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 **ravioli** SpA



ISO 9001: 2000
RAVI 9105

D.C. Contactors LOGO Series - TL10

D.C. Contactors

LOGO Series - TL10

100 A

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Main features of the range

The range of LOGO series contactors type TL-10, which are very small and very powerful, has been designed to be suitable for the traction and material handling fields using direct current.

Such contactors can be applied to lift trucks, industrial cleaning machines, various services on board of ships and boats, as well as to road and rail transport vehicles.

Coils

The d.c. coils feature terminals with 6 mm connections.

Standard duty is in intermittent mode (50%). Maximum working time is 15 mins (temporary duty).

Normalized voltage is: 12-24-36-48 V

Different types are available as follows: reduced consumption coils for continuous duty - **option P**.

Main Contacts

The contactors have silver alloy double breaking contacts, resistant to arc, suitable for heavy duty.

The NC contacts are not suitable for making or breaking current.

Integral Protection

The cover is completely protected from oil, water and dust.

Option M - Magnetic blowouts

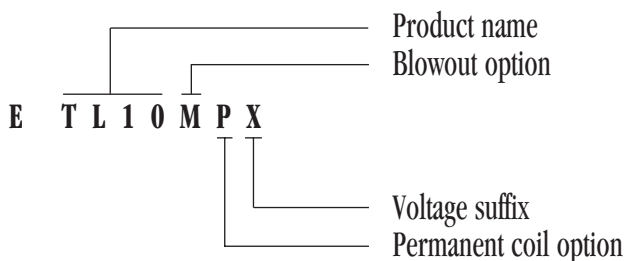
TL10 and TL11 contactors featuring permanent magnets are recommended for voltage > 36 V d.c.

In this case the cover is open, to allow housing of the the magnets, and the polarities indicated on the cover must be respected.



Codes for placing orders

The product code is composed as follows:



The numeric suffix identifying voltage is as follows:

Voltage(V)	12	24	36	48
Suffix	1	2	3	4

Single Pole Contactors

Type TL10

LOGO series single pole contactors type TL10 are suitable in the following versions:

- 50 % intermittent coil
- 100 % intermittent - permanent coil (option P)
- application of magnetic blowouts (option M)



Types and Codes

Types	Codes
TL10 int. 50%	E TL10
TL10 int. 50% and magnets	E TL10M
TL10 int. 100%	E TL10P
TL10 int. 100% and magnets	E TL10MP

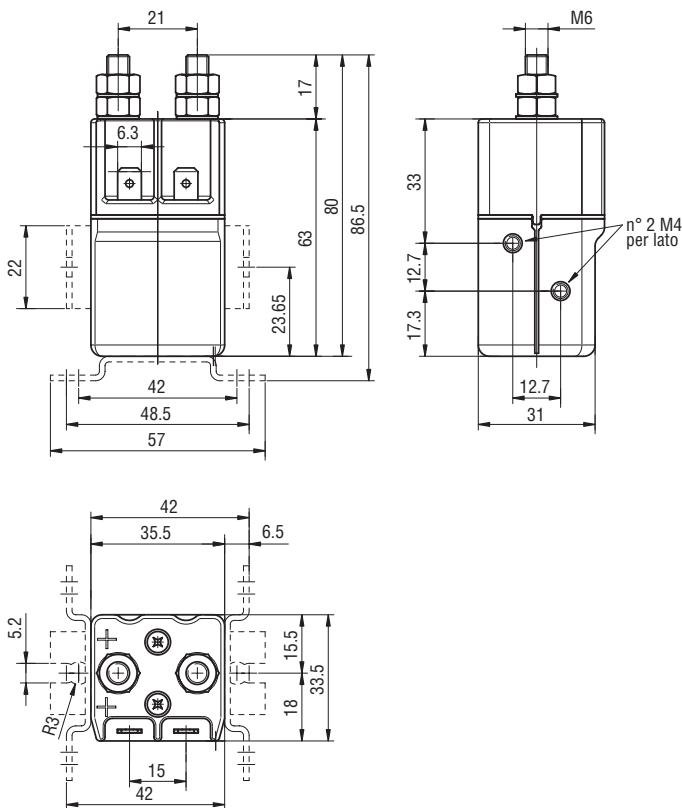
The voltage suffix X has to be added to these codes, see page 2.

Accessories

The range of LOGO series contactors type TL 10 is available with a bracket, which can be assembled like the drawing below.

Bracket

E TL10ST-2



PERFORMANCES

Contactor		TL10	TL10M	TL10P
Nominal operating current at 50% intermittent, 300 op/h	I_e	100A	100A	100A
Thermal current rating	I_{th}	72A	72A	72A
Nominal voltage	U_e	12V 24V	36V 48V	12V 24V
Breaking capacity with 15 ms time constant		400A	400A	400A
Category of usage		DC5	DC5	DC5
Working voltage limits		0,7-1,1Vn	0,7-1,1Vn	0,85-1,1Vn
Coil power dissipation		12W	12W	5W
Manoeuvre time	pull-in time	20ms	20ms	20ms
	drop-out time	10ms	10ms	10ms
Max clamps torque		4 Nm	4 Nm	4 Nm
Mechanical life	op.n.	3x10 ⁶	3x10 ⁶	3x10 ⁶
Main contacts		1NO	1NO	1NO

Single Pole Contactors Type TL11

LOGO series single pole contactors type TL11 are suitable in the following versions:

- 50 % intermittent coil
- 100 % intermittent - permanent coil (option P)
- application of magnetic blowouts (option M)

The NC contacts are not suitable for making or breaking current.

Types and Codes



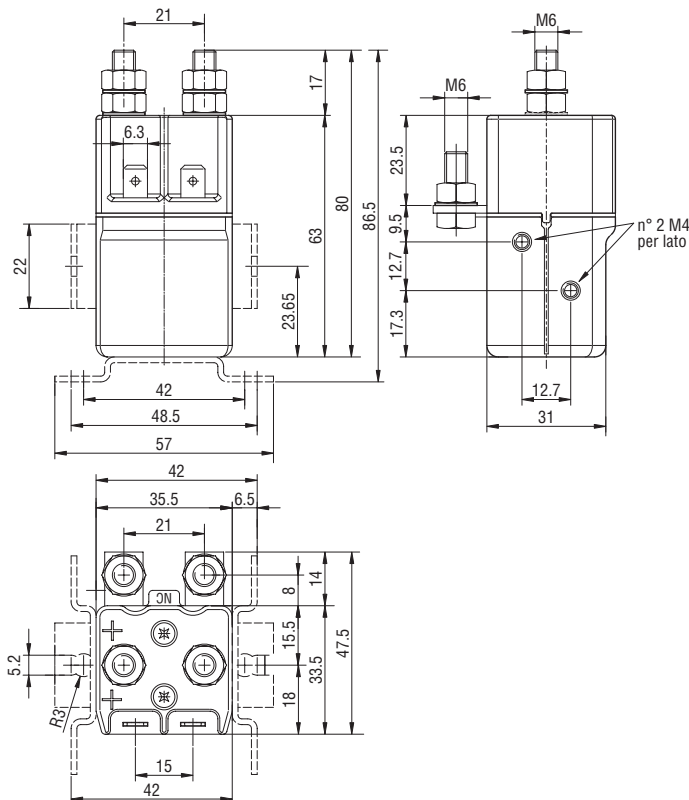
Types	Codes
TL11 int. 50%	E TL11
TL11 int. 50% and magnets	E TL11M
TL11 int. 100%	E TL11P
TL11 int. 100% and magnets	E TL11MP

The voltage suffix X has to be added to these codes, see page 2.

Accessories

The range of LOGO series contactors type TL 11 is available with a bracket, which can be assembled like the drawing below .

Bracket	E TL10ST-2
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PERFORMANCES

Contactor		TL11	TL11M	TL11P
Nominal operating current at 50% intermittent, 300 op/h	I_e	100A	100A	100A
Thermal current rating	I_{th}	72A	72A	72A
Nominal voltage	U_e	12V 24V	36V 48V	12V 24V
Breaking capacity with 15 ms time constant		480A	480A	480A
Category of usage		DC5	DC5	DC5
Working voltage limits		0,7-1,1Vn	0,7-1,1Vn	0,85-1,1Vn
Coil power dissipation		12W	12W	5W
Manoeuvre time	pull-in time	20ms	20ms	20ms
	drop-out time	10ms	10ms	10ms
Max clamps torque		4 Nm	4 Nm	4 Nm
Mechanical life	op.n.	3x10 ⁶	3x10 ⁶	3x10 ⁶
Main contacts		1NO 1NC	1NO 1NC	1NO 1NC

D.C. Motor Reverser COMBI type TLD18

Main Features

The COMBI type TLD18A (two single pole contactors with 1 NO 1 NC) and TLD18B (two single pole contactors with 1 NO) include internal electric connections.

The result is a compact product completely protected from oil, water and dust.

Standard duty is in intermittent mode (50 %) with a maximum working time of 15 minutes (temporary service).

The NC contacts are not suitable for making or breaking current.

Performances: see corresponding models TL11 on page 4.

The TLD18 COMBI motor reverser is suitable with 50 % intermittent coil.



Correct use of the motor reverser

The used contactors have fast drop-out times (10 msec) and relatively long pull-in times (approx. 20 msec).

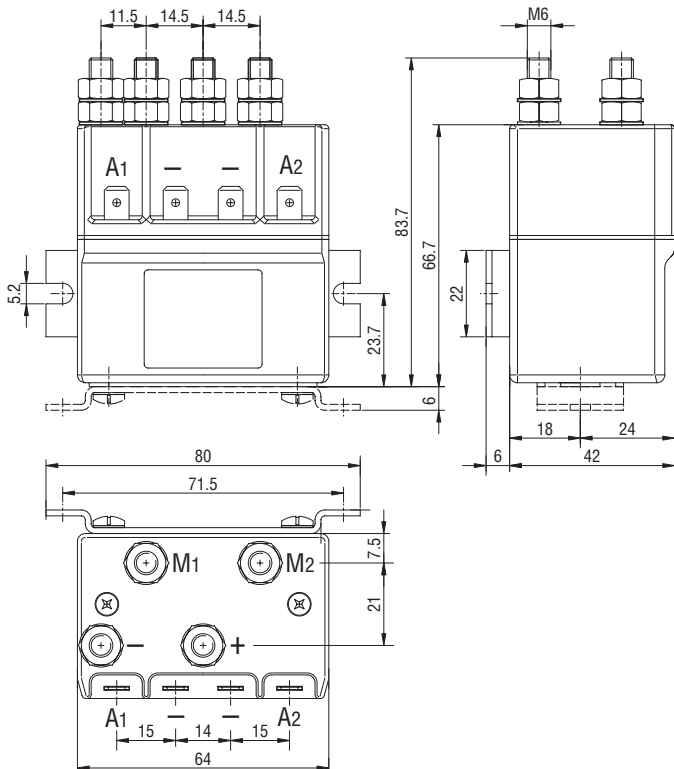
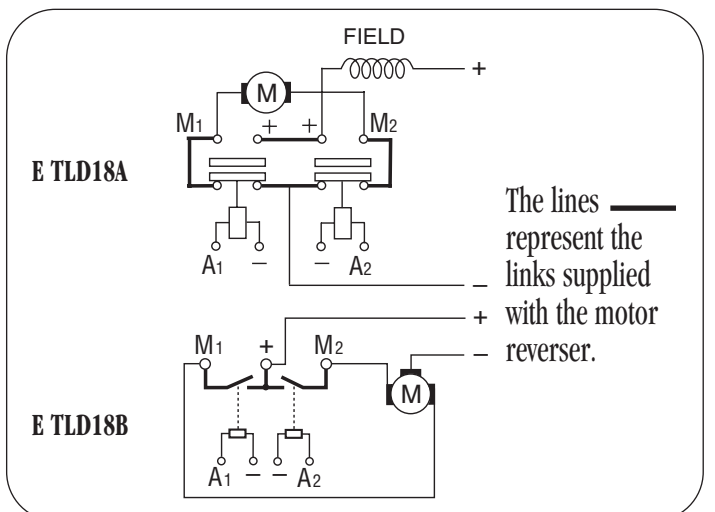
In this way, safe reversals can be carried out without the risk of the contacts being closed at the same time.

The use of suppressor diodes, however, increases drop-out times, and therefore it is important to choose the most suitable type of suppressor (diode+resistor).

Types and Codes

Tipi	Codice
TLD18A 2x1NO 1 NC 4 poles 50% coil	ETLD18A
TLD18B 2x1NO 3 poles 50% coil	ETLD18B

Diagrams of functioning



For Your own Safety

The range of LOGO series type TL 10 comply with the current safety rules, and in particular:

- 89/392 EEC Machine Directive
- 73/23 EEC Low Voltage Directive
- 2004/108/CE EMC Directive
- 2002/95/CE RoHS
- EN 1175-1 Safety of industrial trucks
- EN 60947-4-1 Low voltage switch gear and control gear
- EN 60204-1 Safety of machinery - electrical equipment of machines
- EN 61000-6-4 EMC Emission
- EN 61000-6-2 EMC Immunity
- UL 583 Electric battery powered industrial trucks

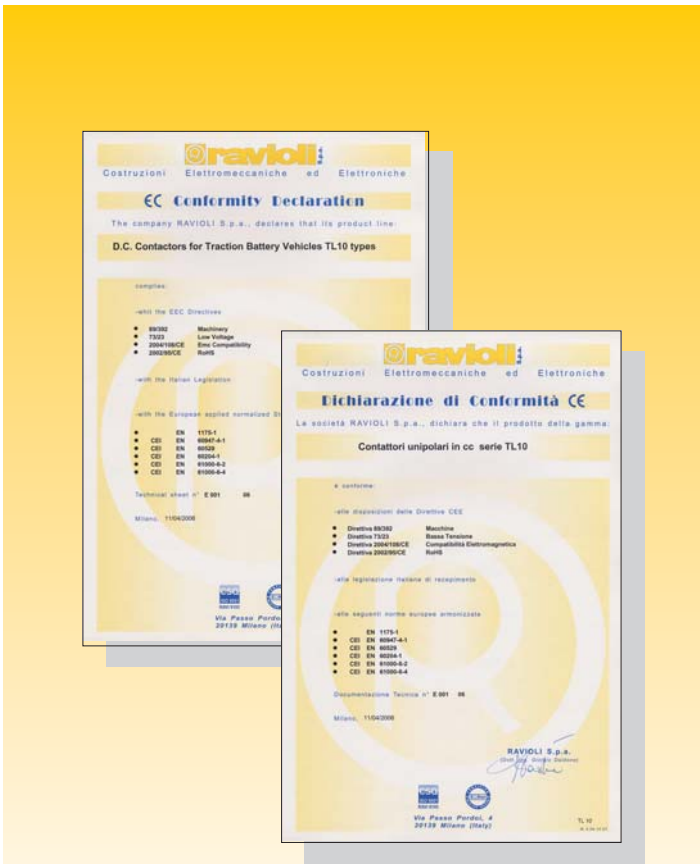
Guaranteed Quality Product

The range of LOGO series contactors type TL 10 is guaranteed by our EC Certificate of Conformity, available upon request, in which it is declared that such product was created by RAVIOLI in accordance to defined and recognised Safety Regulations, and in compliance with the Quality standards stated in our ISO 9001:2000 Quality System Certificate.

The Range



Consult our catalogues
N° 7 - 7.1 - 7.2 - 7.3



Installation and cabling instructions

The LOGO TL 10 contactors must be installed by a qualified staff, according to current safety law . Electrical current must be switched off before wiring.

For better loss of heat use proof cables according to the usage current.

Assure that the terminal power cables are locked with nut at max clamps torque of 4 Nm.

The assembling can be made by screws (max depth 7 mm.) or by the optional bracket.

Recommended working positions : either horizontal or vertical with poles set upwards.

Operating Temperature -25°C+40°C

RAVIOLI declines any responsibility for damage deriving from incorrect installation or improper use of the product.