL

Shell : aluminium

Insert : composite

Contacts : silver plated brass

CTI index : 600 V - Material group 1 (EN 50124)

Fire proof : NF F 16-102 requirement 2, UL94VO, EN 45545-2

ENVIRONMENTAL

Temperature range : -40°C +100°C

Protection index : IP67

Salt spray : 96 hours (250 hours : optional)

MECHANICAL

Mating cycles : 500

Vibrations: 7.9 g (EN 61373:2000)

Shocks: 30 g - 30 ms (EN 61373:2000)

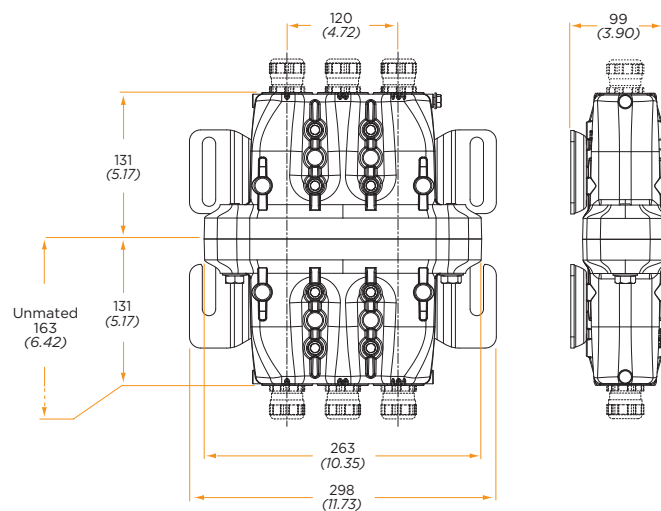
Back-thread : M25, M32, M40 x 1,5 - Lg 15 mm

Keying system : 20

Semi-recessed socket possible

Cable gland : Optional

DIMENSIONS (mm/inch)



Technical Characteristics

EKO 3-50DL

ELECTRICAL

3 contacts calibre 12 - 400 A max - 1500 V max
Receptacle side - 6 cables : 25 to 50 mm²
Mobile Plug side - 3 cables : 50 to 120 mm²
Max. Cable insulation O.D. : 28 mm

Withstand voltage : > 5750 V
Insulation strength : > 5000 MΩ
Contact resistance : < 0,5 mΩ

MATERIAL

Shell : composite
Contacts : silver plated brass
CTI index : 600 V - Material group 1 (EN 50124)
Fire proof : NF F 16-102 requirement 2, UL94V0, EN 45545-2

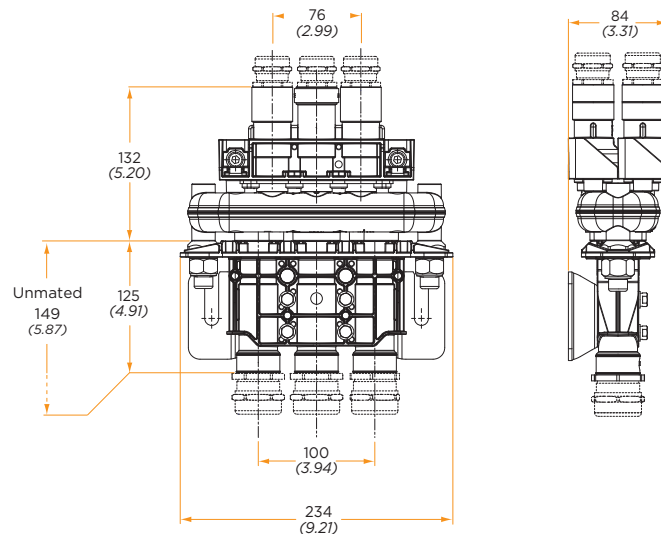
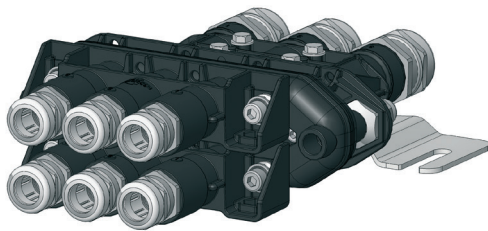
ENVIRONMENTAL

Temperature range : -40°C +100°C
Protection index : IP67
Salt spray : 96 hours (250 hours : optional)

MECHANICAL

Mating cycles : 500
Vibrations: 7.9 g (EN 61373:2000)
Shocks: 30 g - 30 ms (EN 61373:2000)
Keying system : 6
Cable gland : Optional

DIMENSIONS (mm/inch)



Technical Characteristics

EKO3-50DS

ELECTRICAL

3 contacts calibre 12 - 400 A max - 1500 V max
Receptacle side - 3 cables : 50 to 120 mm²
Mobile Plugs side - 2 x 3 cables : 50 to 120 mm²
Max. Cable insulation O.D.: 28 mm

Withstand voltage : > 5750 V
Insulation strength : > 5000 MΩ
Contact resistance : < 0,5 mΩ

MATERIAL

Shell : aluminium
Insert : composite
Contacts : silver plated brass
CTI index : 600 V - Material group 1 (EN 50124)
Fire proof : NF F 16-102 requirement 2, UL94V0, EN 45545-2

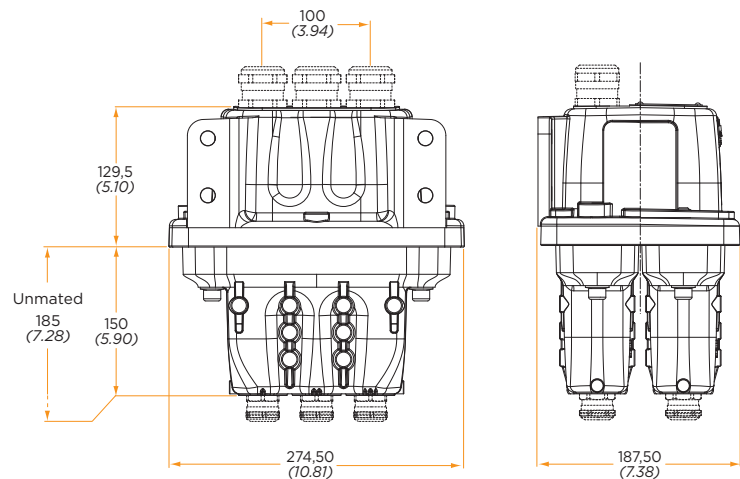
ENVIRONMENTAL

Temperature range : -40°C +100°C
Protection index : IP67
Salt spray : 96 hours (250 hours : optional)

MECHANICAL

Mating cycles : 500
Vibrations: 7.9 g (EN 61373:2000)
Shocks: 30 g - 30 ms (EN 61373:2000)
Keying system : 20
Cable-gland : optional

DIMENSIONS (mm/inch)



Technical Characteristics

EKO 3-60DT

ELECTRICAL

3 contacts calibre 20 - 800 A max - 3000 V max

Cross-sections from 150 to 240 mm²

Max. Cable insulation O.D. : 28 mm

Withstand voltage : > 9500 V

Insulation strength : > 5000 MΩ

Contact resistance : < 0,5 mΩ

MATERIAL

Shell : composite

Contacts : silver plated brass

CTI index : 600 V - Material group 1 (EN 50124)

Fire proof : NF F 16-102 requirement 2, UL94VO, EN 45545-2

ENVIRONMENTAL

Temperature range : -40°C +100°C

Protection index : IP67

Salt spray : 96 hours (250 hours : optional)

MECHANICAL

Mating cycles : 500

Vibrations: 7.9 g (EN 61373:2000)

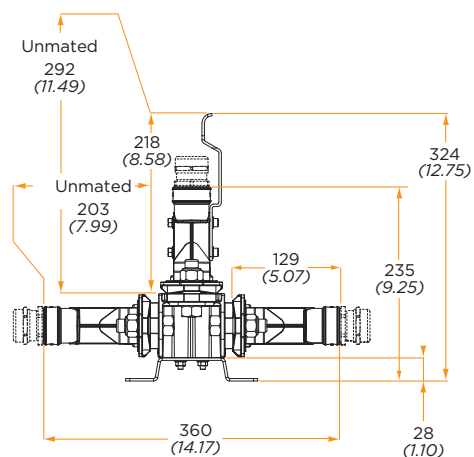
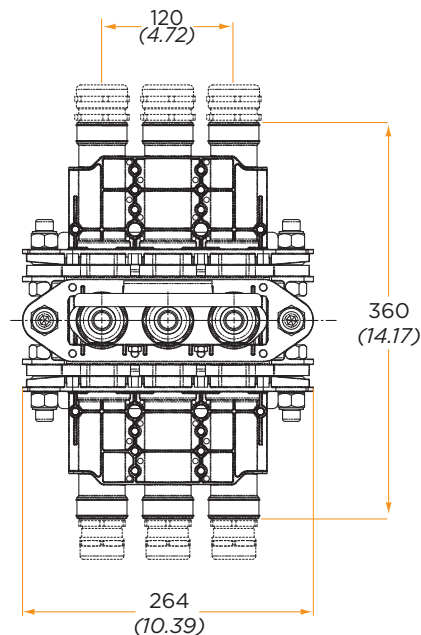
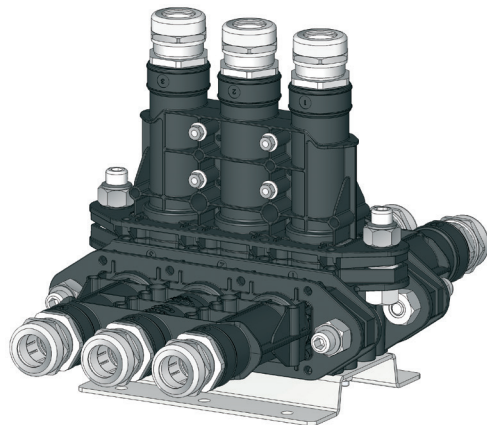
Shocks: 30 g - 30 ms (EN 61373:2000)

Back-thread : M40 x 1,5 - Lg 15 mm

Keying system : 20

Cable holding frame & Cable-gland : Optional

DIMENSIONS (mm/inch)



Technical Characteristics

EKO A

ELECTRICAL

From 2 to 4 modules with contact calibre 20 -
700 A max - 3000 V max - Sections 50 to 240 mm²
Max. Cable insulation O.D. : 30 mm

Withstand voltage : > 9500 V
Insulation strength : > 5000 MΩ
Contact resistance : < 0,15 mΩ
Creepage distance : 37 mm (EN 50124 OV2 PD2)
Clearance distance : 33 mm (EN 50124 OV2 PD2)

MATERIAL

Plug Shell : aluminium
Receptacle Frame : stainless steel
Insert : composite
Contacts : silver plated brass
CTI index : 600 V - Material group 1 (EN 50124)
Fire proof : NF F 16-102 requirement 2, EN 45545-2

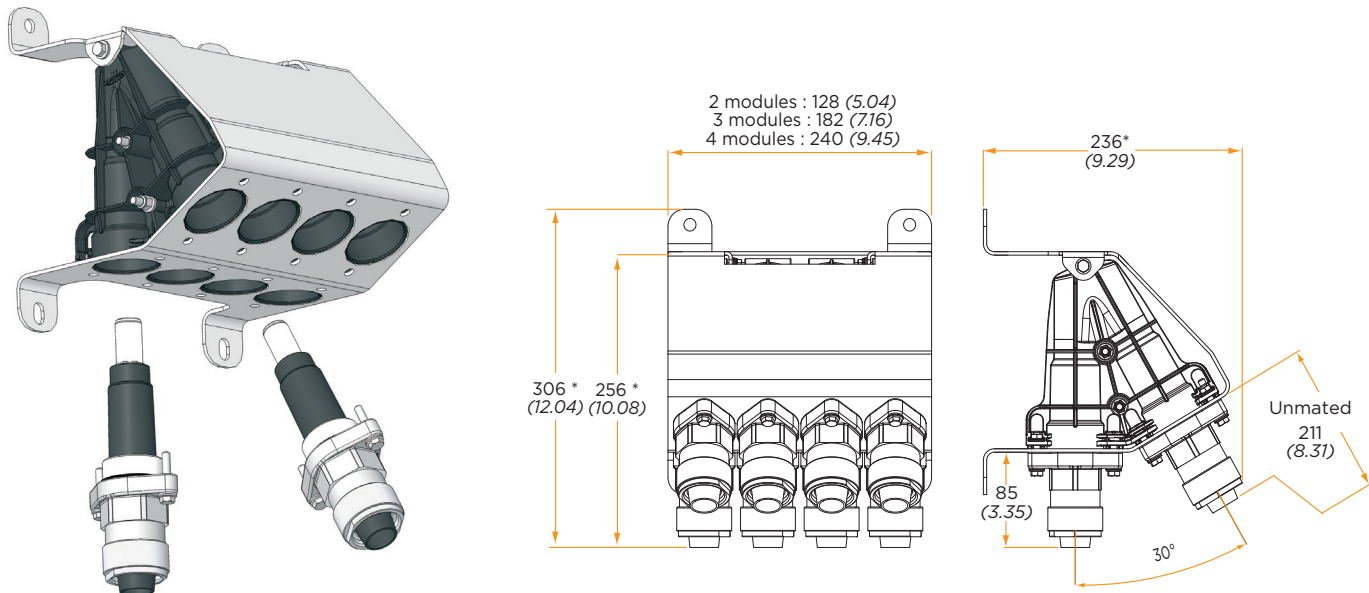
ENVIRONMENTAL

Temperature range : -40°C +100°C
Protection index : IP66
Salt spray : 96 hours (500 hours : optional)

MECHANICAL

Mating cycles : 500
Vibrations: 7.9 g (EN 61373:2000)
Shocks: 30 g - 30 ms (EN 61373:2000)
M10 earth connection on the fixed part : optional
Cable gland : included

DIMENSIONS (mm/inch)



* The receptacle frame can be adapted to different intervehicle configurations

Crimping tools

HEXAGONAL TOOLS - MECATRACTION

Cable Section	Manual Pliers 50 kN		Hydraulic Pliers 13 Tonnes		Hydraulic Pliers 20 Tonnes	
	Pliers	Die	Pliers	Die	Pliers	Die
10 mm ²	 PMM1 OUT0405-0314AS	H1 10-35F OUT0405-0199AS				
16 mm ²		H1 16-50F OUT0405-0137AS				
25 mm ²		H1 25-70F OUT0405-0138AS	 PA133K OUT0405-0367AS	TN25V13 OUT0405-0419AS	 PA133K OUT0405-0367AS	TN25V20 OUT0405-454AS
35 mm ²		H1 10-35F OUT0405-0199AS		TN35V13 OUT0405-0420AS		TN35V20 OUT0405-0455AS
50 mm ²		H1 16-50F OUT0405-0137AS		TN50V13 OUT0405-0413AS		TN50V20 OUT0405-0421AS
70 mm ²		H1 25-70F OUT0405-0138AS	 F 4622 K OUT0405-0360AS	TN70V13 OUT0405-0422AS	 F 4622 K OUT0405-0360AS	TN70V20 OUT0405-0380AS
95 mm ²				TN95V13 OUT0405-0423AS		TN95V20 OUT0405-0424AS
120 mm ²				TN120V13 OUT0405-0412AS	 SU 210K OUT0405-0443AS	TN120V20 OUT0405-0425AS
150 mm ²			 SU 130K OUT0405-0441AS	TN150V13 OUT0405-0445AS		TN150V20 OUT0405-0426AS
185 mm ²					Adapter S21 (for SU 210K) OUT0405-0389AS	TN185V20 OUT0405-0397AS
240 mm ²						TN240V20 OUT0405-0418AS

Die for manual pliers



Die
13 TONNES



Die
20 TONNES



EXTRACTION TOOLS

Part Number	Part Numbers Tools
EKO 3-36 & 3-36S	OUTCCIEXT-G0100
EKO 3-40	
EKO 3-50 & EKO 3-50 S	Dismounting Tool (retaining ring) Pliers Facom 467PA : OUTS203261-00 Pliers + Jaw : OUT EKO KIT 203261
EKO 4-50 & EKO 4-50 S	
EKO 3-60 & EKO 3-60 S	
EKO 3-50 DS & EKO 3-60 DT	
EKO 5-50	
EKO 3-50 DL	EKO 3-40 : OUTEKOEXT-315D / EKO 3-50 : see part number above
EKO 1-60	OUTEKOEXT205332

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1-1773922-1 10/17 Original

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