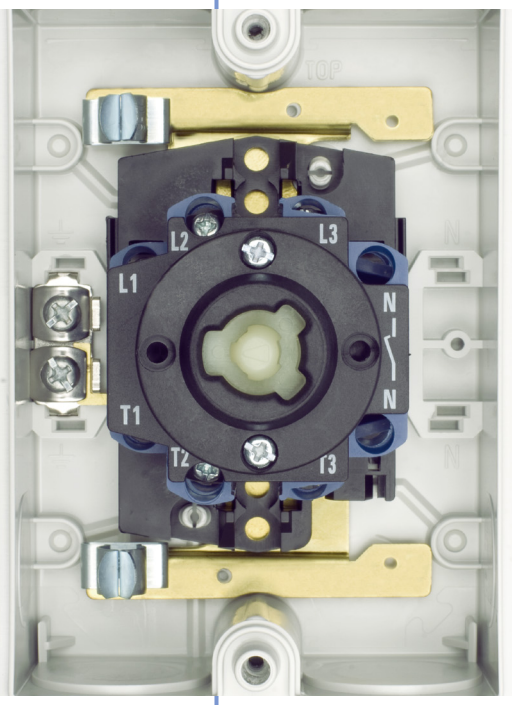
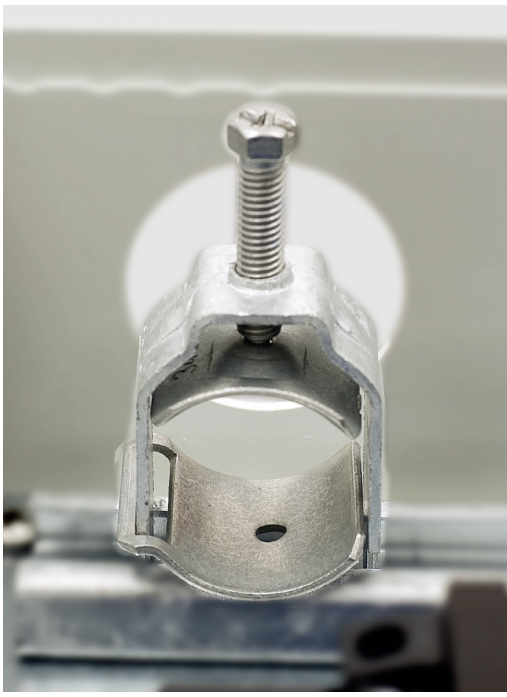
Kraus & Naimer





Maintenance Switches for

EMC-compliant Connection

next ▶

Maintenance Switches for
EMC-compliant connection

Maintenance Switches and Safety Switches
according to IEC 60204 and VDE 0113
for EMC-compliant connection of
frequency regulated motors

CONTENT

Please choose the suitable Maintenance Switch due to the power data of your projected drive from the table below.

< Click the page number to get there. >

Note:

Maintenance Switches for EMC-compliant connection of FU-regulated drives are available either with shield clips (KS- and KL-enclosure) or with clips mounted on DIN-rails (STM-enclosure). These clips are used to continue the cable shield circuit through the enclosure.

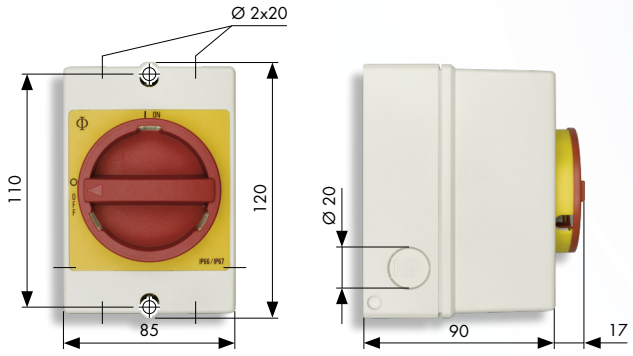
The configuration of the Maintenance Switch between FU and motor allows the use as Disconnector up to 400 Hz and as Load Switch at frequencies from 40 Hz to 100 Hz.

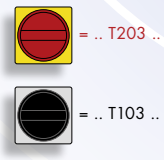
Each Maintenance Switch has as standard 2 auxiliary contacts, 1 NC and 1 NO. Via the NO (20 ms leading) the FU can be switched off before the main contacts of the switch open.

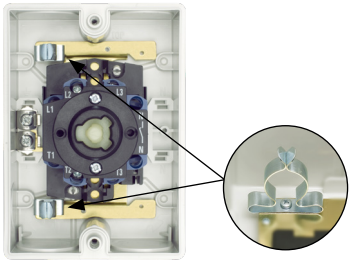
For the rating of the switch please note that the motor may have approx. 10 % higher charging rate due to the higher loss in FU-operation e.g. a motor with 7,5 kW rating the motor current has to be determined with 16,7 A instead of 15,2 A.

20 A / 5,5 kW ➡ *KG10*

Maintenance Switches for
EMC-compliant connection







Connection diagram	Recommended tightening torque for terminal screws
PE L1 L2 L3 13 21 PE T1 T2 T3 14 22	KG10 0,8 Nm
External-Ø shield	**Insulation stripping length**
9 – 11	L 8

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Contact development: 3 pole with auxiliary contacts 1NC/1NO (leading off)

General Data
Switch Disconnectors according to EN 60947-3 and VDE 0660 part 107
Ambient temperature (enclosed): 35 °C during 24 hours with peaks up to 40 °C
Equipment
Plastic enclosure, protection IP 66/67, knock-outs
Handle in the OFF-position lockable with padlocks, special safety interlocked covers with enclosure
With shield clips for use to continue the cable shield circuit through the enclosure

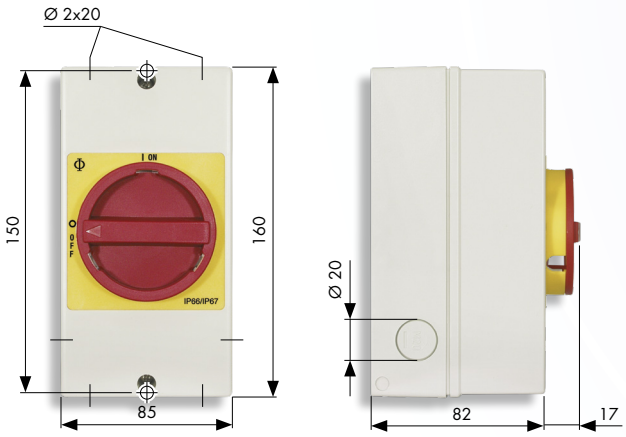
Rated Data / Order Number

Thermal Current I_{the}	Utilization Category AC-23 B/A, 3x400 V	Breaking Capacity 3x400 V	Color Handle / Backing	Order Number
20 A	5,5 kW	120 A		*KG10 T203/D-A076 KS51V*
				KG10 T103/D-A050 KS51V

25 A / 7,5 kW ➡ *KG20*
32 A / 11 kW ➡ *KG32*

Maintenance Switches for
EMC-compliant connection

Maintenance Switches and Safety Switches according to IEC 60204 and VDE 0113 for EMC-compliant connection of frequency regulated motors



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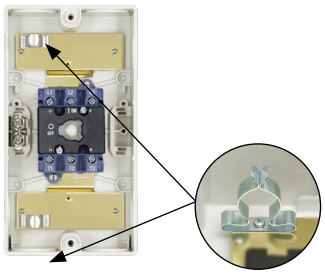

Connection diagram	Recommended tightening torque for terminal screws
PE L1 L2 L3 13 21 PE T1 T2 T3 14 22	KG20 1,25 Nm KG32 1,25 Nm
External-Ø shield	**Insulation stripping length**
12 – 16	9

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Contact development: 3 pole with auxiliary contacts 1NC/1NO (leading off)

General Data
Switch Disconnectors according to EN 60947-3 and VDE 0660 part 107
Ambient temperature (enclosed): 35 °C during 24 hours with peaks up to 40 °C
Equipment
Plastic enclosure, protection IP 66/67, knock-outs
Handle in the OFF-position lockable with padlocks, special safety interlocked covers with enclosure
With shield clips for use to continue the cable shield circuit through the enclosure

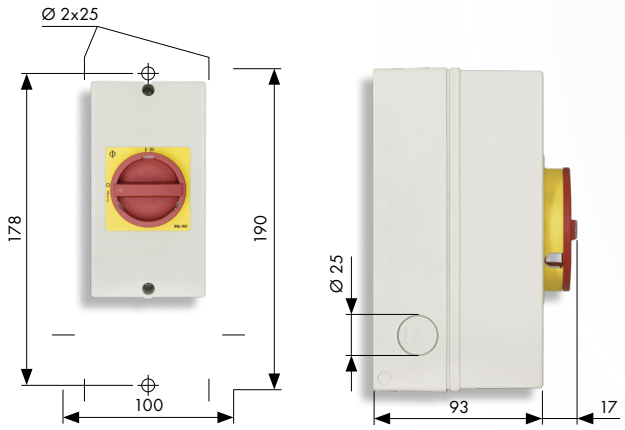
Rated Data / Order Number

Thermal Current I_{the}	Utilization Category AC-23 B/A, 3x400 V	Breaking Capacity 3x400 V	Color Handle / Backing	Order Number
25 A	7,5 kW	180 A		*KG20 T203/D-A159 KL51V*
				KG20 T103/D-A126 KL51V
32 A	11 kW	220 A		*KG32 T203/D-A117 KL51V*
				KG32 T103/D-A061 KL51V

40 A / 15 kW ➡ *KG41*
63 A / 22 kW ➡ *KG64*

Maintenance Switches for
EMC-compliant connection

Maintenance Switches and Safety Switches according to IEC 60204 and VDE 0113 for EMC-compliant connection of frequency regulated motors



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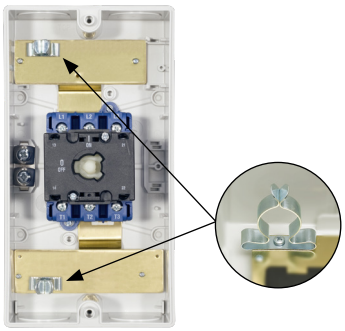

Connection diagram	Recommended tightening torque for terminal screws
PE L1 L2 L3 13 21 PE T1 T2 T3 14 22	KG41 1,80 Nm KG64 1,80 Nm
External-Ø shield	**Insulation stripping length**
12 – 16	10

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Contact development: 3 pole with auxiliary contacts 1NC/1NO (leading off)

General Data
Switch Disconnectors according to EN 60947-3 and VDE 0660 part 107
Ambient temperature (enclosed): 35 °C during 24 hours with peaks up to 40 °C
Equipment
Plastic enclosure, protection IP 66/67, knock-outs
Handle in the OFF-position lockable with padlocks, special safety interlocked covers with enclosure
With shield clips for use to continue the cable shield circuit through the enclosure

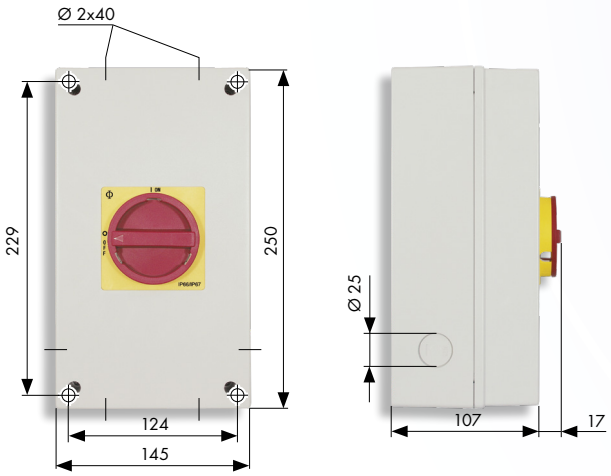
Rated Data / Order Number

Thermal Current I_{the}	Utilization Category AC-23 B/A, 3x400 V	Breaking Capacity 3x400 V	Color Handle / Backing	Order Number
40 A	15 kW	300 A		*KG41 T203/D-A145 KL11V*
				KG41 T103/D-A087 KL11V
63 A	22 kW	350 A		*KG64 T203/D-A173 KL11V*
				KG64 T103/D-A103 KL11V

80 A / 30 kW ➡ *KG80*
100 A / 37 kW ➡ *KG100*

Maintenance Switches for
EMC-compliant connection

Maintenance Switches and Safety Switches
according to IEC 60204 and VDE 0113
for EMC-compliant connection of
frequency regulated motors

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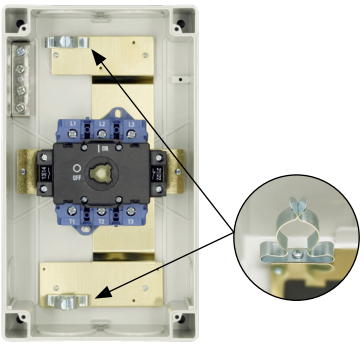

Connection diagram	Recommended tightening torque for terminal screws
PE L1 L2 L3 13 21 PE T1 T2 T3 14 22	KG80 3,00 Nm KG100 3,00 Nm
External-Ø shield	**Insulation stripping length**
23 – 29	14

Contact development: 3 pole with auxiliary contacts 1NC/1NO (leading off)

General Data
Switch Disconnectors according to EN 60947-3 and VDE 0660 part 107
Ambient temperature (enclosed): 35 °C during 24 hours with peaks up to 40 °C
Equipment
Plastic enclosure, protection IP 66/67, knock-outs
Handle in the OFF-position lockable with padlocks, special safety interlocked covers with enclosure
With shield clips for use to continue the cable shield circuit through the enclosure

Rated Data / Order Number

Thermal Current I_{the}	Utilization Category AC-23 B/A, 3x400 V	Breaking Capacity 3x400 V	Color Handle / Backing	Order Number
80 A	30 kW	560 A		*KG80 T203/D-A108 KL71V*
				KG80 T103/D-A061 KL71V
100 A	37 kW	650 A		*KG100 T203/D-A120 KL71V*
				KG100 T103/D-A068 KL71V

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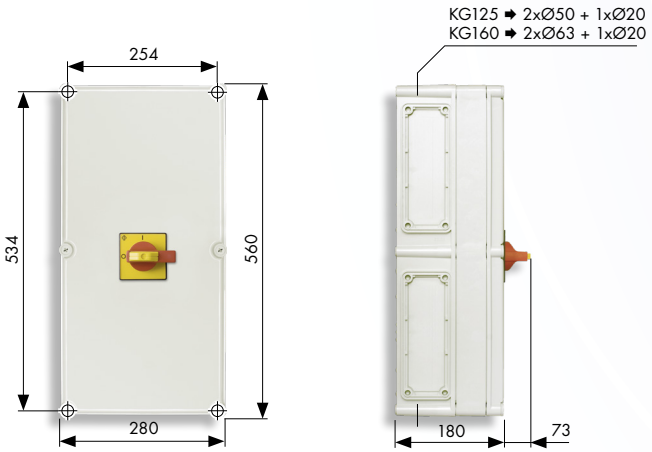
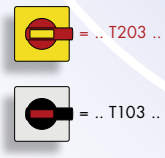
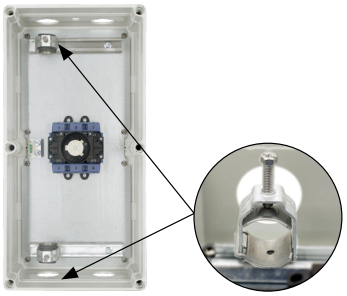
125 A / 45 kW ➡ *KG125*
160 A / 55 kW ➡ *KG160*

Maintenance Switches for
EMC-compliant connection

Maintenance Switches and Safety Switches
according to IEC 60204 and VDE 0113
for EMC-compliant connection of
frequency regulated motors







Connection diagram	Recommended tightening torque for terminal screws
PE L1 L2 L3 13 21 PE T1 T2 T3 14 22	KG125 14 Nm KG160 14 Nm
External-Ø shield	**Insulation stripping length**
34 – 40	

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Contact development: 3 pole with auxiliary contacts 1NC/1NO (leading off)

General Data
Switch Disconnectors according to EN 60947-3 and VDE 0660 part 107
Ambient temperature (enclosed): 35 °C during 24 hours with peaks up to 40 °C
Equipment
Plastic enclosure, protection IP 66/67, Handle in the OFF-position lockable with padlocks, special safety interlocked covers with enclosure
with on DIN-rails mounted clips for use to continue the cable shield circuit through the enclosure

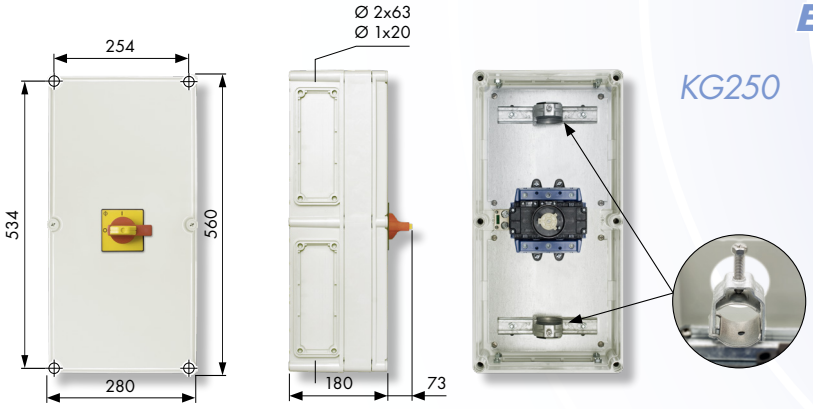
Rated Data / Order Number

Thermal Current I_{the}	Utilization Category AC-23 B/A, 3x400 V	Breaking Capacity 3x400 V	Color Handle / Backing	Order Number
125 A	45 kW	750 A		*KG125 T203/D-A082 STM*
				KG125 T103/D-A070 STM
160 A	55 kW	850 A		*KG160 T203/D-A077 STM*
				KG160 T103/D-A066 STM

250 A / 90 kW ➡ *KG250*
315 A / 110 kW ➡ *KG315*

Maintenance Switches for
EMC-compliant connection

Maintenance Switches and Safety Switches according to IEC 60204 and VDE 0113 for EMC-compliant connection of frequency regulated motors



KG250

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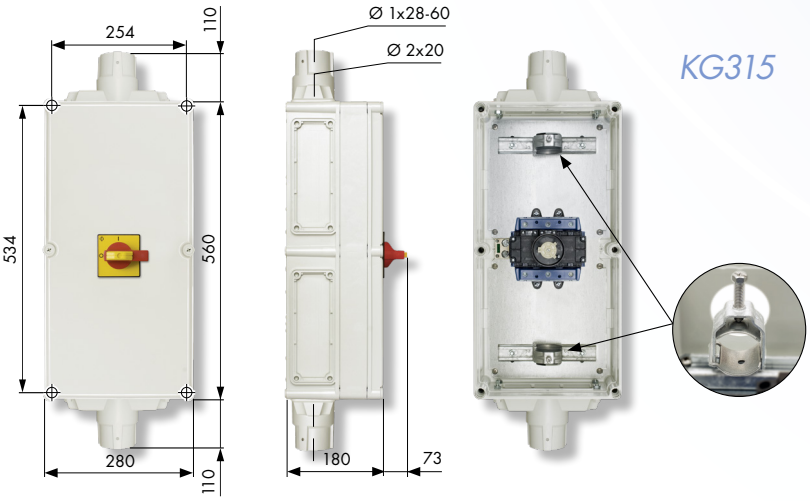

KG315

Connection diagram	Recommended tightening torque for terminal screws
PE L1 L2 L3 13 21 PE T1 T2 T3 14 22	KG250 16 Nm KG315 16 Nm
External-Ø shield	**Insulation stripping length**
KG250 34 – 40 KG315 46 – 52	L 22

Contact development: 3 pole with auxiliary contacts 1NC/1NO (leading off)

General Data
Switch Disconnectors according to EN 60947-3 and VDE 0660 part 107
Ambient temperature (enclosed): 35 °C during 24 hours with peaks up to 40 °C
Equipment
Plastic enclosure, protection IP 66/67, Handle in the OFF-position lockable with padlocks, special safety interlocked covers with enclosure with on DIN-rails mounted clips for use to continue the cable shield circuit through the enclosure

Rated Data / Order Number

Thermal Current I_{the}	Utilization Category AC-23 B/A, 3x400 V	Breaking Capacity 3x400 V	Color Handle / Backing	Order Number
250 A	90 kW	1380 A		*KG250 T203/D-A075 STM*
				KG250 T103/D-A073 STM
315 A	110 kW	1650 A		*KG315 T203/D-A034 STM*
				KG315 T103/D-W043 STM

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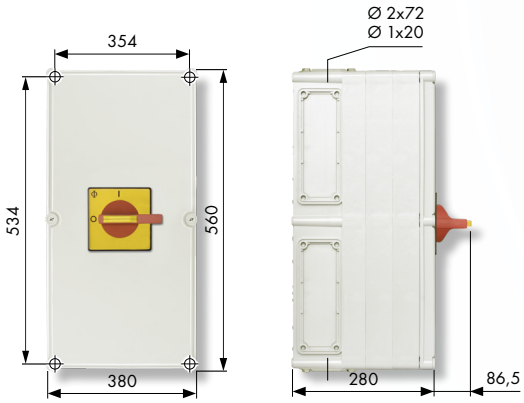
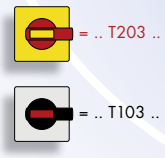
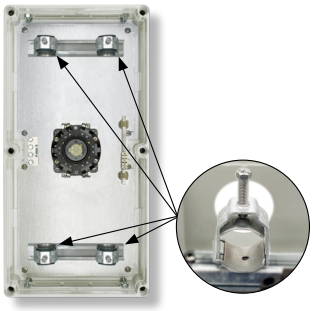
315 A / 132 kW ➡ *C316*

Maintenance Switches for
EMC-compliant connection

Maintenance Switches and Safety Switches
according to IEC 60204 and VDE 0113
for EMC-compliant connection of
frequency regulated motors







Connection diagram	Recommended tightening torque for terminal screws
PE L1 L2 L3 103 101 PE T1 T2 T3 104 102	C316 14 Nm

External-Ø shield		Connecting bolts
C316	46 – 52	M12

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Contact development: 3 pole with auxiliary contacts 1NC/1NO (leading off)

General Data
Switch Disconnectors according to EN 60947-3 and VDE 0660 part 107
Ambient temperature (enclosed): 35 °C during 24 hours with peaks up to 40 °C
Equipment
Plastic enclosure, protection IP 66/67, Handle in the OFF-position lockable with padlocks, special safety interlocked covers with enclosure
with on DIN-rails mounted clips for use to continue the cable shield circuit through the enclosure

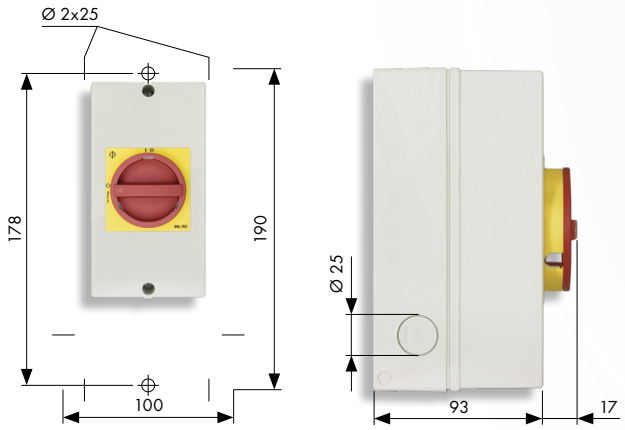
Rated Data / Order Number

Thermal Current I_{the}	Utilization Category AC-23 B/A, 3x400 V	Breaking Capacity 3x400 V	Color Handle / Backing	Order Number
315 A	132 kW	2000 A		*C316 T203/D-A037 STM*
				C316 T103/D-A025 STM

25 A / 7,5 kW ➡ *KG20B*
32 A / 11 kW ➡ *KG32B*

Maintenance Switches for
EMC-compliant connection

Maintenance Switches and Safety Switches according to IEC 60204 and VDE 0113 for EMC-compliant connection of frequency regulated motors



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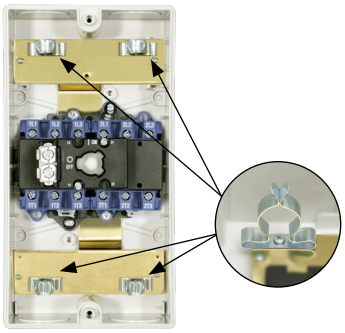

Connection diagram	Recommended tightening torque for terminal screws
PE 1L1 1L2 1L3 2L1 2L2 2L3 13 21 PE 1T1 1T2 1T3 2T1 2T2 2T3 14 22	KG20B 1,25 Nm KG32B 1,25 Nm
External-Ø shield	**Insulation stripping length**
12 – 16	L 9

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Contact development: 6 pole with auxiliary contacts 1NC/1NO (leading off)

General Data
Switch Disconnectors according to EN 60947-3 and VDE 0660 part 107
Ambient temperature (enclosed): 35 °C during 24 hours with peaks up to 40 °C
Equipment
Plastic enclosure, protection IP 66/67, knock-outs
Handle in the OFF-position lockable with padlocks, special safety interlocked covers with enclosure
With shield clips for use to continue the cable shield circuit through the enclosure

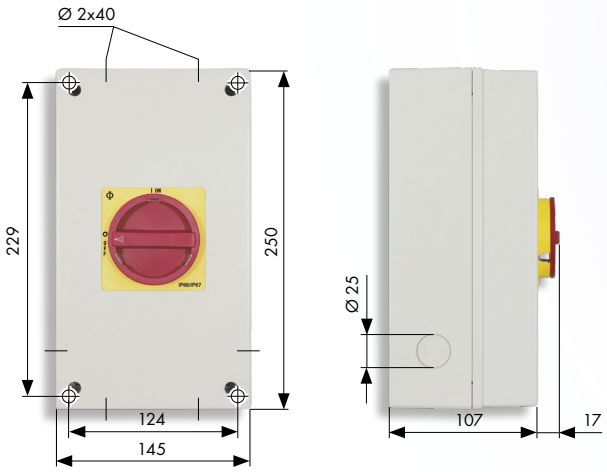
Rated Data / Order Number

Thermal Current I_{the}	Utilization Category AC-23 B/A, 3x400 V	Breaking Capacity 3x400 V	Color Handle / Backing	Order Number
25 A	7,5 kW	180 A		*KG20B T206/D-A059 KL11V*
				KG20B T106/D-A046 KL11V
32 A	11 kW	220 A		*KG32B T206/D-A054 KL11V*
				KG32B T106/D-A040 KL11V

40 A / 15 kW ➡ *KG41B*
63 A / 22 kW ➡ *KG64B*

Maintenance Switches for
EMC-compliant connection

Maintenance Switches and Safety Switches according to IEC 60204 and VDE 0113 for EMC-compliant connection of frequency regulated motors



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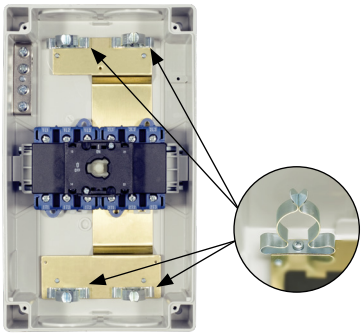

Connection diagram	Recommended tightening torque for terminal screws
PE 1L1 1L2 1L3 2L1 2L2 2L3 13 21 PE 1T1 1T2 1T3 2T1 2T2 2T3 14 22	KG41B 1,80 Nm KG64B 1,80 Nm
External-Ø shield	**Insulation stripping length**
23 – 29	L 10

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Contact development: 6 pole with auxiliary contacts 1NC/1NO (leading off)

General Data
Switch Disconnectors according to EN 60947-3 and VDE 0660 part 107
Ambient temperature (enclosed): 35 °C during 24 hours with peaks up to 40 °C
Equipment
Plastic enclosure, protection IP 66/67, knock-outs
Handle in the OFF-position lockable with padlocks, special safety interlocked covers with enclosure
With shield clips for use to continue the cable shield circuit through the enclosure

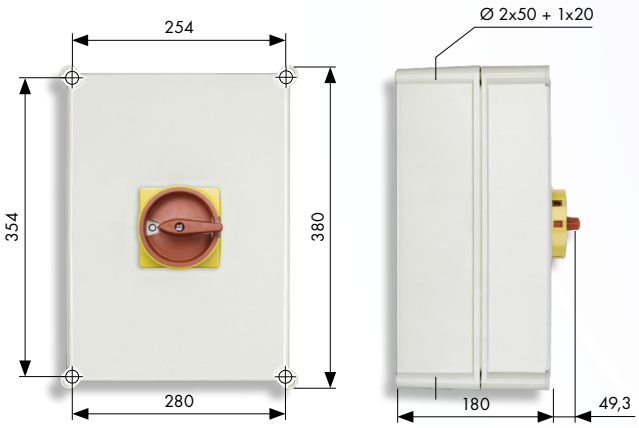
Rated Data / Order Number

Thermal Current I_{the}	Utilization Category AC-23 B/A, 3x400 V	Breaking Capacity 3x400 V	Color Handle / Backing	Order Number
40 A	15 kW	300 A		*KG41B T206/D-A052 KL71V*
				KG41B T106/D-A032 KL71V
63 A	22 kW	350 A		*KG64B T206/D-A066 KL71V*
				KG64B T106/D-A038 KL71V

80 A / 30 kW ➡ *KG80C*
100 A / 37 kW ➡ *KG100C*

Maintenance Switches for
EMC-compliant connection

Maintenance Switches and Safety Switches according to IEC 60204 and VDE 0113 for EMC-compliant connection of frequency regulated motors



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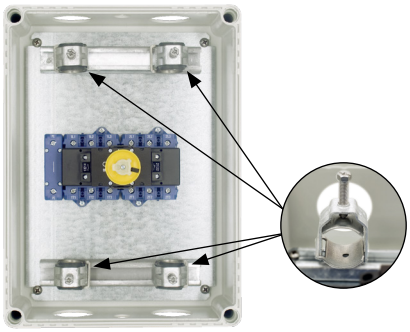

Connection diagram	Recommended tightening torque for terminal screws
PE 1L1 1L2 1L3 2L1 2L2 2L3 13 21 PE 1T1 1T2 1T3 2T1 2T2 2T3 14 22	KG80C 3 Nm KG100C 3 Nm
External-Ø shield	**Insulation stripping length**
28 – 34	L 14

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Contact development: 6 pole with auxiliary contacts 1NC/1NO (leading off)

General Data
Switch Disconnectors according to EN 60947-3 and VDE 0660 part 107
Ambient temperature (enclosed): 35 °C during 24 hours with peaks up to 40 °C
Equipment
Plastic enclosure, protection IP 66/67, Handle in the OFF-position lockable with padlocks, special safety interlocked covers with enclosure with on DIN-rails mounted clips for use to continue the cable shield circuit through the enclosure

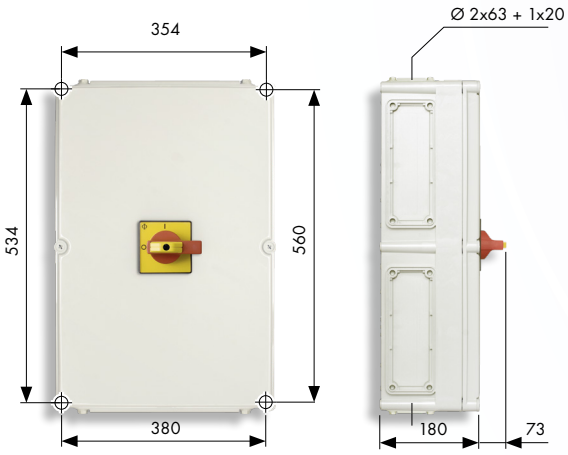
Rated Data / Order Number

Thermal Current I_{the}	Utilization Category AC-23 B/A, 3x400 V	Breaking Capacity 3x400 V	Color Handle / Backing	Order Number
80 A	30 kW	560 A		*KG80C T206/D-A070 STM*
				KG80C T106/D-A055 STM
100 A	37 kW	650 A		*KG100C T206/D-A060 STM*
				KG100C T106/D-A049 STM

125 A / 45 kW ➡ *KG125*
160 A / 55 kW ➡ *KG160*

Maintenance Switches for
EMC-compliant connection

Maintenance Switches and Safety Switches
according to IEC 60204 and VDE 0113
for EMC-compliant connection of
frequency regulated motors



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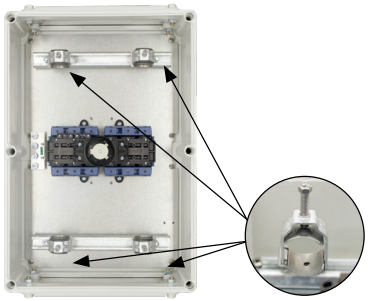

Connection diagram	Recommended tightening torque for terminal screws
	KG125 14 Nm KG160 14 Nm
External-Ø shield	**Insulation stripping length**
34 – 40	

Contact development: 6 pole with auxiliary contacts 1NC/1NO (leading off)

General Data
Switch Disconnectors according to EN 60947-3 and VDE 0660 part 107
Ambient temperature (enclosed): 35 °C during 24 hours with peaks up to 40 °C
Equipment
Plastic enclosure, protection IP 66/67, Handle in the OFF-position lockable with padlocks, special safety interlocked covers with enclosure
with on DIN-rails mounted clips for use to continue the cable shield circuit through the enclosure

Rated Data / Order Number

Thermal Current I_{the}	Utilization Category AC-23 B/A, 3x400 V	Breaking Capacity 3x400 V	Color Handle / Backing	Order Number
125 A	45 kW	750 A		*KG125 T206/D-A020 STM*
				KG125 T106/D-A031 STM
160 A	55 kW	850 A		*KG160 T206/D-A040 STM*
				KG160 T106/D-A024 STM

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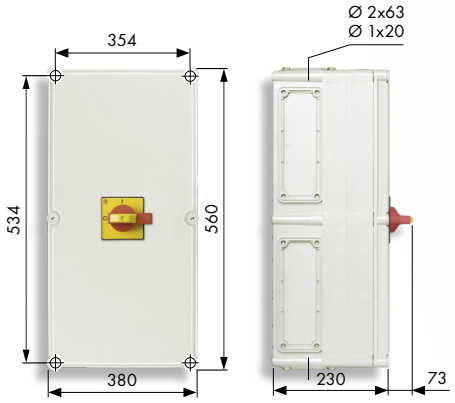
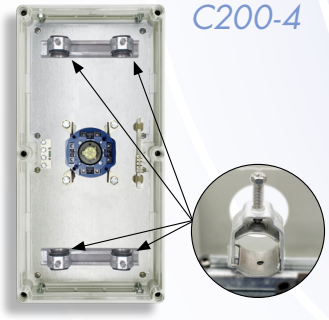
200 A / 75 kW ➡ *C200-4*
275 A / 132 kW ➡ *C316*

Maintenance Switches for
EMC-compliant connection

Maintenance Switches and Safety Switches according to IEC 60204 and VDE 0113 for EMC-compliant connection of frequency regulated motors

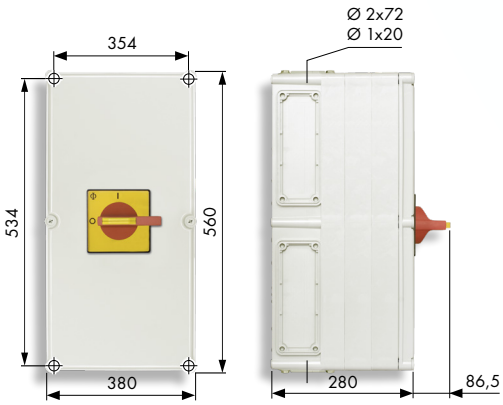


C200-4



= .. T206 ..

= .. T106 ..



C316

Connection diagram		Recommended tightening torque for terminal screws	
PE 1L1 1L2 1L3 2L1 2L2 2L3 103 101 PE 1T1 1T2 1T3 2T1 2T2 2T3 104 102		C200-4 C316	8 Nm 14 Nm
External-Ø shield		**Connecting bolts**	
C200-4 C316	34 – 40 46 – 52	C200-4 C316	M8 M12

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Contact development: 6 pole with auxiliary contacts 1NC/1NO (leading off)

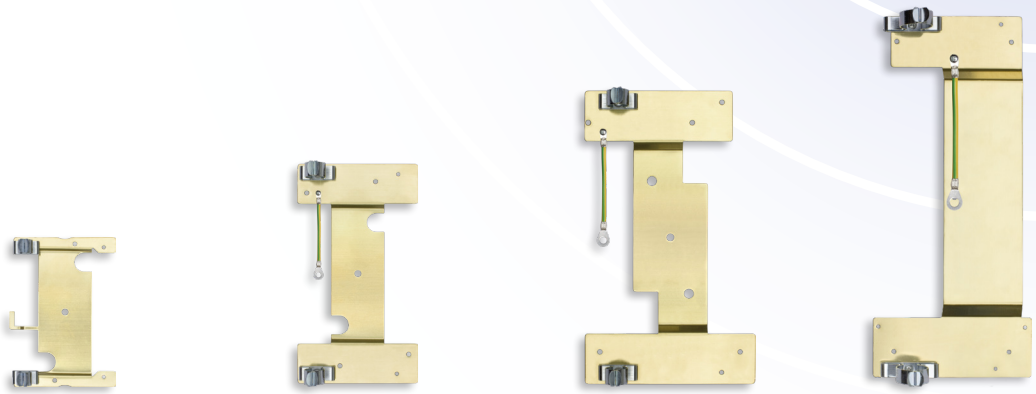
General Data
Switch Disconnectors according to EN 60947-3 and VDE 0660 part 107
Ambient temperature (enclosed): 35 °C during 24 hours with peaks up to 40 °C
Equipment
Plastic enclosure, protection IP 66/67, Handle in the OFF-position lockable with padlocks, special safety interlocked covers with enclosure
with on DIN-rails mounted clips for use to continue the cable shield circuit through the enclosure

Rated Data / Order Number

Thermal Current I_{the}	Utilization Category AC-23 B/A, 3x400 V	Breaking Capacity 3x400 V	Color Handle / Backing	Order Number
200 A	75 kW	1300 A		*C200-4 T206/D-A001 STM*
				C200-4 T106/D-A001 STM
275 A	132 kW	2000 A		*C316 T206/D-A050 STM*
				C316 T106/D-A033 STM

UPGRADE KIT

Shield wheeling kits



Standard KS- KL-Enclosure				
Dimensions enclosure	85 x 120	85 x 160	100 x 190	145 x 250
External-Ø shield	9 – 11	12 – 16	12 – 16	23 – 29
Order Number	*S0E T400 MA*	*K0B T400 MA*	*K1B T400 MA*	*K2B T400 MA*

Shielding clamp suitable for double side connecting. Scope of delivery: panel sheet, 2 shielding clamps, mounting screws

Shield wheeling kit available for 3 pole switches up to KG100…. And 6 pole switches up to KG64. All relevant catalogue listed repair switches can be upgraded with shield wheeling kits. The switch body has to be demounted first before mounting the shield wheeling.

Shielding clamp (separate)

External-Ø shield	9 – 11	12 – 16	23 – 29
Order Number	*K1B T400 KB*	*K1B T400 KC*	*K1B T400 KE*

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