

# Contattore ermetico per impiego in ambienti gravosi

4kW-30kW

5hp-50hp

## • INTRODUZIONE

I contattori ermetici serie MIL , MIL-MINI e la nuova serie MIL-MICRO sono studiati e realizzati nei nostri laboratori, con le tecniche di lavorazione e collaudo più avanzate, per rispondere a specifiche di progetto che ne rendono possibile l'uso in tutti gli ambienti che richiedono specifiche di funzionamento particolarmente dure e gravose.

In particolare i contattori sono progettati e costruiti per rispondere alle esigenze di uso nelle applicazioni:

- ✓ militari;
- ✓ navali;
- ✓ industriali;
- ✓ trasporto ferroviario;

ed ancora

- ✓ nelle installazioni petrolifere, navali e terrestri;
- ✓ nelle applicazioni minerarie;
- ✓ nelle progettazioni di cooling.

Si distinguono in particolare per le seguenti caratteristiche tecniche:

- ✓ range di temperatura operativa massimo, da -40°C a +80°C;
- ✓ range di temperatura di immagazzinamento massimo, da -60°C a +90°C;
- ✓ livello di shock sopportabile, fino a 30 g;
- ✓ livello di vibrazioni sopportabili, fino a 300 Hz;
- ✓ affidabilità, 10 milioni di cicli.

Per permettere un notevole abbattimento dei costi nell'uso dei contattori, sono stati studiati e realizzati con la possibilità di:

- ✓ alimentare la bobina sia in DC che indifferentemente in AC 50/60 Hz;
- ✓ pilotare la bobina direttamente da PLC, grazie al basso assorbimento e quindi alla bassa corrente richiesta;
- ✓ eliminare ogni ulteriore circuito esterno al contattore di protezione alla sovracorrente, perché già presente al loro interno.

Possono pilotare tensioni fino a 690Vac ed essere usati per il controllo di motori trifase, carichi resistivi o induttivi.

Ogni contattore è testato singolarmente, per garantire, sempre la massima affidabilità del prodotto consegnato.

Le configurazioni , tutte trifase, disponibili a catalogo sono:

- ✓ contattore singola bobina, 1 ingresso, 1 uscita; (serie MIL, MIL-MINI e MIL-MICRO)
- ✓ contattore invertitore di fase, doppia bobina, 1 ingressi, 1 uscita, suffisso –INV (TELEINVERTITORE, INVERTITORI DI FASE); (serie MIL e MIL-MICRO)
- ✓ contattore bypass , doppia bobina, 1 ingresso , 2 uscite, suffisso -BYP (serie MIL, MIL-MINI e MIL-MICRO)
- ✓ contattore tripla bobina 1 ingresso, 2 uscite, configurazione stella-triangolo suffisso –STR ; (serie MIL)

A richiesta è possibile realizzare qualsiasi configurazione ingresso-uscita. Inoltre è possibile aggiungere contatti ausiliari in qualsiasi configurazione: per creare il relativo Part Number, è sufficiente creare la configurazione richiesta utilizzando le tabelle a seguire.

• Codice d'ordine serie MIL



IEC	UL/CSA	Coil Voltage		Auxiliary contacts		Order Code	
Rated Power	3 phase	Vmin..Vmax		 			
400V - 3 phase	motor rating 480V	Vac 50/60Hz	Vdc				
kW	hp						
4	5		12..20	1	0	MIL-004-012-10	
			12..20	0	1	MIL-004-012-01	
			24..60	20..60	1	0	MIL-004-020-10
			24..60	20..60	0	1	MIL-004-020-01
			48..130	48..130	1	0	MIL-004-048-10
			48..130	48..130	0	1	MIL-004-048-01
			100..250	100..250	1	0	MIL-004-100-10
			100..250	100..250	0	1	MIL-004-100-01
5,5	7,5		12..20	1	0	MIL-055-012-10	
			12..20	0	1	MIL-055-012-01	
			24..60	20..60	1	0	MIL-055-020-10
			24..60	20..60	0	1	MIL-055-020-01
			48..130	48..130	1	0	MIL-055-048-10
			48..130	48..130	0	1	MIL-055-048-01
			100..250	100..250	1	0	MIL-055-100-10
			100..250	100..250	0	1	MIL-055-100-01
7,5	10		12..20	1	0	MIL-075-012-10	
			12..20	0	1	MIL-075-012-01	
			24..60	20..60	1	0	MIL-075-020-10
			24..60	20..60	0	1	MIL-075-020-01
			48..130	48..130	1	0	MIL-075-048-10
			48..130	48..130	0	1	MIL-075-048-01
			100..250	100..250	1	0	MIL-075-100-10
			100..250	100..250	0	1	MIL-075-100-01
11	15		12..20	0	0	MIL-110-012-00*	
			24..60	20..60	0	0	MIL-110-020-00*
			48..130	48..130	0	0	MIL-110-048-00*
			100..250	100..250	0	0	MIL-110-100-00*
15	20		12..20	0	0	MIL-150-012-00*	
			24..60	20..60	0	0	MIL-150-020-00*
			48..130	48..130	0	0	MIL-150-048-00*
			100..250	100..250	0	0	MIL-150-100-00*
18,5	20		12..20	0	0	MIL-185-012-00*	
			24..60	20..60	0	0	MIL-185-020-00*
			48..130	48..130	0	0	MIL-185-048-00*
			100..250	100..250	0	0	MIL-185-100-00*

Tabella 1


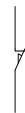
IEC Rated Power 400V - 3 phase kW	UL/CSA 3 phase motor rating 480V hp	Coil Voltage Vmin..Vmax		Auxilliary contacts		Order Code
		Vac 50/60Hz	Vdc			
22	40	24..60	20..60	1	0	MIL-220-020-10
		48..130	48..130	1	0	MIL-220-048-10
		100..250	100..250	1	0	MIL-220-100-10
		250..500	250..500	1	0	MIL-220-250-10
		24..60	20..60	0	1	MIL-220-020-01
		48..130	48..130	0	1	MIL-220-048-01
		100..250	100..250	0	1	MIL-220-100-01
		250..500	250..500	0	1	MIL-220-250-01
30	50	24..60	20..60	1	0	MIL-300-020-10
		48..130	48..130	1	0	MIL-300-048-10
		100..250	100..250	1	0	MIL-300-100-10
		250..500	250..500	1	0	MIL-300-250-10
		24..60	20..60	0	1	MIL-300-020-01
		48..130	48..130	0	1	MIL-300-048-01
		100..250	100..250	0	1	MIL-300-100-01
		250..500	250..500	0	1	MIL-300-250-01

Tabella 2



IEC	UL/CSA	Coil Voltage		Auxilliary contacts		Order Code	
Rated Power	3 phase	Vmin..Vmax		 			
400V - 3 phase	motor rating 480V	Vac 50/60Hz	Vdc				
kW	hp						
4	5		12..20	2	0	MIL-004-012-10-INV	
			12..20	0	2	MIL-004-012-01-INV	
			24..60	20..60	2	0	MIL-004-020-10-INV
			24..60	20..60	0	2	MIL-004-020-01-INV
			48..130	48..130	2	0	MIL-004-048-10-INV
			48..130	48..130	0	2	MIL-004-048-01-INV
			100..250	100..250	2	0	MIL-004-100-10-INV
			100..250	100..250	0	2	MIL-004-100-01-INV
5,5	7,5		12..20	2	0	MIL-055-012-10-INV	
			12..20	0	2	MIL-055-012-01-INV	
			24..60	20..60	2	0	MIL-055-020-10-INV
			24..60	20..60	0	2	MIL-055-020-01-INV
			48..130	48..130	2	0	MIL-055-048-10-INV
			48..130	48..130	0	2	MIL-055-048-01-INV
			100..250	100..250	2	0	MIL-055-100-10-INV
			100..250	100..250	0	1	MIL-055-100-01-INV
7,5	10		12..20	2	0	MIL-075-012-10-INV	
			12..20	0	2	MIL-075-012-01-INV	
			24..60	20..60	2	0	MIL-075-020-10-INV
			24..60	20..60	0	2	MIL-075-020-01-INV
			48..130	48..130	2	0	MIL-075-048-10-INV
			48..130	48..130	0	2	MIL-075-048-01-INV
			100..250	100..250	2	0	MIL-075-100-10-INV
			100..250	100..250	0	2	MIL-075-100-01-INV
11	15		12..20	0	0	MIL-110-012-00*-INV	
			24..60	20..60	0	0	MIL-110-020-00*-INV
			48..130	48..130	0	0	MIL-110-048-00*-INV
			100..250	100..250	0	0	MIL-110-100-00*-INV
15	20		12..20	0	0	MIL-150-012-00*-INV	
			24..60	20..60	0	0	MIL-150-020-00*-INV
			48..130	48..130	0	0	MIL-150-048-00*-INV
			100..250	100..250	0	0	MIL-150-100-00*-INV
18,5	20		12..20	0	0	MIL-185-012-00*-INV	
			24..60	20..60	0	0	MIL-185-020-00*-INV
			48..130	48..130	0	0	MIL-185-048-00*-INV
			100..250	100..250	0	0	MIL-185-100-00*-INV

Tabella 3


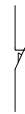
IEC	UL/CSA	Coil Voltage		Auxiliary contacts		Order Code	
Rated Power	3 phase	Vmin..Vmax		 			
400V - 3 phase	motor rating 480V	Vac 50/60Hz	Vdc				
kW	hp						
4	5		12..20	3	0	MIL-004-012-10-STR	
			12..20	0	3	MIL-004-012-01-STR	
			24..60	20..60	3	0	MIL-004-020-10-STR
			24..60	20..60	0	2	MIL-004-020-01-STR
			48..130	48..130	3	0	MIL-004-048-10-STR
			48..130	48..130	0	3	MIL-004-048-01-STR
			100..250	100..250	3	0	MIL-004-100-10-STR
			100..250	100..250	0	3	MIL-004-100-01-STR
5,5	7,5		12..20	3	0	MIL-055-012-10-STR	
			12..20	0	3	MIL-055-012-01-STR	
			24..60	20..60	3	0	MIL-055-020-10-STR
			24..60	20..60	0	3	MIL-055-020-01-STR
			48..130	48..130	3	0	MIL-055-048-10-STR
			48..130	48..130	0	3	MIL-055-048-01-STR
			100..250	100..250	3	0	MIL-055-100-10-STR
			100..250	100..250	0	3	MIL-055-100-01-STR
7,5	10		12..20	3	0	MIL-075-012-10-STR	
			12..20	0	3	MIL-075-012-01-STR	
			24..60	20..60	3	0	MIL-075-020-10-STR
			24..60	20..60	0	3	MIL-075-020-01-STR
			48..130	48..130	3	0	MIL-075-048-10-STR
			48..130	48..130	0	3	MIL-075-048-01-STR
			100..250	100..250	3	0	MIL-075-100-10-STR
			100..250	100..250	0	3	MIL-075-100-01-STR
11	15		12..20	0	0	MIL-110-012-00*-STR	
			24..60	20..60	0	0	MIL-110-020-00*-STR
			48..130	48..130	0	0	MIL-110-048-00*-STR
			100..250	100..250	0	0	MIL-110-100-00*-STR
15	20		12..20	0	0	MIL-150-012-00*-STR	
			24..60	20..60	0	0	MIL-150-020-00*-STR
			48..130	48..130	0	0	MIL-150-048-00*-STR
			100..250	100..250	0	0	MIL-150-100-00*-STR
18,5	20		12..20	0	0	MIL-185-012-00*-STR	
			24..60	20..60	0	0	MIL-185-020-00*-STR
			48..130	48..130	0	0	MIL-185-048-00*-STR
			100..250	100..250	0	0	MIL-185-100-00*-STR

Tabella 4


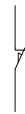
IEC	UL/CSA	Coil Voltage		Auxiliary contacts		Order Code	
Rated Power	3 phase	Vmin..Vmax		 			
400V - 3 phase	motor rating 480V	Vac 50/60Hz	Vdc				
kW	hp						
4	5		12..20	2	0	MIL-004-012-10-BYP	
			12..20	0	2	MIL-004-012-01-BYP	
			24..60	20..60	2	0	MIL-004-020-10-BYP
			24..60	20..60	0	2	MIL-004-020-01-BYP
			48..130	48..130	2	0	MIL-004-048-10-BYP
			48..130	48..130	0	2	MIL-004-048-01-BYP
			100..250	100..250	2	0	MIL-004-100-10-BYP
			100..250	100..250	0	2	MIL-004-100-01-BYP
5,5	7,5		12..20	2	0	MIL-055-012-10-BYP	
			12..20	0	2	MIL-055-012-01-BYP	
			24..60	20..60	2	0	MIL-055-020-10-BYP
			24..60	20..60	0	2	MIL-055-020-01-BYP
			48..130	48..130	2	0	MIL-055-048-10-BYP
			48..130	48..130	0	2	MIL-055-048-01-BYP
			100..250	100..250	2	0	MIL-055-100-10-BYP
			100..250	100..250	0	1	MIL-055-100-01-BYP
7,5	10		12..20	2	0	MIL-075-012-10-BYP	
			12..20	0	2	MIL-075-012-01-BYP	
			24..60	20..60	2	0	MIL-075-020-10-BYP
			24..60	20..60	0	2	MIL-075-020-01-BYP
			48..130	48..130	2	0	MIL-075-048-10-BYP
			48..130	48..130	0	2	MIL-075-048-01-BYP
			100..250	100..250	2	0	MIL-075-100-10-BYP
			100..250	100..250	0	2	MIL-075-100-01-BYP
11	15		12..20	0	0	MIL-110-012-00*-BYP	
			24..60	20..60	0	0	MIL-110-020-00*-BYP
			48..130	48..130	0	0	MIL-110-048-00*-BYP
			100..250	100..250	0	0	MIL-110-100-00*-BYP
15	20		12..20	0	0	MIL-150-012-00*-BYP	
			24..60	20..60	0	0	MIL-150-020-00*-BYP
			48..130	48..130	0	0	MIL-150-048-00*-BYP
			100..250	100..250	0	0	MIL-150-100-00*-BYP
18,5	20		12..20	0	0	MIL-185-012-00*-BYP	
			24..60	20..60	0	0	MIL-185-020-00*-BYP
			48..130	48..130	0	0	MIL-185-048-00*-BYP
			100..250	100..250	0	0	MIL-185-100-00*-BYP

Tabella 5



• Codice d'ordine serie MIL-MINI

IEC	UL/CSA	Coil Voltage		Auxiliary contacts		Order Code
Rated Power	3 phase	Vmin..Vmax				
400V - 3 phase	motor rating 480V	Vac 50/60Hz	Vdc			
kW	hp					
4	5		20-30	1	0	MIL-MINI-004-024-10
			20-30	0	1	MIL-MINI-004-024-01
			40-50	1	0	MIL-MINI-004-048-10
			40-50	0	1	MIL-MINI-004-048-01
			90-130	1	0	MIL-MINI-004-110-10
			90-130	0	1	MIL-MINI-004-110-01
			180-250	1	0	MIL-MINI-004-230-10
			180-250	0	1	MIL-MINI-004-230-01
4	5		24	1	0	MIL-MINI-004-024AC-10
			24	0	1	MIL-MINI-004-024AC-01
			230	1	0	MIL-MINI-004-230AC-10
			230	0	1	MIL-MINI-004-230AC-01
			400	1	0	MIL-MINI-004-400AC-10
			400	0	1	MIL-MINI-004-400AC-01
5,5	7,5		20-30	1	0	MIL-MINI-055-024-10
			20-30	0	1	MIL-MINI-055-024-01
			40-50	1	0	MIL-MINI-055-048-10
			40-50	0	1	MIL-MINI-055-048-01
			90-130	1	0	MIL-MINI-055-110-10
			90-130	0	1	MIL-MINI-055-110-01
			180-250	1	0	MIL-MINI-055-230-10
			180-250	0	1	MIL-MINI-055-230-01
5,5	7,5		24	1	0	MIL-MINI-055-024AC-10
			24	0	1	MIL-MINI-055-024AC-01
			48	1	0	MIL-MINI-055-048AC-10
			48	0	1	MIL-MINI-055-048AC-01
			230	1	0	MIL-MINI-055-230AC-10
			230	0	1	MIL-MINI-055-230AC-01
7,5	10		20-30	1	0	MIL-MINI-075-024-10
			20-30	0	1	MIL-MINI-075-024-01
			40-50	1	0	MIL-MINI-075-048-10
			40-50	0	1	MIL-MINI-075-048-01
			90-130	1	0	MIL-MINI-075-110-10
			90-130	0	1	MIL-MINI-075-110-01
			180-250	1	0	MIL-MINI-075-230-10
			180-250	0	1	MIL-MINI-075-230-01

IEC	UL/CSA	Coil Voltage		Auxiliary contacts		Order Code
Rated Power	3 phase	Vmin..Vmax		}	}	
400V - 3 phase	motor rating 480V	Vac 50/60Hz	Vdc			
<b>kW</b>	<b>hp</b>					
7,5	10	24		1	0	MIL-MINI-075-024AC-10
		24		0	1	MIL-MINI-075-024AC-01
		48		1	0	MIL-MINI-075-048AC-10
		48		0	1	MIL-MINI-075-048AC-01
		230		1	0	MIL-MINI-075-230AC-10
		230		0	1	MIL-MINI-075-230AC-01

Tabella 6

• Codice d'ordine serie MIL-MICRO

IEC Rated Power 400V - 3 phase kW	UL/CSA 3 phase motor rating 480V hp	Coil Voltage Vmin..Vmax		Auxilliary contacts		Order Code
		Vac 50/60Hz	Vdc			
4	5	22-30	22-30	1	0	MIL-MICRO-004-024DC-10
			22-30	0	1	MIL-MICRO-004-024DC-01
		110-127	110-127	1	0	MIL-MICRO-004-110DC-10
			110-127	0	1	MIL-MICRO-004-110DC-01
		220-240	220-240	1	0	MIL-MICRO-004-220DC-10
			220-240	0	1	MIL-MICRO-004-220DC-01
4	5	24	24	1	0	MIL-MICRO-004-024AC-10
			24	0	1	MIL-MICRO-004-024AC-01
		110-127	110-127	1	0	MIL-MICRO-004-110AC-10
			110-127	0	1	MIL-MICRO-004-110AC-01
		220-240	220-240	1	0	MIL-MICRO-004-220AC-10
			220-240	0	1	MIL-MICRO-004-220AC-10
5,5	7,5	22-30	22-30	1	0	MIL-MICRO-055-024DC-10
			22-30	0	1	MIL-MICRO-055-024DC-01
		110-127	110-127	1	0	MIL-MICRO-055-110DC-10
			110-127	0	1	MIL-MICRO-055-110DC-01
		220-240	220-240	1	0	MIL-MICRO-055-220DC-10
			220-240	0	1	MIL-MICRO-055-220DC-01
5,5	7,5	24	24	1	0	MIL-MICRO-055-024AC-10
			24	0	1	MIL-MICRO-055-024AC-01
		110-127	110-127	1	0	MIL-MICRO-055-110AC-10
			110-127	0	1	MIL-MICRO-055-110AC-01
		220-240	220-240	1	0	MIL-MICRO-055-220AC-10
			220-240	0	1	MIL-MICRO-055-220AC-10

Tabella 7

IEC Rated Power 400V - 3 phase kW	UL/CSA 3 phase motor rating 480V hp	Coil Voltage Vmin..Vmax		Auxilliary contacts		Order Code
		Vac 50/60Hz	Vdc			
4	5	22-30		0	2	MIL-MICRO-004-024DC-01 INV
		110-127		0	2	MIL-MICRO-004-110DC-01 INV
		220-240		0	2	MIL-MICRO-004-220DC-01 INV
		24		0	2	MIL-MICRO-004-024AC-01 INV
		110-127		0	2	MIL-MICRO-004-110AC-01 INV
		220-240		0	2	MIL-MICRO-004-240AC-01 INV
5,5	7,5	22-30		0	2	MIL-MICRO-055-024DC-01 INV
		110-127		0	2	MIL-MICRO-055-048DC-01 INV
		220-240		0	2	MIL-MICRO-055-110DC-01 INV
		22-30		0	2	MIL-MICRO-055-024AC-01 INV
		110-127		0	2	MIL-MICRO-055-110AC-01 INV
		220-240		0	2	MIL-MICRO-055-220AC-01 INV
4	5	22-30		2	0	MIL-MICRO-004-024DC-10 INV
		110-127		2	0	MIL-MICRO-004-110DC-10 INV
		220-240		2	0	MIL-MICRO-004-220DC-10 INV
		24		2	0	MIL-MICRO-004-024AC-10 INV
		110-127		2	0	MIL-MICRO-004-110AC-10 INV
		220-240		2	0	MIL-MICRO-004-240AC-10 INV
5,5	7,5	22-30		2	0	MIL-MICRO-055-024DC-10 INV
		110-127		2	0	MIL-MICRO-055-110DC-10 INV
		220-240		2	0	MIL-MICRO-055-220DC-10 INV
		22-30		2	0	MIL-MICRO-055-024AC-10 INV
		110-127		2	0	MIL-MICRO-055-110AC-10 INV
		220-240		2	0	MIL-MICRO-055-220AC-10 INV

Tabella 8

Nota:

\*

E' possibile richiedere l'inserimento di contatti ausiliari , scrivere all'email [info@energytomotion.com](mailto:info@energytomotion.com) indicando il P/N di base e la propria esigenza.

• **Composizione Part Number prodotto**



MIL	[power]	[coil voltage]	[Auxilliary contacts]	[optional configuration]
	<p>004=4kW 055=5,5kW 075=7,5kW 110=11kW 150=15kW 185=18,5kW 220=22kW 300=30kW</p>	<p>012=12..20Vdc 020=20..60Vdc / 24..60Vac 048=48..130Vdc/48..130Vac 100=100..250Vdc/100..250Vac</p>	<p>00=NO AUXILIARY CONTACT 10=  normally open 01=  normally close 11= N°2 auxiliary contacts (qty 1 normally open + q.ty 1 normally close) XY= auxiliary contacts (qty X normally open + q.ty Y normally close)</p>	<p>INV=REVERSING CONTACTOR STR=STAR TO DELTA CONFIGURATOR BYP=BYPASS CONFIGURATION</p>

Tabella 9



MIL - MINI-	[power]	[coil voltage]	[Auxilliary contacts]
	<p>004=4kW 055=5,5kW 075=7,5kW</p>	<p>024=20-30Vdc 048=40..50Vdc 110=90..130Vdc 230=180..250Vdc  024AC=24Vac +/-20% (50-60Hz) 230AC=230Vac +/-20% (50-60Hz) 400AC=400Vac +/-20% (50-60Hz)</p>	<p>00=NO AUXILIARY CONTACT 10=  normally open 01=  normally close</p>

Tabella 10



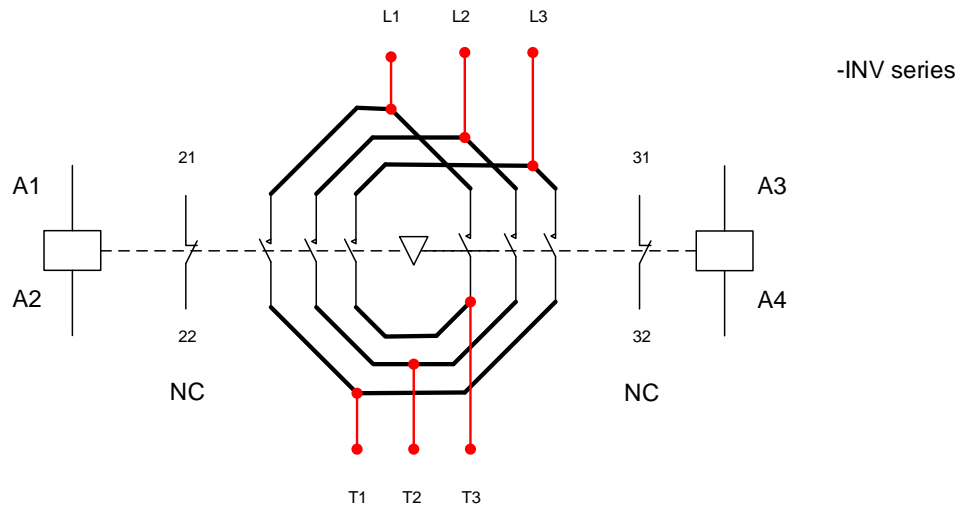
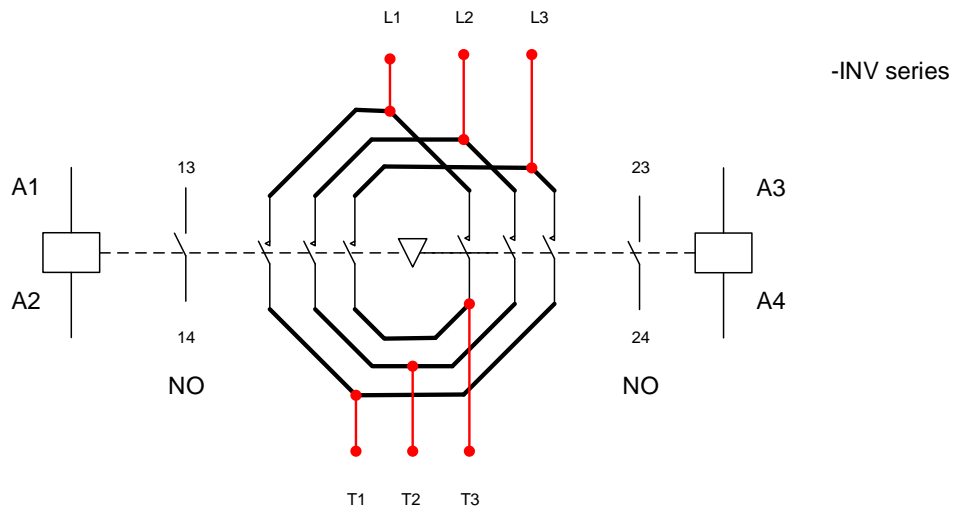
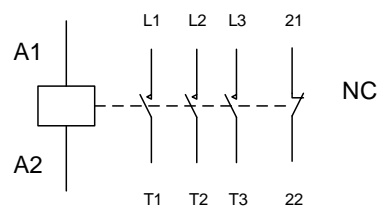
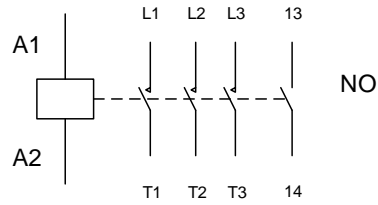
MIL - MICRO -	[power]	[coil voltage]	[Auxilliary contacts]	[Optional configuration]
	<p>004=4kW 055=5,5kW</p>	<p>024DC 110DC 220DC  024AC(50-60Hz) 110AC(50-60Hz) 220AC(50-60Hz)</p>	<p>00=NO AUXILIARY CONTACT 10=  normally open 01=  normally close</p>	<p>INV=REVERSING CONTACTOR</p>

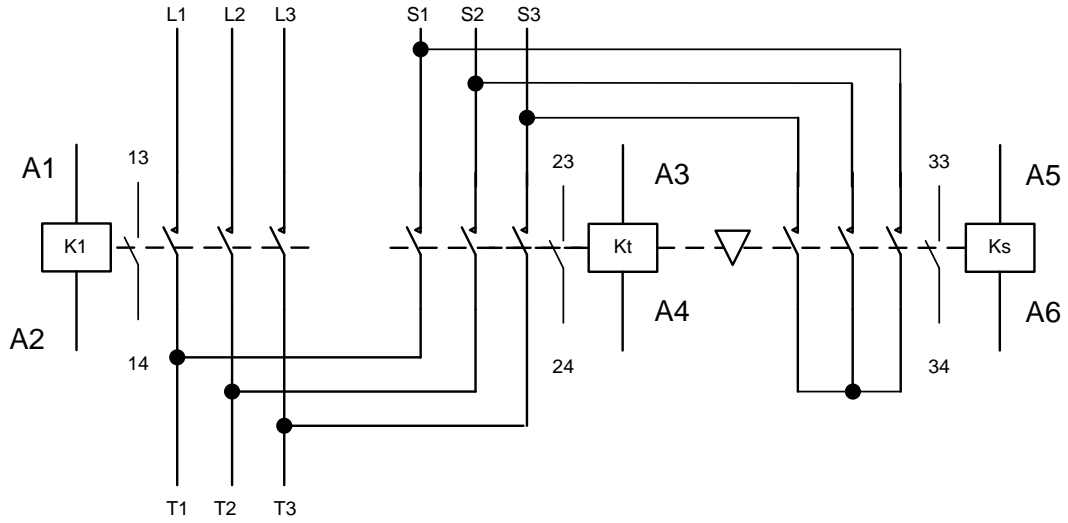
Tabella 11

**Nota:** gli ingombri meccanici dei prodotti sono riportati nella parte finale del catalogo e possono essere richiesti a [info@energytomotion.com](mailto:info@energytomotion.com), specificando il P/N del prodotto.

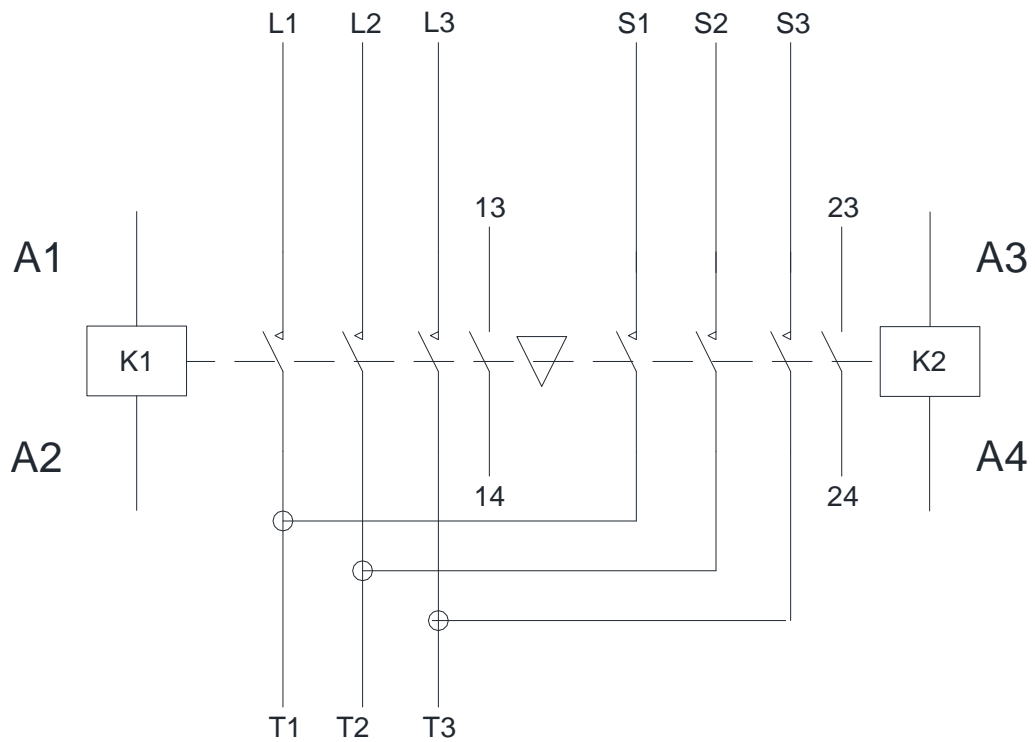
• Diagramma delle interconnessioni



- STR series



- BYP series



• Caratteristiche tecniche

UTILIZATION CHARACTERISTIC ACCORDING TO IEC	Model MIL							
	MIL-004	MIL-055	MIL-075	MIL-110	MIL-150	MIL-185	MIL-220	MIL-300
Standard	IEC 60947-1 / 60947-4-1 and EN 60947-1 / 60947-4-1							
Rated operational voltage Ue max.	690V							
Rated frequency limits	25 ... 400 Hz							
Conventional free-air thermal current Ith acc. to IEC 60947-4-1, open contactors, $\theta \leq 40^\circ\text{C}$ with conductor cross-sectional area	35A	35A	35A	50A	50A	50A	105A	105A
	4mm <sup>2</sup>	6mm <sup>2</sup>	6mm <sup>2</sup>	10mm <sup>2</sup>	10mm <sup>2</sup>	10mm <sup>2</sup>	35mm <sup>2</sup>	35mm <sup>2</sup>

UTILIZATION CHARACTERISTIC ACCORDING TO IEC	Model MIL-MINI / MIL-MICRO		
	MIL-MINI-004 MIL-MICRO-004	MIL-MINI-055 MIL-MICRO-055	MIL-MINI-075 --
Standard	IEC 60947-1 / 60947-4-1 and EN 60947-1 / 60947-4-1		
Rated operational voltage Ue max.	690V		
Rated frequency limits	25 ... 400 Hz		
Conventional free-air thermal current Ith acc. to IEC 60947-4-1, open contactors, $\theta \leq 40^\circ\text{C}$ with conductor cross-sectional area	20A	21A	22A
	4 mm <sup>2</sup>	4 mm <sup>2</sup>	4 mm <sup>2</sup>



SWITCHING ON RESISTIVE CIRCUITS			Model MIL							
AC-1 Utilization category	Air Temp	Voltage	MIL-004	MIL-055	MIL-075	MIL-110	MIL-150	MIL-185	MIL-220	MIL-300
IEC / AC-1 rated operational current	$\theta \leq 40^\circ$	690V	25A	28A	30A	45A	50A	50A	100A	105A
	$\theta \leq 60^\circ$	690V	25A	28A	30A	40A	42A	42A	80A	90A
	$\theta \leq 70^\circ$	690V	22A	24A	26A	32A	37A	37A	70A	80A
	Conductor section area		4mm <sup>2</sup>	6mm <sup>2</sup>	6mm <sup>2</sup>	10mm <sup>2</sup>	10mm <sup>2</sup>	10mm <sup>2</sup>	35mm <sup>2</sup>	35mm <sup>2</sup>

SWITCHING ON RESISTIVE CIRCUITS			Model MIL-MINI / MIL-MICRO							
AC-1 Utilization category	Air Temp	Voltage	MIL-MINI-004	MIL-MINI-055	MIL-MINI-075					
			MIL-MICRO-004	MIL-MICRO-055	--					
IEC / AC-1 rated operational current	$\theta \leq 40^\circ$	690V	20A	21A	22A					
	$\theta \leq 60^\circ$	690V	15A	16A	16A					
	$\theta \leq 70^\circ$	690V	12A	12A	13A					
	Conductor section area		4mm <sup>2</sup>	4mm <sup>2</sup>	4mm <sup>2</sup>					

SWITCHING OF 3 PHASE CAGE MOTORS			Model MIL							
AC-3 Utilization category	Air Temp	Voltage	MIL-004	MIL-055	MIL-075	MIL-110	MIL-150	MIL-185	MIL-220	MIL-300
IEC / AC-3 reted operational CURRENT (1500 rpm 50Hz or 1900 rpm 60Hz)	$\theta \leq 60^\circ$	220-230-240V	9A	12A	18A	26A	33A	40A	53A	65A
	$\theta \leq 60^\circ$	380-400V	9A	12A	18A	26A	32A	38A	53A	65A
	$\theta \leq 60^\circ$	415V	9A	12A	18A	26A	32A	38A	53A	65A
	$\theta \leq 60^\circ$	440V	9A	12A	18A	26A	32A	38A	53A	65A
	$\theta \leq 60^\circ$	500V	9.5A	12.5A	15A	23A	28A	33A	45A	55A
	$\theta \leq 60^\circ$	690V	7A	9A	10.5A	17A	21A	24A	35A	39A
IEC / AC-3 reted operational POWER (1500 rpm 50Hz or 1900 rpm 60Hz)	$\theta \leq 60^\circ$	220-230-240V	2.2kW	3 kW	4 kW	6.5 kW	9 kW	11 kW	15kW	18.5kW
	$\theta \leq 60^\circ$	380-400V	4 kW	5.5kW	7.5 kW	11 kW	15 kW	18.5 kW	22kW	30kW
	$\theta \leq 60^\circ$	415V	4 kW	5.5kW	9 kW	11 kW	15 kW	18.5 kW	30kW	37kW
	$\theta \leq 60^\circ$	440V	4 kW	5.5kW	9 kW	15 kW	18.5 kW	22 kW	30kW	37kW
	$\theta \leq 60^\circ$	500V	5.5 kW	7.5 kW	9 kW	15 kW	18.5 kW	22 kW	30kW	37kW
	$\theta \leq 60^\circ$	690V	5.0 kW	7.5 kW	9 kW	15 kW	18.5 kW	22 kW	30kW	37kW
Rated making capacity AC-3			10 x Ie AC-3 acc. to IEC 60947-4-1							
Rated breaking capacity AC-3			8 x Ie AC-3 acc. to IEC 60947-4-1							
AC-8a Utilization category (without thermal overload relay - Ue 400 V - $\theta \leq 40^\circ\text{C}$ )										
Ie / AC-8a rated operational current			12A	16A	22A	30A	40A	50A	70A	85A
AC-8a rated operational power			5.5kW	7.5kW	11kW	15kW	20kW	25kW	37kW	45kW
Short-circuit protection for contactors (without thermal O/L relay - Motor protection excluded Ue $\leq$ 500 V AC - gG type fuse)			25A	32A	32A	50A	63A	63A	125A	160A

SWITCHING OF 3 PHASE CAGE MOTORS			Model MIL							
AC-3 Utilization category	Air Temp	Voltage	MIL-004	MIL-055	MIL-075	MIL-110	MIL-150	MIL-185	MIL-220	MIL-300
Rated short-time withstand current I <sub>cw</sub> at 40 °C ambient temperature, in free air from a cold state		1s	300A	300A	700A	700A	700A	700A	1000A	1000A
		10s	150A	150A	350A	350A	350A	350A	600A	600A
		30s	80A	80A	225A	225A	225A	225A	350A	350A
		1 min	60A	60A	150A	150A	150A	150A	250A	250A
		15 min	35A	35A	50A	50A	50A	50A	110A	110A
Maximum breaking capacity cos φ = 0.45		@400V	250A	250A	250A	500A	500A	500A	950A	950A
		@690	106A	106A	106A	200A	200A	200A	600A	600A
Max. electrical switching frequency		AC-1	600 cycles/h							
		AC-3	1200 cycles/h							
		AC-2; AC-4	300 cycles/h				150 cycles/h			
Heat dissipation per pole		I <sub>e</sub> / AC-1	0.8W	1W	1.2W	1.8W	2.4W	2.4W	6,3W	7W
		I <sub>e</sub> / AC-3	0.1W	0.2W	0.35W	0.6W	0.9W	1.3W	1,7W	2,7W

SWITCHING OF 3 PHASE CAGE MOTORS			Model MIL-MINI / MIL-MICRO			
AC-3 Utilization category	Air Temp	Voltage	MIL-MINI-004 MIL-MICRO-004	MIL-MINI-055 MIL-MICRO-055	MIL-MINI-075	
IEC / AC-3 reted operational CURRENT (1500 rpm 50Hz or 1900 rpm 60Hz)	θ ≤ 60°	220-230-240V	9A	12A	15A	
	θ ≤ 60°	400V	9A	12A	15A	
	θ ≤ 60°	415V	9A	12A	15A	
	θ ≤ 60°	440V	8.5 A	12A	14A	
	θ ≤ 60°	500V	8A	12A	13A	
	θ ≤ 60°	690V	4.5 A	6.5 A	9A	
IEC / AC-3 reted operational POWER	θ ≤ 60°	220-230-240V	2.2kW	3 kW	4 kW	

SWITCHING OF 3 PHASE CAGE MOTORS			Model MIL-MINI / MIL-MICRO			
AC-3 Utilization category (1500 rpm 50Hz or 1900 rpm 60Hz)	Air Temp	Voltage	MIL-MINI-004	MIL-MINI-055	MIL-MINI-075	
			MIL-MICRO-004	MIL-MICRO-055		
	$\theta \leq 60^\circ$	380-400V	4 kW	5.5kW	7.5 kW	
	$\theta \leq 60^\circ$	415V	4 kW	5.5kW	7.5 kW	
	$\theta \leq 60^\circ$	440V	4 kW	5.5kW	7.5 kW	
	$\theta \leq 60^\circ$	500V	4 kW	5.5kW	7.5 kW	
	$\theta \leq 60^\circ$	690V	4 kW	5.5kW	7.5 kW	
Rated making capacity AC-3			10 x I <sub>e</sub> AC-3 acc. to IEC 60947-4-1			
Rated breaking capacity AC-3			8 x I <sub>e</sub> AC-3 acc. to IEC 60947-4-1			
AC-8a Utilization category (without thermal overload relay - U <sub>e</sub> 400 V - $\theta \leq 40^\circ\text{C}$ )						
I <sub>e</sub> / AC-8a rated operational current			12A	16A	22A	
AC-8a rated operational power			5.5kW	7.5kW	11kW	
Short-circuit protection for contactors (without thermal O/L relay - Motor protection excluded U <sub>e</sub> $\leq$ 500 V AC - gG type fuse)			25A	25A	25A	
Rated short-time withstand current I <sub>cw</sub> at 40 °C ambient temperature, in free air from a cold state		1s	220A	230A	240A	
		10s	100A	120A	125A	
		30s	60A	70A	75A	
		1 min	50A	50A	55A	
		15 min	20A	20A	21A	
Maximum breaking capacity cos $\phi$ = 0.45		@400V	150A	150A	150A	
		@690	85A	85A	85A	
Max. electrical switching frequency		AC-1	600 cycles/h			
		AC-3	MINI: 1200 cycles/h - MICRO: 600 cycles/h			
		AC-2; AC-4	MINI: 300 cycles/h - MICRO: 120 cycles/h			
Heat dissipation per pole		I <sub>e</sub> / AC-1	MINI:1W – MICRO:0.8W	MINI:1.1W – MICRO:0.8W	MINI:1.2W	
		I <sub>e</sub> / AC-3	MINI:0.20W– MICRO:0.15W	MINI:0.35W– MICRO:0.25W	MINI:0.65W	

AUXILIARY CONTACTS ACCORDING TO IEC		Model
		<i>ALL MODELS</i>
Rated operational voltage Ue max.		690V
Conventional free air thermal current Ith - $\theta \leq 40\text{ }^{\circ}\text{C}$		16A (10A MIL-MINI , MIL-MICRO)
Rated frequency limits		25 .. 400 Hz
Rated operational current Ie / AC-15 according to IEC 60947-5-1	24-127 V 50/60 Hz	6A
	220-240 V 50/60 Hz	4A
	400-440 V 50/60 Hz	3A
	500 V 50/60 Hz	2A
	690 V 50/60 Hz	2A
Making capacity AC-15		10 x Ie AC-15 acc. to IEC 60947-5-1
Breaking capacity AC-15		10 x Ie AC-15 acc. to IEC 60947-5-1
Rated operational current Ie / DC-13 according to IEC 60947-5-1	24Vdc	6A-144W
	48Vdc	2.8A-134W
	72Vdc	1A-72W
	110Vdc	0.55A-60W
	125Vdc	0.55A-69W
	220Vdc	0.27A-60W
	250Vdc	0.27A-68W
	400Vdc	0.15A-60W
	500Vdc	0.13A-65W
	600Vdc	0.1A-60W
Short-circuit protection gG type fuse		10A
Rated short-time withstand current Icw	for 0.1 s	140A
	for 1.0 s	100A
Minimum switching capacity with failure rate acc. to IEC 60947-5-4		12 V / 3 mA
		$10^{-7}$

AUXILIARY CONTACTS ACCORDING TO IEC		Model
		<i>ALL MODELS</i>
Non-overlapping time between N.O. and N.C. contacts		≥ 2 ms
Heat dissipation per pole at 6 A		0.1W
Max. electrical switching frequency	AC-15	1200 cycles/h (MIL-MICRO: 600 cycles/h)
	DC-13	900 cycles/h (MIL-MICRO: 300 cycles/h)

UTILIZATION CHARACTERISTIC ACCORDING TO UL/NEMA/CSA		Model MIL							
		MIL-004	MIL-055	MIL-075	MIL-110	MIL-150	MIL-185	MIL-220	MIL-300
Standard		UL 508, CSA C22.2 N°14							
Rated operational voltage Ue max.		600V							
NEMA size		0	0		1				
NEMA continuous amp rating	thermal current	9A	18A		27A				
NEMA maximum H.P. ratings 1-phase, 60 Hz	115Vac	1/3Hp	1Hp		2Hp				
	230Vac	1Hp	2Hp		3Hp				
NEMA maximum H.P. ratings 3-phase, 60 Hz	200Vac	1-1/2Hp	3Hp		7-1/2Hp				
	230Vac	1-1/2Hp	3Hp		7-1/2Hp				
	460Vac	2Hp	5Hp		10Hp				
	575Vac	2Hp	5Hp		10Hp				
UL General use rating	600Vac	25A	28A	30A	45A	50A	50A	80A	90A
	With conductor cross-sectional area	AWG10	AWG10	AWG10	AWG8	AWG8	AWG8	AWG4	AWG3
	80 V DC - 1-pole	25A	28A	30A	45A	50A	50A		

UTILIZATION CHARACTERISTIC ACCORDING TO UL/NEMA/CSA		Model MIL								
		MIL-004	MIL-055	MIL-075	MIL-110	MIL-150	MIL-185	MIL-220	MIL-300	
								80A	90A	
	With conductor cross-sectional area	AWG10	AWG10	AWG10	AWG8	AWG8	AWG8	AWG4	AWG3	
UL maximum 1-phase motor rating	Amp-rating	120Vac	13.8A	16A	20A	24A	24A	24A	34A	56A
		240Vac	10A	12A	17A	17A	28A	28A	50A	68A
	Motor power	120Vac	3/4Hp	1Hp	1-1/2Hp	2Hp	2Hp	2Hp	3 Hp	5 Hp
		240Vac	1-1/2Hp	2Hp	3Hp	3Hp	5Hp	5Hp	10Hp	15Hp
UL maximum 3-phase motor rating	Amp-rating	200-208Vac	7.8A	11A	17.5A	25.3A	32.2A	32.2A	48.3A	62.1A
		220-240Vac	6.8A	9.6A	15.2A	22A	28A	28A	54A	68A
		440-480Vac	7.6A	11A	14A	21A	27A	27A	52A	65A
		550-600Vac	9A	11A	17A	22A			52A	62A
	Motor power <small>(for 1500 r.p.m., 50 Hz or 1800 r.p.m., 60 Hz 3-phase motors)</small>	200-208Vac	2Hp	3Hp	5Hp	7.5Hp	10Hp	10Hp	15Hp	20Hp
		220-240Vac	2Hp	3Hp	5Hp	7.5Hp	10Hp	10Hp	20Hp	25Hp
		440-480Vac	5Hp	7.5Hp	10Hp	15Hp	20Hp	20Hp	40Hp	50Hp
		550-600Vac	7.5Hp	10Hp	15Hp	20Hp			50Hp	60Hp
Short-circuit protection for contactors	Fuse rating	60A	60A	60A	150A	150A	150A	150A	150A	

UTILIZATION CHARACTERISTIC ACCORDING TO UL/NEMA/CSA		Model MIL							
		MIL-004	MIL-055	MIL-075	MIL-110	MIL-150	MIL-185	MIL-220	MIL-300
Max. electrical switching frequency	for general use	600 cycles/h							
	for motor use	1200 cycles/h							
Mechanical durability	Number of operating cycles	10 millions operating cycles							
	Max. switching frequency	3600 cycles/h							

UTILIZATION CHARACTERISTIC ACCORDING TO UL/NEMA/CSA		Model MIL-MINI / MIL-MICRO			
		MIL-MINI-004 MIL-MICRO-004	MIL-MINI-055 MIL-MICRO-055	MIL-MINI-075	
Standard		UL 508, CSA C22.2 N°14			
Rated operational voltage Ue max.		690V			
NEMA size		0	0	0	
NEMA continuous amp rating	thermal current	9A	9A	9A	
NEMA maximum H.P. ratings 1-phase, 60 Hz	115Vac	1/3Hp	1/3Hp	1/3Hp	
	230Vac	1Hp	1Hp	1Hp	
NEMA maximum H.P. ratings 3-phase, 60 Hz	200Vac	1-1/2Hp	1-1/2Hp	1-1/2Hp	
	230Vac	1-1/2Hp	1-1/2Hp	1-1/2Hp	
	460Vac	2Hp	2Hp	2Hp	
	575Vac	2Hp	2Hp	2Hp	
UL General use rating	600Vac	12A	12A	15A	
	With conductor cross-sectional area	AWG12	AWG12	AWG12	
	80 V DC - 1-pole	12A	12A	15A	
	With conductor cross-sectional area	AWG12	AWG12	AWG12	



**UTILIZATION CHARACTERISTIC ACCORDING TO UL/NEMA/CSA**
**Model MIL-MINI / MIL-MICRO**

			<i>MIL-MINI-004</i> <i>MIL-MICRO-004</i>	<i>MIL-MINI-055</i> <i>MIL-MICRO-055</i>	<i>MIL-MINI-075</i>
UL maximum 1-phase motor rating	Amp-rating	120Vac	7A	9A	13.5A
		240Vac	8A	10A	11A
	Motor power	120Vac	1/3Hp	1/2Hp	3/4Hp
		240Vac	1Hp	1Hp	2Hp
UL maximum 3-phase motor rating	Amp-rating	200-208Vac	7.5A	7.5A	10.5A
		220-240Vac	6.5A	9A	15A
		440-480Vac	7.5A	11A	14A
		550-600Vac	9A	11A	11A
	Motor power <small>(for 1500 r.p.m., 50 Hz or 1800 r.p.m., 60 Hz 3-phase motors)</small>	200-208Vac	2Hp	2Hp	3Hp
		220-240Vac	2Hp	3Hp	5Hp
		440-480Vac	5Hp	7.5Hp	10Hp
		550-600Vac	5Hp	7Hp	10Hp
Short-circuit protection for contactors	Fuse rating (MINI)		40A	45A	55A
	Fuse rating (MICRO)		20A	22A	---
Max. electrical switching frequency	for general use		600 cycles/h		
	for motor use		MINI: 1200 cycles/h - MICRO: 600 cycles/h		
Mechanical durabilità	Number of operating cycles		MINI: 10 millions; MICRO(AC):5 millions; MICRO(DC): 15 millions		
	Max. switching frequency		MINI: 3600 cycles/h; MICRO: 1800 cycles/h		

AUXILIARY CONTACTS ACCORDING TO UL/CSA	Model
	<i>ALL MODELS</i>
Rated operational voltage Ue max.	600 V AC, 600 V DC
Pilot duty	A600, Q600
AC thermal rated current	10A
AC maximum volt-ampere making	7200VA
AC maximum volt-ampere breaking	720A
DC thermal rated current	2.5A
DC maximum volt-ampere making-breaking	69A

GENERAL TECHNICAL DATA		Model				
		ALL MODELS				
Rated insulation voltage $U_i$ acc. to IEC 60947-4-1		690V				
Rated insulation voltage $U_i$ acc. to acc. to UL / CSA		600V				
Rated impulse withstand voltage $U_{imp}$ .		6kV				
Electromagnetic compatibility		Devices complying with IEC 60947-1 / EN 60947-1 - Environment A				
Ambient air temperature close to contactor						
Operation		MIL & MIL-MINI: -40 ... +70°C MIL-MICRO: -40 ... +65°C MIL-MICRO: -40 ... +80°C with reduced rated current at $I_e * 0.75$				
Storage		MIL & MIL-MINI: -60 ... +80°C MIL-MICRO: -40 ... +90°C				
Climatic withstand		Category B according to IEC 60947-1 Annex Q				
Operating altitude (without derating)		≤ 3000 m				
Mechanical durabilità						
Number of operating cycles		MIL & MIL-MINI : 10 millions operating cycles MICRO(AC):5 millions; MICRO(DC): 15 millions				
Max. switching frequency		MIL & MIL-MINI : 3600 cycles/h ; MICRO: 1800 cycles/h				
Shock withstand acc. IEC 60068-2-27 and EN 60068-2-27	Mounting position 1 close or open position	Shock direction	Model MIL	Model MIL-MINI	MIL-MICRO	
			A	30 g	15 g	5 g (AC coil) 8 g (DC coil)
			B	25 g (Closed) 5 g (Open)	15 g (Closed) 5 g (Open)	5 g (AC coil) 8 g (DC coil)
			C	15g	15 g	5 g (AC coil) 8 g (DC coil)

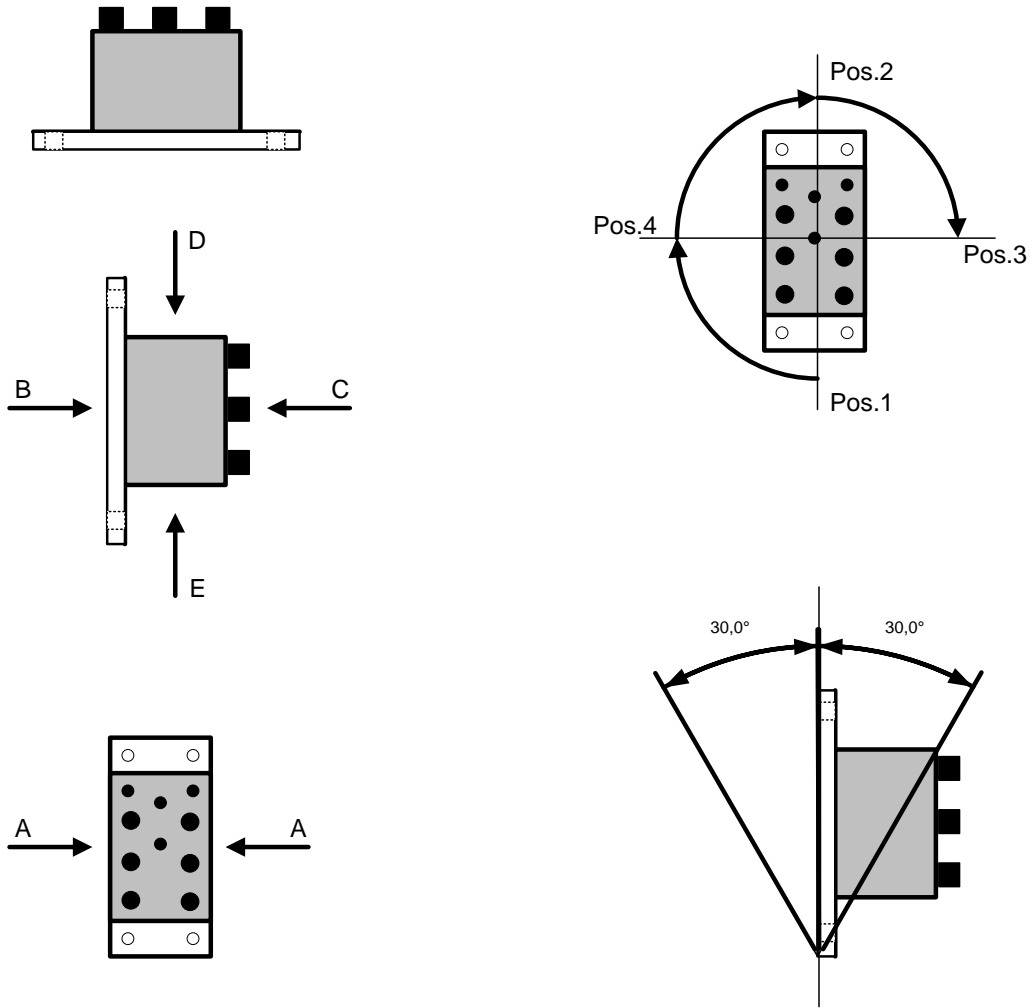
	D	25g	22 g	5 g (AC coil) 8 g (DC coil)
	E	25g	22 g	5 g (AC coil) 8 g (DC coil)
Vibration withstand acc. to IEC 60068-2-6		5 ... 300 Hz		
		4 g Closed position / 2 g Open position	3 g Closed position / 2 g Open position	

**MAGNET SYSTEM CHARACTERISTICS**
**Model**
*ALL MODELS MIL*

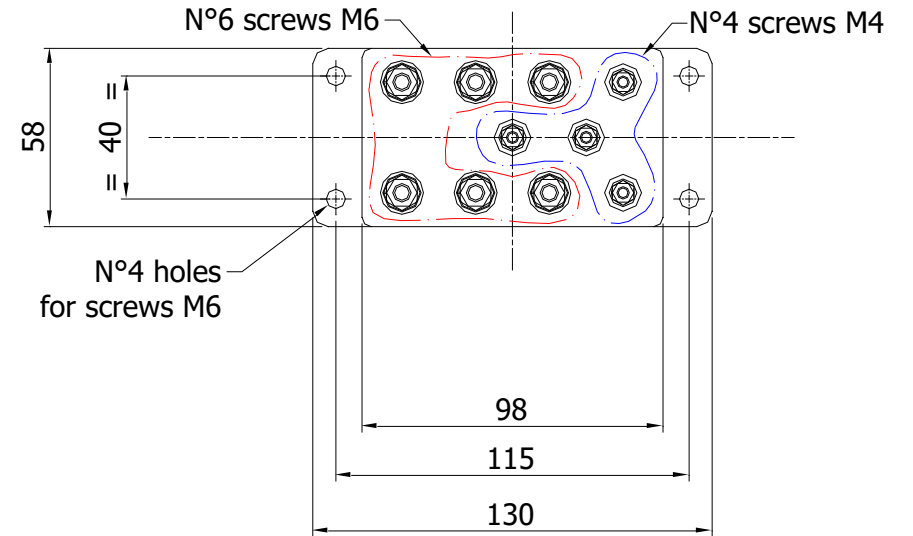
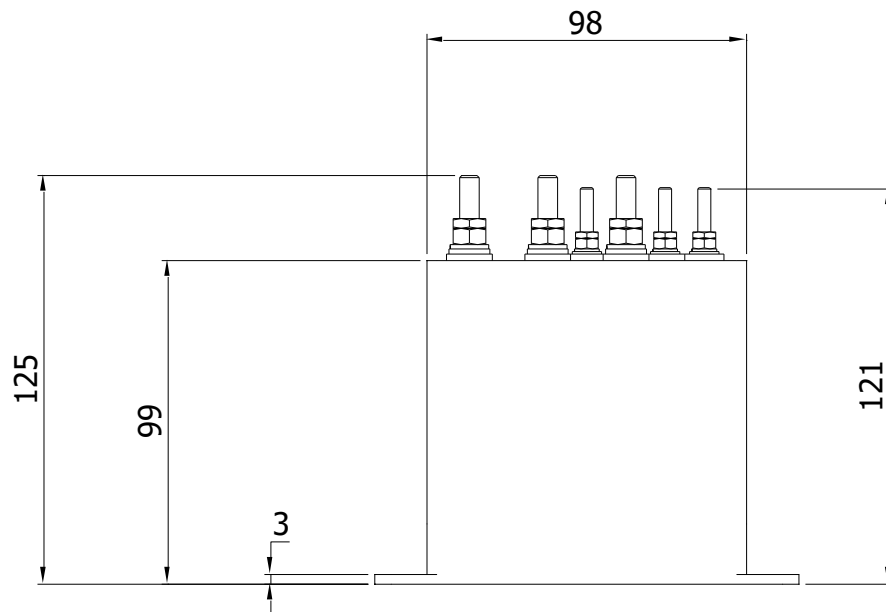
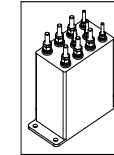
Coil operating limits acc. to IEC 60947-4-1	AC supply		at $\theta \leq 60\text{ }^{\circ}\text{C}$ 0.85 x $U_c$ min ... 1.1 x $U_c$ max at $\theta \leq 70\text{ }^{\circ}\text{C}$ 0.85 x $U_c$ min ... $U_c$ max
	DC supply		at $\theta \leq 60\text{ }^{\circ}\text{C}$ 0.85 x $U_c$ min ... 1.1 x $U_c$ max at $\theta \leq 70\text{ }^{\circ}\text{C}$ 0.85 x $U_c$ min ... 1.1 x $U_c$ max
AC control voltage 50/60 Hz	Rated control circuit voltage $U_c$		24 ... 500 V AC
	Coil consumption	Average pull-in value	16 VA
Average holding value		1.7 VA / 1.5 W	
DC control voltage	Rated control circuit voltage $U_c$		12 ... 500 V DC
	Coil consumption	Average pull-in value	12 ... 16 W
		Average holding value	1.7 W
PLC-Output control			$\geq 500\text{ mA}$ 24 V DC
Drop-out voltage in % of $U_c$ min.			$\leq 60\%$ $U_c$ min
Dips withstand (level 0% according to IEC 61000-4-11) $-20\text{ }^{\circ}\text{C} \leq \theta \leq +60\text{ }^{\circ}\text{C}$			22 ms average for $U_c = 24 \dots 250\text{ V}$ 50/60Hz
Operating time	between coil energization and:	N.O. contact closing	40 ... 95 ms
		N.C. contact opening	38 ... 90 ms
	between coil de-energization and:	N.O. contact closing	11 ... 95 ms
		N.C. contact opening	13 ... 98 ms

MAGNET SYSTEM CHARACTERISTICS		Model		
		<i>MIL-MINI / MIL-MICRO</i>		
Coil operating limits acc. to IEC 60947-4-1	AC supply		at $\theta \leq 60\text{ }^{\circ}\text{C}$ 0.85 x Uc min ... 1.1 x Uc max at $\theta \leq 70\text{ }^{\circ}\text{C}$ 0.85 x Uc min ... Uc max	
	DC supply		at $\theta \leq 60\text{ }^{\circ}\text{C}$ 0.85 x Uc min ... 1.1 x Uc max at $\theta \leq 70\text{ }^{\circ}\text{C}$ 0.85 x Uc min ... 1.1 x Uc max	
AC control voltage 50/60 Hz	Rated control circuit voltage Uc		24 ... 400 V AC	
	Coil consumption	Average pull-in value	35 VA	
		Average holding value	7 VA / 2W	
DC control voltage	Rated control circuit voltage Uc		12 ... 240 V DC	
	Coil consumption	Average pull-in value	3.5 W	
		Average holding value	3.5W	
PLC-Output control			$\geq 500\text{ mA}$ 24 V DC	
Drop-out voltage in % of Uc min.			$\leq 60\%$ Uc min	
Dips withstand (level 0% according to IEC 61000-4-11) -20 °C $\leq \theta \leq$ +60 °C			15 ms average for Uc = 24 ... 250 V 50/60Hz	
Operating time	between coil energization and:	N.O. contact closing	30 ... 60 ms	15-25 ms
		N.C. contact opening	30 ... 60 ms	15-25 ms
	between coil de-energization and:	N.O. contact closing	10 ... 20 ms	8-25 ms
		N.C. contact opening	10 ... 20 ms	8-25 ms

• Posizioni di installazione

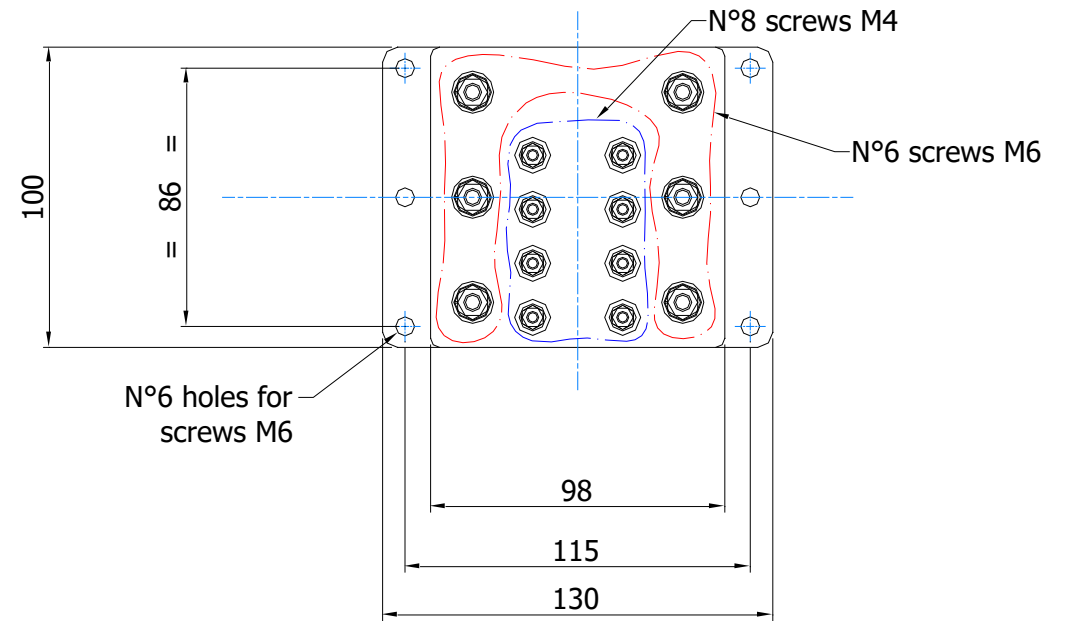
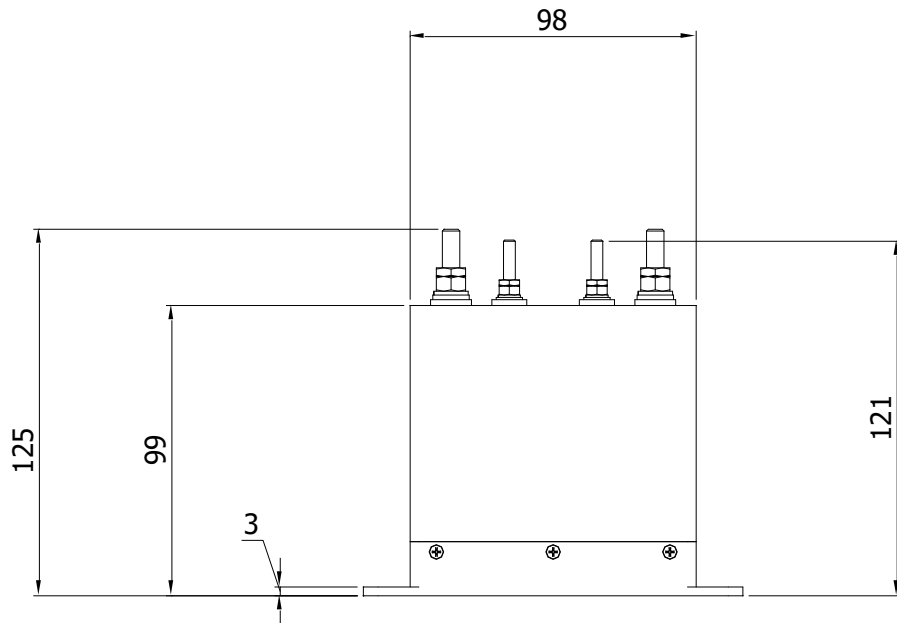
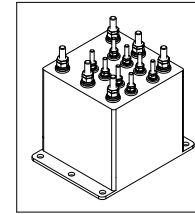


• INGOMBRI MIL-004 ... MIL-075 con contatto ausiliario



Dimensioni in mm

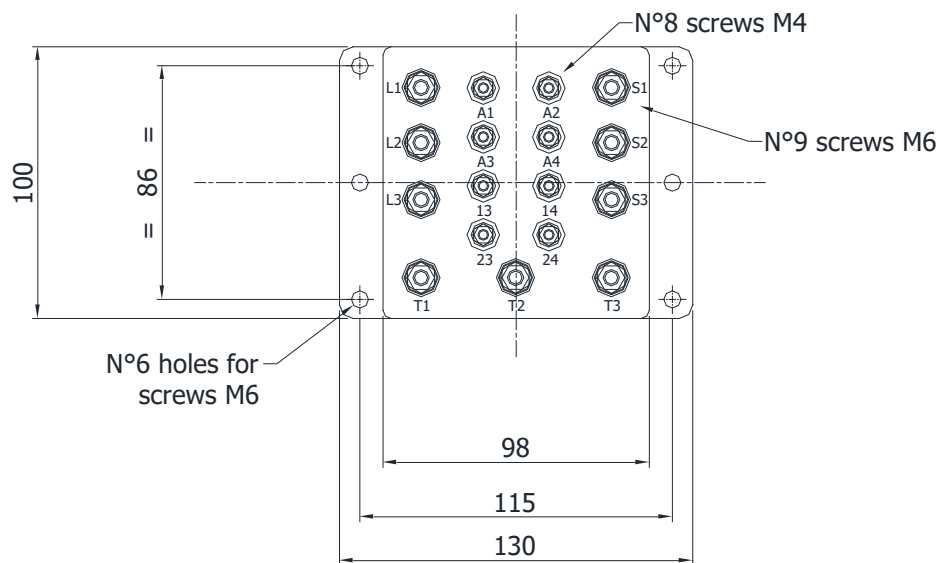
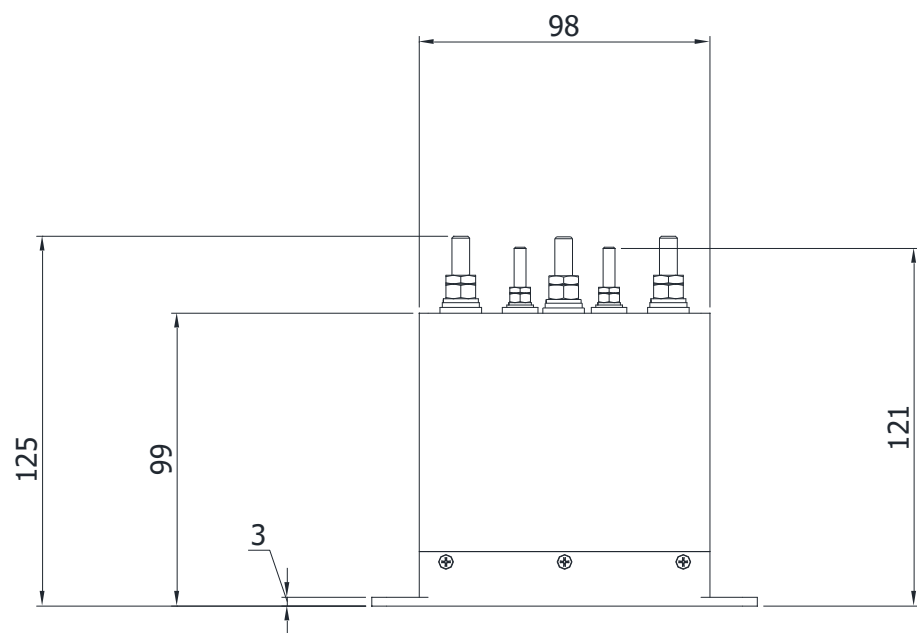
• INGOMBRI MIL-004 ... MIL-075 serie INV con contatti ausiliari



Dimensioni in mm

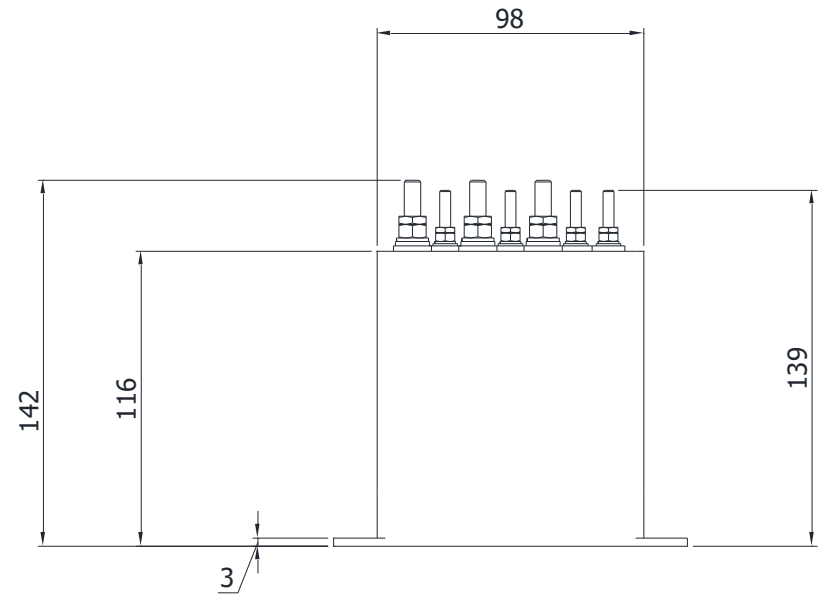
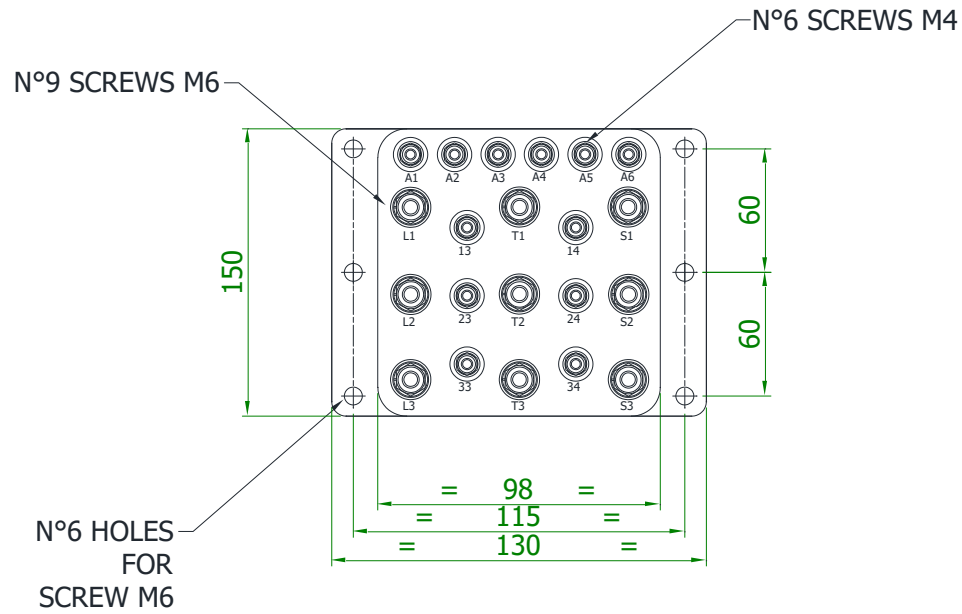


• INGOMBRI MIL-004 ... MIL-075 serie BYP con contatti ausiliari



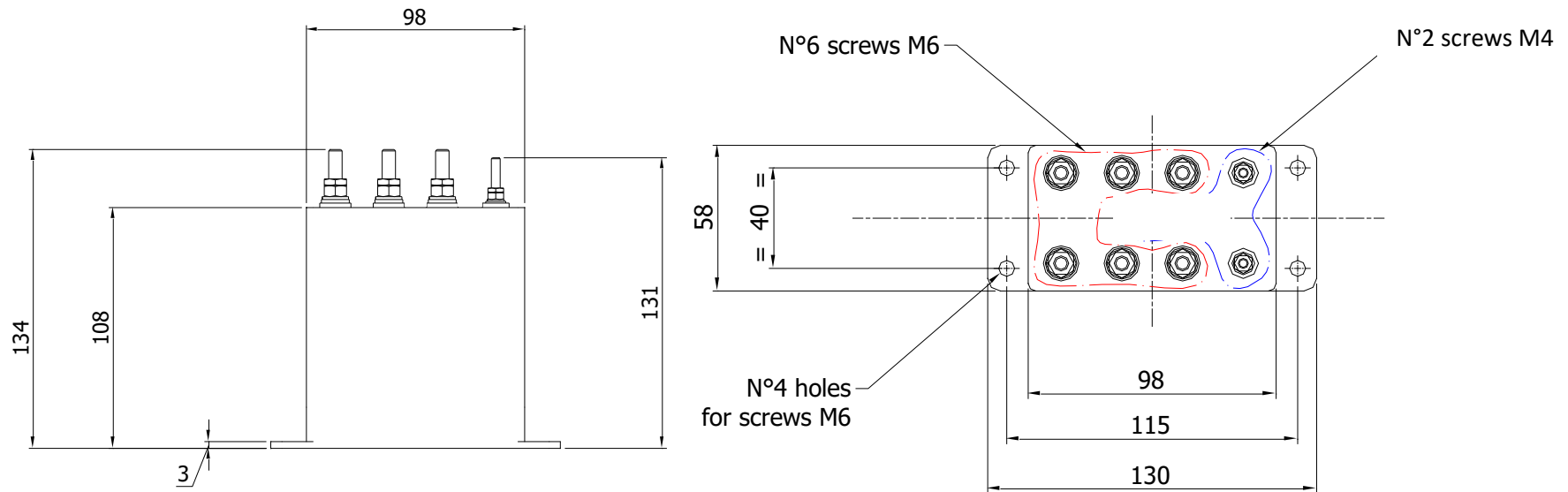
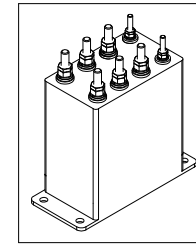
Dimensioni in mm

• INGOMBRI MIL-004 ... MIL-075 serie STR con contatti ausiliari



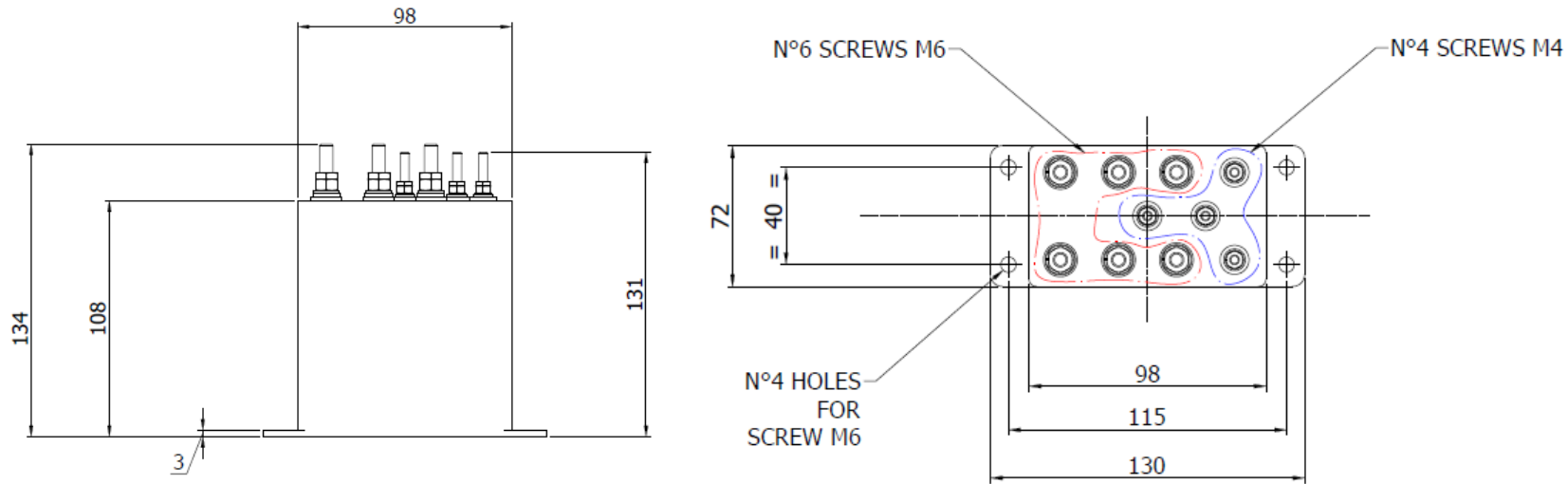
Dimensioni in mm

• INGOMBRI MIL-110 ... MIL-185 senza contatto ausiliario



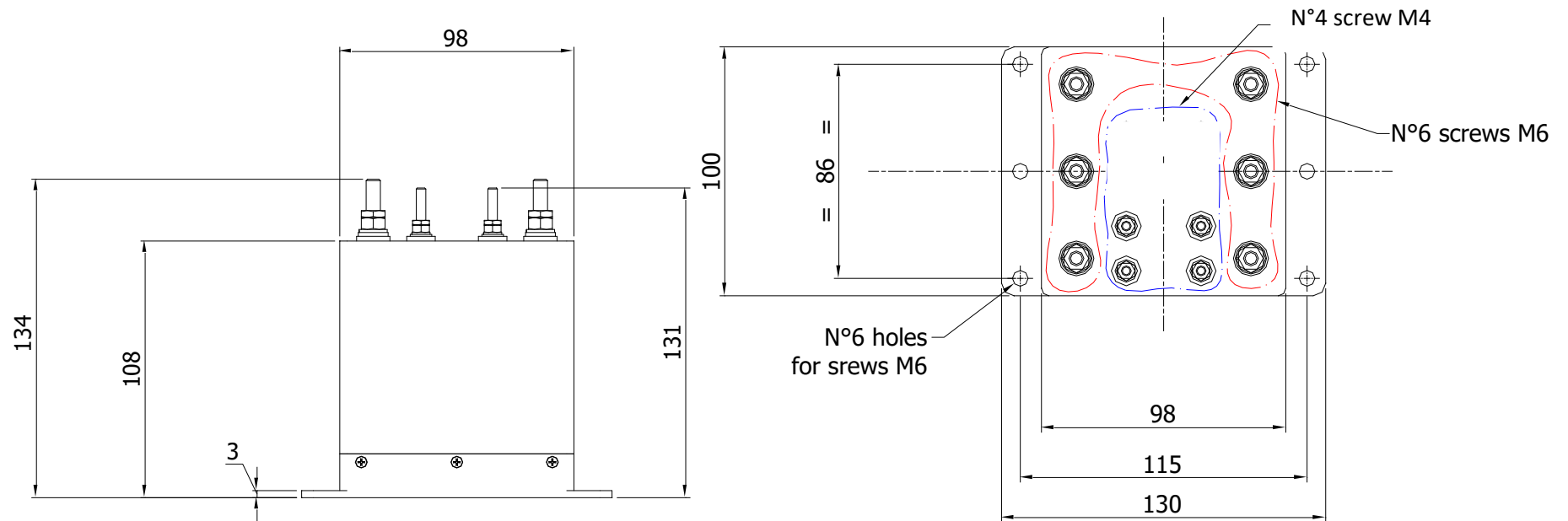
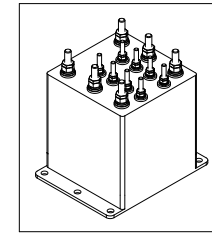
Dimensioni in mm

• INGOMBRI MIL-110 ... MIL-185 con contatto ausiliario



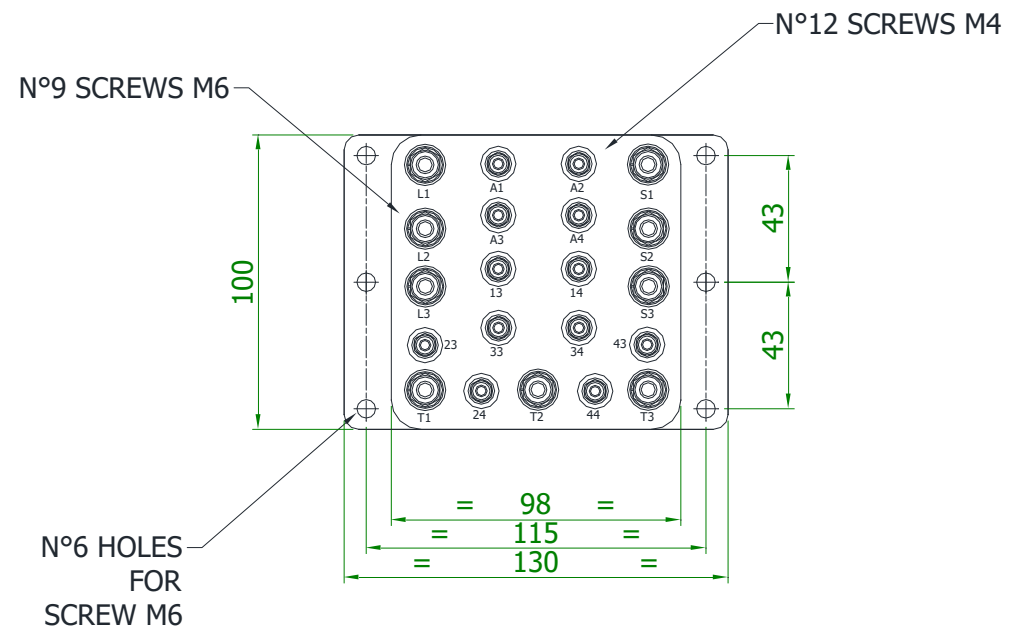
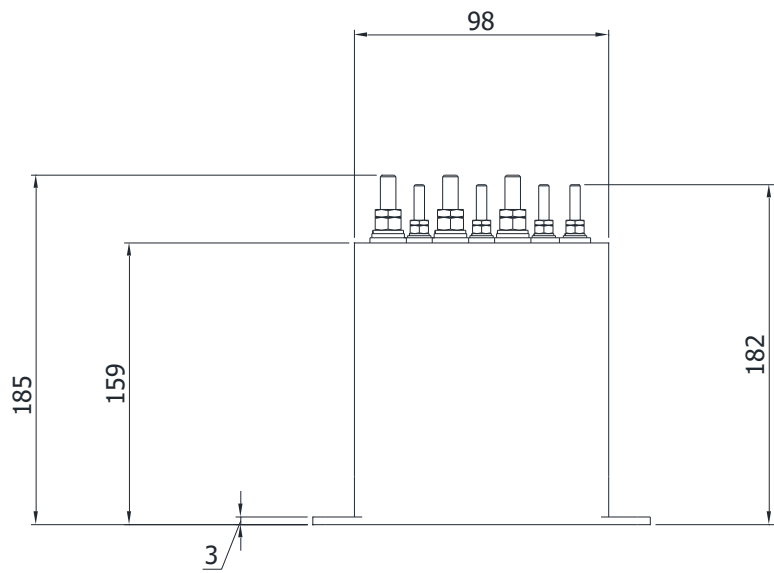
Dimensioni in mm

• INGOMBRI MIL-110 ... MIL-185 serie INV senza contatti ausiliari



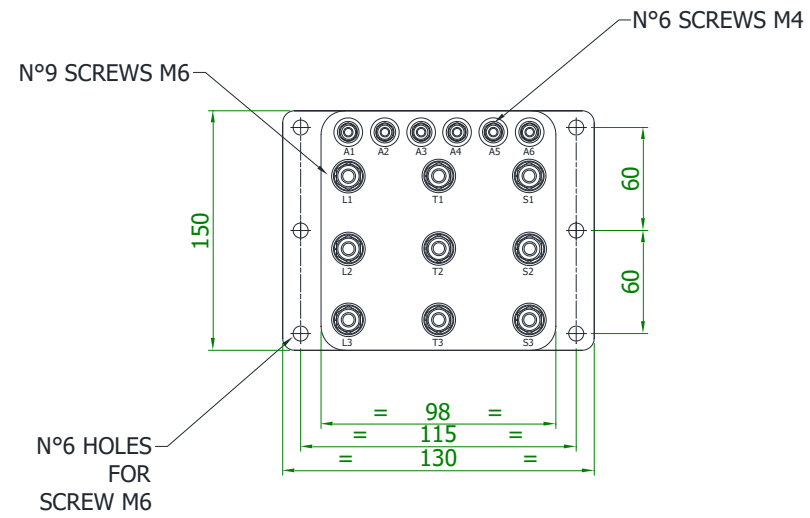
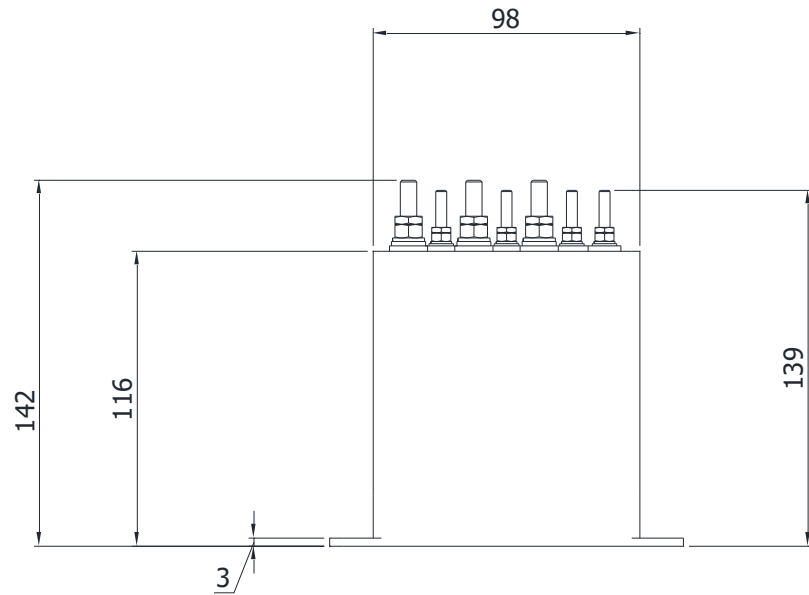
Dimensioni in mm

• INGOMBRI MIL-110 ... MIL-185 serie BYP con contatti ausiliari



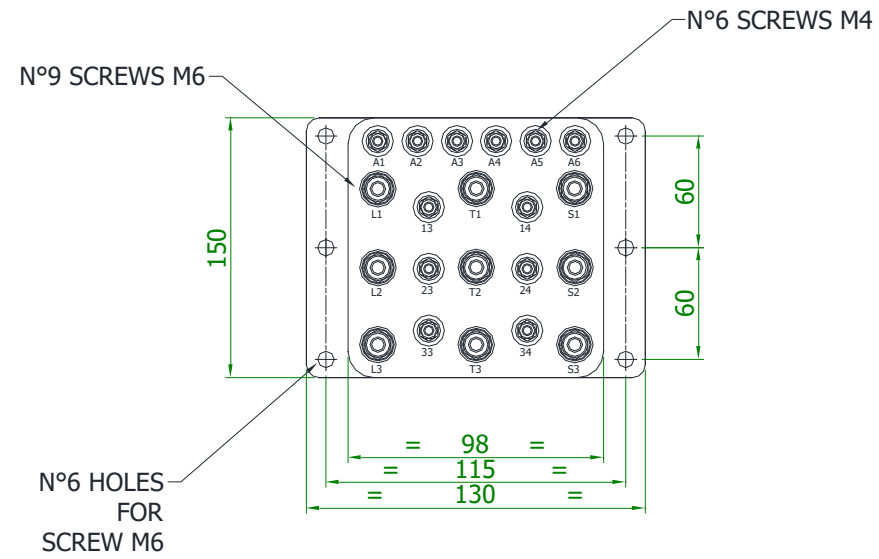
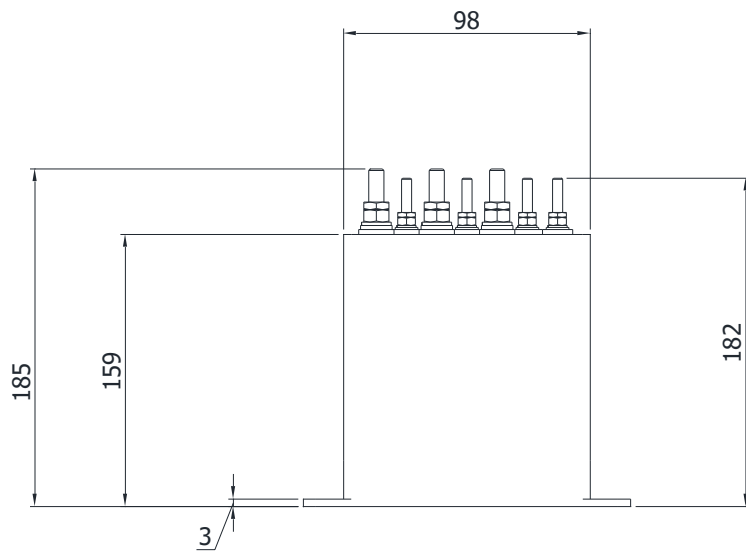
Dimensioni in mm

• INGOMBRI MIL-110 ... MIL-185 series STR senza contatti ausiliari



Dimensioni in mm

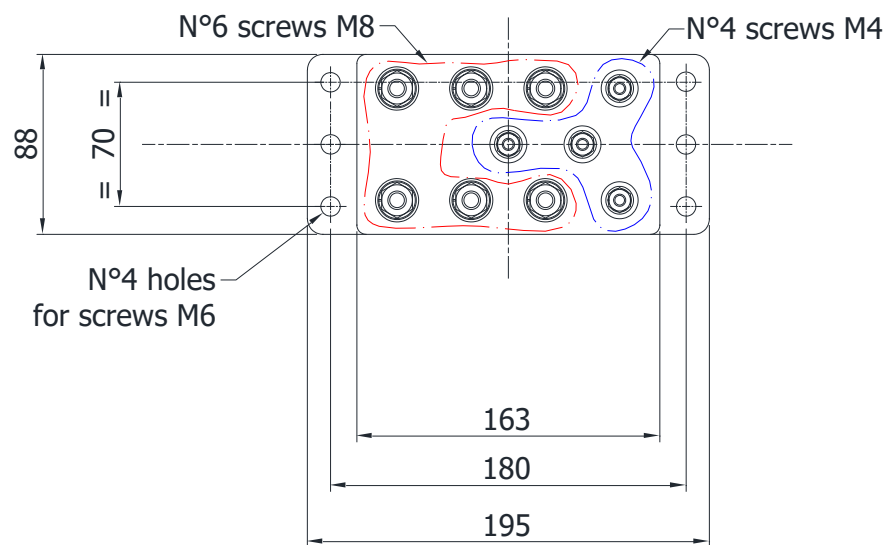
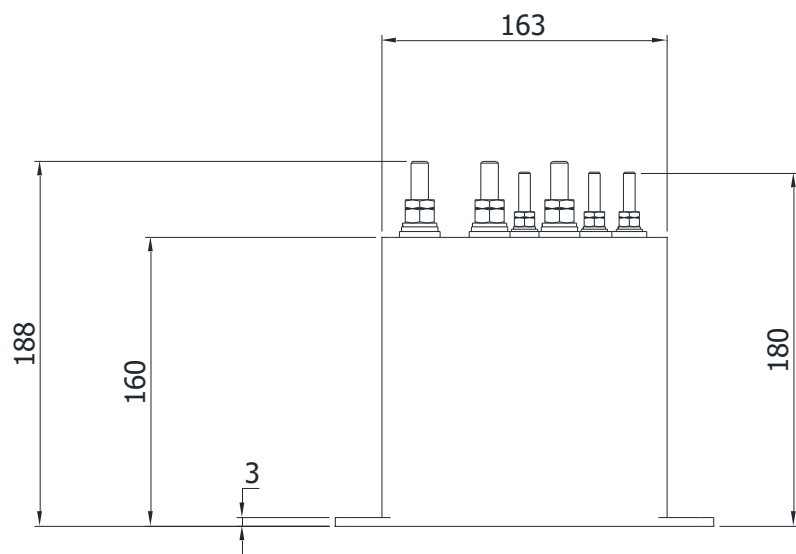
• INGOMBRI MIL-110 ... MIL-185 series STR con contatti ausiliari



Dimensioni in mm

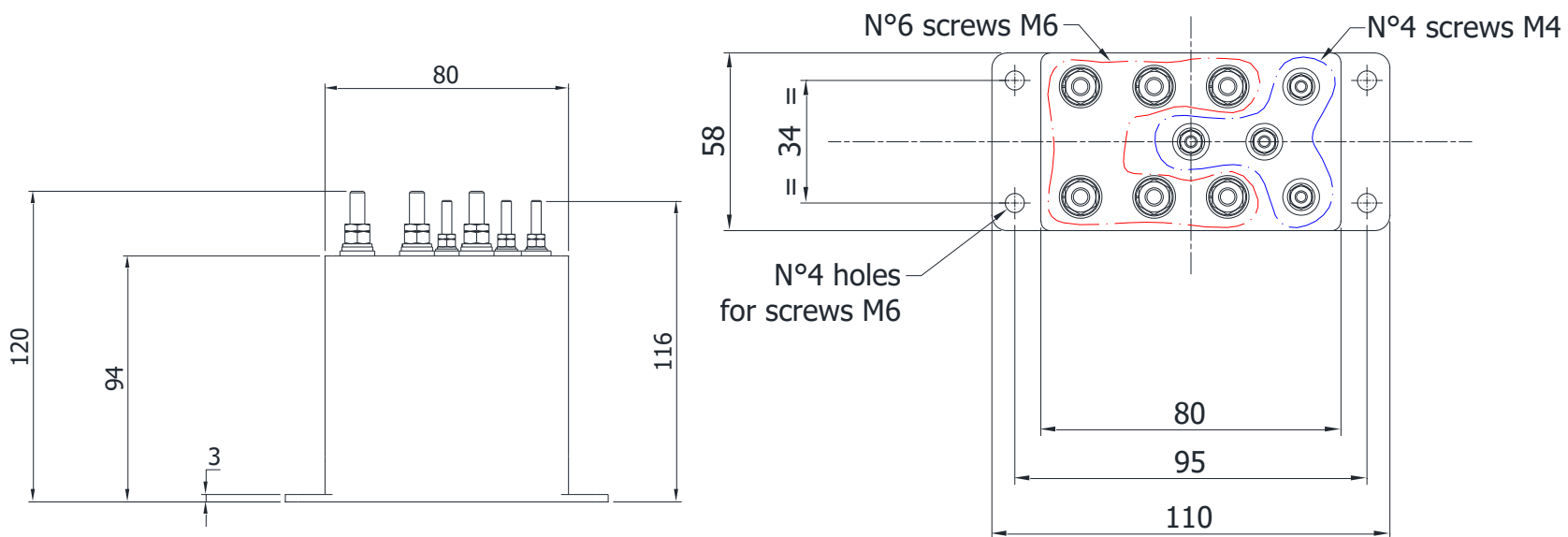


INGOMBRI MIL-220 ... MIL-300 con contatto ausiliario



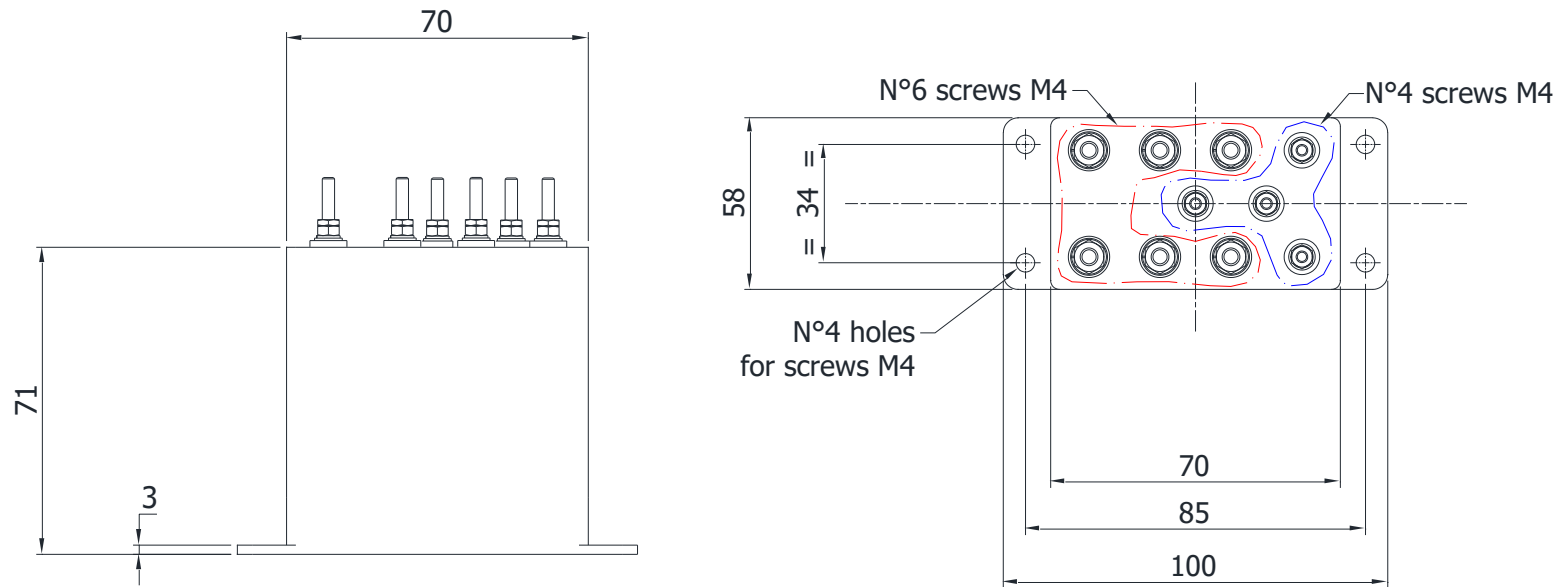
Dimensioni in mm

• INGOMBRI MIL-MINI tutta la serie con contatto ausiliario



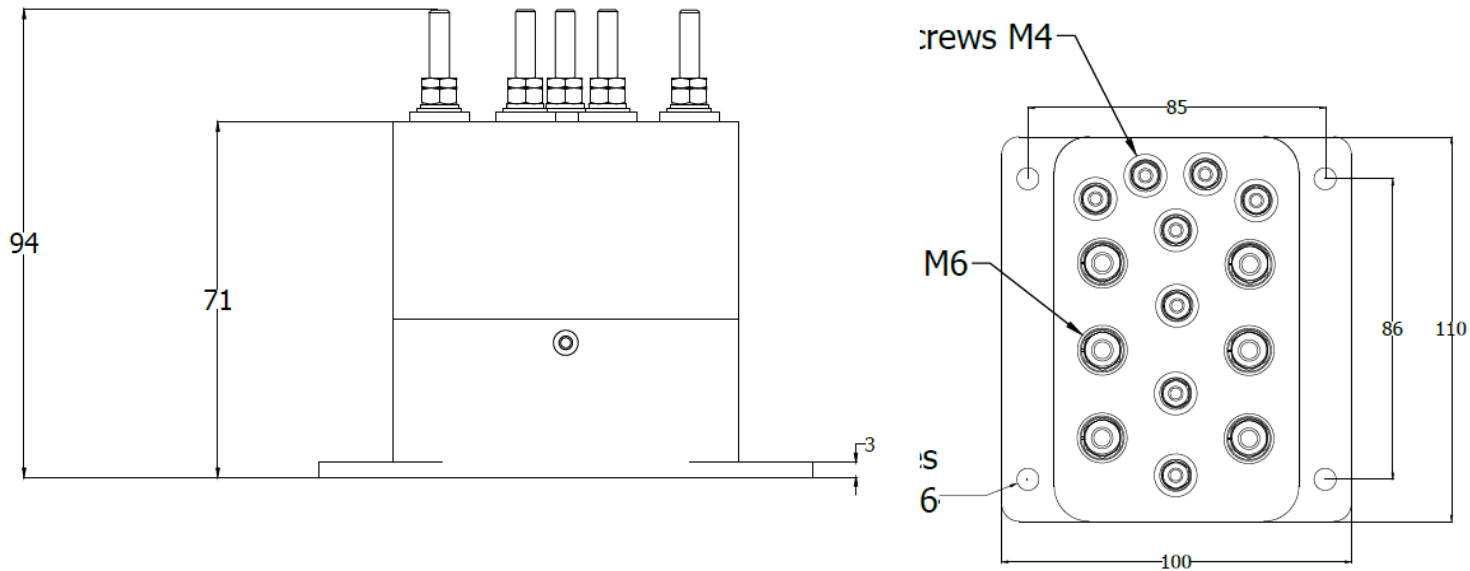
Dimensioni in mm

• INGOMBRI MIL-MICRO tutta la serie con contatto ausiliario



Dimensioni in mm

• INGOMBRI MIL-MICRO serie -INV con contatti ausiliari



Dimensioni in mm

**Nota:** gli ingombri meccanici dei prodotti non presenti possono essere richiesti a [info@energytomotion.com](mailto:info@energytomotion.com), specificando il P/N del prodotto.

**Contatti:**

**[www.energytomotion.com](http://www.energytomotion.com)**

Per informazioni tecniche:

**[info@energytomotion.com](mailto:info@energytomotion.com)**

**[tec\\_info@energytomotion.com](mailto:tec_info@energytomotion.com)**

Per informazioni commerciali:

**[sales@energytomotion.com](mailto:sales@energytomotion.com)**

**Nota**

Ci riserviamo il diritto di apportare modifiche tecniche o modificare il contenuto di questo documento senza previo preavviso. E2M non si assume alcuna responsabilità per eventuali errori o possibile mancanza di informazioni contenute in questo documento.