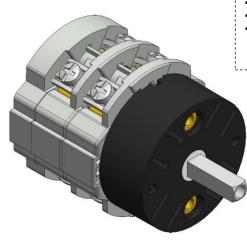
BREMAS

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ISO 9001 Certified Quality System

## Cod. CA0160006PL2

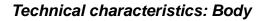


(Image is purely indicative)



# Standard and Approvals

- Switch according to IEC/EN 60947-3
- Certified UL60947-4-1A and CAN/CSA C22.2 No. 60947-4-1-07
- Suitable as Manual Motor Controller

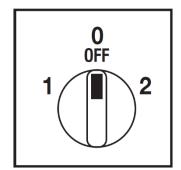


- Change-over switch 2 pole
- IP00 Protection degree
- Rated operational current le: 16A (AC-21A)
- Rated thermal current Ith: 20A
- Rated insulation voltage Ui: 690V
- Rear mounting
- Fixing with 2 screw at 28mm vertical
- Switching angle: 60°
- Class V2 self-extinguishing thermoplastic housing
- Assembled with metal shaft and threaded stud bolts to ensure maximum operating reliability
- Positive opening double break contacts, silver alloy made.

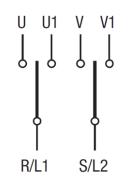
# Technical characteristics: Knob

- Transparent plate 75,5x75,5mm and black knob
- Fixing with 2 screws at 28mm vertical
- IP 40 Protection degree

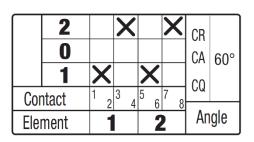
Positions



#### Electrical diagram



# Electrical function



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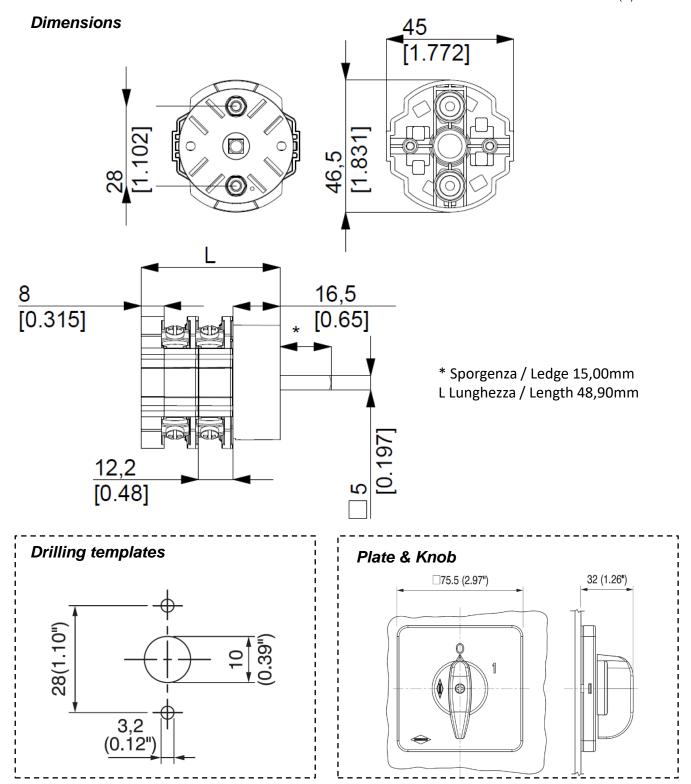


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measures in mm (in)



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Technical data IEC 947-3 EN 60947-3				
Rated insulation voltage		Ui	v	690
Rated insulation voltage		Ue	v	690
Rated operating votage		Uimp	kV	6
Rated thermal current for open switch		lth	A	20
Rated thermal current for enclosed switch		Ithe	A	20
Rated operation frequency			Hz	50/60
Power dissipation for each pole			W	0,5
Rated operating current				0,5
AC-21A Switching resistive loads, including moderate overloads		le	A	16
AC-22A Switching of mixed resistive and inductive loads, including moderate overloads		le	A	16
AC-20A Connecting and disconnecting under no loads conditions				-
Rated operating power				
AC-23A Switching of motor loads or other highly inductive loads 3 phase - 3 pole	230V	Kw (A)	4 (14)	
		400V	Kw (A)	7,5 (14)
		500V	Kw (A)	-
	690V	Kw (A)	-	
AC-23A Switching of motor loads or other highly inductive loads 1 phase - 2 pole	110V	Kw (A)	1,1 (12)	
		230V	Kw (A)	2,2 (14)
AC-3 Squirrel cage motors: starting, swtiching off motors during running 3 phase - 3 pole	230V	Kw (A)	3,7 (12)	
	400V	Kw (A)	5,5 (10)	
		500V	Kw (A)	-
	690V	Kw (A)	-	
AC-3 Squirrel cage motors: starting, swtiching off motors during running 1 phase - 2 pole		110V	Kw (A)	0,75 (9)
	230V	Kw (A)	1,5 (8)	
	400V	Kw (A)	-	
AC-4 Squirrel cage motors: starting, pluggign, inching		230V	Kw (A)	-
		400V	Kw (A)	-
AC-15 Control of a.c electromagnetic loads	230V	A	6	
	400V	А	4	
Rated breaking capability in AC-23A (cos φ=0,45)		230V	А	112
		400V	A	112
Short circuit protection				
Rated short time withstand current		Icw	A	240
Rated short-circuit make capacity		Icm	A	-
Rated conditional short-circuit current		-	kA	4
With fuses class gG		500V	A	20
Technical data UL/CSA				
Rated operating voltage		Ue	UL/CSA V	600/-
		Ue Ie	UL/CSA V UL/CSA A	600/-
Rated operating voltage				
Rated operating voltage General use current			UL/CSA A	16
Rated operating voltage General use current Short circuit rating @600Vac			UL/CSA A Arms	16 5000
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.)			UL/CSA A Arms	16 5000
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power		le	UL/CSA A Arms A	16 5000 25 (30)
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power		le 	UL/CSA A Arms A Hp (A)	16 5000 25 (30) 1 (16)
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power 1 phase - 2 pole		le 	UL/CSA A Arms A Hp (A) Hp (A)	16 5000 25 (30) 1 (16) 2 (12)
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power 1 phase - 2 pole		le 	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A)	16 5000 25 (30) 1 (16) 2 (12) 2 (7,8) 3 (9,6)
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power 1 phase - 2 pole		le 120V 240V 200V 240V	UL/CSA A Arms A Hp (A) Hp (A) Hp (A)	16 5000 25 (30) 1 (16) 2 (12) 2 (7,8)
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power 1 phase - 2 pole		le 120V 240V 200V 240V 480V	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A)	16 5000 25 (30) 1 (16) 2 (12) 2 (7,8) 3 (9,6) 7,5 (11)
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power 1 phase - 2 pole 3 phase - 3 pole		le 120V 240V 200V 240V 480V	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A)	16 5000 25 (30) 1 (16) 2 (12) 2 (7,8) 3 (9,6) 7,5 (11)
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power 1 phase - 2 pole 3 phase - 3 pole Mechanical characteristics		le 120V 240V 240V 240V 480V 600V	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A)	16 5000 25 (30) 1 (16) 2 (12) 2 (7,8) 3 (9,6) 7,5 (11) 7,5 (9)
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power 1 phase - 2 pole 3 phase - 3 pole Mechanical characteristics Panel thickness		le 120V 240V 240V 240V 480V 600V	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A)	16 5000 25 (30) 1 (16) 2 (12) 2 (7,8) 3 (9,6) 7,5 (11) 7,5 (9) 4
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power 1 phase - 2 pole 3 phase - 3 pole Mechanical characteristics Panel thickness		le 120V 240V 240V 240V 480V 600V	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Mp (A) Cycles x 10 <sup>6</sup>	16 5000 25 (30) 1 (16) 2 (12) 2 (7,8) 3 (9,6) 7,5 (11) 7,5 (9) 4 2
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power 1 phase - 2 pole 3 phase - 3 pole Mechanical characteristics Panel thickness Mechanical life Connection according to IEC 9471-1 and EN 50947-1	With flexible wires	le 120V 240V 240V 240V 480V 600V	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Mp (A) Cycles x 10 <sup>6</sup>	16 5000 25 (30) 1 (16) 2 (12) 2 (7,8) 3 (9,6) 7,5 (11) 7,5 (9) 4 2
Rated operating voltage General use current Short circuit rating @6500Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power 1 phase - 2 pole 3 phase - 3 pole Mechanical characteristics Panel thickness Mechanical life	With flexible wires	le 120V 240V 240V 240V 480V 600V Max Min-Max	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Cycles x 10 <sup>6</sup> Cycles/hr mm <sup>2</sup>	16 5000 25 (30) 1 (16) 2 (12) 2 (7.8) 3 (9,6) 7,5 (11) 7,5 (9) 4 2 120 2x1,5-4
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power 1 phase - 2 pole 3 phase - 3 pole Mechanical characteristics Panel thickness Mechanical life Connection according to IEC 9471-1 and EN 50947-1		le 120V 240V 240V 240V 480V 600V Max Min-Max Min-Max	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Cycles x 10 <sup>6</sup> Cycles x 10 <sup>6</sup> Cycles x 10 <sup>6</sup>	16 5000 25 (30) 1 (16) 2 (12) 2 (7.8) 3 (9,6) 7,5 (11) 7,5 (9) 4 4 2 120 2x1,5-4 16-10
Rated operating voltage         General use current         Short circuit rating @600Vac         Fuse size (Class RK5, 600Vac, 200kA A.I.C.)         Rated operating power         1 phase - 2 pole         3 phase - 3 pole         Mechanical characteristics         Panel thickness         Mechanical life         Connection according to IEC 9471-1 and EN 50947-1         Connecting capability	With flexible wires With solid wires	le 120V 240V 240V 240V 480V 600V Max Min-Max	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Mp (A) Cycles x 10 <sup>6</sup> Cycles x 10 <sup>6</sup> Cycles x 10 <sup>6</sup> AWG mm <sup>2</sup>	16 5000 25 (30) 1 (16) 2 (12) 2 (7,8) 3 (9,6) 7,5 (11) 7,5 (9) 4 2 120 2x1,5-4 16-10 2x1,5-6
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power 1 phase - 2 pole 3 phase - 3 pole Mechanical characteristics Panel thickness Mechanical life Connection according to IEC 9471-1 and EN 50947-1 Connection cerminal screw dimensions Connection terminal screw dimensions		le 120V 240V 240V 240V 480V 600V Max Min-Max Min-Max	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Mm Cycles x 10 <sup>6</sup> Cycles/hr Cycles/hr Mm <sup>2</sup> AWG mm <sup>2</sup> Type	16 5000 25 (30) 1 (16) 2 (12) 2 (7,8) 3 (9,6) 7,5 (11) 7,5 (9) 4 2 2 2 2 2 2 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 2 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 4 2 2 2 2 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 2 2 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 2 2 2 3 (9,6) 5 2 2 2 2 3 (9,6) 2 2 2 3 (9,6) 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 2 2 2 3 (9,6) 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 2 2 2 2 3 (9,6) 3 (9,6) 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 2 2 2 2 3 (9,6) 3 (9,6) 2 2 2 2 2 2 2 2 2 2 2 2 2
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power 1 phase - 2 pole 3 phase - 3 pole Mechanical characteristics Panel thickness Mechanical life Connection according to IEC 9471-1 and EN 50947-1 Connection g capability Connection terminal screw dimensions Screw tightening torque		le 120V 240V 240V 240V 480V 600V Max Min-Max Min-Max	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Mp (A) Cycles x 10 <sup>6</sup> Cycles x 10 <sup>6</sup> Cycles x 10 <sup>6</sup> AWG mm <sup>2</sup>	16 5000 25 (30) 1 (16) 2 (12) 2 (7,8) 3 (9,6) 7,5 (11) 7,5 (9) 4 2 120 2x1,5-4 16-10 2x1,5-6
Rated operating voltage General use current Short circuit rating @6500Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power 1 phase - 2 pole 3 phase - 3 pole Mechanical characteristics Panel thickness Mechanical life Connection according to IEC 9471-1 and EN 50947-1 Connecting capability Connection terminal screw dimensions Screw tightening torque Protection degree IEC 529 EN 60529		le 120V 240V 240V 240V 480V 600V Max Min-Max Min-Max	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Cycles x10° Cycles x10° Cycles/hr Mm <sup>2</sup> AWG mm <sup>2</sup> Type Nm	16 5000 25 (30) 1 (16) 2 (12) 2 (7,8) 3 (9,6) 7,5 (11) 7,5 (9) 4 2 (12) 2 (7,8) 3 (9,6) 7,5 (11) 7,5 (9) 2 (12) 2 (12)
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) Rated operating power 1 phase - 2 pole 3 phase - 3 pole Mechanical characteristics Panel thickness Mechanical life Connection according to IEC 9471-1 and EN 50947-1 Connecting capability Connecting capability Connectinot terminal screw dimensions Screw tightening torque Protection degree IEC 529 EN 60529 Terminals		le 120V 240V 240V 240V 480V 600V Max Min-Max Min-Max	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Mm Cycles x 10 <sup>6</sup> Cycles/hr Cycles/hr Mm <sup>2</sup> AWG mm <sup>2</sup> Type	16 5000 25 (30) 1 (16) 2 (12) 2 (7,8) 3 (9,6) 7,5 (11) 7,5 (9) 4 2 120 2x1,5-4 16-10 2x1,5-6 M3,5
Rated operating voltage         General use current         Short circuit rating @600Vac         Fuse size (Class RK5, 600Vac, 200kA A.I.C.)         Rated operating power         1 phase - 2 pole         3 phase - 3 pole         Mechanical characteristics         Panel thickness         Mechanical life         Connection according to IEC 9471-1 and EN 50947-1         Connecting capability         Connection degree IEC 529 EN 60529         Terminals         Ambient conditions		le 120V 240V 240V 240V 480V 600V Max Min-Max Min-Max	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Mm Cycles x 10 <sup>6</sup> Cycles x 10 <sup>6</sup> Cycle	16 5000 25 (30) 1 (16) 2 (12) 2 (7,8) 3 (9,6) 7,5 (11) 7,5 (9) 4 4 2 120 2x1,5-4 16-10 2x1,5-6 M3,5 1 00
Rated operating voltage         General use current         Short circuit rating @600Vac         Fuse size (Class RK5, 600Vac, 200kA A.I.C.) <b>Rated operating power</b> 1 phase - 2 pole         3 phase - 3 pole <b>Mechanical characteristics</b> Panel thickness         Mechanical life <b>Connection according to IEC 9471-1 and EN 50947-1</b> Connecting capability         Connection degree IEC 529 EN 60529         Terminals <b>Ambient conditions</b> Operating ambient temperature		le 120V 240V 240V 240V 480V 600V Max Min-Max Min-Max	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Mm Cycles x 10 <sup>6</sup> Cycles x 10 <sup>6</sup> Cycle	16 5000 25 (30) 1 (16) 2 (12) 2 (7.8) 3 (9,6) 7,5 (11) 7,5 (9) 4 4 2 2 2 2 4 2 2 2 4 2 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 3 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 (1,5-4) 16-10 2 2 2 3 (1,5-6) 10 2 2 2 2 2 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 (1,5-4) 16-10 2 2 2 2 3 (1,5-6) 10 2 2 2 2 2 3 (9,6) 7 5 (1) 7 5 (9) 2 2 2 2 2 2 2 2 2 2 2 2 2
Rated operating voltage         General use current         Short circuit rating @600Vac         Fuse size (Class RK5, 600Vac, 200kA A.I.C.)         Rated operating power         1 phase - 2 pole         3 phase - 3 pole         Mechanical characteristics         Panel thickness         Mechanical life         Connection according to IEC 9471-1 and EN 50947-1         Connection terminal screw dimensions         Screw tightening torque         Protection degree IEC 529 EN 60529         Terminals         Ambient conditions         Operating ambient temperature         Storage ambient temperature		le 120V 240V 240V 240V 480V 600V Max Min-Max Min-Max	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Mm Cycles x 10 <sup>6</sup> Cycles x 10 <sup>6</sup> Cycle	16 5000 25 (30) 1 (16) 2 (12) 2 (7,8) 3 (9,6) 7,5 (11) 7,5 (9) 4 2 2 2 2 2 3 (3,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 (3,6) 7,5 (11) 7,5 (9) 2 2 2 3 (3,6) 7,5 (11) 7,5 (9) 2 4 2 2 2 3 3 (3,6) 7,5 (11) 7,5 (9) 2 2 2 3 3 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 3 (3,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 (3,6) 3 (3,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 (3,5) 1 2 2 2 2 2 2 2 2 2 2 2 2 2
Rated operating voltage General use current Short circuit rating @600Vac Fuse size (Class RK5, 600Vac, 200kA A.I.C.) <b>Rated operating power</b> 1 phase - 2 pole 3 phase - 3 pole Mechanical characteristics Panel thickness Mechanical life Connection according to IEC 9471-1 and EN 50947-1 Connecting capability Connecting capability Connecting capability Connection degree IEC 529 EN 60529 Terminals Commet conditions Coperating ambient temperature		le 120V 240V 240V 240V 480V 600V Max Min-Max Min-Max	UL/CSA A Arms A Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Hp (A) Mm Cycles x 10 <sup>6</sup> Cycles x 10 <sup>6</sup> Cycle	16 5000 25 (30) 1 (16) 2 (12) 2 (7.8) 3 (9,6) 7,5 (11) 7,5 (9) 4 4 2 2 2 2 4 2 2 2 4 2 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 3 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 (1,5-4) 16-10 2 2 2 3 (1,5-6) 10 2 2 2 2 2 2 3 3 (9,6) 7,5 (11) 7,5 (9) 2 2 2 2 3 (1,5-4) 16-10 2 2 2 2 3 (1,5-6) 10 2 2 2 2 2 3 (9,6) 7 5 (1) 7 5 (9) 2 2 2 2 2 2 2 2 2 2 2 2 2

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