

Voltage code table

The below tables indicate the available voltage ranges $U_{c \min}$... $U_{c \max}$ usually used in rolling stock application according to IEC 60077 standard. When placing an order, please check the required control supply and select the corresponding AF..(Z)B / NF(Z)B control voltage range. Select a standard contactor from ordering detail pages. Change the coil voltage code in the order code according to the table below. Example: for contactor AF09ZB-30-10 and coil 48 ...130 V DC, type is AF09ZB-30-10-22 and order code is 1SBL136061R2210.

DC operated

Control supply

$U_{c \min}$... $U_{c \max}$
acc. to IEC 60077

V DC

17...32
23...42.5
23...44.5
25...45
33...60
36...65

42...78
50...90
55...96
63...113
67...120
77...143

87.5...162.5
90...150
105...183
120...167
152...264
187...253

Rated control circuit voltage

$U_{c \min}$... $U_{c \max}$
acc. to IEC 60947-4-1
0.85 $U_{c \min}$... 1.1 $U_{c \max}$

V DC

20...60

48...130

100...250

Coil code

AF09..ZB(..K) ...AF38..ZB(..K)
NFZB(..K)

AF45 ... AF95B

AF116B ... AF370B

21

72

11

22

69

12

23

70

13

AC operated

Rated control circuit voltage

$U_{c \min}$... $U_{c \max}$
acc. to IEC 60947-4-1
0.85 $U_{c \min}$... 1.1 $U_{c \max}$

V AC 50/60 Hz

24...60

48...130

100...250

250...500

Coil code

AF09..(Z)B(..K) ...AF38..(Z)B(..K)
NF(Z)B(..K)

AF45 ... AF95B

AF116B ... AF370B

21

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11

22

69

12

23

70

13

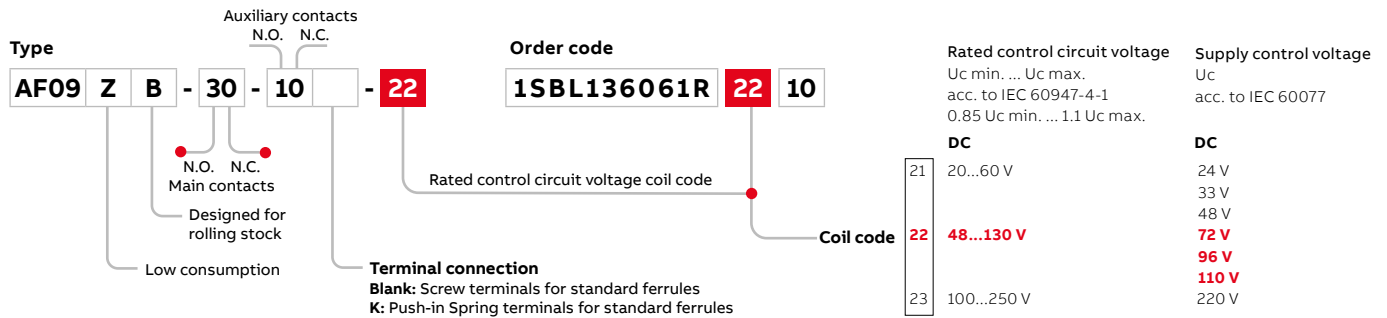
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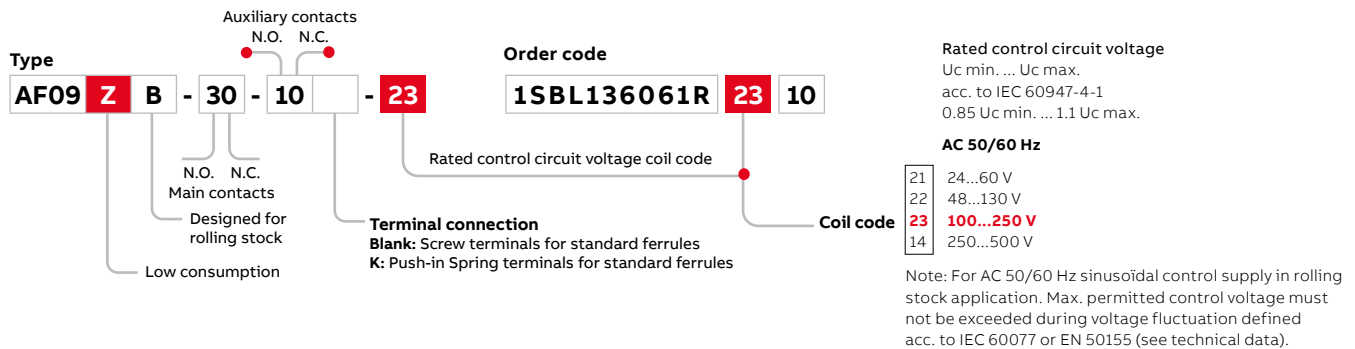
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AF09(Z)B ... AF38(Z)B 3 and 4-pole contactors

DC operated

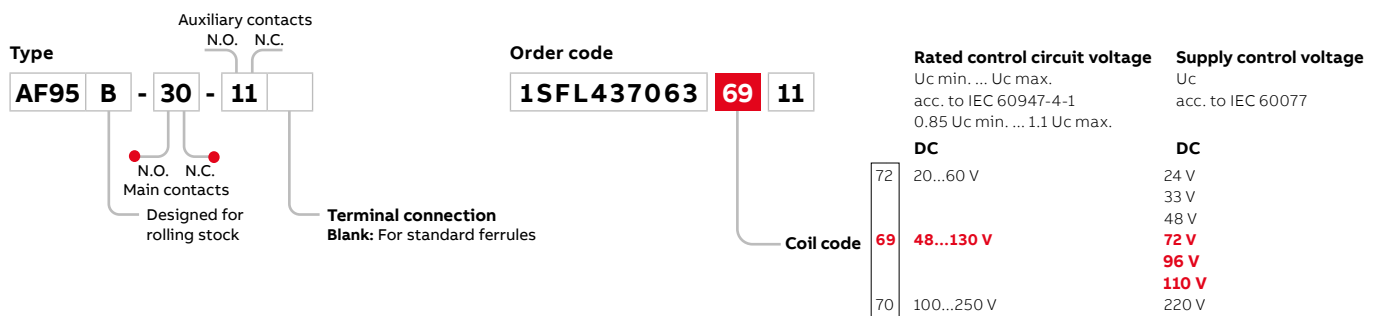


AC operated



AF45 ... AF95B 3 and 4-pole contactors

DC operated



AC operated



AF116B ... AF370B 3 and 4-pole contactors

DC operated

Type
AF116 B - 30 - 22 - 12

Auxiliary contacts
N.O. N.C.
Main contacts
Designed for rolling stock

Order code
1SFL427063R 12 22

Terminal connection
Blank: for standard ferrules

Coil code

Rated control circuit voltage		Supply control voltage	
Uc min. ... Uc max. acc. to IEC 60947-4-1 0.85 Uc min. ... 1.1 Uc max.		Uc acc. to IEC 60077	
11	20...60 V	DC	24 V
12	48...130 V	DC	33 V
		DC	48 V
		DC	72 V
		DC	96 V
		DC	110 V
13	100...250 V	DC	220 V

Note: For AC 50/60 Hz sinusoidal control supply in rolling stock application. Max. permitted control voltage must not be exceeded during voltage fluctuation defined acc. to IEC 60077 or EN 50155 (see technical data).

AC operated

Type
AF116 B - 30 - 22 - 13

Auxiliary contacts
N.O. N.C.
Main contacts
Designed for rolling stock

Order code
1SFL427063R 13 22

Terminal connection
Blank: for standard ferrules

Coil code

Rated control circuit voltage		Supply control voltage	
Uc min. ... Uc max. acc. to IEC 60947-4-1 0.85 Uc min. ... 1.1 Uc max.		Uc acc. to IEC 60077	
11	24...60 V	AC 50/60 Hz	24 V
12	48...130 V	AC 50/60 Hz	33 V
13	100...250 V	AC 50/60 Hz	48 V
14	250...500 V	AC 50/60 Hz	72 V
		AC 50/60 Hz	96 V
		AC 50/60 Hz	110 V
		AC 50/60 Hz	220 V

Note: For AC 50/60 Hz sinusoidal control supply in rolling stock application. Max. permitted control voltage must not be exceeded during voltage fluctuation defined acc. to IEC 60077 or EN 50155 (see technical data).

NF(Z)B contactor relays

DC operated

Type
NF Z B - 22 - E - 22

Auxiliary contacts
N.O. N.C.
Main contacts
Designed for rolling stock

Order code
1SBH136061R 22 22

Terminal connection
Blank: Screw terminals for standard ferrules
K: Push-in Spring terminals for standard ferrules

Coil code

Rated control circuit voltage		Supply control voltage	
Uc min. ... Uc max. acc. to IEC 60947-4-1 0.85 Uc min. ... 1.1 Uc max.		Uc acc. to IEC 60077	
21	20...60 V	DC	24 V
22	48...130 V	DC	33 V
		DC	48 V
		DC	72 V
		DC	96 V
		DC	110 V
23	100...250 V	DC	220 V

Note: For AC 50/60 Hz sinusoidal control supply in rolling stock application. Max. permitted control voltage must not be exceeded during voltage fluctuation defined acc. to IEC 60077 or EN 50155 (see technical data).

AC operated

Type
NF Z B - 22 - E - 22

Auxiliary contacts
N.O. N.C.
Main contacts
Designed for rolling stock

Order code
1SBH136061R 23 22

Terminal connection
Blank: Screw terminals for standard ferrules
K: Push-in Spring terminals for standard ferrules

Coil code

Rated control circuit voltage		Supply control voltage	
Uc min. ... Uc max. acc. to IEC 60947-4-1 0.85 Uc min. ... 1.1 Uc max.		Uc acc. to IEC 60077	
21	24...60 V	AC 50/60 Hz	24 V
22	48...130 V	AC 50/60 Hz	33 V
23	100...250 V	AC 50/60 Hz	48 V
14	250...500 V	AC 50/60 Hz	72 V
		AC 50/60 Hz	96 V
		AC 50/60 Hz	110 V
		AC 50/60 Hz	220 V

Note: For AC 50/60 Hz sinusoidal control supply in rolling stock application. Max. permitted control voltage must not be exceeded during voltage fluctuation defined acc. to IEC 60077 or EN 50155 (see technical data).

AF45..RT ... AF75..RT 4-pole contactors

100 to 125 A AC-1

DC operated - connection with ring tongue ferrules



AF75-40-00RT

AF45..RT, AF75..RT 4-pole contactors comply with the latest railway rolling stock standards and allow installation in passenger or driver cabins for trains frequently operating tunnels or undergrounds. They are mainly used for controlling non-inductive or slightly inductive loads and generally for controlling power circuits up to 690 V AC and up to 220 V DC. These contactors are of the block

type design with 4 main poles.

- designed in accordance to the applicable parts of IEC 60077 and EN 50155 standard
- shocks and vibration withstand conforming to IEC 61373 (category 1, class B)
- fire and smoke safety compliance to European standard EN 45545 (HL2, HL3 hazard levels)
- electronic coil interface accepting a wide DC control voltage range (0.85 Uc min. ... 1.1 Uc max. according to IEC 60947-4-1) including several Uc control voltages (0.7 ... 1.25 Uc according to IEC 60077) used for battery supply
- built-in surge suppression
- side by side mounting without restriction from -40 °C up to +70 °C
- add-on auxiliary contact blocks for front or side mounting and a wide range of accessories.

IEC Rated operational current $\theta \leq 40^\circ\text{C}$ AC-1 A	UL / CSA General use rating 600 V AC A	Supply control voltage Uc (IEC 60077) (1) V DC	Rated control circuit voltage Uc Uc min. ... Uc max. (IEC 60947-4-1) V DC	Auxiliary contacts fitted 	Type	Order code	Weight Pkg (1 pce) kg
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4 N.O. main poles

100	80	24, 33, 48	20...60	0 0	AF45-40-00RT (2)	1SBL337210R7200	1.42
		72, 96, 110	48...130	0 0	AF45-40-00RT	1SBL337210R6900	1.42
		220	100...250	0 0	AF45-40-00RT	1SBL337210R7000	1.42
125	105	24, 33, 48	20...60	0 0	AF75-40-00RT (2)	1SBL417210R7200	1.42
		72, 96, 110	48...130	0 0	AF75-40-00RT	1SBL417210R6900	1.42
		220	100...250	0 0	AF75-40-00RT	1SBL417210R7000	1.42

2 N.O. + 2 N.C. main poles (3)

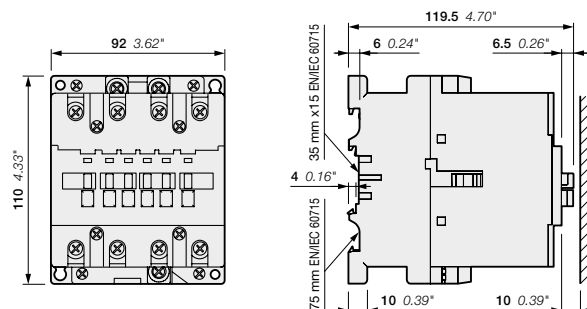
100	80	24, 33, 48	20...60	0 0	AF45-22-00RT (2) (4)	1SBL337562R9001	1.42
125	105	72, 96, 110	48...130	0 0	AF75-22-00RT	1SBL417510R6900	1.42

(1) Other control voltages, see voltage code table.

(2) The connection polarities indicated close to the coil terminals must be respected: A1 for the positive pole and A2 for the negative pole.

(3) Other control voltages, on request.

(4) Main contact terminal M5.



AF45..RT, AF75..RT

Main dimensions mm, inches