

SINAMICS G120D

Supplementary products





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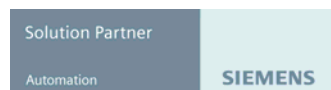


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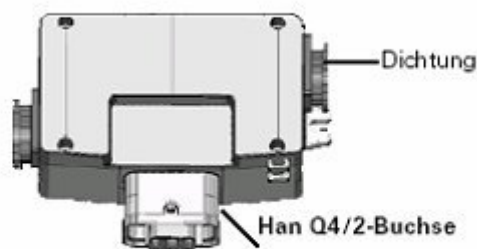


1 Power connection

1.1 Power branches

1.1.1 T-terminal connector

Energie-T-Klemmverbinder



Purchase order number	Description	RRP €
ZKT:10018700	Power T-terminal connector for power bus cables from 2.5 mm ² to 6 mm ² With mounted plug connector 4/2 socket insert and grommet housing contour	On request
ZKT:10021000	Seal for 10 – 13 mm cable 1 set = 2 seals	On request
ZKT:10021100	Seal for 13 – 16 mm cable 1 set = 2 seals	On request
ZKT:10021200	Seal for 16 – 19 mm cable 1 set = 2 seals	On request
ZKT:10021300	Seal for 19 – 22 mm cable 1 set = 2 seals	On request
ZKT:10021400	Blind stopper seal 1 seal	On request

1.1.2 PowerBox



Purchase order number	Description				RRP €
	PowerBox, contact unit for uncut power cables, housing IP65, complete with seals				
	Power bus	Round cable	Branch	Round cable	
ZKT:10035300	5 x 4 mm ² 4 x 6 mm ² 5 x 6 mm ²	D = 15 to 17 mm	5 x 4 mm ² 4 x 6 mm ² 5 x 6 mm ²	D = 15 to 17 mm	43.20
ZKT:10035310	5 x 4 mm ² 4 x 4 mm ²	D = 13 to 15 mm	5 x 4 mm ² 4 x 4 mm ²	D = 13 to 15 mm	43.20
ZKT:10035320	5 x 4 mm ²	D = 15 to 17 mm	5 x 2.5 mm ² 4 x 2.5 mm ²	D = 11 to 13 mm	43.20
ZKT:10035330	5 x 4 mm ² 4 x 6 mm ² 5 x 6 mm ²	D = 15 to 17 mm	4 x 4 mm ²	D = 13 to 15 mm	43.20
ZKT:10035340	5 x 4 mm ² 4 x 4 mm ²	D = 13 to 15 mm	5 x 2.5 mm ² 4 x 2.5 mm ²	D = 11 to 13 mm	43.20
ZKT:10035350	5 x 2.5 mm ² 4 x 2.5 mm ²	D = 11 to 13 mm	5 x 2.5 mm ² 4 x 2.5 mm ²	D = 11 to 13 mm	43.20
	Power bus	Ribbon cable	Branch	Round cable	
ZKT:10035360	5 x 6 mm ²	7.5 x 26.5 mm	5 x 4 mm ² 4 x 6 mm ² 5 x 6 mm ²	D = 15 to 17 mm	43.20
ZKT:10035370	5 x 6 mm ²	7.5 x 26.5 mm	5 x 4 mm ² 4 x 4 mm ²	D = 13 to 15 mm	43.20

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1.2 *Power bus cables (by the meter)*

1.2.1 Power bus cables (by the meter) 2.5 mm²

Purchase order number	Description	RRP €
ZKT:10029120	Power bus cable 5x2.5 mm² Sheath diameter 12.4 mm Length 50 m	173.50
ZKT:10029130	Length 100 m	347.00
ZKT:10029100	Length > 100 m	2.90/m

1.2.2 Power bus cables (by the meter) 4 mm²

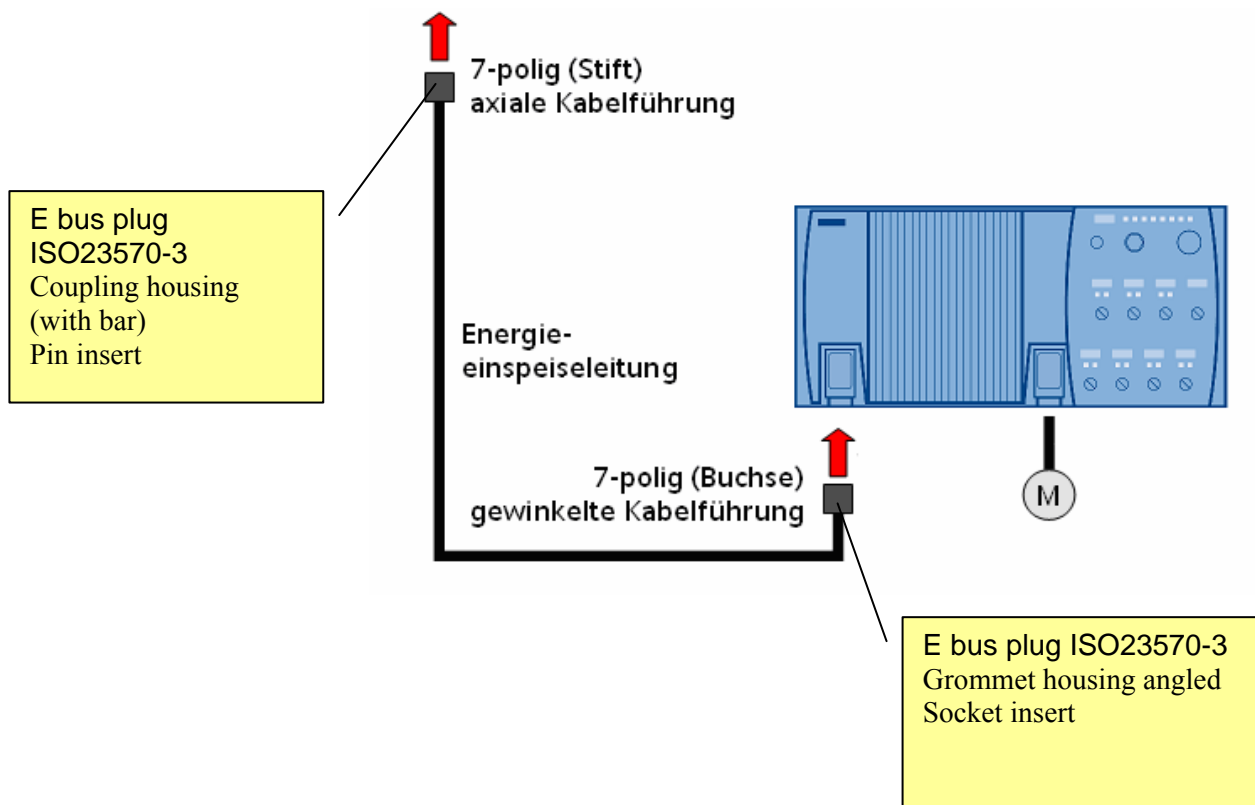
Purchase order number	Description	RRP €
ZKT:10029220	Power bus cable 5x4 mm² Sheath diameter 15.3 mm Length 50 m	298.50
ZKT:10029230	Length 100 m	597.00
ZKT:10029200	Length > 100 m	4.00/m

1.2.3 Power bus cables (by the meter) 6 mm²

Purchase order number	Description	RRP €
ZKT:10029320	Power bus cable 5x6 mm² Sheath diameter 17.3 mm Length 50 m	400.50
ZKT:10029330	Length 100 m	801.00
ZKT:10029300	Length > 100 m	6.75/m

2 Power cable

2.1 Power supply cables for frequency converters, with connectors



2.1.1 Cross-section 2.5 mm²

Purchase order number	Description	RRP €
ZKT:70008800000150	Power supply cable MS/FU for ET 200pro, ECOFAST, G120D E bus plug ISO23570-3 pin straight E bus plug ISO23570-3 socket angled 4x2.5 mm ² Length 1.5 m	51.80
ZKT:70008800000300	Length 3 m	55.90
ZKT:70008800000500	Length 5 m	61.56
ZKT:70008800001000	Length 10 m	75.50

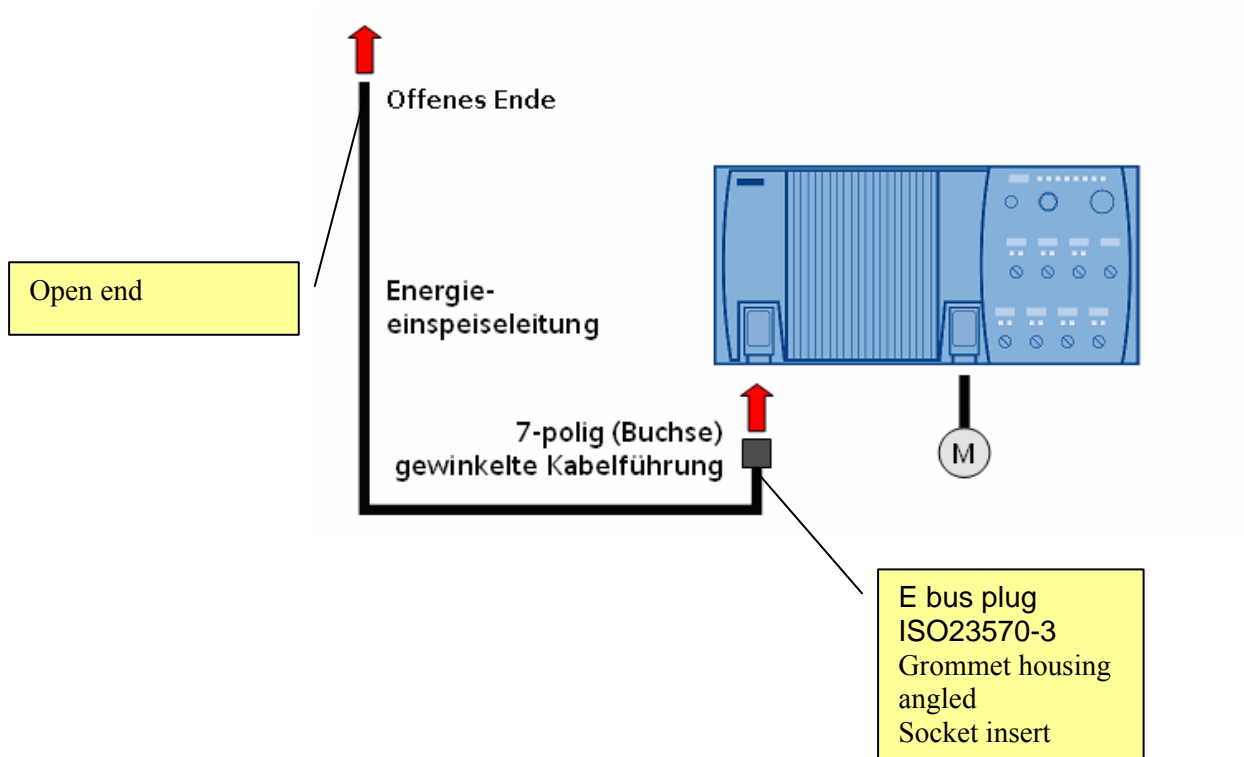
2.1.2 Cross-section 4 mm²

Purchase order number	Description	RRP €
ZKT:70008900000150	Power supply cable MS/FU for ET 200pro, ECOFAST, G120D E bus plug ISO23570-3 pin straight E bus plug ISO23570-3 socket angled 4x4 mm ² Length 1.5 m	55.18
ZKT:70008900000300	Length 3 m	62.35
ZKT:70008900000500	Length 5 m	71.90
ZKT:70008900001000	Length 10 m	95.78

2.1.3 Cross-section 6 mm²

Purchase order number	Description	RRP €
ZKT:70013600000150	Power supply cable MS/FU for ET 200pro, ECOFAST, G120D E bus plug ISO23570-3 pin straight E bus plug ISO23570-3 socket angled 4x6 mm ² Length 1.5 m	61.39
ZKT:70013600000300	Length 3 m	71.58
ZKT:70013600000500	Length 5 m	85.15
ZKT:70013600001000	Length 10 m	119.09

2.2 Power supply cables for frequency converters, with connectors at one side



2.2.1 Cross-section 2.5 mm²

Purchase order number	Description	RRP €
ZKT:70013700000150	Power supply cable MS/FU for ET 200pro, ECOFAST, G120D open E bus plug ISO23570-3 socket angled 4x2.5 mm ² Length 1.5 m	28.46
ZKT:70013700000300	Length 3 m	32.64
ZKT:70013700000500	Length 5 m	38.22
ZKT:70013700001000	Length 10 m	52.16

2.2.2 Cross-section 4 mm²

Purchase order number	Description	RRP €
ZKT:70013800000150	Power supply cable MS/FU for ET 200pro, ECOFAST, G120D open E bus plug ISO23570-3 socket angled 4x4 mm ² Length 1.5 m	31.84
ZKT:70013800000300	Length 3 m	39.01
ZKT:70013800000500	Length 5 m	48.56
ZKT:70013800001000	Length 10 m	72.44

2.2.3 Cross-section 6 mm²

Purchase order number	Description	RRP €
ZKT:70013200000150	Power supply cable MS/FU for ET 200pro, ECOFAST, G120D open E bus plug ISO23570-3 socket angled 4x6 mm ² Length 1.5 m	38.05
ZKT:70013200000300	Length 3 m	48.23
ZKT:70013200000500	Length 5 m	61.81
ZKT:70013200001000	Length 10 m	95.75

2.3 *Power supply cables (by the meter) 2.5 mm²*

Purchase order number	Description	RRP €
ZKT:10029420	Power supply cable 4x2.5 mm² Sheath diameter 11.1 mm Length 50 m	139.50
ZKT:10029430	Length 100 m	279.00
ZKT:10029400	Length > 100 m	2.70/m

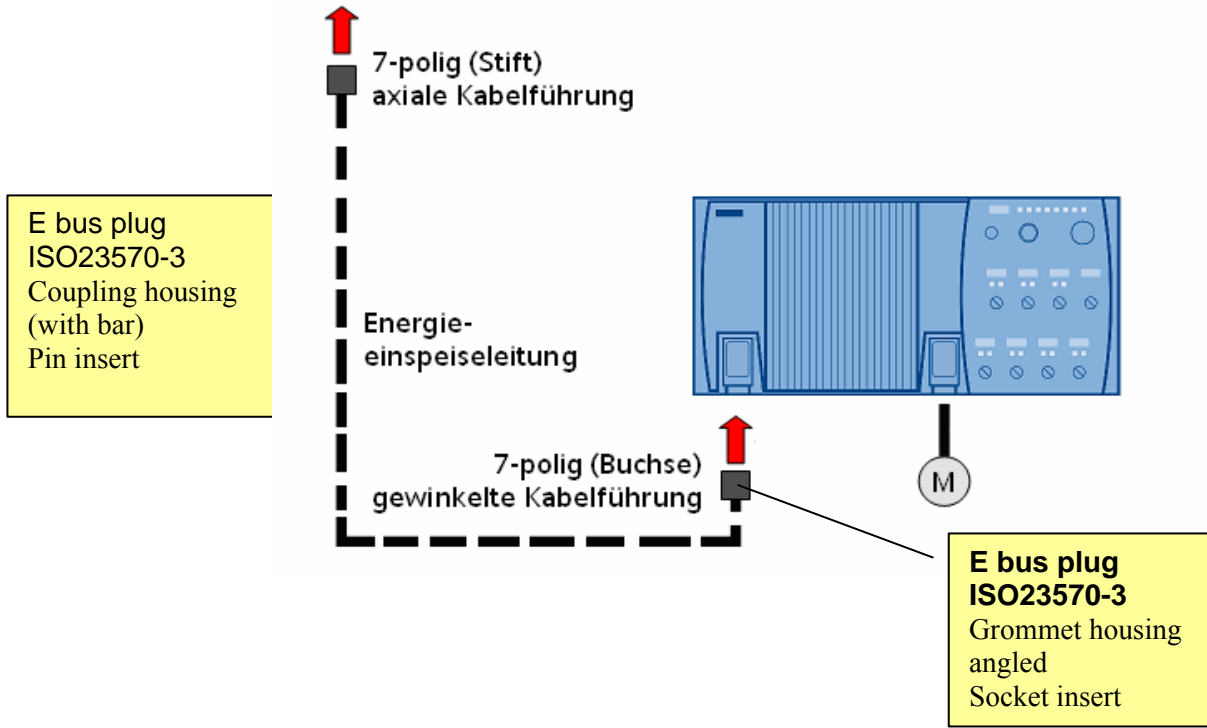
2.4 *Power supply cables (by the meter) 4 mm²*

Purchase order number	Description	RRP €
ZKT:10029520	Power supply cable 4x4 mm² Sheath diameter 13.8 mm Length 50 m	239.00
ZKT:10029530	Length 100 m	478.00
ZKT:10029500	Length > 100 m	4.70/m

2.5 *Power supply cables (by the meter) 6 mm²*

Purchase order number	Description	RRP €
ZKT:10029620	Power supply cable 4x6 mm² Sheath diameter 15.6 mm Length 50 m	339.50
ZKT:10029630	Length 100 m	679.00
ZKT:10029600	Length > 100 m	6.70/m

2.6 Plug sets for power supply cables



Purchase order number	Description	RRP €
ZKT:10030900	Plug set for power supply for example for connecting to T-terminal connector consisting of coupling housing straight outgoing feeder (with clip) E bus plug ISO23570, 3 pins Screw connector for cable diameters 10 – 18 mm 5 contact pins 2.5 mm²	19.32
ZKT:10017700	5 contact pins 4 mm²	19.32
ZKT:10017800	5 contact pins 6 mm²	19.32
ZKT:10031000	Plug set for power supply for connecting to MS/RSM/G120D grommet housing straight outgoing feeder E bus plug ISO23570, 3 sockets Screw connector for cable diameters 7 – 14 mm 5 contact sockets 2.5 mm²	18.75
ZKT:10018100	Up to 10 – 18 mm 5 contact sockets 4 mm²	29.94
ZKT:10018200	5 contact sockets 6 mm²	29.94

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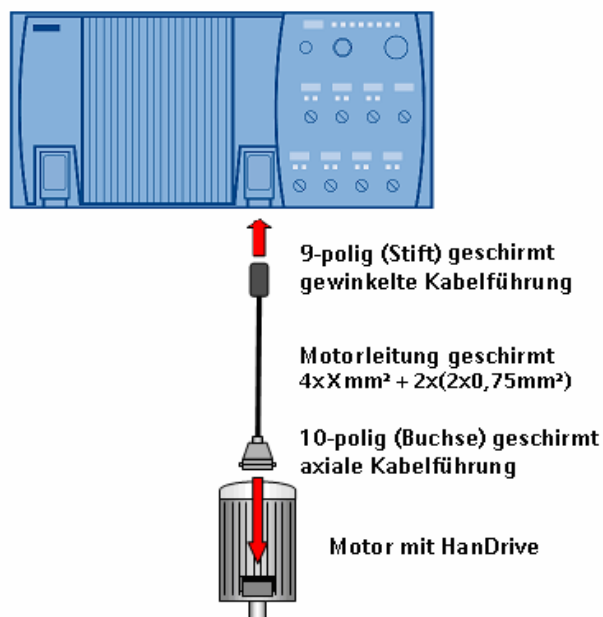
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3 Motor connection

3.1 *Motor cable (shielded) for motors in star connection with brake and temperature sensor*



3.1.1 Cross-section 4x1.5 mm² + 2x(2x0.75 mm²)

Purchase order number	Description	RRP €
	Motor cable for frequency converter, shielded Star bridge Motor plug ISO23570-3 type 2 pin Motor plug ISO23570-3 type 1 socket 4x1.5 mm ² + 2x(2x0.75 mm ²)	
ZKT:70018201000150	Length 1.5 m	159.28
ZKT:70018201000300	Length 3 m	173.01
ZKT:70018201000500	Length 5 m	191.32

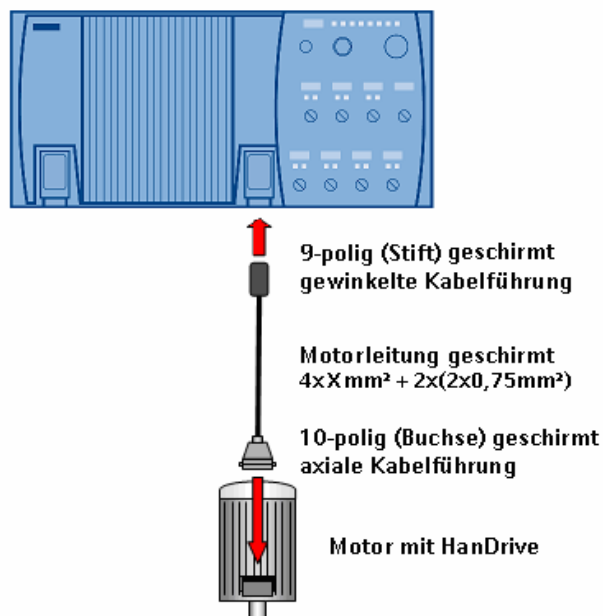
3.1.2 Cross-section 4x2.5 mm² + 2x(2x0.75 mm²)

Purchase order number	Description	RRP €
ZKT:70012301000150	Motor cable for frequency converter, shielded Star bridge Motor plug ISO23570-3 type 2 pin Motor plug ISO23570-3 type 1 socket 4x2.5 mm ² + 2x(2x0.75 mm ²) Length 1.5 m	161.15
ZKT: 70012301000300	Length 3 m	176.43
ZKT: 70012301000500	Length 5 m	196.80

3.1.3 Cross-section 4x4 mm² + 2x(2x1 mm²)

Purchase order number	Description	RRP €
ZKT:70016801000150	Motor cable for frequency converter, shielded Star bridge Motor plug ISO23570-3 type 2 pin Motor plug ISO23570-3 type 1 socket 4x4 mm ² + 2x(2x1 mm ²) Length 1.5 m	169.11
ZKT: 70016801000300	Length 3 m	188.24
ZKT: 70016801000500	Length 5 m	213.74

3.2 *Motor cable (shielded) for motors in delta connection with brake and temperature sensor*



3.2.1 Cross-section 4x1.5 mm² + 2x(2x0.75 mm²)

Purchase order number	Description	RRP €
ZKT:70020401000150	Motor cable for frequency converter, shielded Delta bridge Motor plug ISO23570-3 type 2 pin Motor plug ISO23570-3 type 1 socket 4x1.5 mm ² + 2x(2x0.75 mm ²) Length 1.5 m	159.28
ZKT:70020401000300	Length 3 m	173.01
ZKT:70020401000500	Length 5 m	191.32



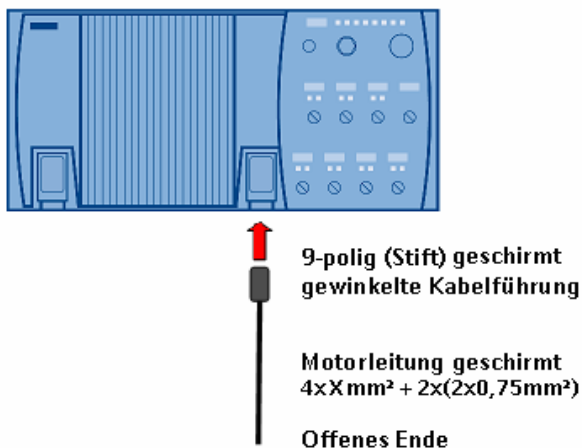
3.2.2 Cross-section 4x2.5 mm² + 2x(2x0.75 mm²)

Purchase order number	Description	RRP €
ZKT:70015901000150	Motor cable for frequency converter, shielded Delta bridge Motor plug ISO23570-3 type 2 pin Motor plug ISO23570-3 type 1 socket 4x2.5 mm ² + 2x(2x0.75 mm ²) Length 1.5 m	161.15
ZKT:70015901000300	Length 3 m	176.43
ZKT:70015901000500	Length 5 m	196.80

3.2.3 Cross-section 4x4 mm² + 2x(2x1 mm²)

Purchase order number	Description	RRP €
ZKT:70016901000150	Motor cable for frequency converter, shielded Delta bridge Motor plug ISO23570-3 type 2 pin Motor plug ISO23570-3 type 1 socket 4x4 mm ² + 2x(2x1 mm ²) Length 1.5 m	169.11
ZKT:70016901000300	Length 3 m	188.24
ZKT:70016901000500	Length 5 m	213.74

3.3 Motor cable (shielded) for motors with brake and temperature sensor, with connectors at one side



3.3.1 Cross-section 4x1.5 mm² + 2x(2x0.75 mm²)

Purchase order number	Description	RRP €
ZKT:70020501000150	Motor cable for frequency converter, shielded Motor plug ISO23570-3 type 2 pin open 4x1.5 mm ² + 2x(2x0.75 mm ²) Length 1.5 m	101.23
ZKT:70020501000300	Length 3 m	114.96
ZKT:70020501000500	Length 5 m	133.27
ZKT:70020501001000	Length 10 m	179.03
ZKT:70020501001500	Length 15 m	224.79

3.3.2 Cross-section 4x2.5 mm² + 2x(2x0.75 mm²)

Purchase order number	Description	RRP €
ZKT:70009601000150	Motor cable for frequency converter, shielded Motor plug ISO23570-3 type 2 pin open 4x2.5 mm ² + 2x(2x0.75 mm ²) Length 1.5 m	102.89
ZKT:70009601000300	Length 3 m	118.17
ZKT:70009601000500	Length 5 m	138.55
ZKT:70009601001000	Length 10 m	189.49
ZKT:70009601001500	Length 15 m	240.43

3.3.3 Cross-section 4x4 mm² + 2x(2x1 mm²)

Purchase order number	Description	RRP €
ZKT:70017001000150	Motor cable for frequency converter, shielded Motor plug ISO23570-3 type 2 pin open 4x4 mm ² + 2x(2x1 mm ²) Length 1.5 m	122.99
ZKT:70017001000300	Length 3 m	142.12
ZKT:70017001000500	Length 5 m	167.63
ZKT:70017001001000	Length 10 m	231.39
ZKT:70017001001500	Length 15 m	295.15

3.4 *Motor cable by the meter*

3.4.1 Motor cable 4x1.5 mm² + 2x(2x0.75 mm²) – by the meter

Purchase order number	Description	RRP €
ZKT:10035210	Motor cable, shielded, by the meter 4x1.5 mm ² + 2x(2x0.75 mm ²) Length 10 m	91.50
ZKT:10035220	Length 50 m	457.50

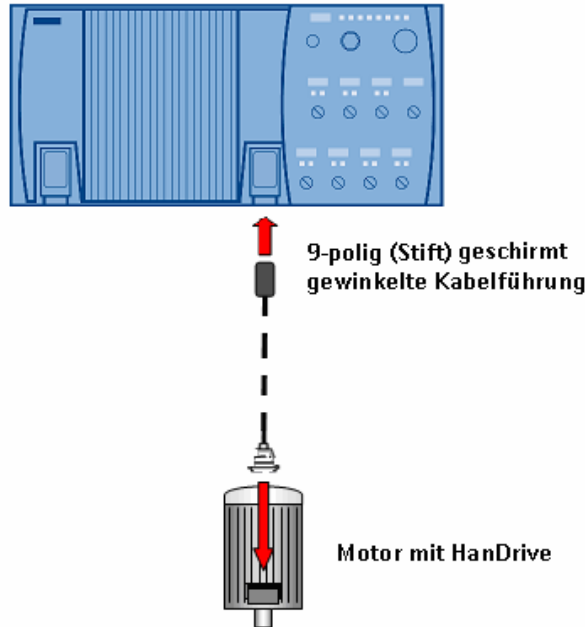
3.4.2 Motor cable 4x2.5 mm² + 2x(2x0.75 mm²) – by the meter

Purchase order number	Description	RRP €
ZKT:10031810	Motor cable, shielded, by the meter 4x2.5 mm ² +2x(2x 0.75 mm ²) Length 10 m	101.90
ZKT:10031820	Length 50 m	509.50

3.4.3 Motor cable 4x4 mm² + 2x(2x1 mm²) – by the meter

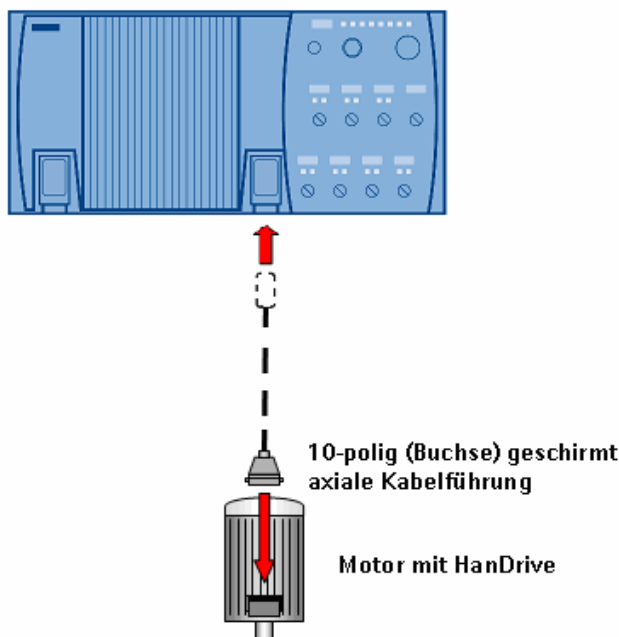
Purchase order number	Description	RRP €
ZKT:10032910	Motor cable, shielded, by the meter 4x4 mm ² + 2x(2x1 mm ²) Length 10 m	127.50
ZKT:10032920	Length 50 m	637.50

3.5 *Plug sets (shielded) for motor connection cables at the converter side*



Purchase order number	Description	RRP €
ZKT:10032001	Plug set (shielded) for motor cable for connection to frequency converter Metal EMC EMC cable screw connector Grommet housing straight outgoing feeder Motor plug ISO23570-3 type 2 pin Screw connector for cable diameters 7 – 13 mm 4 contact pins 1.5 mm² + 4x0.75 mm²	69.33
ZKT:10032011	4 contact pins 2.5 mm² + 4x0.75 mm²	69.33
ZKT:10032021	Screw connector for cable diameters 10.5 – 15 mm 4 contact pins 4 mm² + 4x1 mm²	69.33

3.6 Plug sets (shielded) for motor connection cables at the motor side

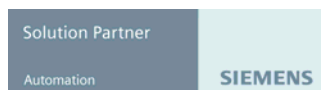


Purchase order number	Description	RRP €
ZKT:10019710	Plug set (shielded) for motor cable for connection to the motor Star bridge Grommet housing straight outgoing feeder Motor plug ISO23570-3 type 1 socket EMC screw connector for cable diameters 11 – 20 mm 3 contact sockets 1.5 mm² + 4x0.75 mm²	37.97
ZKT:10019720	3 contact sockets 2.5 mm² + 4x0.75 mm²	37.97
ZKT:10019730	3 contact sockets 4 mm² + 4x1 mm²	37.97
ZKT:10031900	Plug set (shielded) for motor cable for connection to the motor Delta bridge Grommet housing straight outgoing feeder Motor plug ISO23570-3 type 1 socket EMC screw connector for cable diameters 11 – 20 mm 3x insulation-piercing connectors 1 to 2.5 mm² + 4 contact sockets 0.75 mm²	38.77
ZKT:10031910	3x insulation-piercing connectors 4 mm² to 6 mm² + 4 contact sockets 1 mm²	38.77

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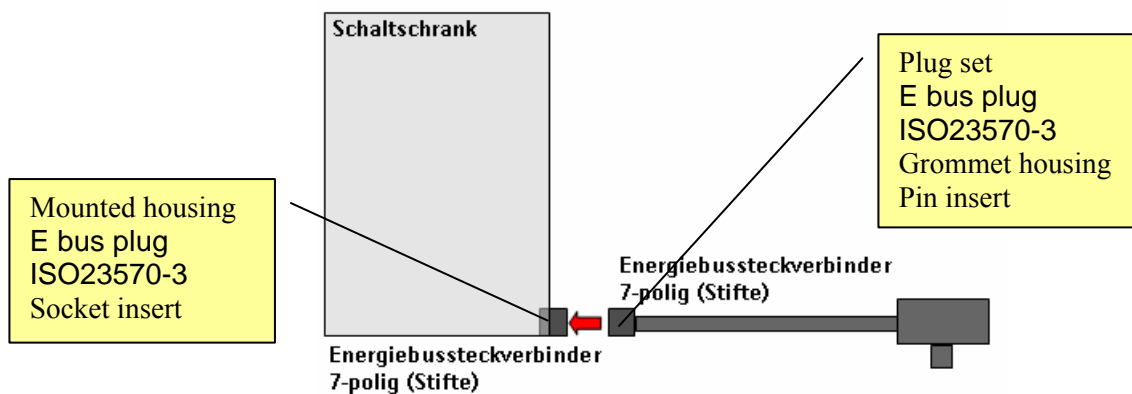
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4 Accessories

4.1 Plug sets for power bus to connect control enclosure / sub-distribution board



Purchase order number	Description	RRP €
ZKT:10019010	Mounted housing consisting of coupling housing (with clip) E bus plug ISO23570, 3 sockets 5 contact sockets 4 mm²	15.04
ZKT:10019000	5 contact sockets 6 mm²	15.04

Purchase order number	Description	RRP €
ZKT:10017300	Plug set Grommet housing straight outgoing feeder E bus plug ISO23570, 3 pins Screw connector for cable diameters 10 – 18 mm 5 contact pins 4 mm²	16.24
ZKT:10017400	5 contact pins 6 mm²	16.24
ZKT:10017500	Plug set Grommet housing straight outgoing feeder E bus plug ISO23570, 3 pins Screw connector for cable diameters 11.5 – 15,5 mm 5 contact pins 4 mm²	24.35
ZKT:10017610	4 contact pins 6 mm²	23.49



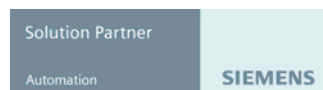
4.2 *Sealing caps*

Purchase order number	Description	RRP €
ZKT:10029800	Sealing cap for E bus plug ISO23570-3 and motor plug ISO23570-3 type 2 for coupling housing or mounted housing with pin insert (5 caps in bag)	14.83
ZKT:10029810	Sealing cap for E bus plug ISO23570-3 and motor plug ISO23570-3 type 2 for coupling housing or mounted housing with socket insert (5 caps in bag)	14.83
ZKT:10029820	Sealing cap for E bus plug ISO23570-3 and motor plug ISO23570-3 type 2 with clip for grommet housing with socket insert	On request
ZKT:10029900	Sealing cap for motor plug ISO23570-3 type 1 with clip for grommet housing with socket insert (5 caps in bag)	54.72
ZKT:10015400	CONLOC [®] locking plug cap for motor plug ISO23570-3 type 1 for mounted, plinth and coupling housing	100.00

The prices quoted are based on a copper price of €150/100 kg and are exclusive of the material supplement and VAT. The supplement is calculated on the basis of the DEL prices on the date on which the order is received plus 1% procurement costs.

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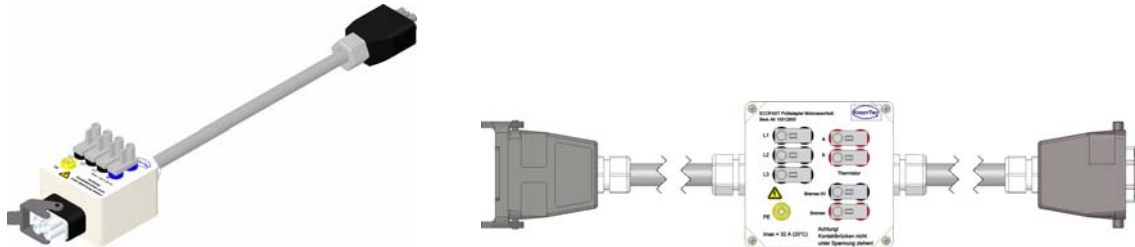
4.3 *Crimping tools*

Purchase order number	Description	RRP €
ZKT:30020500	Crimping tool for E bus plug ISO23570-3 and motor plug ISO23570-3 type 1 to 3 Cross-sections from 1.5 mm² to 6 mm²	586.00

4.4 *Removal tools for pins and sockets*

Purchase order number	Description	RRP €
ZKT:30020600	Removal tool for E bus plug ISO23570-3 for Cross-sections from 1.5 mm² to 6 mm²	33.34
ZKT:30020700	Removal tool for Motor plug ISO23570-3 type 1 and 2 Cross-sections from 1.5 mm² to 2.5 mm²	40.14

4.5 *Test adapters*

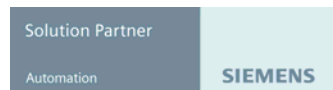


Purchase order number	Description	RRP €
ZKT:10030800	Test case for power cables with Han Q4/2, Han Q8/0 and Han 10e	On request
ZKT:10012610	Power bus test adapter (Han Q8/0)	307.00
ZKT:10012600	Power bus test adapter (Han Q4/2)	310.00
ZKT:10012800	Motor connector test adapter (Han 10e)	450.00

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5 Specification

5.1 *General requirements*

5.1.1 General requirements for cables

These properties apply to all the power cables described below.

- The sheath color is black (RAL 9005).
- They always must have a yellow-and-green protective conductor
- Round cables
- Unshielded cables
- Cables with plugs are available in
 - fixed lengths
 - variable lengths at length intervals of 10 cm

These properties apply to all the motor cables described below.

- The sheath color is orange (RAL 2003).
- They always must have a yellow-and-green protective conductor
- Round cables
- Shielded cables $4 \times X \text{ mm}^2 + 2 \times (2 \times Y \text{ mm}^2)$
- Cables with plugs are available in
 - fixed lengths
 - variable lengths at length intervals of 10 cm

5.1.2 Mechanical requirements

All power cables must satisfy the following requirements:

- High resistance to oil and chemicals at room temperature
- Minimum bending radius 15x external diameter
- Temperature range:
 - Moving: -5°C to $+70^{\circ}\text{C}$
 - Fixed: -30°C to $+70^{\circ}\text{C}$
- Conductor structure: Fine wires to VDE 0295, Class 5 / IEC 228 Cl.5
- External sheath PVC, flame-resistant to IEC 60332-1-2 and DIN VDE 0482-265-2-1

All motor cables must satisfy the following requirements:

- High resistance to oil and chemicals at room temperature
- Minimum bending radius 10x external diameter
- Temperature range:
 - Moving: -5°C to $+70^{\circ}\text{C}$
 - Fixed: -30°C to $+70^{\circ}\text{C}$
- Conductor structure: Fine wires to VDE 0295, Class 6 / IEC 228 Cl.6
- External sheath:
 - PVC (unshielded cables)
 - PUR (shielded cables)
 - flame-resistant to IEC 60332-1-2

5.1.3 Electrical requirements

The following requirements apply to all power cables:

- Test voltage at least 2000 V
- Rated voltage U_0/U 300V/500V
- Insulation Specific volume resistance $> 20 \text{ G}\Omega \times \text{cm}$

The following requirements apply to all motor cables:

- Test voltage at least 4000V
- Rated voltage U_0/U 600V/1000V
- Insulation Specific volume resistance $> 20 \text{ G}\Omega \times \text{cm}$

5.1.4 General requirements for plug connectors

5.1.4.1 Screw connectors on housing

M screw connectors should be given preference for use as screw connectors for the plug connectors; PG screw connectors may also be used depending on availability.

5.1.4.2 Requirements for 7-pole plug connector

5.1.4.2.1 Housing

- Plastic
- Limit temperatures $-40^\circ\text{C} / +125^\circ\text{C}$
- Protection type when locked IP 65
- M/(PG) screw connector

5.1.4.2.2 Contact insert

- Plastic
- Limit temperatures $-40^\circ\text{C} / +125^\circ\text{C}$
- Safe to touch in accordance with IEC 60529

5.1.4.2.3 Contacts

- Copper alloy
- Surface hard silver-plated
- Crimped contacts

5.1.4.3 Requirements for 9-pole plug connector

5.1.4.3.1 Housing

- Metal EMC shielded (metal-coated plastic available on request)
- Limit temperatures $-40^\circ\text{C} / +125^\circ\text{C}$
- Protection type when locked IP 65
- M/(PG) screw connector

-

5.1.4.3.2 Contact insert

- Plastic
- Limit temperatures -40°C / +125°C
-

5.1.4.3.3 Contacts

- Copper alloy
- Surface hard silver-plated
- Crimped contacts

5.1.4.4 Requirements for 10-pole plug connector with protective conductor

5.1.4.4.1 Housing

- Die-cast aluminum housing
- Limit temperatures -40°C / +125°C
- Protection type when locked IP 65
- M screw connector

5.1.4.4.2 Contact insert

- Plastic
- Limit temperatures -40°C / +125°C

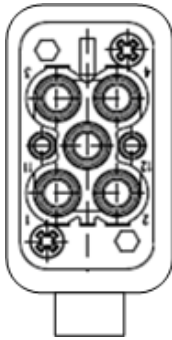
5.1.4.4.3 Contacts

- Copper alloy
- Surface hard silver-plated
- Crimped contacts or cage strain spring terminals

5.1.5 Plug assignment for cables with plugs

All cables are connected in accordance with the ISO 23570-3 standard.

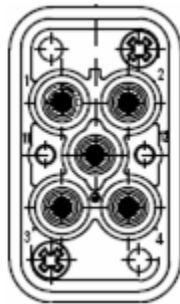
5.1.5.1 Power cable 7-pole socket



Plug assignment

Pin	
1	L1
2	L2
3	L3
4	-
11	-
12	-
⊕	PE

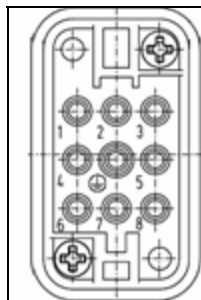
5.1.5.2 Power cable 7-pole pins



Plug assignment

Pin	
1	L1
2	L2
3	L3
4	-
11	-
12	-
⊕	PE

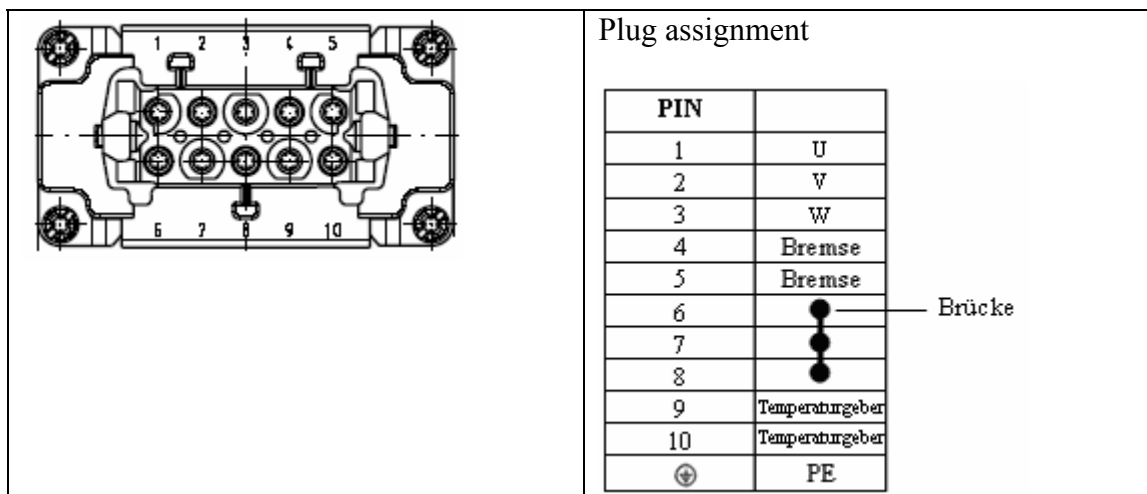
5.1.5.3 Motor cable 9-pole pins



Plug assignment

Pin	
1	U
2	-
3	W
4	Bremse
5	Temperaturgeber
6	Bremse
7	V
8	Temperaturgeber
⊕	PE

5.1.5.4 Motor connection plug 10-pole with PE socket for star connection



5.1.6 Power cables

Power cables are available with the following cross-sections:

- 4 x 2.5 mm² 5 x 2.5 mm²
- 4 x 4 mm² 5 x 4 mm²
- 4 x 6 mm² 5 x 6 mm²

5.1.7 Requirements for T-distributors

5.1.7.1 Technical data

5.1.7.1.1 Housing

- Material plastic
- Operating temperature -25°C to +70°C
- Protection type when locked IP 65

5.1.7.1.2 Contact inserts for 7-pole connection (external)

- Plastic
- Limit temperatures -40°C / +125°C
- Safe to touch in accordance with IEC 60529

5.1.7.1.3 Contacts

- Copper alloy
- Connection equipment depending on design:
- Insulating-piercing/screw connector
- Insulation-piercing connector

5.1.7.1.4 Plug connectors with cables

See: Cables section 5.1.1 General requirements for cables and section 5.1.4.2 Requirements for 7-pole power supply.

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5.1.8 Pack units

5.1.8.1 Cables

5.1.8.1.1 *Cables without plugs (by the meter)*

Cables without plugs are always sold by the meter and are supplied on a cable ring or a cable drum.

5.1.8.1.2 *Cables with plugs*

These cables are always supplied individually.

5.1.8.2 Plug connectors

The pack unit is one unit.

5.1.8.3 Accessories

The pack unit is one unit in this case as well. The pack unit may also be 5 or 10 units for small parts such as sealing caps.

5.2 *Standards and regulations*

5.2.1 Cables

- ISO 23570-3
- VDE 0295, Class 5
- IEC 228 Cl.5
- IEC 60332-2-1
- DIN VDE 0482-265-2-1

5.2.2 Plug connectors

- DIN VDE 0110
- DIN VDE 0627
- DIN EN 61 984
- IEC 60529
- ISO 23570-3



6 Solution partner services

Bespoke products

KnorrTec also develops and supplied bespoke solutions on request, as well as modifications and variations of all the products listed in the catalog.

Pr- sales and after sales service

KnorrTec offers comprehensive support and service which guarantees fast, competent support in all questions relating to KnorrTec products and system solutions.

KnorrTec support

KnorrTec offers extensive technical support services for its own products, including:

- Planning and project work
- Commissioning
- Cable specifications

KnorrTec service

KnorrTec also provides after-sales support:

- Repair service
- Spare parts service
- Hotline service