

Mechanical latching unit



WA4

Description

The WA4 mechanical latching unit for AF09 ... AF96 contactors and NF contactor relays ensures that the contactor or contactor relay remains switched on even if there is a lack or a failure of voltage. Standard contactors can be easily converted into compact latched contactors.

The WA4 block contains a mechanical latching device with electromagnetic impulse unlatching (AC or DC) or manual unlatching.

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:

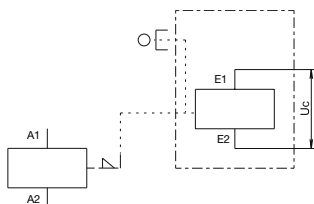
- electrically by an impulse (AC or DC) on the WA4 block coil (the coil is not designed to be permanently energized)
- manually by pressing the pushbutton on the front face of the WA4 block.

Mounting

The WA4 block is clipped onto the front face of the 1-stack contactor where it takes up two slots in central position (see fig. below).

The two other slots may accept CA4 single pole auxiliary contacts (1 block on each side of the mechanical latch).

Additional CAL4 can be fitted on the side of the contactor in respect to the total number of built-in or additional N.O. and N.C. auxiliary contacts as described in the accessory fitting details part of each contactor type.



Wiring diagram

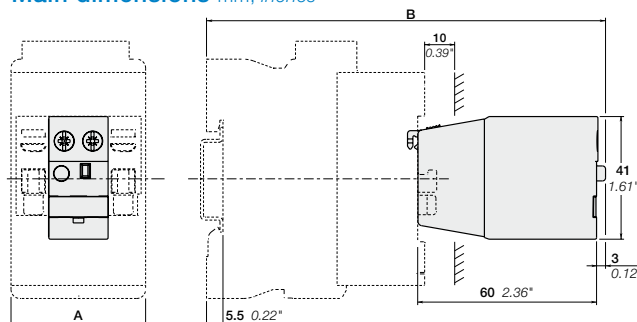
Ordering details

For contactors and contactor relays	Rated control circuit voltage U _c		Type	Order code	Pkg qty	Weight (1 pce) kg
	V AC 50/60 Hz	V DC				
AF09 ... AF65, NF 1-stack	24...60	24...60	WA4-11	1SBN040100R1011	1	0.080
	48...130	48...130	WA4-12	1SBN040100R1012	1	0.080
	100...250	100...250	WA4-13	1SBN040100R1013	1	0.080
	250...500	250...500	WA4-14	1SBN040100R1014	1	0.080
AF80, AF96	24...60	24...60	WA4-96-11	1SBN040200R1011	1	0.080
	48...130	48...130	WA4-96-12	1SBN040200R1012	1	0.080
	100...250	100...250	WA4-96-13	1SBN040200R1013	1	0.080
	250...500	250...500	WA4-96-14	1SBN040200R1014	1	0.080

Mechanical latching unit for 24 V DC - 500 mA PLC control

AF09 ... AF38, NF 1-stack	–	24	WA4-10	1SBN040100R1010	1	0.080
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Main dimensions mm, inches



WA4 + AF09 ... AF96, NF 1-stack







For contactors and contactor relays	A mm in.	B mm in.
AF09 ... 16(Z)-30-...	45 1.77"	133.5 5.25"
AF09 ... 16(Z)-40/22-00 NF(Z)		
AF26 ... 38(Z)-30-00	45 1.77"	142.5 5.61"
AF26 ... 38(Z)-40/22-00	45 1.77"	157.5 6.17"
AF40 ... 65-30-00	55 2.16"	167 6.57"
AF40-40/22-00	70 2.75"	170 6.70"
AF52-40-00	70 2.75"	170 6.70"
AF80, 96-30-00	70 2.75"	172 6.77"
AF80-40/22-00	90 3.54"	172 6.77"

Mechanical latching unit

Technical data

Types	WA4, WA4-96	WA4
Coil voltage code	11, 12, 13, 14	10
Standards	IEC 60947-4-1	
Rated insulation voltage Ui acc. to IEC 60947-1	690 V AC	
Coil operating limits acc. to IEC 60947-4-1	AC supply At $\theta \leq 70^\circ\text{C}$ $0.85 \times U_c \text{ min} \dots 1.1 \times U_c \text{ max}$	–
	DC supply At $\theta \leq 70^\circ\text{C}$ $0.85 \times U_c \text{ min} \dots 1.1 \times U_c \text{ max}$	At $\theta \leq 70^\circ\text{C}$ $0.85 \times U_c \dots 1.1 \times U_c$
Control circuit voltage		
AC control voltage 50/60 Hz		
Rated control circuit voltage U_c	24 ... 500 V AC 50/60 Hz	–
Coil consumption Average pull-in value	15 ... 100 VA	–
DC control voltage 50/60 Hz		
Rated control circuit voltage U_c	24 ... 500 V DC	24 V DC
Coil consumption Average pull-in value	15 ... 100 W	12 W
Max. electrical impulse time		
On AC control supply (with load factor 1.6%)	4 s	–
On DC control supply (with load factor 1.6%)	4 s	–
Min. electrical impulse time		
For latching, energizing of the contactor coil	120 ms	
For unlatching, energizing of the mechanical latching unit coil	50 ms	
Operating time		
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 mechanical latching unit coil energization and:		
N.O. contact opening	8 ... 15 ms	
N.C. contact closing	10 ... 17 ms	
Ambient air temperature		
Operation	-25 ... +70 °C	
Storage	-60 ... +80 °C	
Climatic withstand	Category B according to IEC 60947-1 Annex Q	
Max. operating altitude	≤ 3000 m	
Mounting positions	Mounting positions 1, 1+/- 30°, 2, 3, 4, 5	
Mechanical durability	AF09 ... AF38, NF: 1 million operating cycles AF40 ... AF65: 0.5 million operating cycles AF80, AF96: 0.2 million operating cycles	
Max. switching frequency with on-load factor of 1.6%	cycles/h	600

Connecting characteristics

Connection capacity (min. ... max.)		
 Rigid solid	1 x	1 ... 2.5 mm ²
 Flexible with non insulated ferrule	2 x	1 ... 2.5 mm ²
 Flexible with non insulated ferrule	1 x	0.75 ... 2.5 mm ²
 Flexible with insulated ferrule	2 x	0.75 ... 2.5 mm ²
 Flexible with insulated ferrule	1 x	0.75 ... 2.5 mm ²
 Lugs	2 x	0.75 ... 1.5 mm ²
	L <	8 mm
Connection capacity acc. to UL / CSA	1 or 2 x	AWG 18 ... 14
Stripping length	10 mm	
Tightening torque	1.2 Nm / 11 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 M3.5	
Screwdriver type	Flat Ø 5.5 / Pozidriv 2	