

Latching relay 16 A

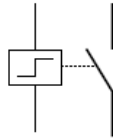
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1. DESCRIPTION - USE

Symbol :



Technology :

- . Electromagnetic modular latching relay (impulse relay)

Use :

- . Enable control of a load from a distance, using several push-buttons

2. RANGE

Rated thermal current :

- . 16 A

Type of contact :

- . « NO » normally open contact

Poles :

- . Single pole, 1 « NO », in 1 module (17.8 mm)
- . Double pole, 2 « NO », in 1 module (17.8 mm)
- . Four pole, 4 « NO », in 2 modules (35,6 mm)

Rated voltage :

- . $U_n = 250/400\text{ V} \sim$

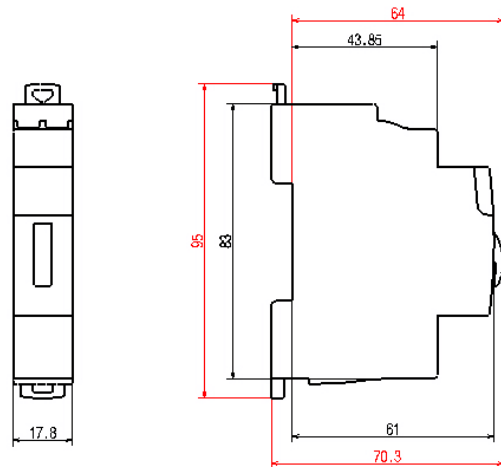
Control rated voltage :

- . 12 V, 24 V, 48 V and 230 V \sim

Rated frequency (power and control) :

- . 50 Hz / 60 Hz

3. OVERALL DIMENSIONS



4. PREPARATION - CONNECTION

Installation software :

- . XL PRO

Operating positions :

- . Vertical, horizontal, flat

Fixing :

- . On EN 50-055 or DIN 35 symmetrical rail, by two plastic clamps.

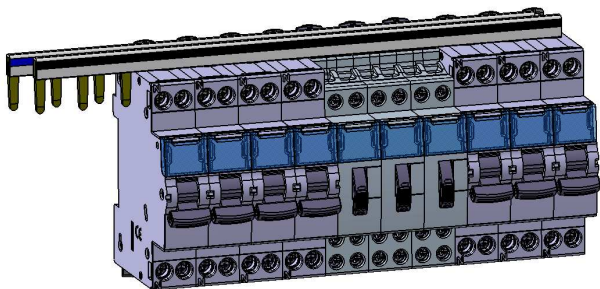
Tools recommended :

- . For terminals : screwdriver, insulated or not, Pozidriv n° 1 or plate 4 mm.
- . For fixing : 5.5 mm max or PZ1 screwdriver.

4. PREPARATION - CONNECTION (continued)

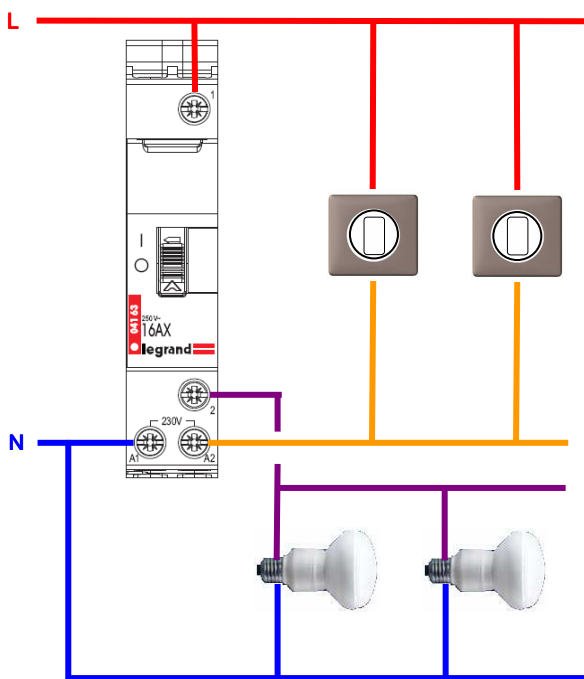
Location in a row :

. Due to the location of the terminals and the profile of the device, single phase and three phase prong busbars can go through the latching relay without disturbing access to latching relay top terminals. Whatever the place of the latching relay in the row, M.C.B.'s installed on the same rail can be supplied by a prong busbar topside.



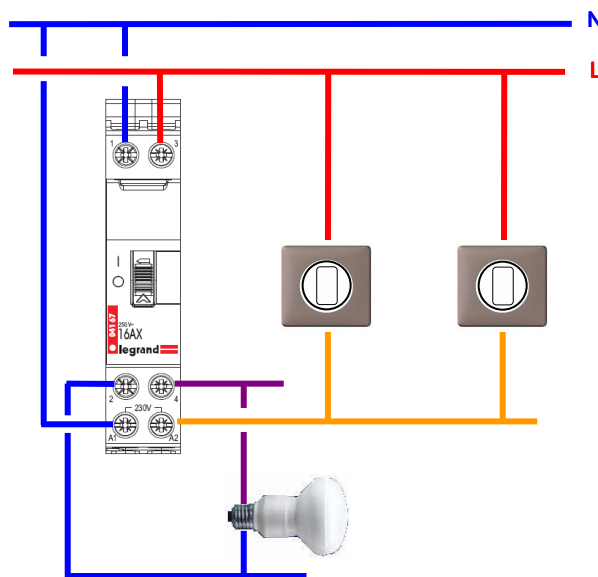
Examples of wiring diagrams :

. Latching relay 1 « NO »

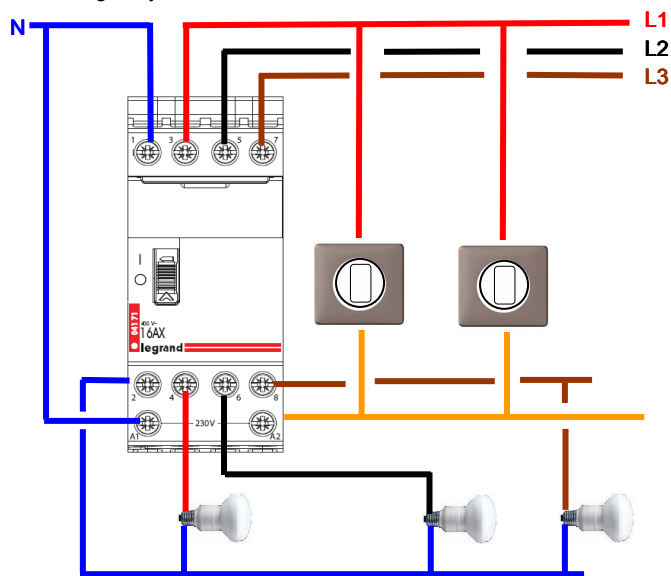


4. PREPARATION - CONNECTION (continued)

. Latching relay 2 « NO »



. Latching relay 4 « NO »



Connection :

. Control and power screw terminals :

- Type of terminal : cage terminals
- Terminal depth : 12 mm
- Terminal capacity (h x w) : 4.7 x 4.7 mm
- Copper cables

Rigid : 1 x (0.75 to 6 mm²) or 2 x (0.75 to 2.5 mm²)

Flexible without ferrule : 1 x (0.75 to 6 mm²) or 2 x (0.75 to 2.5 mm²)

Flexible with single ferrule : 1 x (0.75 to 6 mm²)

Flexible with double ferrule : 1 x (0.75 to 4 mm²)

- Screw head type: mixed, Posidriv n° 1 and slotted 4mm
- Type of screw : M3,5
- Tightening torque : mini = 0.5 Nm / max = 1.2 Nm / recommended : 0.8 Nm

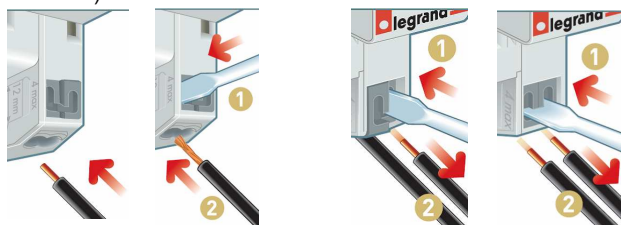
4. PREPARATION - CONNECTION (continued)

. Automatic control and power terminals :

- opening by a screwdriver
- copper cables

Rigid : 1 x (0.75 to 2,5 mm²) or 2 x (0.75 to 2.5 mm²)

Flexible without ferrule : 1 x (0.75 to 2,5 mm²) or 2 x (0.75 to 2.5 mm²)



Protection degree :

- . Terminal ingress protection : IP2x (device connected)
- . Front face ingress protection : IP3XD
- . Classe II, front face behind a cabinet faceplate
- . Protection against mechanical shocks : IK04

Shaking resistance :

- . No change of contact state during shaking test in accordance with EN 60898 standard

Manual actuation :

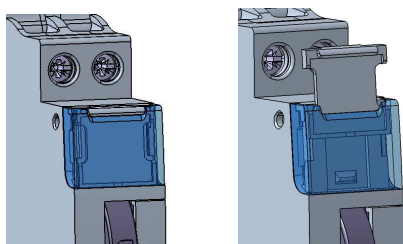
- . By ergonomic 2 position (I – O) handle

Display of contacts state :

- . By handle position
- Position 1 : contacts closed
- Position 0 : contacts open

Labelling :

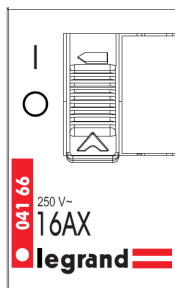
- . Circuit may be labelled by the mean of the label holder on the front face of the latching relay



5. GENERAL CHARACTERISTICS

Marking :

- By permanent ink pad printing :
- . Front face :

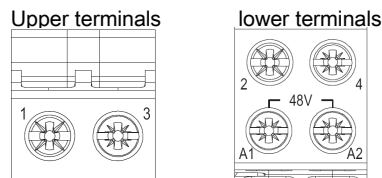


5. GENERAL CHARACTERISTICS (continued)

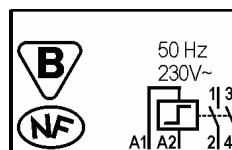
Marking :

. Terminals :

- 1, 2, 3, 4, 5, 6, 7, 8 : supply and load / A1 et A2 : control



Top face : certification logos, electric diagram



Isolation :

- . > 3 mm in compliance with EN 60669-2-2 (§ 23) standard

Isolation rated voltage (Ui) :

- . Single pole / Double pole : 250 V~
- . Four pole : 400 V~

Isolation voltage between control and load :

- . 4 000 V.

Rated impulse withstand voltage (Uimp) :

- . U imp = 4 kV

Dielectric strength :

- . 2000 V

Heighth effect :

- . no effect up to 4 000 m

Operation with DC current :

- . Latching relay doesn't operate with DC current

Stress on the handle :

- . Single pole and double pole : 200 g for closing and opening
- . Four pole : 500 g for closing and opening

Electrical impulse control :

- . minimum : 0.150 s

Control current :

Latching relay	Control voltage	Frequency	Consumption at Un	
			keeping	inrush
1 « NO »	12V	50 Hz	670 mA	2500 mA
1 « NO »	24 V	50 Hz	280 mA	1200 mA
2 « NO »	24 V	50 Hz	280 mA	1200 mA
4 « NO »	24 V	50 Hz	570 mA	2500 mA
2 « NO »	48 V	50 Hz	170 mA	700 mA
1 « NO »	230 V	50 Hz	30 mA	130 mA
2 « NO »	230 V	50 Hz	30 mA	130 mA
4 « NO »	230 V	50 Hz	50 mA	250 mA

5. GENERAL CHARACTERISTICS (continued)

Maximum control lines :

- . The length of control lines is limited due to their resistive and capacitor effects
- . Max. length in meter with a 1.5 mm² wire

Control voltage	12 V	24 V	48 V	230 V
1NO / 2 NO	60 m	260 m	980 m	325 m
4 NO	-	110 m	-	625 m

- . Max. distance between a push-button and a latching relay will be half of the figures read in the above table
- . For other cross sections, max. length is inversely proportional to the cross-section.

Max number of illuminated push-buttons possible without risk of malfunction :

- . For 230 V~ control latching relays :
Possible if the total drawn current of the push-buttons is lower than
3 mA for single pole and double pole latching relays
6 mA for four pole latching relay.

Connect one compensator cat. n° 041 89, if consumption is higher than this values.

Connect two compensators cat. n° 041 89 if consumption is higher than 6 mA for single pole or double pole latching relay (for example, from 12 illuminated push-buttons with consumption of 0.55 mA) and 10 mA for a four pole latching relay.

- . For 12V~ control latching relays :
Possible if the drawn current of the push-buttons is lower than 0.55 mA for a single pole latching relay.

- . For 24V~ control latching relays :
Possible if the drawn current of the push-buttons is lower than 35 mA for a double pole latching relay or 80 mA for a four pole latching relay.

- . For 48V~ control latching relays :
Possible if the drawn current of the push-buttons is lower than 15 mA for a double pole latching relay.

The max. amount of illuminated push-button is not lowered in case where the latching relay is fitted with centralized control auxiliaries cat. n° 04186 or 04187.

Dissipated power :

- . 0.8 W per contact at In (rated current) 230V~

Consummate power :

- . 0.24 kWh per pole per year for a "standard" use.

Endurance :

- . Number of off-load changes of position of the contacts :
 - By the handle : 500
 - By electrical control : 1 000 000
- . Number of on-load changes of position of the contacts :
 - 200 000 with 16 A cos Φ 0.6 for single and double pole devices
 - 100 000 with 16 A cos Φ 0.6 for four pole device
 - 100 000 with lights in accordance with the derating tables below
 - 5 000 with a 16 A fluorescent load (in accordance with NF EN 60669-2-2 standard)

5. GENERAL CHARACTERISTICS (continued)

Operating temperatures :

- . A standard latching relay is set to operate at its rated current (16 A) in an ambient temperature of + 30°C
- . Operating temperature : from - 25°C up to + 60°C without derating

Storage temperature :

- . from - 40°C up to + 70°C

Moulded case material :

- . Polyamid

Characteristics of the plastic material :

- . Resistance to glow wire during 30 s according to IEC 60669-2-2 (§24.1) :
 - Handle : 650°C
 - Other components : 850°C

Weight :

- . 0.120 kg per single pole / double pole device
- . 0.230 kg per four pole device

Packaged volume :

- . 0.2 dm³ for single pole and double pole individually packaged units
- . 1.6 dm³ for single pole and double pole units packaged per 10
- . 0.4 dm³ for four pole individually packaged units

Loads tables :

- . Lighting

Maximum number of lamps per contact in 230 V~ single phase network and 400 V~ triple phase network

- . In 230 V~ triple phase network without neutral, values in the tables must be divided by $\sqrt{3}$

- Incandescent lamps

230 V~ tungsten filament and low voltage halogen				
Unit power	40 W	60 W	75 W	100 W
16 A	45	30	24	18

230 V~ tungsten filament and low voltage halogen (continued)				
Unit power	150 W	200 W	500 W	1000 W
16 A	12	9	3	1

Low voltage halogen lamps with ferromagnetic ballast						
Unit power	20 W	35 W	50 W	75 W	100 W	150 W
16 A	32	20	15	10	8	5

Low voltage halogen lamps with electronic ballast						
Unit power	20 W	35 W	50 W	75 W	100 W	150 W
16 A	70	40	28	18	14	9

- Fluorescent tubes with ferromagnetic ballasts

Single non compensated					
Unit power	18 W	20 W	36 W	58 W	115 W
16 A	30	25	20	13	7

Single parallel compensated					
Unit power	18 W	20 W	36 W	58 W	115 W
16 A	24	20	16	11	5

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5. GENERAL CHARACTERISTICS (continued)

Double serial compensated					
Unit power	2 x 20 W	2 x 36 W	2 x 40 W	2 x 58 W	2 x 140
16 A	30	24	22	15	6

Quadruple serial compensated	
Unit power	4 x 18 W
16 A	16

- Fluorescent tubes with electronic ballasts

Singles				
Unit power	18 W	30 W	36 W	58 W
16 A	72	42	36	22

Doubles			
Unit power	2 x 18 W	2 x 36 W	2 x 58 W
16 A	36	20	12

Triples		
Unit power	3 x 14 W	3 x 18 W
16 A	34	26

Quadruples		
Unit power	4 x 14 W	4 x 18 W
16 A	26	20

Compacts with integrated electronic power supply					
Unit power	7 W	11 W	15 W	20 W	23 W
16 A	120	80	64	50	42

Compacts for electronic supply					
Unit power	11 W	18 W	32 W	57 W	70 W
16 A	80	54	30	17	14

Compacts with integrated starter for ferromagnetic supply					
Unit power	7 W	10 W	18 W	26 W	
16 A	50	40	28	19	

- Discharge lamps

Metalic halogen compensated						
Unit power	35 W	70 W	100 W	150 W	250 W	400 W
16 A	10	6	5	3	2	1

Low pressure sodium vapour compensated						
Unit power	18 W	35 W	55 W	90 W	135 W	180 W
16 A	12	6	5	3	2	2

High pressure sodium vapour compensated					
Unit power	70 W	150 W	250 W	400 W	1000 W
16 A	8	7	5	3	1

High pressure mercury vapour compensated					
Unit power	50 W	80 W	125 W	250 W	400 W
16 A	11	8	6	3	2

Mixed high pressure				
Unit power	100 W	160 W	250 W	400 W
16 A	11	7	5	3

6. CONFORMITIES AND APPROVALS

Compliance :

. EN 60669-2-2 (NF C 61-112)
 « Switches for domestic fixed installations and similar – 2nd section : special requirements for remote electromagnetically controlled switches (remotes switches) »

Certificates :

. NF (France)
 . BBJ (Poland)

Tropicalization :

. execution 2 (all climates) according to U.T.E. C 63-100 guide

Environment :

. complying with RoHS
 . without halogen

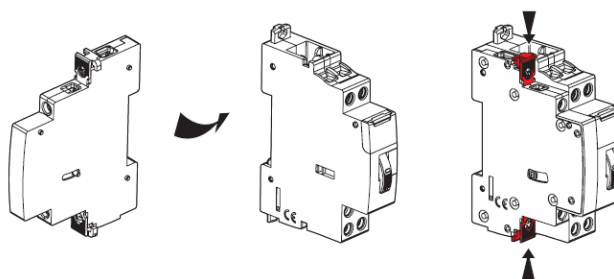
7. AUXILIARIES AND ACCESSORIES

Auxiliaries :

. Signalling change-over switch NO+NC auxiliary : cat. n° 041 85
 . Centralized control auxiliaries :
 - cat. n° 041 86 for 24/48 V~ latching relays
 - cat. n° 041 87 for 230 V~ latching relays
 . General multi group centralized control auxiliary :
 - cat. n° 041 88 for groups of 230 V~ latching relays equipped with cat. n° 04187 auxiliaries
 . Compensator 230 V ~ : cat. n° 041 89
 . Auxiliary for maintained control : cat. n° 041 84

Association of the auxiliaries :

. Auxiliaries are fitted on latching relay's left side



. maximum of 2 auxiliaries per latching relay, such as two change-over switches or one change-over switch and one centralized control

A	B
041 84	
041 85	
041 86	
041 87	
041 84	041 85
041 85	
041 86	
041 87	

