

Accessories for UA, UA..RA contactors and GA75, GAE75, GAF contactors

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For direct product details information, use product type or order code, ex:

- www.abb.com/productdetails/AF09-30-10-13
- or www.abb.com/productdetails/1SBL137001R1310

Auxiliary contact blocks



CA5-10



CA5-40E



CAL5-11



CAL18-11

The auxiliary contact blocks are used for the operation of auxiliary circuits and control circuits for standard industrial environments.

Types of auxiliary contact blocks for front mounting:

- CA5 1 or 4-pole block, instantaneous with N.O., N.C. contacts
- CC5 1-pole block, with N.O. leading contact or N.C. lagging contact.

Select the 4-pole auxiliary contact blocks CA5 type, according to the contactor type for compliance with the standard requirements (see "Terminal Marking and Positioning").

Types of auxiliary contact blocks for side mounting:

- CAL 2-pole block instantaneous N.O. + N.C. contacts.

For clipping onto the right- and/or left-hand side of the contactors.

The auxiliary contact blocks are equipped with screw type connecting terminals delivered open, protected against accidental direct contact and bear the corresponding function marking.

For contactors	Auxiliary contacts	Type	Order code	Pkg qty	Weight (1 pce)
	 				kg

Front-mounted instantaneous auxiliary contact blocks, 1-pole

UA16... UA110	1 0	--	CA5-10	1SBN010010R1010	10	0.014
	0 1	--	CA5-01	1SBN010010R1001	10	0.014
	--	1 0	CC5-10	1SBN010011R1010	10	0.014
	--	0 1	CC5-01	1SBN010011R1001	10	0.014

Front-mounted instantaneous auxiliary contact blocks, 4-pole

UA16... UA30	2 2	--	CA5-22M	1SBN010040R1122	2	0.060
	3 1	--	CA5-31M	1SBN010040R1131	2	0.060
	1 3	--	CA5-13M	1SBN010040R1113	2	0.060
	0 4	--	CA5-04M	1SBN010040R1104	2	0.060
	1 1	1 1	CA5-11/11M	1SBN010040R1118	2	0.060
UA50... UA110	2 2	--	CA5-22E	1SBN010040R1022	2	0.060
	3 1	--	CA5-31E	1SBN010040R1031	2	0.060
	4 0	--	CA5-40E	1SBN010040R1040	2	0.060
	0 4	--	CA5-04E	1SBN010040R1004	2	0.060
	1 1	1 1	CA5-11/11E	1SBN010040R1018	2	0.060

Side-mounted instantaneous auxiliary contact blocks, 2-pole

UA16... UA75	1 1	--	CAL5-11	1SBN010020R1011	2	0.050
UA95, UA110, GAF185...GAF2050	1 1	--	CAL18-11	1SFN010720R1011	2	0.050

For each contactor type, refer to "Accessory fitting details" table.

Note:

- The front-mounted auxiliary contact blocks provided for the UA75 contactors can be used with the GA and GAE types
- The CAL auxiliary contact blocks can be used with GA contactors:
 - GA75-10-00: 2 x CAL5-11 blocks
 - GA75-10-11: 1 x CAL5-11 block
 - GAE75-10-00: 1 x CAL5-11 block
 - GAE75-10-11: no add-on block.
- The CAL auxiliary contact blocks can be used with UA...RA contactors. See "Accessory fitting details" for this contactor type.

Auxiliary contact blocks

Technical data

	Front mounted	Side mounted	
Types	1-pole CA5, 1-pole CC5, 4-pole CA5	CAL5-11	CAL18-11, CAL18-11B

Contact utilization characteristics according to IEC

Standards		IEC 60947-5-1 and EN 60947-5-1	
Rated insulation voltage U_i acc. to IEC 60947-5-1		690 V	
Rated operational voltage U_e max.		24...690 V AC	
Conventional thermal current I_{th} - $\theta \leq 40\text{ }^{\circ}\text{C}$		16 A	
I _e / Rated operational current AC-15 acc. to IEC 60947-5-1	24-127 V 50/60 Hz	6 A	
	220-240 V 50/60 Hz	4 A	
	380-440 V 50/60 Hz	3 A	
	500-690 V 50/60 Hz	2 A	
Making capacity acc. to IEC 60947-5-1		10 x I _e AC-15	
Breaking capacity acc. to IEC 60947-5-1		10 x I _e AC-15	
I _e / Rated operational current DC-13 acc. to IEC 60947-5-1	24 V DC	6 A / 144 W	
	48 V DC	2.8 A / 134 W	
	72 V DC	1 A / 72 W	
	110 V DC	0.55 A / 60 W	
	125 V DC	0.55 A / 69 W	
	220 V DC	0.3 A / 66 W	
	250 V DC	0.3 A / 75 W	
	Short-circuit protection device gG type fuse		10 A
Rated short-time withstand current I _{cw} $\theta = 40\text{ }^{\circ}\text{C}$	for 1.0 s	100 A	
	for 0.1 s	140 A	
Minimum switching capacity			
A40 ... A75 contactors		17 V / 1 mA	
with failure rate acc. to IEC 60947-5-4		≤ 10 ⁻⁷	
A95 ... A110 contactors		24 V / 50 mA	
with failure rate acc. to IEC 60947-5-4		-	
Power dissipation per pole at 6 A		0.1 W	
Mechanical durability Number of operating cycles	10 millions (UA16 ... UA75)		10 millions
	3 millions (UA95 ... UA110)		
	5 millions (UA95 ... UA110)		
		3 millions (GAF185 ... GAF750)	
		0.5 million (GAF1250 ... GAF2050)	
Max. switching frequency		3600 cycles/h	
Electrical durability	Number of operating cycles see "Electrical durability" curves		
	Max. switching frequency	AC-15	1200 cycles/h
		DC-13	900 cycles/h

Contact utilization characteristics according to UL / CSA

Standards	UL 508, CSA C22.2 N°14
Max. operational voltage	600 V AC, 250 V DC
Pilot duty	A600, Q300
AC thermal rated current	10 A

Connecting characteristics

Connection capacity (min. ... max.)				
	Rigid solid	1 x	1...4 mm²	
		2 x	1...4 mm²	
	Flexible with ferrule	1 x	0.75...2.5 mm²	
		2 x	0.75...2.5 mm²	
	Lugs	L ≤	7.7 mm	8 mm
		L >	3.7 mm	3.7 mm
Stripping length		10 mm		-
Tightening torque		1 Nm		
Degree of protection		Terminals	IP20	
acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529				
Screw terminals		Delivered in open position, screws of unused terminals must be tightened		
All terminals		M3.5		
Screwdriver type		Flat Ø 5.5 / Pozidriv 2		

Auxiliary contact blocks for severe industrial environments



CE5-01W

The auxiliary contact blocks are used for the operation of auxiliary and control circuits for severe industrial environments.

Types of auxiliary contact blocks for front mounting:

- CE5 1-pole block, instantaneous with N.O. contact or N.C. contact, designed in 2 protection versions:
 - CE5-.. D with built-in microswitch IP40, degree of protection (IP20 on terminals)
 - CE5-.. W with built-in microswitch IP67, degree of protection (IP20 on terminals).

Types of auxiliary contact blocks for side mounting:

- CEL18 1-pole block with built-in microswitch IP67 degree of protection (IP20 on terminals). Instantaneous N.O. or N.C. contact.

For clipping onto the right- and/or left-hand side of the contactors.

The auxiliary contact blocks are equipped with screw type connecting terminals delivered open, protected against accidental direct contact and bear the corresponding function marking.

For contactors	Auxiliary contacts	Type	Order code	Pkg qty	Weight (1 pce)
					kg

Front-mounting instantaneous auxiliary contact blocks, 1-pole

UA16... UA75	1 - - -	CE5-10D0.1	1SBN010015R1010	1	0.020
	- 1 - -	CE5-01D0.1	1SBN010015R1001	1	0.020
	1 - - -	CE5-10D2	1SBN010017R1010	1	0.020
	- 1 - -	CE5-01D2	1SBN010017R1001	1	0.020
	1 - - -	CE5-10W0.1	1SBN010016R1010	1	0.020
	- 1 - -	CE5-01W0.1	1SBN010016R1001	1	0.020
	1 - - -	CE5-10W2	1SBN010018R1010	1	0.020
	- 1 - -	CE5-01W2	1SBN010018R1001	1	0.020

Side-mounting instantaneous auxiliary contact blocks, 1-pole microswitch auxiliary contact N.O. or N.C.

UA95, UA110 GAF185 ... GAF2050	1 0 - -	CEL18-10	1SFN010716R1010	1	0.050
UA95, UA110 GAF185 ... GAF2050	0 1 - -	CEL18-01	1SFN010716R1001	1	0.050

For each contactor type, refer to "Accessory fitting details" table.

Note: The front-mounted auxiliary contact blocks provided for the UA contactors can be used with the GA and GAE types.

The side-mounted auxiliary contact blocks provided for the UA95, UA110 contactors can be used with the GAF types.

Auxiliary contact blocks

Technical data

Types	Front-mounted		Side-mounted
	1-pole CE5-..0.1	1-pole CE5-..2	CEL18-10, CEL18-01

Contact utilization characteristics according to IEC

Standards	IEC 60947-5-1 and EN 60947-5-1		
Rated insulation voltage U_i acc. to IEC 60947-5-1	250 V		
Rated operational voltage U_e max.	125 V	250 V	125 V
Conventional thermal current $I_{th} - \theta \leq 40^\circ\text{C}$	0.1 A	2 A	0.1 A
I_e / Rated operational current	AC-14	AC-15	AC-14
acc. to IEC 60947-5-1			
24-127 V 50/60 Hz	0.1 A	2 A	0.1 A
220-240 V 50/60 Hz	–	2 A	–
Making capacity acc. to IEC 60947-5-1	6 x I_e AC-14	10 x I_e AC-15	6 x I_e AC-14
Breaking capacity acc. to IEC 60947-5-1	6 x I_e AC-14	10 x I_e AC-15	6 x I_e AC-14
I_e / Rated operational current	DC-12		
acc. to IEC 60947-5-1			
24 V DC	0.1 A	2 A	0.1 A
48 V DC	0.1 A	1 A	0.1 A
72 V DC	0.1 A	0.3 A	0.1 A
110 V DC	0.1 A	0.2 A	0.1 A
125 V DC	–	0.2 A	–
220 V DC	–	0.1 A	–
Short-circuit protection device	0.1 A (FF type fuses) (1)	10 A (FF type fuses) (1)	0.1 A (FF type fuses) (1)
Minimum switching capacity			
A40 ... A75 contactors	3 V / 1 mA	17 V / 1 mA	3 V / 1 mA
With failure rate acc. to IEC 60947-5-4	–	$\leq 10^{-7}$	–
A95 ... A110 contactors	3 V / 1 mA	17 V / 1 mA	–
With failure rate acc. to IEC 60947-5-4	–	$\leq 10^{-7}$	–
Mechanical durability			
Number of operating cycles	5 millions for CE5-..D0.1	5 millions for CE5-..D2	1 million
	2.5 millions for CE5-..W0.1	2.5 millions for CE5-..W2	–
Max. switching frequency	3600 cycles/h		1200 cycles/h
Electrical durability			
Number of operating cycles	2.5 millions for CE5-..D0.1	1 million for CE5-..D2	0.7 millions
	0.7 millions for CE5-..W0.1	0.3 millions for CE5-..W2	
Max. switching frequency	AC-14, 1200 cycles/h		
	AC-15		
	DC-12 900 cycles/h		

Contact utilization characteristics according to UL / CSA

Standards	UL 508, CSA C22.2 N°14		
Max. operational voltage	125 V AC / 110 V DC	250 V AC / 220 V DC	125 V
Pilot duty			
AC thermal rated current	0.1 A	2 A	0.1 A

Connecting characteristics

Connection capacity (min. ... max.)			
 Rigid solid	1 x	1...4 mm ²	
	2 x	1...4 mm ²	
 Flexible with ferrule	1 x	0.75...2.5 mm ²	
	2 x	0.75...2.5 mm ²	
 Bars or lugs	L ≤	7.7 mm	
	l >	3.7 mm	
Connection capacity acc. to UL/CSA	1 or 2 x	AWG 18...14	
Tightening torque		1 Nm	
Degree of protection	Terminals	IP20	
acc. to IEC 60947-1 / EN 60947-1	Microswitches	IP40 for CE5-..D0.1	IP40 for CE5-..D2
and IEC 60529 / EN 60529		IP67 for CE5-..W0.1	IP67 for CE5-..W2
Screw terminals		Delivered in open position, screws of unused terminals must be tightened	
All terminals		M3.5	
Screwdriver type		Flat Ø 5.5 / Pozidriv 2	

(1) or HRC fuses for very fast action (6.3 x 32 mm size).

Auxiliary contacts

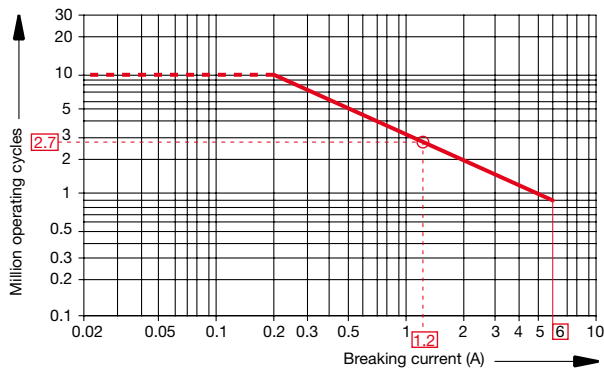
Electrical durability

Electrical durability for AC-15 utilization category

AC-15 utilization category according to IEC 60947-5-1 / EN 60947-5-1:

- making current: $10 \times I_e$ with $\cos \phi = 0.7$ and U_e
- breaking current: I_e with $\cos \phi = 0.4$ and U_e .

These curves represent the electrical durability of the built-in or add-on auxiliary contacts, in relation to the breaking current. The curves have been drawn for resistive and inductive loads up to 690 V, 40...60 Hz.



- 1-pole and 4-pole CA5,
1-pole CC5,
2-pole CAL5 and CAL18 add-on auxiliary contacts.

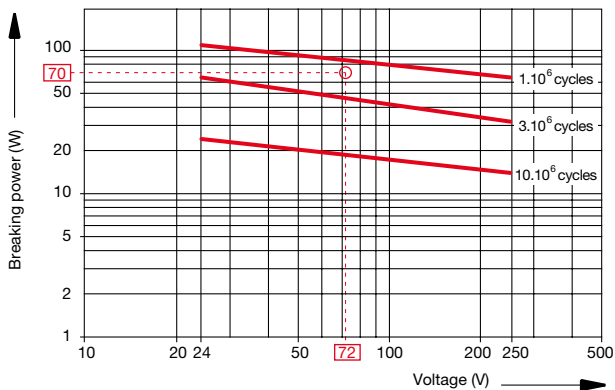
Example:

Breaking current = 1.2 A

On the opposite curve at intersection "O" 1.2 A the corresponding value for the electrical durability is approximately 2.7 millions operating cycles.

Electrical durability for DC-13 utilization category

DC-13 utilization category according to IEC 60947-5-1 / EN 60947-5-1: making and breaking current = I_e with U_e value.



- 1-pole and 4-pole CA5,
1-pole CC5,
2-pole CAL5 and CAL18 add-on auxiliary contacts.

Example:

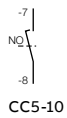
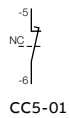
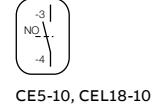
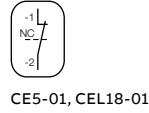
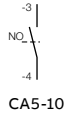
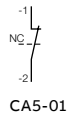
Control of DC electro-magnet: U_e voltage = 72 V DC and breaking power = 70 W.

On the opposite curve at intersection "O" 72 V / 70 W the corresponding value for the electrical durability is approximately 2 millions operating cycles.

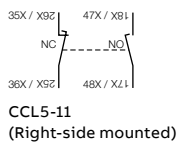
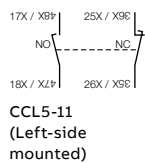
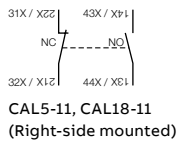
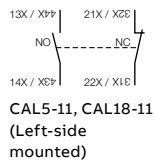
Add-on auxiliary contacts

Terminal marking and positioning

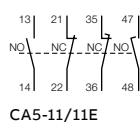
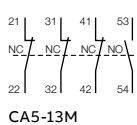
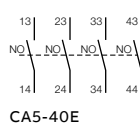
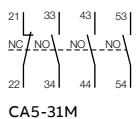
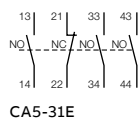
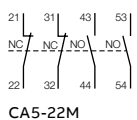
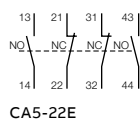
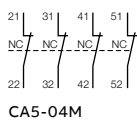
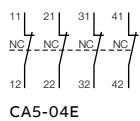
1-pole auxiliary contacts



2-pole auxiliary contacts



4-pole auxiliary contacts



Electronic timers



TEF5-OFF

TEF5 frontal electronic timers are used for realizing timing function and are available in ON-delay and OFF-delay versions.

Compact solution in cabinet compared to separate timers

TEF5 electronic timers are front-mounted and locked on contactors.

A mechanical indicator allows to show the state of the contactor.

TEF5 electronic timers are supplied by direct wiring to the coil terminals A1 - A2 of the contactor or contactor relay. A varistor is integrated on the timer to offer a built-in protection against surges in the contactor coil.

Available for a wide control voltage range 24...240 V AC/DC

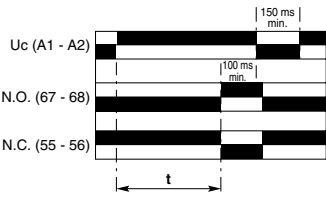
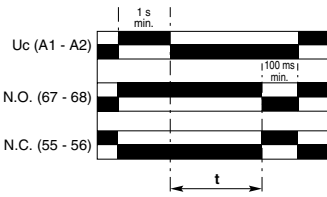
TEF5-ON or TEF5-OFF allow time-delayed functions up to 100 s in 3 distinct time ranges, independently of the control system. The time delay ranges are selected by a switch and the time delay can be adjusted by means of a rotary switch. The timing function is activated by closing or opening the device on which the timer is mounted. The OFF-delay version operates without additional control supply.

For contactors, contactor relays	Time delay range selected by switch	Delay type	Rated control circuit voltage Uc	Auxiliary contacts	Type	Order code	Weight
			V 50/60 Hz or DC				Pkg (1 pce) kg
UA16 ... UA75	0.1...1 s	ON-delay	24...240	1 1	TEF5-ON	1SBN020312R1000	0.065
GA75, GAE75	1...10 s 10...100 s	OFF-delay	24...240	1 1	TEF5-OFF	1SBN020314R1000	0.065

Electronic timers

Technical data

Contact utilization characteristics according to IEC

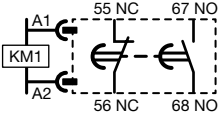
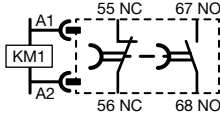
Types	TEF5-ON	TEF5-OFF
Standards	IEC 60947-5-1 and EN 60947-5-1	
Rated insulation voltage U_i acc. to IEC 60947-5-1	400 V	
Rated impulse withstand voltage U_{imp}	4 kV	
Rated operational voltage U_e max.	240 V	
Rated frequency (without derating)	50 / 60 Hz	
Conventional thermal current I_{th} - $\theta \leq 40^\circ\text{C}$	5 A	
I_e / Rated operational current AC-15		
acc. to IEC 60947-5-1	24-127 V 50/60 Hz	3 A
	220-240 V 50/60 Hz	1.5 A
Making capacity	10 x I_e AC-15 acc. to IEC 60947-5-1	
Breaking capacity	10 x I_e AC-15 acc. to IEC 60947-5-1	
I_e / Rated operational current DC-13 acc. to IEC 60947-5-1	24 V DC	1 A / 24 W
Short-circuit protection device gG type fuse	6 A	
Rated short-time withstand current I_{cw} $\theta = 40^\circ\text{C}$	for 1.0 s	8 A
	for 0.1 s	8 A
Minimum switching capacity	12 V / 3 mA	
with failure rate acc. to IEC 60947-5-4	24 V DC	10-7
Power dissipation per pole at 3 A	0.1 W	
Function diagram	ON-delay 	OFF-delay 
Bistable relay inside. Before use, once apply U_c then switch it off in order to initialize position of the contacts.		
Control circuit voltage		
AC control voltage	Rated control circuit voltage U_c 50/60 Hz	24...240 V AC
	Average consumption	1.5 mA RMS
DC control voltage	Rated control circuit voltage U_c Average consumption	24...240 V DC
		1 mA
Rated frequency limits	50 / 60 Hz	
Supply voltage range	0.85...1.1 x U_c (at $\theta \leq 70^\circ\text{C}$)	
Overvoltage protection	Varistor included	
Time delay range (t) selected by switch	0.1...1 s	
	1...10 s	
	10...100 s	
On-load reiteration accuracy under constant conditions	$\leq 1\%$	
Minimum ON period	0.1 s	1 s
Recovery time	0.15 s	0.1 s
Ambient air temperature	Operation	-25 $^\circ\text{C}$... +70 $^\circ\text{C}$
	Storage	-40 $^\circ\text{C}$... +80 $^\circ\text{C}$
Climatic withstand	Category B according to IEC 60947-1 Annex Q	
Maximum operating altitude	2000 m	
Mounting positions	Acc. to mounting positions permitted on contactors or contactor relays	
Shock withstand	1/2 sinusoidal shock for 11 ms; no change in contact position	
acc. to IEC 60068-2-27 and EN 60068-2-27 (Mounting position 1)	Same as contactor or contactor relay	
Mechanical durability		
	Number of operating cycles	5 millions operating cycles
	Max. switching frequency	3600 cycles/h
Max. electrical switching frequency	AC-15	1200 cycles/h
	DC-13	900 cycles/h

Electronic timers

Technical data

03

Connecting characteristics

Connection capacity (min. ... max.)		
	Rigid solid	1 x 1...2.5 mm ²
		2 x 1...2.5 mm ²
	Flexible with non insulated ferrule	1 x 0.75...2.5 mm ²
		2 x 0.75...2.5 mm ²
	Flexible with insulated ferrule	1 x 0.75...2.5 mm ²
		2 x 0.75...1.5 mm ²
	Lugs	L ≤ 8 mm
		l > 3.7 mm
Stripping length		10 mm
Tightening torque		1 N.m / 9 lb.in
Degree of protection acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529		IP20
Screw terminals All terminals		Delivered in open position, screws of unused terminals should be tightened M3.5
Screwdriver type		Flat Ø 5.5 / Pozidriv 2
Terminal Marking		 

Notes

Mechanical and electrical interlock units



VE5-2

When mounted between two contactors, the mechanical interlock unit prevents one of the contactors from closing as long as the other contactor is closed.

VE interlock units are used for mechanical and electrical interlocking of two AC or DC operated contactors mounted side by side.

For contactors	Mounting	Type	Order code	Pkg qty	Weight (1 pce) kg
Mechanical and electrical interlock units for two horizontal mounted contactors					
GA75, GAE75	Rail mounting	VE5-2	1SBN030210R1000	1	0.146

Mechanical and electrical interlock units

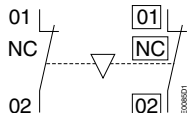
Technical data

Types	VE5-2	
Contact utilization characteristics according to IEC		
Standards		IEC 60947-5-1 and EN 60947-5-1
Rated insulation voltage Ui acc. to IEC 60947-5-1		690 V
Rated operational voltage Ue max.		24...690 V
Conventional thermal current Ith - θ ≤ 40 °C		16 A
Ie / Rated operational current AC-15 acc. to IEC 60947-5-1	24-127 V 50/60 Hz	6 A
	220-240 V 50/60 Hz	4 A
	380-440 V 50/60 Hz	3 A
	500-690 V 50/60 Hz	2 A
Making capacity acc. to IEC 60947-5-1		10 x Ie AC-15
Breaking capacity acc. to IEC 60947-5-1		10 x Ie AC-15
Ie / Rated operational current DC-13 acc. to IEC 60947-5-1	24 V DC	6 A
	48 V DC	2.8 A
	72 V DC	1 A
	125 V DC	0.55 A
	250 V DC	0.3 A
Short-circuit protection device - gG type fuse		10 A
Rated short-time withstand current Icw θ = 40 °C	for 1.0 s	100 A
	for 0.1 s	140 A
Power dissipation per pole at 6 A		0.15 W
Mechanical durability		
Number of operating cycles		5 millions operating cycles
Max. switching frequency		600 cycles/h

Utilization characteristics according to UL/CSA

Standards	UL 508, CSA C22.2 N°14
Max. operational voltage	600 V

Connecting characteristics

Connection capacity (min. ... max.)	
 Rigid solid	1 x 1...4 mm ²
	2 x 1...4 mm ²
 Flexible with ferrule	1 x 0.75...2.5 mm ²
	2 x 0.75...2.5 mm ²
 Lugs	L < 8 mm
	L > 3.5 mm
Stripping length	10 mm
Tightening torque	
Recommended	1 Nm
Max.	1.2 Nm
Degree of protection	IP20
acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529	
Screw terminals	delivered in open position, screws of unused terminals must be tightened
All terminals	M3.5
Screwdriver type	Flat Ø 5.5 / Pozidriv 2
Terminal marking	

Technical note: when, during switching, the arc time is estimated to more than 40 ms, the closing signal of one of the two contactors must be delayed with respect to the opening signal of the other contactor in order to prevent a short-circuit.

Use a TEF5 electronic timer according to application use with time lapse for GA75, GAE75 contactors.

CA5, CE5, CAL, CEL18 and TEF5 fitting details

Many configurations are possible depending on whether these are front-mounted or side-mounted.

Contactor types	Main poles	Built-in auxiliary contacts	Front-mounted accessories		Electronic timer	Side-mounted accessories	
			Auxiliary contact blocks			Auxiliary contact blocks	Interlock unit
			1-pole CA5 1-pole CE5	4-pole CA5	TEF5	2-pole CAL 1-pole CEL18	VE5
UA contactors							
UA16 ... UA26	3 0	1 0	▶	1 to 4 x CA5 1 to 2 x CE5 max. (1)	or 1 x 4-pole CA5 + 1 x 1-pole CA5 or CE5 (1)	or 1 x TEF5 + 1 x 1-pole CA5	+ 1 to 2 x CAL5-11 -
UA30	3 0	1 0	▶	1 to 5 x CA5 1 to 3 x CE5 max. (1)	or 1 x 4-pole CA5 + 1 x 1-pole CA5 or CE5 (1)	or 1 x TEF5 + 1 x 1-pole CA5	+ 1 to 2 x CAL5-11 -
UA50 ... UA75	3 0	0 0	▶	1 to 6 x CA5 1 to 5 x CE5 max. (2)	or 1 x 4-pole CA5 + 2 x 1-pole CA5 or CE5 (1)	or 1 x TEF5 + 2 x 1-pole CA5	+ 1 to 2 x CAL5-11 -
	3 0	1 1	▶	1 to 6 x CA5 1 to 5 x CE5 max. (2)	or 1 x 4-pole CA5 + 2 x 1-pole CA5 or CE5 (1)	or 1 x TEF5 + 2 x 1-pole CA5	+ 1 x CAL5-11 -
UA95, UA110	3 0	0 0	▶	1 to 6 x CA5 1 to 5 x CE5 max. (2)	or 1 x 4-pole CA5 + 2 x 1-pole CA5 or CE5 (1)	- -	+ 1 to 2 x CAL18-11 or 1 to 2 x CEL18
	3 0	1 1	▶	1 to 6 x CA5 1 to 5 x CE5 max. (2)	or 1 x 4-pole CA5 + 2 x 1-pole CA5 or CE5 (1)	- -	+ 1 x CAL18-11 or 1 x CEL18
UA..RA contactors							
UA16-30-10RA	3 0	1 0	▶	-	-	-	+ 1 x CAL5-11 -
UA26-30-10RA	3 0	1 0	▶	-	-	-	-
UA30-30-10RA	3 0	1 0	▶	1 x CA5 1 x CE5	-	-	+ 1 to 2 x CAL5-11 -
UA50-30-00RA	3 0	0 0	▶	1 to 2 x CA5	-	-	+ 1 to 2 x CAL5-11 -
UA63-30-00RA	3 0	0 0	▶	1 to 2 x CE5	-	-	-
UA75-30-00RA	3 0	0 0	▶	-	-	-	-
UA95-30-00RA	3 0	0 0	▶	1 to 2 x CA5	-	-	+ 1 to 2 x CAL18-11 or 1 to 2 x CEL18
UA110-30-00RA	3 0	0 0	▶	1 to 2 x CE5	-	-	-
GA75, GAE75 contactors							
GA75	1 0	0 0	▶	1 to 6 x CA5 1 to 5 x CE5 max. (2)	or 1 x 4-pole CA5 + 2 x 1-pole CA5 or CE5 (2)	or 1 x TEF5 + 2 x 1-pole CA5	+ 1 to 2 x CAL5-11 -
	1 0	1 1	▶	1 to 6 x CA5 1 to 5 x CE5 max. (2)	or 1 x 4-pole CA5 + 2 x 1-pole CA5 or CE5 (2)	or 1 x TEF5 + 2 x 1-pole CA5	- + 1 x CAL5-11
GAE75	1 0	0 0	▶	1 to 6 x CA5 1 to 5 x CE5 max. (2)	or 1 x 4-pole CA5 + 2 x 1-pole CA5 or CE5 (2)	or 1 x TEF5 + 2 x 1-pole CA5	+ 1 x CAL5-11 -
	1 0	1 1	▶	1 to 6 x CA5 1 to 5 x CE5 max. (2)	or 1 x 4-pole CA5 + 2 x 1-pole CA5 or CE5 (2)	or 1 x TEF5 + 2 x 1-pole CA5	- -

Notes regarding combination of CE5 with other accessories:

(1) The total number of N.O. or N.C. CE5 and other additional N.C. CA5 auxiliary contacts is limited to 3. CES auxiliary contacts not allowed in mounting position 5.

(2) The total number of N.O. or N.C. CE5 and other additional N.C. CA5 auxiliary contacts is limited to 5.

Function markers

Mounting piece



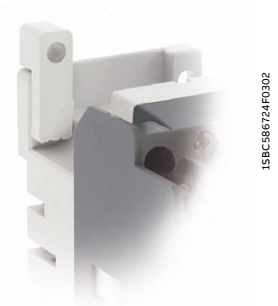
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BA5-50

BA5-50 Function markers

Set of 50 function markers designed to be clipped onto the front face of devices. Details can be added to these markers using a ball point pen, indelible felt-tip pen or pentel white. Self-adhesive labels (not supplied) can also be added to them. Marker dimensions: 7 x 19 mm (0.276" x 0.748").

For contactors	Type	Order code		Pkg qty	Weight (1 pce) kg
UA, UA..RA and accessories GA75, GAE75	BA5-50	1SBN110000R1000		1	0.017



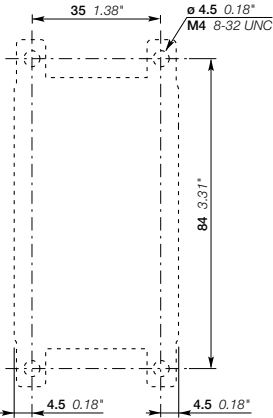
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BP16

BP16 Mounting piece

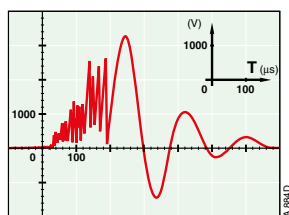
Mounting piece for screw fixing (M4, not supplied) of UA, UA..RA series contactors indicated in the table below. Easy handling of screwdrivers and screw driving. Add-on mounting piece on contactor's rear face, offering a wide fixing facility.

For contactors	Type	Order code		Pkg qty	Weight (1 pce) kg
UA16, UA16..RA	BP16	1SBN111403R1000		100	0.141



Drilling plan for UA16, UA16..RA contactors with BP16

Surge suppressors for contactor coils



The operation of inductive circuits causes overvoltages, in particular on opening of the contactor coil.

The electromagnetic energy stored in the coil during contactor closing is restored on opening in the form of surges, the slope and amplitude of which may rise to several kilovolts. A number of drawbacks are observed ranging from interference on the electronic devices to breakdown of insulators and even destruction of certain sensitive components.

The graph opposite reproduces the oscillogram showing voltage discharges at the terminals of a 42 V / 50 Hz coil without peak clipping. The coil was switched by 8 series-connected poles of a contactor relay.

Following a burst of discharges with a very steep slope a damped oscillation emerges with a peak value of 3500 V.

Overvoltage Factor

The overvoltage factor k is defined as the ratio of the maximum overvoltage peak value $\hat{U}_s$ to the peak value $\hat{U}_c$ of the coil rated control voltage U_c :

$$k = \frac{\hat{U}_s \text{ max.}}{\hat{U}_c} \quad \text{in DC: } k = \frac{\hat{U}_s \text{ max.}}{U_c} \quad \text{or in AC: } k = \frac{\hat{U}_s \text{ max.}}{U_c \sqrt{2}}$$

For example the following is obtained for the above graph: $k = \frac{3500}{42 \sqrt{2}} \approx 60$

To reduce the harmful effects of these overvoltages, ABB has developed a range of surge suppressors designed to reduce the k factor defined above and to limit or even completely eliminate the high pre-damping voltage frequencies.

Each case is different, but the technical data tolerances and the generous sizing of parts have enabled us to reduce the number of variants.

We have chosen the following solutions: transil diodes, varistors and RC blocks.

Note: A varistor is a resistor whose value decreases to a very large extent when a certain voltage is applied at its terminals.



RV5/50



RC5-1/50

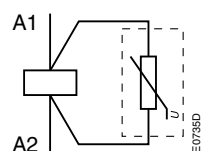
For contactors	Rated control circuit voltage U_c			Type	Order code	Pkg qty	Weight (1 pce) kg
	V	AC	DC				
UA, UA...RA GA75, GAE75	24...50	●	●	RV5/50	1SBN050010R1000	2	0.015
	50...133	●	●	RV5/133	1SBN050010R1001	2	0.015
	110...250	●	●	RV5/250	1SBN050010R1002	2	0.015
	250...440	●	●	RV5/440	1SBN050010R1003	2	0.015
UA16...UA30, UA16RA...UA30RA	24...50	●	–	RC5-1/50	1SBN050100R1000	2	0.012
	50...133	●	–	RC5-1/133	1SBN050100R1001	2	0.012
	110...250	●	–	RC5-1/250	1SBN050100R1002	2	0.012
	250...440	●	–	RC5-1/440	1SBN050100R1003	2	0.012
UA50...UA110, UA50RA...UA110RA GA75	24...50	●	–	RC5-2/50	1SBN050200R1000	2	0.015
	50...133	●	–	RC5-2/133	1SBN050200R1001	2	0.015
	110...250	●	–	RC5-2/250	1SBN050200R1002	2	0.015
	250...440	●	–	RC5-2/440	1SBN050200R1003	2	0.015
GAE75	12...32	–	●	RT5/32	1SBN050020R1000	2	0.015
	25...65	–	●	RT5/65	1SBN050020R1001	2	0.015
	50...90	–	●	RT5/90	1SBN050020R1002	2	0.015
	77...150	–	●	RT5/150	1SBN050020R1003	2	0.015
	150...264	–	●	RT5/264	1SBN050020R1004	2	0.015

Surge suppressors for contactor coils

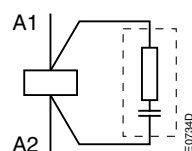
Technical data

Varistor	RV5/50	RV5/133	RV5/250	RV5/440	
Rated control circuit voltage Uc	24...50 V AC	50...133 V AC	110...250 V AC	250...440 V AC	
	24...50 V DC	50...133 V DC	110...250 V DC	250...440 V DC	
Residual overvoltage (clipping voltage)	132 V AC	270 V AC	480 V AC	825 V AC	
	132 V DC	270 V DC	480 V DC	825 V DC	
Opening time growth factor	1.1...1.5				
Operating temperature	-20...+70 °C				
Connection to the coil terminals (parallel mounting)	Clip-on for both fixing and connection.				
Fixing	Clipped onto the top part of the contactor base without change in contactor overall dimensions.				
Advantages	High energy absorption: good damping - Unpolarized system.				
Drawback	Clipping as from Uvdr*, thus voltage front up to this point.				
	*Uvdr = Varistor operating voltage (voltage dependent resistor), tolerance ± 10 %.				
RC type	RC5-1/50 RC5-2/50	RC5-1/133 RC5-2/133	RC5-1/250 RC5-2/250	RC5-1/440 RC5-2/440	
Rated control circuit voltage Uc	24...50 V AC	50...133 V AC	110...250 V AC	250...440 V AC	
Residual overvoltage (clipping voltage)	2 to 3 x Uc max.				
Opening time growth factor	1.2...1.3				
Operating temperature	-20...+70 °C				
Connection to the coil terminals (parallel mounting)	Clip-on for both fixing and connection.				
Fixing	Clipped onto the top part of the contactor base without change in contactor overall dimensions.				
Advantages	Very fast clipping - Attenuation of steep fronts and thus of high frequencies. No operating delays.				
Transil diode	RT5/32	RT5/65	RT5/90	RT5/150	RT5/264
Rated control circuit voltage Uc	12...32 V DC	25...65 V DC	50...90 V DC	77...150 V DC	150...264 V DC
Residual overvoltage (clipping voltage)	50 V DC	100 V DC	150 V DC	210 V DC	390 V DC
Opening time growth factor	1.5...3				
Operating temperature	-20...+70 °C				
Connection to the coil terminals (parallel mounting)	Clip-on for both fixing and connection.				
Fixing	Clipped onto the top part of the contactor base without change in contactor overall dimensions.				
Advantages	Good energy absorption - Unpolarized system - Simple, reliable system.				
Drawback	A certain delay on drop out which does not however reduce contactor breaking capacity.				

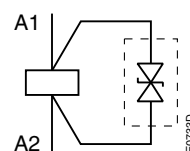
Wiring diagrams



Varistor

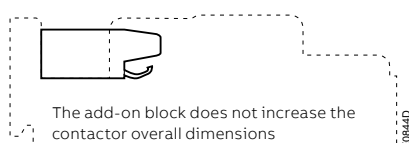


RC type



Transil diode

Dimensions



RV5, RC5, RT5

Interface relays



RA5-1

RA5-1 interface relay is designed to receive 24 V DC signals delivered by PLC’s or other sources with a low output power and to restore them with sufficient power to operate the coils of the relevant contactors.

RA5-1 interface relay is made up of a miniature electromechanical relay equipped with a N.O. contact and with a low consumption 24 V DC coil.

The interface relay coil is controlled by the PLC while the N.O. contact ensures switching of the power contactor.

Coil switching gives rise to overvoltages which have adverse effects on the electronic devices, insulators and, more generally, on component lifetime. The RA5-1 is equipped with surge suppressors:

- on the 24 V DC relay coil via a diode,
- on the power contactor coil via a varistor.

Furthermore, the RA5-1 is protected against relay pole reversal by a diode inserted between the E1 and E2 input terminals.

For contactors	Coil voltages	Rated control circuit voltage Uc	Type	Order code	Pkg qty	Weight (1 pce)
	V 50/60 Hz	V DC				kg
UA, UA..RA	24...250	24	RA5-1	1SBN060300R1000	1	0.050
GA75			RA5-1	1SBN060300T1000	10	0.050

Interface relays

Technical data

Type	RA5-1
Utilization characteristics according to IEC	
Standards	IEC 60255-5
Rated insulation voltage U_i acc. to IEC 60947-4-1	250 V AC
Ambient air temperature	
In free air operation	at $U_c = 24$ V DC (between E1 and E2) -25...+70 °C
	from 0.85 to 1.1 x U_c -25...+55 °C
Storage	-40...+70 °C
Climatic withstand	Complies with that of associated contactors
Maximum operating altitude	3000 m
Mounting positions	No limitation
Fixing	Using the contactor A1 and A2 terminal connecting parts

Connecting characteristics

Connection capacity (min. ... max.)	
 Rigid solid	1 x 1...4 mm ²
 Rigid solid	2 x 1...4 mm ²
 Flexible with ferrule	1 x 0.75...2.5 mm ²
 Flexible with ferrule	2 x 0.75...2.5 mm ²
 Lugs	L < 8 mm
	L > 3.5 mm
Stripping length (all terminals)	10 mm
Tightening torque	
Recommended	1 Nm
Max.	1.2 Nm
Degree of protection acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529	Protection against direct contact in acc. with EN 50274 RA5-1 wired and mounted on the associated contactor
Screw terminals	Delivered in open position, screws of unused terminals must be tightened
All terminals	M3.5
Screwdriver type	Flat Ø 5.5 / Pozidriv 2

Working data

Surge suppression	
For contactor coil	Varistor
For interface relay coil	Diode
Protection against polarity reversal between terminals E1 and E2	Diode
Interface relay operating time	Closing and drop-out ≤ 10 ms
Total operating time, interface relay + contactor	
Between energization and:	N.O. contact closing 20...37 ms
	N.C. contact opening 17...32 ms
Between de-energization and:	N.O. contact opening 17...25 ms
	N.C. contact closing 20...28 ms

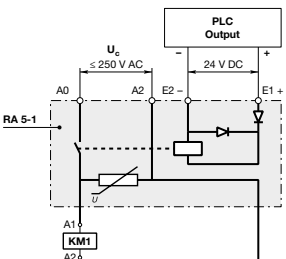
Electrical input data

Control voltage (E1 and E2 terminals) U_c	
Rated value	24 V DC
Max. range at ambient temperature 20 °C	19...30 V DC
Max. consumption for $U_c = 24$ V DC, $\theta = 20$ °C	0.3 W
"0" status (relay open)	for U_c ≤ 2.4 V DC
	for I_c < 1 mA
"1" status (relay closed)	for U_c ≥ 19 V DC
Max. short supply interruption immunity time	2 ms

Electrical output data

Switching voltage (A0 and A2 terminals)	≤ 250 V AC
Electrical durability	
Number of operating cycles	2 millions (600 cycles/h) on UA16(RA) ... UA75(RA), GA75, GAE75 contactors
	0.5 million (600 cycles/h) on UA95(RA) and UA110(RA) contactors

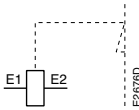
Connection

	The "E1+" and "E2-" input terminals must be connected, according to their polarity, to the PLC output. The RA5-1 is equipped with two terminal pads for connection to the A1 and the A2 terminals of the contactor coil. This coil is supplied between the A0 and the A2 terminals of the RA 5-1. Mounting: terminals pads clamped inside the contactor coil terminals.
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Mechanical latching units



WB75-A



Terminal marking

For converting standard contactors into latched contactors.

The WB75-A block contains a mechanical latching device with electromagnetic impulse unlatching (AC or DC) or manual unlatching.

Captive screw type connecting terminals, built-in cable clamps, M3.5 (+,-) pozidriv 2 screw with screwdriver guidance; delivered untightened and protected against accidental direct contact.

Operation

After closing, the contactor continues to be held in the closed position by the latching mechanism should the supply voltage fail at the contactor coil terminals.

Contactor opening can be controlled:

- electrically by an impulse (AC or DC) on the WB75-A block coil.
(the coil is not designed to be permanently energized)
- manually by pressing the pushbutton on the front face of the WB75-A block.

Mounting

The WB75-A block is clipped onto the front face of the 1-stack contactor where it takes up two slots. The two other slots may accept CA5... single pole auxiliary contacts (1 block on each side of the mechanical latch).

For contactors	Rated control circuit voltage Uc		Type	Order code	Pkg qty	Weight (1 pce)
	V 50 Hz or DC	V 60 Hz				kg
UA16 ... UA75, GA75, GAE75	24	24...28	WB75-A	FPTN372726R1001	1	0.120
	42	42...48	WB75-A	FPTN372726R1002	1	0.120
	48	48...55	WB75-A	FPTN372726R1003	1	0.120
	110	110...127	WB75-A	FPTN372726R1004	1	0.120
	220...230	220...255	WB75-A	FPTN372726R1006	1	0.120
	230...240	230...277	WB75-A	FPTN372726R1005	1	0.120
	380...415	380...440	WB75-A	FPTN372726R1007	1	0.120
	415...440	440...480	WB75-A	FPTN372726R1008	1	0.120

Mechanical latching units

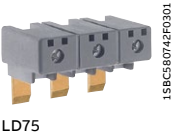
Technical data

Type	WB75-A	
Utilization characteristics according to IEC		
Rated insulation voltage Ui acc. to IEC 60947-1		690 V
Max. electrical impulse time		
On AC coil (with load factor 5 %)		20 s
On DC coil (with load factor 3 %)		8 s
Min. electrical impulse time		
For latching (energizing of the contactor coil)	AC	50 ms (UA, GA contactors)
	DC	50 ms (GAE contactors)
For pull-out (energizing of the WB block coil)	AC	30 ms (UA, GA contactors)
	DC	50 ms (GAE contactors)
Coil operating limits	AC or DC supply	0.85...1.1 x Uc
AC control voltage 50/60 Hz		
Rated control circuit voltage Uc		24...480 V AC
Coil consumption	Average pull-in value	90 VA
	Average holding value	60 VA
DC control voltage		
Rated control circuit voltage Uc		24...440 V DC
Coil consumption	Average pull-in value	110 W
	Average holding value	110 W
On contactor closing (latching)		
Between coil energization and:	N.O. contact closing	No difference with the operation of a contactor without mechanical latching unit
	N.C. contact opening	No difference with the operation of a contactor without mechanical latching unit
On contactor opening (unlatching)		
Between WB coil energization and:	N.O. contact opening	5...25 ms
	N.C. contact closing	7...28 ms
Mechanical durability		
	Number of operating cycles	1 million operating cycles
Max. switching frequency		3600 cycles/h with on-load factor of 8 %

Connecting characteristics

Connection capacity (min. ... max.)		
	Rigid solid	1 x 1...4 mm ²
		2 x 1...4 mm ²
	Flexible with ferrule	1 x 0.75...2.5 mm ²
		2 x 0.75...2.5 mm ²
	Lugs	L < 8 mm
		I > 3.5 mm
Stripping length	10 mm	
Tightening torque	Recommended	1 Nm
	Max.	1.2 Nm
Screw terminals	Delivered in open position, screws of unused terminals must be tightened	
All terminals	M3.5	
Screwdriver type	Flat Ø 5.5 / Pozidriv 2	

Additional terminal blocks and other accessories



Terminal blocks

The LD terminal blocks are designed to increase the connecting capacity of the contactor on which they are fitted and for preparation of the wiring before final connection on the contactor. The LD blocks are 3-pole terminal blocks with tunnel terminals. The LD75 terminal blocks are fixed in the 3 independent slots located above the built-in connectors.

For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
UA50(RA) ... UA75(RA)	LD75	1SBN073508R1000	1	0.115

Technical data

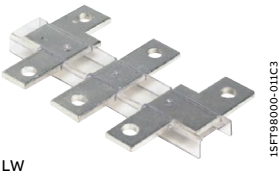
Types	LD75
Rated insulation voltage Ui acc. to IEC 60947-4-1	690 V
acc. to UL / CSA	600 V
Main terminals	 Screw terminals with single connector 10x11 mm
Connection capacity (min. ... max.)	
 Rigid Solid ($\leq 4\text{ mm}^2$)	} 1 x 6...50 mm ² 2 x 6...25 mm ²
 Stranded ($\geq 6\text{ mm}^2$)	
 Flexible with ferrule	1 x 6...35 mm ²
 Bars	2 x 6...16 mm ² 10 mm
Tightening torque	4 Nm
Degree of protection acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529	IP10
Screw terminals	Delivered in closed position M6
	Screwdriver type pozidriv 2

Note: The utilization of LD additional terminal blocks leaves the possibility to connect the following cables directly into the contactor main terminals.

	LD75
Possible cross section of rigid cable in the contactor terminals	50 mm ²

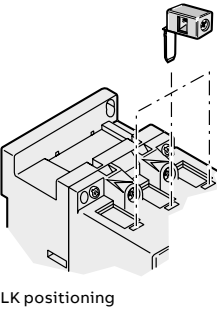
Terminal enlargements

Enlargement pieces designed to increase the width of the contactor terminal pads in order to allow larger connections to be mounted. Sets containing 3 tin plated copper bars fixed by an isolating spacer.



For contactors	Dimensions		Type	Order code	Pkg qty	Weight (1 pce) kg
	hole Ø mm	bar mm				
UA95, UA110	6.5	15 x 3	LW110	1SFN074307R1000	1	0.100

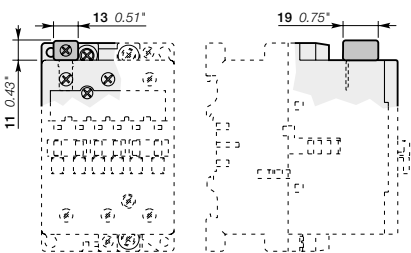
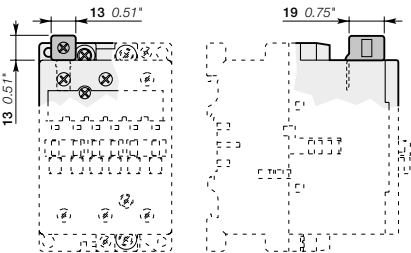
Terminals for control lead connections



- Terminals designed to connect the control conductors to the main poles of the UA and GA contactors and derivative versions.
- Accessories clipped into the slots placed above each power terminal connector.
- The LK75 are fitted with a pin designed to hold them in place until the connector has been fully clamped with its power cable.
- Degree of protection IP20
 - Connecting terminal delivered in open position: cable clamp and M3.5 (+,-) pozidriv 2 screw.
 - Cable cross-sectional area:
 - 1 or 2 rigid conductors.....1...4 mm²
 - 1 or 2 flexible conductors with cable end 0.75...2.5 mm²
 - Tightening torque for the LK screw:
 - recommended1.00 Nm
 - maxi.1.20 Nm

For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
Right and left on: UA50(RA) ... UA75(RA) GA75, GAE75	LK75-L	1SBN073552R1003	2	0.006
Opposite on: UA50(RA) ... UA75(RA) GA75, GAE75	LK75-F	1SBN073552R1002	2	0.006

Note: The LK terminals provided for the UA contactors can be used with the AM types.



Main dimensions mm, inches

Connection bar for contactor



For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
Connection bar for contactor				
GAF185	LP185	1SFN074712R1000	2	0.300
GAF300	LP300	1SFN075112R1000	2	0.400
GAF460	LP460	1SFN075712R1000	4	0.550
GAF750	LP750	1SFN076112R1000	4	0.950
GAF1250	LP1250	1SFN076412R1000	4	1.900
GAF1650, GAF2050	LP2050	1SFN076512R1000	4	2.900

Maximum continuous current with two parrallel connection strips per pole	
Connexion kit (includes 4 pcs of connection strips)	Ie max
2 x LP185	220 A
2 x LP300	370 A
1 x LP460	600 A
1 x LP750	800 A
1 x LP1250	900 A
1 x LP2050	1650 A

Contactor coils and main contact sets



ZAI6

1SBC573802F0302



ZAF1650

1SFC10007F0201

Contactor coils

For contactors	Rated control circuit		Type	Order code	Pkg qty	Weight (1 pce)
	voltage Uc					
	V 50 Hz	V 60 Hz				kg
UA16,	24	24	ZAI6	1SBN151410R8106	1	0.093
	110	110...120	ZAI6	1SBN151410R8406	1	0.093
	220...230	230...240	ZAI6	1SBN151410R8006	1	0.093
	230...240	240...260	ZAI6	1SBN151410R8806	1	0.093
	380...400	400...415	ZAI6	1SBN151410R8506	1	0.093
UA26, UA30,	400...415	415...440	ZAI6	1SBN151410R8606	1	0.093
	24	24	ZA40	1SBN152410R8106	1	0.148
	110	110...120	ZA40	1SBN152410R8406	1	0.148
	220...230	230...240	ZA40	1SBN152410R8006	1	0.148
	230...240	240...260	ZA40	1SBN152410R8806	1	0.148
UA50 ... UA75 GA75	380...400	400...415	ZA40	1SBN152410R8506	1	0.148
	400...415	415...440	ZA40	1SBN152410R8606	1	0.148
	24	24	ZA75	1SBN153510R8106	1	0.166
	110	110...120	ZA75	1SBN153510R8406	1	0.166
	220...230	230...240	ZA75	1SBN153510R8006	1	0.166
UA95, UA110	230...240	240...260	ZA75	1SBN153510R8806	1	0.166
	380...400	400...415	ZA75	1SBN153510R8506	1	0.166
	400...415	415...440	ZA75	1SBN153510R8606	1	0.166
	24	24	ZA110	1SFN154310R8106	1	0.170
	110	110...120	ZA110	1SFN154310R8406	1	0.170
GAF460	220...230	230...240	ZA110	1SFN154310R8006	1	0.170
	230...240	240...260	ZA110	1SFN154310R8806	1	0.170
	380...400	400...415	ZA110	1SFN154310R8506	1	0.170
	400...415	415...440	ZA110	1SFN154310R8606	1	0.170
	-	24...60	ZAF460	1SFN155770R6806	1	0.525
GAF750 ... AF1250	48...130	48...130	ZAF460	1SFN155770R6906	1	0.525
	100...250	100...250	ZAF460	1SFN155770R7006	1	0.525
	250...500	250...500	ZAF460	1SFN155770R7106	1	0.525
	-	24...60	ZAF750	1SFN156170R6806	1	1.335
	48...130	48...130	ZAF750	1SFN156170R6906	1	1.335
GAF1650 ... GAF2050	100...250	100...250	ZAF750	1SFN156170R7006	1	1.335
	250...500	250...500	ZAF750	1SFN156170R7106	1	1.335
	100...250	100...250	ZAF1650 (1)	1SFN156570R7026	1 set	0.900
			ZP1650 (2)	1SFN166521R1070	1	0.300

ZAF460, ZAF750 : printed circuit board included.

(1) One set of two coil.

(2) Printed circuit board.

Main contact sets

The contact sets for 3-pole contactors consists of six fixed contacts, three moving contacts, springs and the required screws.

For contactors	Type	Order code	Pkg qty	Weight (1 pce)
				kg
UA50	ZLU50	1SBN163502R1000	1	0.115
UA63	ZLU63	1SBN163702R1000	1	0.145
UA75	ZLU75	1SBN164102R1000	1	0.145
UA95	ZLU95	1SFN164302R1000	1	0.190
UA110	ZLU110	1SFN164502R1000	1	0.190