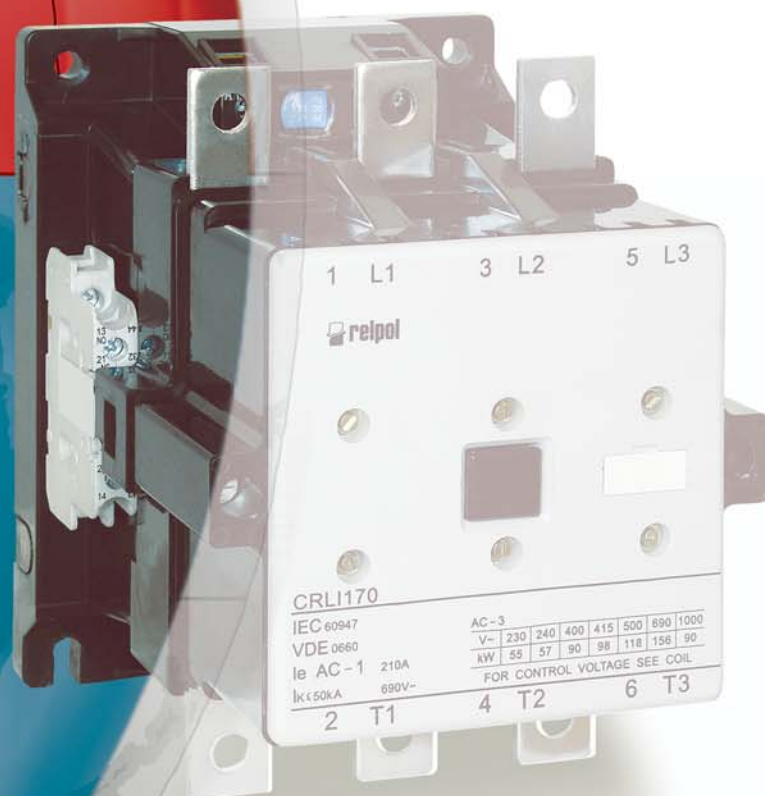


50
years
1958-2008

Contactors

- new line



- mini-contactors
- contactors up to 100 A
- contactors over 100 A
- thermal overload relays
- auxiliary contacts and accessories

Automation is our passion



For dozens of years now, Relpol S.A.

has been a worldwide known supplier of components

used in industrial and power automation, power electronics,
industrial and applied electronics, telecommunication, etc.



Apart from complete delivery of components, Relpol S.A. provides its partners with technical consultancy based upon **extensive knowledge of the application of the components.**

Taking into account **the significant role of the products of Relpol S.A.**, we have made their quality improvement our priority strategic goal.

You are welcome to review our catalogs which present a very wide line of products for industrial automation.

Due to the wide line of products, orders of non-standard products should be consulted with the manufacturer or distributor.



The leading position

of the manufacturer of electromagnetic relays in Europe

provides for Relpol's presence
in markets worldwide.

Commercial Partnerships of Relpol S.A.

RELPOL M Minsk / Belarus

RELPOL BG Varna / Bulgaria

RELPOL HUNGARY Budapest / Hungary

RELPOL BALTIJA Vilnius / Lithuania

RELPOL ELTIM Sankt-Petersburg / Russia

RELPOL ALTERA Kiev / Ukraine

RELPOL FRANCE Paris / France

RELPOL LTD. London / England



The standards quality guaranteed

Taking into account the high requirements of the market and our customers' full satisfaction, Relpol S.A. constantly strives for improvement of the quality of the products and services we offer. Our own technological, designing and research facilities remarkably help us to achieve our goals.

The modern production profile and high quality of the products that comply with the requirements of the European Union are confirmed by the ISO 9001 : 2001, ISO 14001 : 2005 CERTIFICATES.

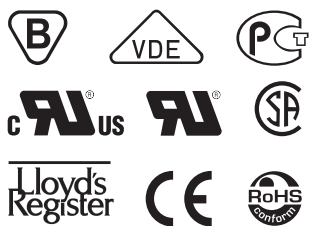
ISO 9001 : 2001

ISO 14001 : 2005

The Gold Statuette of the Business Centre Club 1995 / EUROPRODUCT 2002 / EUROPRODUCT 2003 / the Statuette of the Minister of Economic Affairs, Labor and Social Policy 2003 / GOLD EUROPRODUCT 2003 / ELECTROPRODUCT 2003 / GOLD MEDAL Automaticon 2004 / the Statuette for the Pillar of the Polish Economy 2004 / Product of the Year 2005

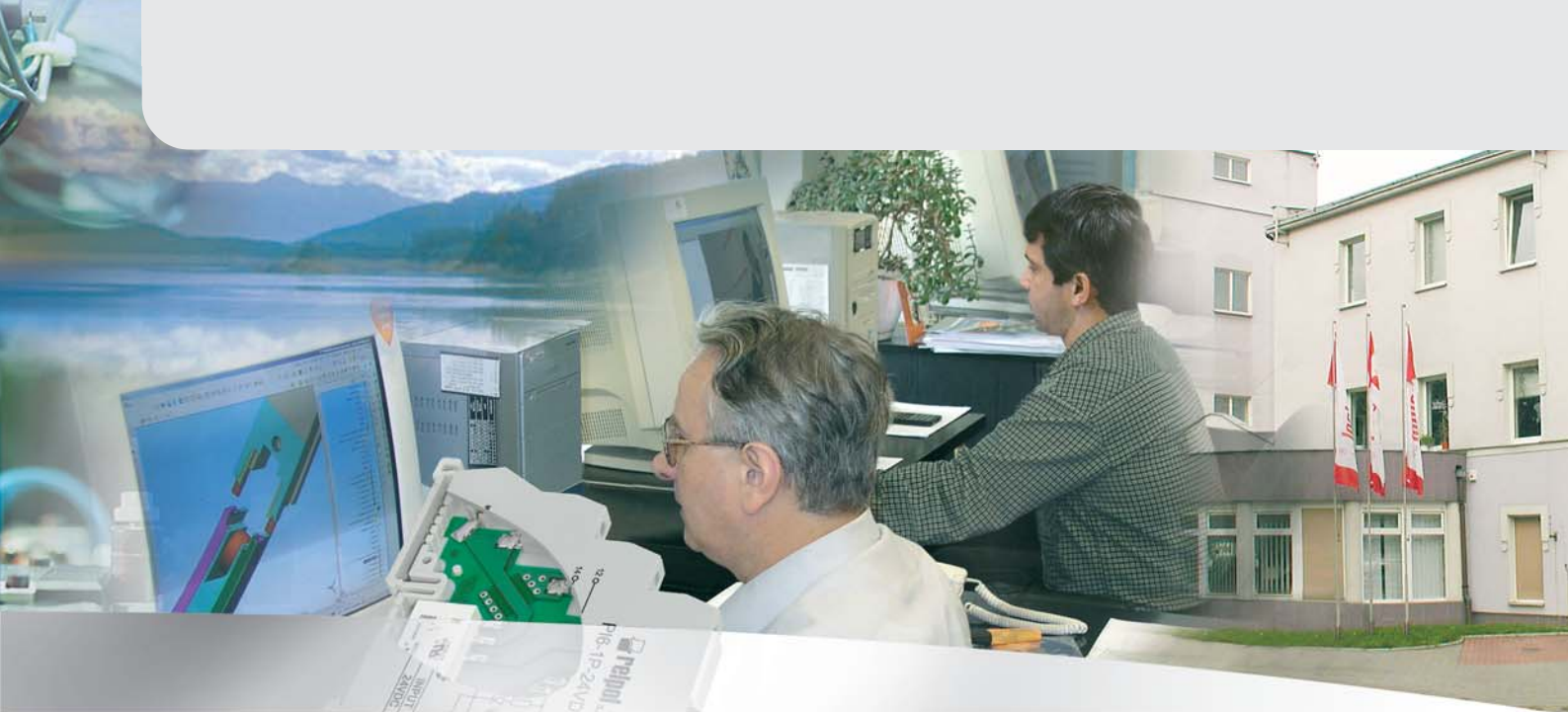
The innovative features of our technological solutions

and the reliability of our products



are confirmed by numerous recognitions and certifications BBJ, VDE, UL, CSA, GOST, LR, RoHS and by prizes and awards.





Relations and trust

Our co-operation with numerous renowned suppliers of materials and components necessary for the production process allows us to realize even complex deliveries quickly and smoothly. We build long-term partnership relations with our customers.

Owing to regular consultations and steady contribution of our Partners to our activities, we gain the knowledge necessary for reliable and professional services.

Relpol S.A. runs its own Research and Development Department which designs new products to follow the worldwide trends and solutions in the electrotechnical industry.

The permanent development of our staff along with human resources stabilization provide our customers with professional service.

Relpol S.A. Technical Support Department advises the Client and helps to solve the problems of electrical applications and, thus, enhances their satisfaction at cooperation with ourselves.

The long years of experience, the knowledge of the electrotechnical industry and the market activities of Relpol S.A. have been proved by co-operation with the largest corporations worldwide.

Environment protection

With the development of technology we shall not forget

about the issues of the environment protection.

Reduction of the natural environment pollution with regard to the production process and the products of Relpol S.A. is a constant process aimed at minimizing of the environmental impact.

Our products meet the requirements of the RoHS Directive.



Contactors



Mini-contactors, AC control

CRMIO5	6
CRMIO9	6
CRMIOO - contactor relays	14

Contactors up to 100 A, AC control



CRNI09	6
CRNI12	6
CRNI16	7
CRNI22	7
CRNI32	7
CRNI38	7
CRNI45	8
CRNI63	8
CRNI75	8
CRNI85	8

Contactors over 100 A, AC control



CRLI110	9
CRLI140	9
CRLI170	9
CRLI205	9
CRLI250	10
CRLI300	10
CRLI400	10



Mini-contactors, DC control

CRMIO5	11
CRMIO9	11

Contactors up to 100 A, DC control



CRNI09	11
CRNI12	11
CRNI16	12
CRNI22	12
CRNI32	12
CRNI38	12
CRNI45	13
CRNI63	13
CRNI75	13
CRNI85	13

Add-on blocks	14
Technical data	16
Dimensions	18
Permissible mounting positions	19
Connections diagrams	20
Coding system	23

Thermal overload relays



RSTM	24
RSTN1	24
RSTN2	24
RSTN3	25
RSTN4	25
RSTL1	25
RSTL2	25



RSTL3	26
RSTL4	26

Add-on blocks for independent mounting	26
Technical data	27
Dimensions	32

The new line of contactors of Relpol S.A. includes three groups divided due to the current switching capacity and sizes related hereto, i.e. mini-contactors **CRMI** up to 9 A, contactors of type **CRNI** up to 100 A and contactors of **CRLI** type over 100 A. Contactors are available with AC and DC coils. The rated insulation voltage of contactors: 690 V - contactors from CRM105 to CRNI38; 1000 V - contactors from CRNI45 to CRLI400. The range of rated switching current in AC3 category: from 5 A to 400 A. The contactors provide controlling the operation of long electrical circuits, switching on and off electrical AC motors. The contactors are compliant with the following standards: PN-EN 60947-1 and VDE 0660.

Operating conditions:

- the altitude of the installation site shall not exceed 2000 meters over sea level,
- ambient temperature: from -25 °C to +55 °C,
- atmospheric conditions: air shall not contain explosive gases, media, caustic gases or conductive dust,
- shock and vibrations shall not exceed the values specified by the manufacturer,
- the contactors shall not be used in the rain or snow.

Characteristics:

- the conductive parts are covered for better safety,
- the design of the main contact set is unique, which results in extended electrical life,
- the special design of the supply system provides low noise level, high reliability and significant strength,
- the contactors co-operate with auxiliary contact blocks,
- the terminals provide easy and reliable connection, and high resistance to shock.



Thermal overload relays of RSTM, RSTN and RSTL types are used for protection of AC motors of 50/60 Hz frequency against overload and phase error.

Rated voltages of the relays are from 690 V to 1000 V, at rated switching current from 0,1 A to 400 A.

The relays may also be used for protection of DC electromagnets and DC motors against overload.

Individual functions provide protection against phase errors, compensation of temperature impact, indication of ON/OFF status, manual or automatic reset, etc.

The relays may be mounted on contactors or as separate devices.

The relays contain an auxiliary contacts 1NO + 1NC.

Operating conditions:

- the altitude of the installation site shall not exceed 2000 meters over sea level,
- ambient temperature: from -25 °C to +55 °C,
- relative humidity shall not exceed 90% at 25 °C.

Type of contactor		CRMI05	CRMI09	CRNI09	CRNI12
		NEW product 	NEW product 	NEW product 	NEW product 
					
Auxiliary contacts NO NC					
Ordering codes		Contactors: • three-pole CRMI05-30-10-... 1 - • three-pole CRMI05-30-01-... - 1 • four-pole CRMI05-40-00-... - -	Contactors: • three-pole CRMI09-30-10-... 1 - • three-pole CRMI09-30-01-... - 1 • four-pole CRMI09-40-00-... - -	Contactors: • three-pole CRNI09-30-10-... 1 - • three-pole CRNI09-30-01-... - 1 • four-pole CRNI09-40-00-... - -	Contactors: • three-pole CRNI12-30-10-... 1 - • three-pole CRNI12-30-01-... - 1 • four-pole CRNI12-40-00-... - -
Insulation rated voltage [V]		690	690	690	690
Rated operating current (380 V)	AC3	5	9	9	12
	AC4	1,9	2,6	3,3	4,3
Rated outputs of three phase motors at 50 Hz [kW]	AC3	230/220 V	1,3	2,4	3,3
		400/380 V	2,2	4	5,5
		500 V	2,9	4	7,5
		690/660 V	3,8	4	7,5
	AC4	1000 V	-	-	-
		400/380 V	0,81	1,10	2/1,9
		690/660 V	0,86	1,10	3,45/3,3
Mechanical life (x 10 ⁶)	AC	10	10	15	15
Electrical life (x 10 ⁶)	AC3	0,8	0,4	1,2	1,2
	AC4	0,2	0,2	0,2	0,2
Maximum switching frequency (1/h)	AC3	1000	1000	1000	1000
	AC4	-	-	250	250
Range of supply coil voltage		(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	(0,8 - 1,1) U _s
Power consumption of AC coil (50 Hz)	closing [VA]	15	15	68	68
	cosφ at closing	0,41	0,41	0,82	0,82
	closed [VA]	6,8	6,8	10	10
	cosφ at closed	0,42	0,42	0,29	0,29
Conventional thermal current I _{th} of operating / main contacts [A]		16	16	20	20
Conventional thermal current I _{th} of auxiliary contacts [A]		10	10	10	10
Rated insulation voltage of auxiliary contacts [V]		690	690	690	690
Rated operating current of auxiliary contacts [A]	AC15	-/4	-/4	6/10	6/10
	380/220 V				
	DC13	0,5/0,3	0,5/0,3	0,9/0,45	0,9/0,45
Weight [kg]	three-pole	0,18	0,18	0,37	0,37
	four-pole	0,19	0,19	0,37	0,37

Coil markings supplement the relays ordering codes.

❶ A024 - 24 V AC 50 Hz
 A230 - 230 V AC 50 Hz
 ❷ A230 - 230 V AC 50 Hz
 For other voltages, contact Relpol S.A.

Coil of contactor 50 Hz

Operating at	50 Hz	60 Hz
	24 V	29 V
	230 V	277 V

Thermal overload relays

Type of thermal overload relay	RSTM	RSTM	RSTN1	RSTN1
Module for installing as a single unit	CRI-310	CRI-310	-	-
Relay base for installing as a single unit	-	-	CRI-320	CRI-320

Type of contactor			CRNI16	CRNI22	CRNI32	CRNI38
			NEW product 	NEW product 	NEW product 	NEW product 
						
Auxiliary contacts NO NC						
Ordering codes			• three-pole			
			CRNI16-30-00-... ^❶	CRNI22-30-00-... ^❶	CRNI32-30-00-... ^❶	CRNI38-30-00-... ^❶
			— —	— —	— —	— —
Insulation rated voltage [V]			690	690	690	690
Rated operating current (380 V)		AC3	16	22	32	38
		AC4	7,7	8,5	15,6	18,5
Rated outputs of three phase motors at 50 Hz [kW]	AC3	230/220 V	4	5,5	8,5	11
		400/380 V	7,5	11	15	18,5
		500 V	9	11	21	25
		690/660 V	11	11	23	23
	AC4	1000 V	—	—	—	—
		400/380 V	3,5	4	7,5	9
		690/660 V	6	6,6	13	15,5
Mechanical life (x 10 ⁶)		AC	15	15	10	10
Electrical life (x 10 ⁶)		AC3	1,2	1,2	1,2	1,2
		AC4	0,2	0,2	0,2	0,2
Maximum switching frequency (1/h)		AC3	750	750	750	600
		AC4	250	250	250	200
Range of supply coil voltage			(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	(0,8 - 1,1) U _s
Power consumption of AC coil (50 Hz)	closing [VA]		68	68	101	101
	cosφ at closing		0,82	0,82	0,83	0,83
	closed [VA]		10	10	12,1	12,1
	cosφ at closed		0,29	0,29	0,28	0,28
Conventional thermal current I _{th} of operating / main contacts [A]			30	30	55	55
Conventional thermal current I _{th} of auxiliary contacts [A]			10	10	10	10
Rated insulation voltage of auxiliary contacts [V]			690	690	690	690
Rated operating current of auxiliary contacts [A]		AC15	4/6	4/6	4/6	4/6
		380/220 V				
		DC13	1,14/0,48	1,14/0,48	1,14/0,48	1,14/0,48
		110/220 V				
Weight [kg]			0,45	0,45	0,68	0,68

Coil markings supplement the relays ordering codes.

❶ A024 - 24 V AC 50 Hz

A230 - 230 V AC 50 Hz

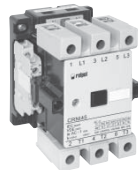
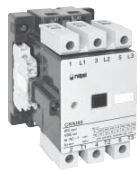
For other voltages, contact Relpol S.A.

Coil of contactor 50 Hz

Operating at	50 Hz	60 Hz
	24 V	29 V
	230 V	277 V

Thermal overload relays

Type of thermal overload relay	RSTN2	RSTN2	RSTN3	RSTN3
Relay base for installing as a single unit	CRI-330	CRI-330	CRI-340	CRI-340

Type of contactor			CRNI45	CRNI63	CRNI75	CRNI85
			NEW product  	NEW product  	NEW product  	NEW product  
Auxiliary contacts NO NC						
Ordering codes			CRNI45-30-22-... ^❶	CRNI63-30-22-... ^❶	CRNI75-30-22-... ^❶	CRNI85-30-22-... ^❶
			2 2	2 2	2 2	2 2
Insulation rated voltage [V]			1000	1000	1000	1000
Rated operating current (380 V)		AC3	45	63	75	85
		AC4	24	28	34	42
Rated outputs of three phase motors at 50 Hz [kW]	AC3	230/220 V	15	18,5	22	26
		400/380 V	22	30	37	45
		500 V	30	41	50	59
		690/660 V	39	55	67	67
	AC4	1000 V	7-5	7-5	39	39
		400/380 V	12,6/12	14,7/14	17,9/17	22/21
		690/660 V	21,8/20,8	25,4/24,3	30,9/29,5	38/36
Mechanical life (x 10 ⁶)		AC	10	10	10	10
Electrical life (x 10 ⁶)		AC3	1,2	1,2	1,2	1,2
		AC4	0,2	0,2	0,2	0,2
Maximum switching frequency (1/h)		AC3	1200	1000	1000	850
		AC4	400	300	300	250
Range of supply coil voltage			(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	(0,8 - 1,1) U _s
Power consumption of AC coil (50 Hz)	closing [VA]	183	183	330	330	
	cosϕ at closing	0,6	0,6	0,5	0,5	
	closed [VA]	17	17	32	32	
	cosϕ at closed	0,29	0,29	0,23	0,23	
Conventional thermal current I _{th} of operating / main contacts [A]			80	90	100	100
Conventional thermal current I _{th} of auxiliary contacts [A]			10	10	10	10
Rated insulation voltage of auxiliary contacts [V]			690	690	690	690
Rated operating current of auxiliary contacts [A]		AC15	4/6	4/6	4/6	4/6
		380/220 V				
		DC13	1,14/0,48	1,14/0,48	1,14/0,48	1,14/0,48
		110/220 V				
Weight [kg]			1,4	1,4	2,3	2,3

Coil markings supplement the relays ordering codes.

❶ A024 - 24 V AC 50 Hz

A230 - 230 V AC 50 Hz

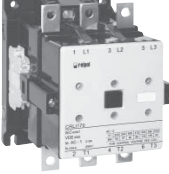
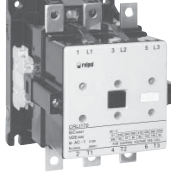
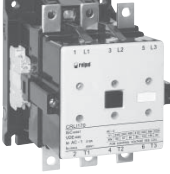
For other voltages, contact Relpol S.A.

Coil of contactor 50 Hz

Operating at	50 Hz	60 Hz
	24 V	29 V
	230 V	277 V

Thermal overload relays

Type of thermal overload relay	RSTN4	RSTN4	RSTN4	RSTN4
Relay base for installing as a single unit	CRI-350	CRI-350	CRI-350	CRI-350

Type of contactor		CRLI110	CRLI140	CRLI170	CRLI205
		NEW product 	NEW product 	NEW product 	NEW product 
					
Auxiliary contacts NO NC					
Ordering codes		• three-pole CRLI110-30-22-... ^①	CRLI140-30-22-... ^①	CRLI170-30-22-... ^①	CRLI205-30-22-... ^①
		2 2	2 2	2 2	2 2
Insulation rated voltage [V]		1000	1000	1000	1000
Rated operating current (380 V)	AC3	110	140	170	205
	AC4	54	68	75	96
Rated outputs of three phase motors at 50 Hz [kW]	AC3	230/220 V	37	43	55
		400/380 V	55	75	90
		500 V	76	98	118
		690/660 V	100	100	156
	AC4	1000 V	65	65	90
		400/380 V	28,4/27	36/35	40/38
		690/660 V	49/46,9	63/60	69/66
					52/50
Mechanical life (x 10 ⁶)	AC	10	10	10	10
Electrical life (x 10 ⁶)	AC3	1,2	1,2	1,2	1,2
	AC4	0,2	0,2	0,2	0,2
Maximum switching frequency (1/h)	AC3	1000	750	700	500
	AC4	300	200	200	130
Range of supply coil voltage		(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	(0,8 - 1,1) U _s
Power consumption of AC coil (50 Hz)	closing [VA]	550	550	910	910
	cosφ at closing	0,45	0,45	0,38	0,38
	closed [VA]	39	39	58	58
	cosφ at closed	0,24	0,24	0,26	0,26
Conventional thermal current I _{th} of operating / main contacts [A]		160	160	210	220
Conventional thermal current I _{th} of auxiliary contacts [A]		10	10	10	10
Rated insulation voltage of auxiliary contacts [V]		690	690	690	690
Rated operating current of auxiliary contacts [A]	AC15	4/6	4/6	4/6	4/6
	380/220 V				
	DC13	1,14/0,48	1,14/0,48	1,14/0,48	1,14/0,48
	110/220 V				
Weight [kg]		3,3	3,3	4,8	4,8

Coil markings supplement the relays ordering codes.

① A230 - 230 V AC 50 Hz

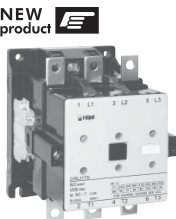
For other voltages, contact Relpol S.A.

Coil of contactor 50 Hz

Operating at	50 Hz	60 Hz
	24 V	29 V
	230 V	277 V

Thermal overload relays

Type of thermal overload relay	RSTL1	RSTL2	RSTL3	RSTL3
Box terminal block for installing as a single unit	CRI-360	—	—	—
Current links (set - 3 pices) for connections to contactors	—	CRI-370	CRI-382	CRI-382

Type of contactor		CRLI250	CRLI300	CRLI400		
		NEW product 	NEW product 	NEW product 		
Auxiliary contacts NO NC						
Contactors:		NO NC	NO NC	NO NC		
Ordering codes	• three-pole	CRLI250-30-22-... ^① 2 2	CRLI300-30-22-... ^① 2 2	CRLI400-30-22-... ^① 2 2		
Insulation rated voltage [V]		1000	1000	1000		
Rated operating current (380 V)	AC3	250	300	400		
	AC4	110	125	150		
Rated outputs of three phase motors at 50 Hz [kW]	AC3	230/220 V	78	93		
		400/380 V	132	160		
		500 V	178	210		
		690/660 V	235	235		
	AC4	1000 V	132	132		
		400/380 V	61/58	69/66		
		690/660 V	105/100	119/114	85/81	147/140
Mechanical life (x 10 ⁶)		AC	10	10	10	
Electrical life (x 10 ⁶)	AC3	1,2	1,2	1,2		
	AC4	0,2	0,2	0,2		
Maximum switching frequency (1/h)	AC3	700	500	500		
	AC4	200	130	150		
Range of supply coil voltage		(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	(0,8 - 1,1) U _s		
Power consumption of AC coil (50 Hz)	closing [VA]	1430	1430	2450		
	cosφ at closing	0,34	0,34	0,21		
	closed [VA]	84	84	115		
	cosφ at closed	0,24	0,24	0,33		
Conventional thermal current I _{th} of operating / main contacts [A]		300	300	400		
Conventional thermal current I _{th} of auxiliary contacts [A]		10	10	10		
Rated insulation voltage of auxiliary contacts [V]		690	690	690		
Rated operating current of auxiliary contacts [A]	AC15	4/6	4/6	4/6		
	380/220 V					
	DC13	1,14/0,48	1,14/0,48	1,14/0,48		
110/220 V						
Weight [kg]		6,2	6,2	8,5		

Coil markings supplement the relays ordering codes.

¹ A230 - 230 V AC 50 Hz
For other voltages, contact Relpol S.A.

Coil of contactor 50 Hz

Operating at	50 Hz	60 Hz
	24 V	29 V
	230 V	277 V

Thermal overload relays

Type of thermal overload relay	RSTL4	RSTL4	RSTL4
Current links (set - 3 pices) for connections to contactors	CRI-390	CRI-390	CRI-390

Type of contactor		CRMI05	CRMI09	CRNI09	CRNI12	
		NEW product 	NEW product 	NEW product 	NEW product 	
						
Auxiliary contacts NO NC						
Ordering codes	Contactors: • three-pole • four-pole	CRMI05-30-10-... CRMI05-40-00-...	CRMI09-30-10-... CRMI09-40-00-...	CRNI09-30-00-... CRNI09-40-00-...	CRNI12-30-00-... CRNI12-40-00-...	
Insulation rated voltage [V]		690	690	690	690	
Rated operating current (380 V)	AC3	5	9	9	12	
	AC4	1,9	2,6	3,3	4,3	
Rated outputs of three phase motors at 50 Hz [kW]	AC3	230/220 V	1,3	2,4	3,3	
		400/380 V	2,2	4	5,5	
		500 V	2,9	4	7,5	
		690/660 V	3,8	4	7,5	
	AC4	1000 V	—	—	—	
		400/380 V	0,81	1,10	1,48/1,4	2/1,9
		690/660 V	0,86	1,10	2,54/2,4	3,45/3,3
Mechanical life (x 10 ⁶)		DC	20	20	15	15
Electrical life (x 10 ⁶)	AC3	0,8	0,4	1,2	1,2	
	AC4	0,2	0,2	0,2	0,2	
Maximum switching frequency (1/h)	AC3	1000	1000	1000	1000	
	AC4	250	250	250	250	
Range of supply coil voltage		(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	
Power consumption of DC coil	closing [W]	3	3	6,2	6,2	
	closed [W]	3	3	6,2	6,2	
Conventional thermal current I _{th} of operating / main contacts [A]		16	16	20	20	
Conventional thermal current I _{th} of auxiliary contacts [A]		10	10	10	10	
Rated insulation voltage of auxiliary contacts [V]		690	690	690	690	
Rated operating current of auxiliary contacts [A]	AC15	—/4	—/4	6/10	6/10	
	380/220 V					
	DC13	0,5/0,3	0,5/0,3	0,9/0,45	0,9/0,45	
Weight [kg]	three-pole	0,22	0,22	0,58	0,58	
	four-pole	0,22	0,22	0,58	0,58	

Coil markings supplement the relays ordering codes.

❶ D024 - 24 V DC

For other voltages, contact Relpol S.A.

Thermal overload relays

Type of thermal overload relay	RSTM	RSTM	RSTN1	RSTN1
Module for installing as a single unit	CRI-310	CRI-310	—	—
Relay base for installing as a single unit	—	—	CRI-320	CRI-320

Type of contactor			CRNI16	CRNI22	CRNI32	CRNI38
			NEW product 	NEW product 	NEW product 	NEW product 
						
Auxiliary contacts NO NC						
Contactors:			NO NC	NO NC	NO NC	NO NC
Ordering codes	• three-pole		CRNI16-30-00-... ^❶ — —	CRNI22-30-00-... ^❶ — —	CRNI32-30-00-... ^❶ — —	CRNI38-30-00-... ^❶ — —
Insulation rated voltage [V]			690	690	690	690
Rated operating current (380 V)		AC3	16	22	32	38
		AC4	7,7	8,5	15,6	18,5
Rated outputs of three phase motors at 50 Hz [kW]	AC3	230/220 V	4	5,5	8,5	11
		400/380 V	7,5	11	15	18,5
		500 V	9	11	21	25
		690/660 V	11	11	23	23
		1000 V	—	—	—	—
	AC4	400/380 V	3,5	4	7,5	9
		690/660 V	6	6,6	13	15,5
Mechanical life (x 10 ⁶)		DC	15	15	10	10
Electrical life (x 10 ⁶)		AC3	1,2	1,2	1,2	1,2
		AC4	0,2	0,2	0,2	0,2
Maximum switching frequency (1/h)		AC3	750	750	750	600
		AC4	250	250	250	200
Range of supply coil voltage			(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	(0,8 - 1,1) U _s
Power consumption of DC coil	closing [W]		6,2	6,2	11,7	11,7
	closed [W]		6,2	6,2	11,7	11,7
Conventional thermal current I _{th} of operating / main contacts [A]			30	30	55	55
Conventional thermal current I _{th} of auxiliary contacts [A]			10	10	10	10
Rated insulation voltage of auxiliary contacts [V]			690	690	690	690
Rated operating current of auxiliary contacts [A]		AC15	4/6	4/6	4/6	4/6
		380/220 V				
		DC13	1,14/0,48	1,14/0,48	1,14/0,48	1,14/0,48
		110/220 V				
Weight [kg]			0,70	0,70	1,25	1,25

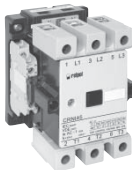
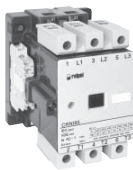
Coil markings supplement the relays ordering codes.

❶ D024 - 24 V DC

For other voltages, contact Relpol S.A.

Thermal overload relays

Type of thermal overload relay	RSTN2	RSTN2	RSTN3	RSTN3
Relay base for installing as a single unit	CRI-330	CRI-330	CRI-340	CRI-340

Type of contactor			CRNI45	CRNI63	CRNI75	CRNI85
			NEW product 	NEW product 	NEW product 	NEW product 
						
Auxiliary contacts NO NC						
Ordering codes			• three-pole	• three-pole	• three-pole	• three-pole
			CRNI45-30-22-... ^①	CRNI63-30-22-... ^①	CRNI75-30-22-... ^①	CRNI85-30-22-... ^①
			2 2	2 2	2 2	2 2
Insulation rated voltage [V]			1000	1000	1000	1000
Rated operating current (380 V)		AC3	45	63	75	85
		AC4	24	28	34	42
Rated outputs of three phase motors at 50 Hz [kW]	AC3	230/220 V	15	18,5	22	26
		400/380 V	22	30	37	45
		500 V	30	41	50	59
		690/660 V	39	55	67	67
	AC4	1000 V	7–5	7–5	39	39
		400/380 V	12,6/12	14,7/14	17,9/17	22/21
		690/660 V	21,8/20,8	25,4/24,3	30,9/29,5	38/36
Mechanical life (x 10 ⁶)		DC	3	3	3	3
Electrical life (x 10 ⁶)		AC3	1,2	1,2	1,2	1,2
		AC4	0,2	0,2	0,2	0,2
Maximum switching frequency (1/h)		AC3	1200	1000	1000	850
		AC4	400	300	300	250
Range of supply coil voltage			(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	(0,8 - 1,1) U _s	(0,8 - 1,1) U _s
Power consumption of DC coil		closing [W]	400	400	420	420
		closed [W]	2,1	2,1	2,7	2,7
Conventional thermal current I _{th} of operating / main contacts [A]			80	90	100	100
Conventional thermal current I _{th} of auxiliary contacts [A]			10	10	10	10
Rated insulation voltage of auxiliary contacts [V]			690	690	690	690
Rated operating current of auxiliary contacts [A]		AC15	4/6	4/6	4/6	4/6
		380/220 V				
		DC13	1,14/0,48	1,14/0,48	1,14/0,48	1,14/0,48
		110/220 V				
Weight [kg]			1,4	1,4	2,3	2,3

Coil markings supplement the relays ordering codes.

① D024 - 24 V DC

For other voltages, contact Relpol S.A.

Thermal overload relays

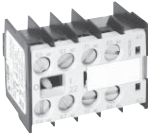
Type of thermal overload relay	RSTN4	RSTN4	RSTN4	RSTN4
Relay base for installing as a single unit	CRI-350	CRI-350	CRI-350	CRI-350

Contactor relays CRMI00 ①

	Ordering codes	Rated operating current I_e (AC15) at voltage:				Contacts number  NO NC	Weight [kg]
		230 / 220 V [A]	400 / 380 V [A]	500 V [A]	690 / 660 V [A]		
NEW product  	CRMI00-40-00-A230	4	3	2	1	4 –	0,19
	CRMI00-31-00-A230	4	3	2	1	3 1	0,19
	CRMI00-22-00-A230	4	3	2	1	2 2	0,19

① See page 23 - Contactors coding system

Auxiliary contacts for mini-contactors CRMI

	Ordering codes	Rated operating current I_e (AC15) at voltage:				Contacts number  NO NC	Weight [kg]
		230 / 220 V [A]	400 / 380 V [A]	500 V [A]	690 / 660 V [A]		
NEW product  	CRMI10-11	4	3	2	–	1 1	0,04
	CRMI10-20	4	3	2	–	2 –	0,04
	CRMI10-02	4	3	2	–	– 2	0,04
	CRMI10-40	4	3	2	–	4 –	0,04
	CRMI10-31	4	3	2	–	3 1	0,04
	CRMI10-22	4	3	2	–	2 2	0,04
	CRMI10-13	4	3	2	–	1 3	0,04
	CRMI10-04	4	3	2	–	– 4	0,04

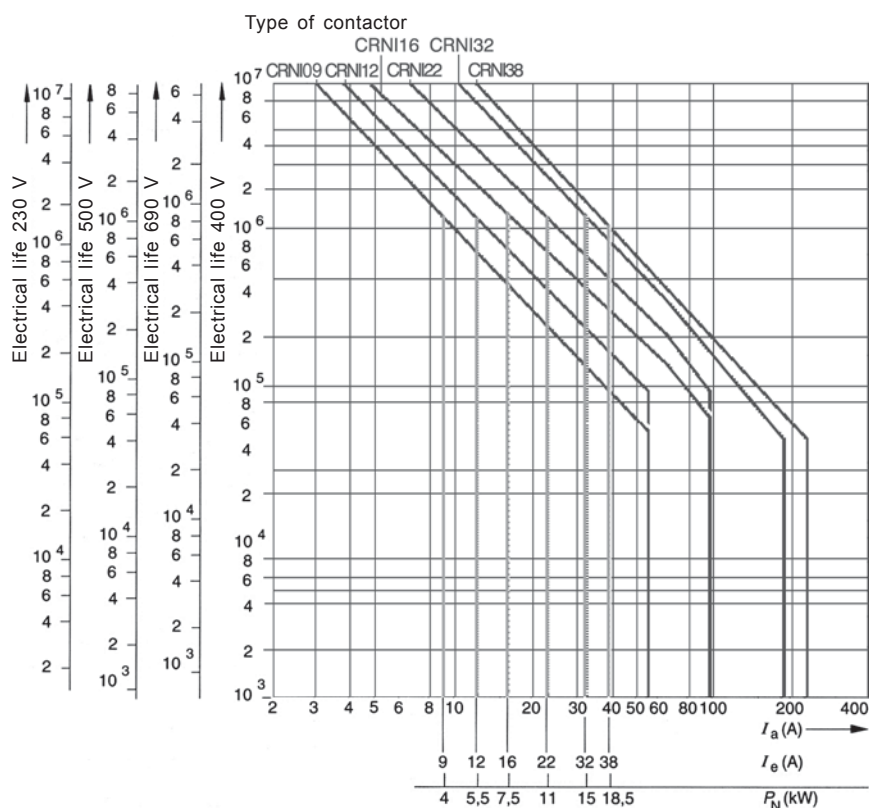
Auxiliary contacts for contactors CRNI, CRLI

	Ordering codes	Rated operating current I _e (AC15) at voltage:				Contacts number	Contactor application	Weight [kg]
		230 / 220 V [A]	400 / 380 V [A]	500 V [A]	690 / 660 V [A]	 NO NC		
NEW product  	CRI20-10	5,6/6	3,8/4	2,5	1,8/2	1 –	from CRNI09 to CRNI38	0,02
	CRI20-01	5,6/6	3,8/4	2,5	1,8/2	– 1		0,02
NEW product  	CRI2A-11	5,6/6	3,6/4	2,5	2,3/5	1 1	from CRNI45 to CRLI400	0,048

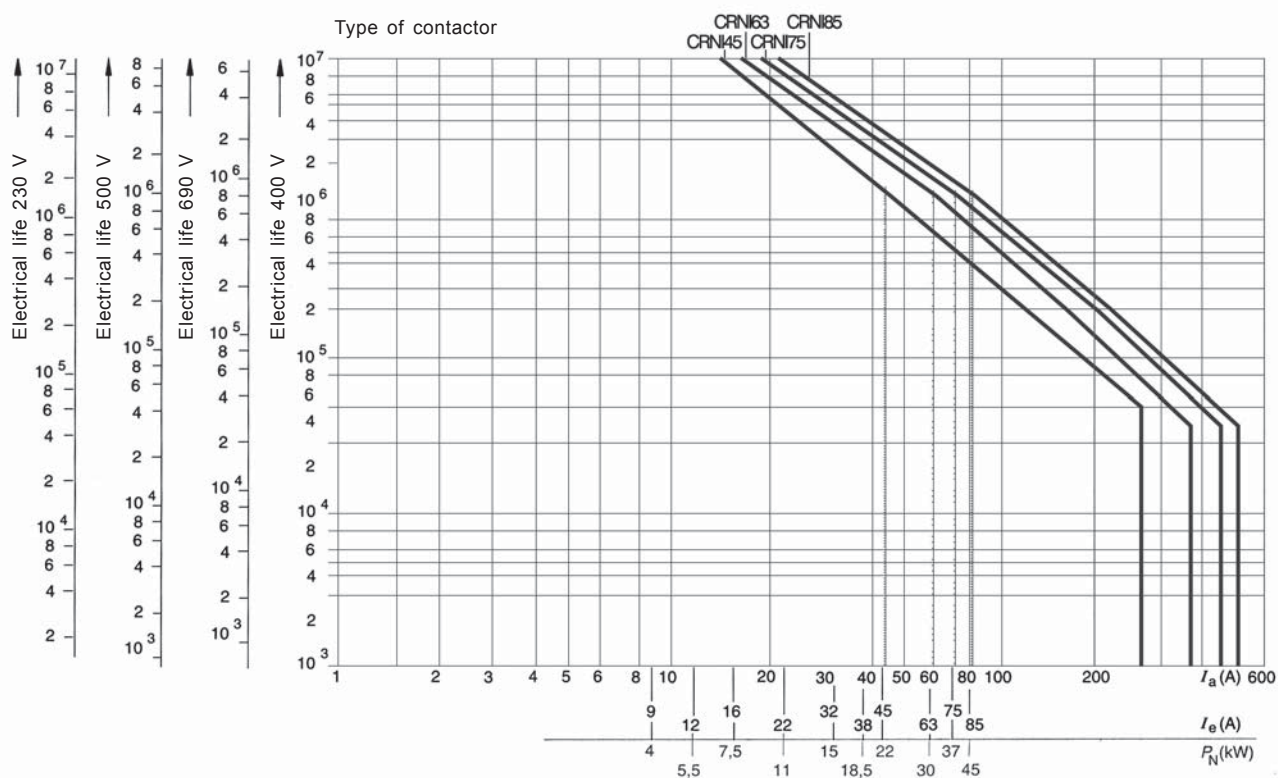
Mechanical latches for contactors CRNI, CRLI

	Ordering codes	Contactor application
NEW product  	CRI-410	from CRNI09 to CRNI38
NEW product  	CRI-420	from CRNI45 to CRLI300
	CRI-430	CRLI400

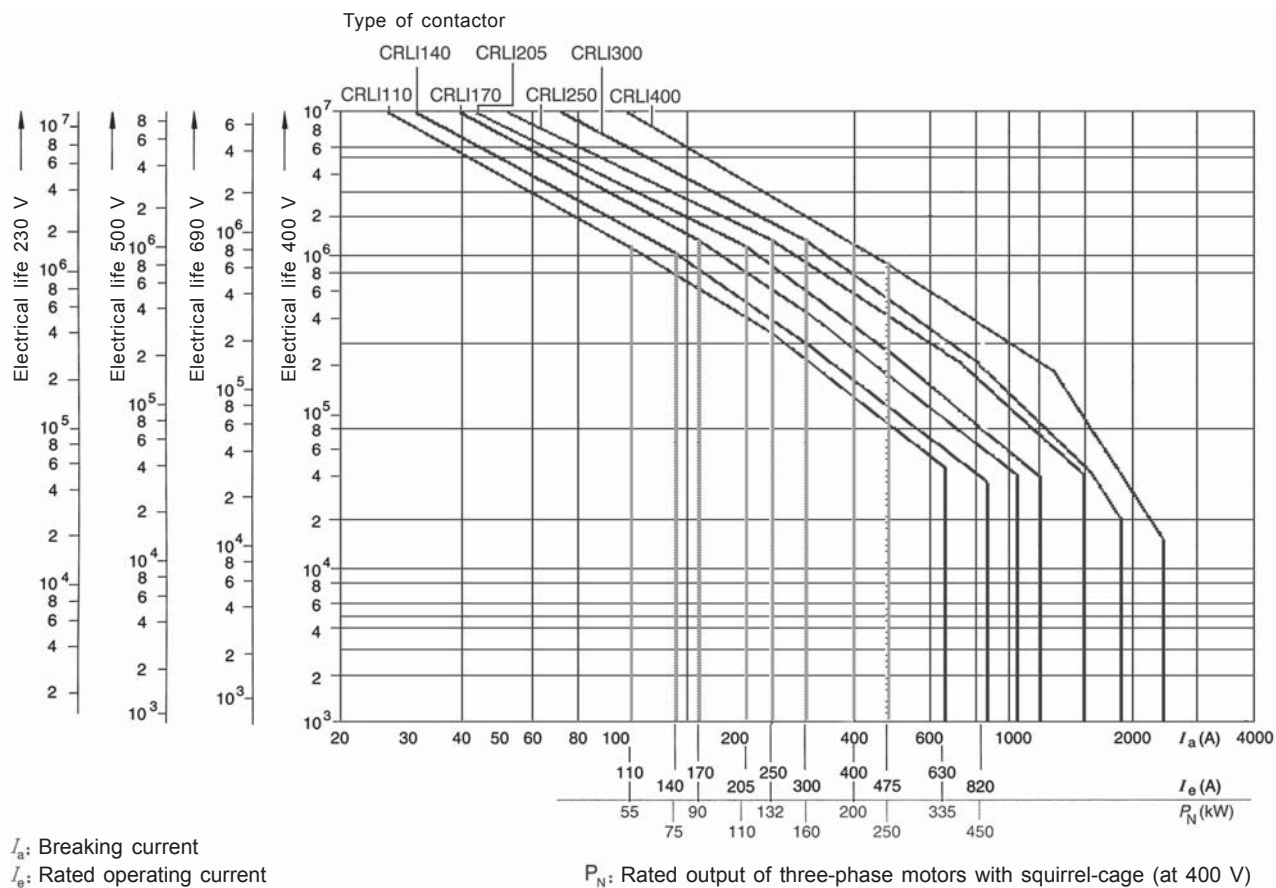
Strength of operating / main contacts (AC3)



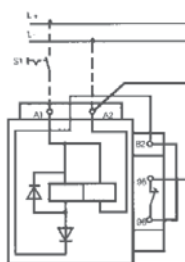
Strength of operating / main contacts (AC3)



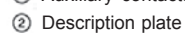
Strength of operating / main contacts (AC3)



CRNI45 to CRNI85 DC control (economic) - connections diagram

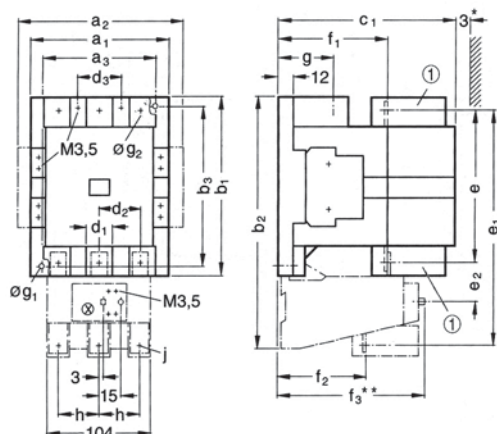


Standard for **CRNI45** to **CRNI85**



Dimension for the round RESET button (stroke 2,5 mm) less 2,5 mm.

Dimensions



*) Minimum clearance from the earthed parts.

** Dimension for the square OFF button (stroke 3 mm).

Dimension for the round RESET button (stroke 2.5 mm) less 2.5 mm.

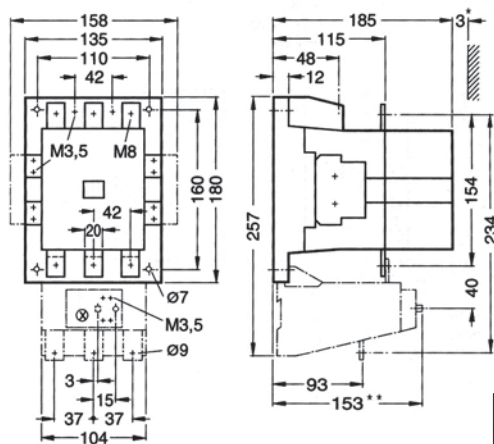
Type	h	j
RSTL1	37	M6
RSTL2	42	M8

CRLI110 with box terminal block
CRLI140 without box terminal block

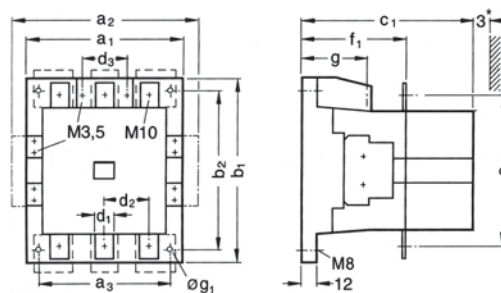
CRLI110 + RSTL1 thermal overload relay, **CRLI140** + RSTL2 thermal overload relay

① Box terminal block - standard equipment for CRL110 contactors only

Type	a ₁	a ₂	a ₃	b ₁	b ₂	b ₃	c ₁	d ₁	d ₂	d ₃	e	e ₁	e ₂	f ₁	f ₂	f ₃	g	Øg ₁	Øg ₂
CRLI110	120	143	100	150	232	130	150	15	37	37	130	213	40	93	80	146	45	6,3	6,1 (M6)
CRLI140	120	143	100	150	232	130	150	20	42	37	139	215,5	40,5	93	80	146	45	6,3	9 (M8)



CRLI170 + RSTL3 thermal overload relay

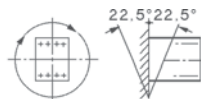


CRLI205 to CRLI400

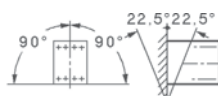
Type	a_1	a_2	a_3	b_1	b_2	c_1	e_1	f_1	g	d_1	d_2	$\varnothing_{g_1}$
CRLI205	135	158	110	180	160	185	159	115	48	25	48	7
CRLI250, CRLI300	145	168	120	200	180	198	168	132	58	25	48	9
CRLI400	160	183	130	200	180	222	178	150	65	25	48	9

Permissible mounting positions

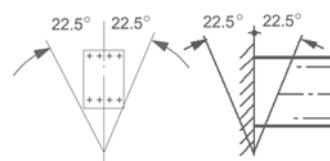
The contactors are designed for operation on vertical mounting surface.



CRNI09 to CRNI22 (AC control)



CRNI32 to CRNI38	(AC control)
CRNI45 to CRLI400	(AC control)
CRNI09 to CRNI22	(DC control)
CRNI45 to CRNI85	(DC control - economic)

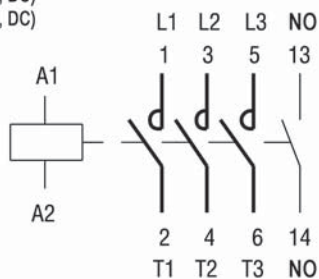


CRNI32 to CRNI38 (DC control)

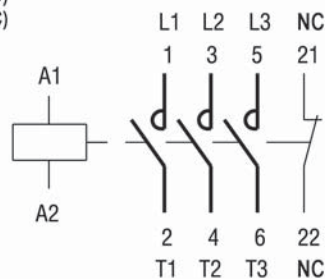
Internal connections diagrams

Three-pole mini-contactors

CRM105-30-10 (AC, DC)
CRM109-30-10 (AC, DC)

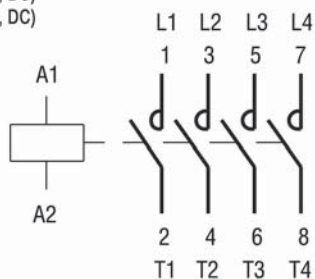


CRM105-30-01 (AC)
CRM109-30-01 (AC)



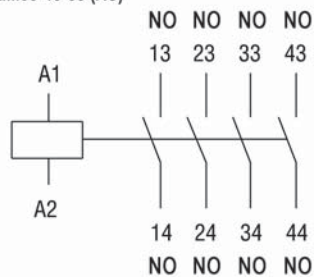
Four-pole mini-contactors

CRM105-40-00 (AC, DC)
CRM109-40-00 (AC, DC)

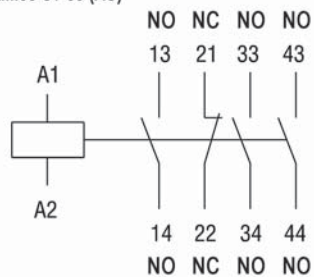


Contactor relays

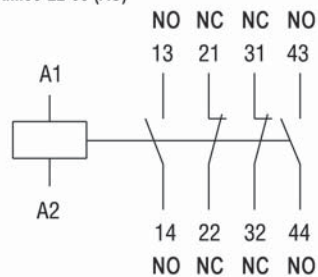
CRM100-40-00 (AC)



CRM100-31-00 (AC)



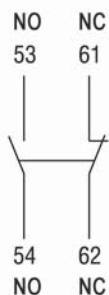
CRM100-22-00 (AC)



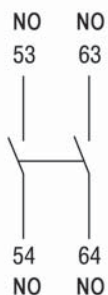
Internal connections diagrams

Auxiliary contacts for mini-contactors CRMI

CRI10-11



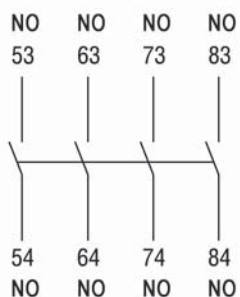
CRI10-20



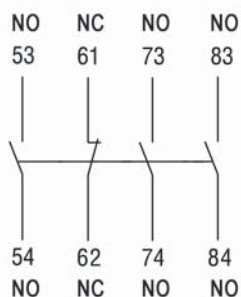
CRI10-02



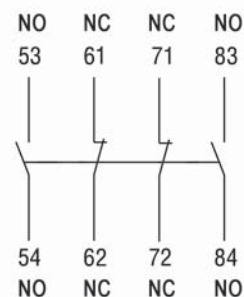
CRI10-40



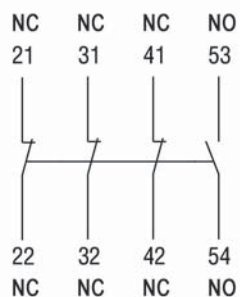
CRI10-31



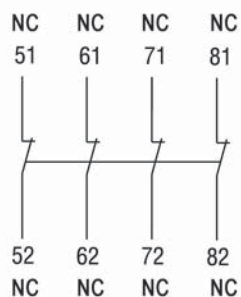
CRI10-22



CRI10-13



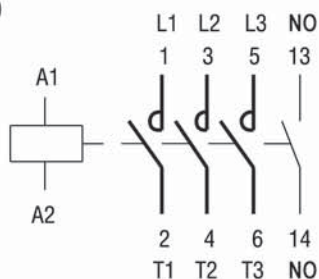
CRI10-04



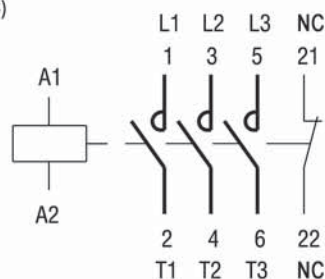
Internal connections diagrams

Three-pole contactors

CRNI09-30-10 (AC)
CRNI12-30-10 (AC)

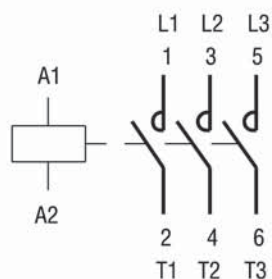


CRNI09-30-01 (AC)
CRNI12-30-01 (AC)



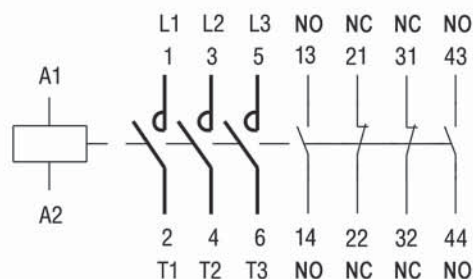
CRNI09-30-00 (DC)
CRNI12-30-00 (DC)

CRNI16-30-00 (AC, DC)
CRNI22-30-00 (AC, DC)
CRNI32-30-00 (AC, DC)
CRNI38-30-00 (AC, DC)

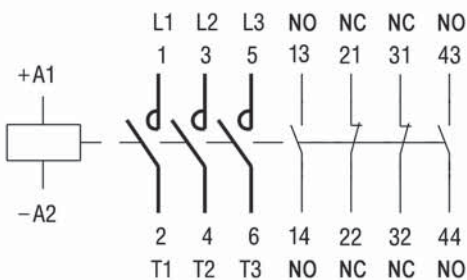


CRNI45-30-22 (AC)
CRNI63-30-22 (AC)
CRNI75-30-22 (AC)
CRNI85-30-22 (AC)

CRLI110-30-22 (AC)
CRLI140-30-22 (AC)
CRLI170-30-22 (AC)
CRLI205-30-22 (AC)
CRLI250-30-22 (AC)
CRLI300-30-22 (AC)
CRLI400-30-22 (AC)

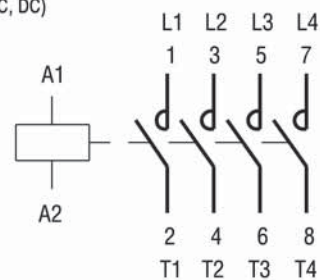


CRNI45-30-22 (DC)
CRNI63-30-22 (DC)
CRNI75-30-22 (DC)
CRNI85-30-22 (DC)



Four-pole contactors

CRNI09-40-00 (AC, DC)
CRNI12-40-00 (AC, DC)



Auxiliary contacts for contactors CRNI, CRLI

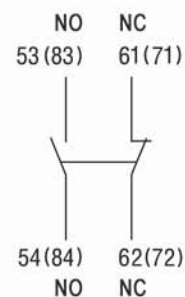
CR120-10



CR120-01



CR12A-11



Contactors coding system

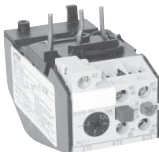
Type of contactor	Value of current	Configuration of operating contacts	Configuration of auxiliary contacts	Type and value of coil voltage																																										
<table><tr><th>Type of contactor</th></tr><tr><td>CRMI - mini-contactors</td></tr><tr><td>CRNI - contactors up to 100 A</td></tr><tr><td>CRLI - contactors over 100 A</td></tr></table>	Type of contactor	CRMI - mini-contactors	CRNI - contactors up to 100 A	CRLI - contactors over 100 A	<table><tr><th colspan="2">Value of current</th></tr><tr><td>00 - ❶</td><td>75 - 75 A</td></tr><tr><td>05 - 5 A</td><td>85 - 85 A</td></tr><tr><td>09 - 9 A</td><td>110 - 110 A</td></tr><tr><td>12 - 12 A</td><td>140 - 140 A</td></tr><tr><td>16 - 16 A</td><td>170 - 170 A</td></tr><tr><td>22 - 22 A</td><td>205 - 205 A</td></tr><tr><td>32 - 32 A</td><td>250 - 250 A</td></tr><tr><td>38 - 38 A</td><td>300 - 300 A</td></tr><tr><td>45 - 45 A</td><td>400 - 400 A</td></tr><tr><td>63 - 63 A</td><td></td></tr></table>	Value of current		00 - ❶	75 - 75 A	05 - 5 A	85 - 85 A	09 - 9 A	110 - 110 A	12 - 12 A	140 - 140 A	16 - 16 A	170 - 170 A	22 - 22 A	205 - 205 A	32 - 32 A	250 - 250 A	38 - 38 A	300 - 300 A	45 - 45 A	400 - 400 A	63 - 63 A		<table><tr><th>Configuration of operating / main contacts</th></tr><tr><td>30 - three-pole</td></tr><tr><td>40 - four-pole</td></tr><tr><th>Contacts configuration of contactor relays</th></tr><tr><td>40 - 4 NO</td></tr><tr><td>31 - 3 NO + 1 NC</td></tr><tr><td>22 - 2 NO + 2 NC</td></tr></table>	Configuration of operating / main contacts	30 - three-pole	40 - four-pole	Contacts configuration of contactor relays	40 - 4 NO	31 - 3 NO + 1 NC	22 - 2 NO + 2 NC	<table><tr><th>Configuration of auxiliary contacts</th></tr><tr><td>00 - failure</td></tr><tr><td>01 - 1 NC</td></tr><tr><td>10 - 1 NO</td></tr><tr><td>22 - 2 NO + 2 NC</td></tr></table>	Configuration of auxiliary contacts	00 - failure	01 - 1 NC	10 - 1 NO	22 - 2 NO + 2 NC	<table><tr><th>Type and value of coil voltage</th></tr><tr><td>D024 - 24 V DC</td></tr><tr><td>A024 - 24 V AC 50 Hz</td></tr><tr><td>A230 - 230 V AC 50 Hz</td></tr></table>	Type and value of coil voltage	D024 - 24 V DC	A024 - 24 V AC 50 Hz	A230 - 230 V AC 50 Hz
Type of contactor																																														
CRMI - mini-contactors																																														
CRNI - contactors up to 100 A																																														
CRLI - contactors over 100 A																																														
Value of current																																														
00 - ❶	75 - 75 A																																													
05 - 5 A	85 - 85 A																																													
09 - 9 A	110 - 110 A																																													
12 - 12 A	140 - 140 A																																													
16 - 16 A	170 - 170 A																																													
22 - 22 A	205 - 205 A																																													
32 - 32 A	250 - 250 A																																													
38 - 38 A	300 - 300 A																																													
45 - 45 A	400 - 400 A																																													
63 - 63 A																																														
Configuration of operating / main contacts																																														
30 - three-pole																																														
40 - four-pole																																														
Contacts configuration of contactor relays																																														
40 - 4 NO																																														
31 - 3 NO + 1 NC																																														
22 - 2 NO + 2 NC																																														
Configuration of auxiliary contacts																																														
00 - failure																																														
01 - 1 NC																																														
10 - 1 NO																																														
22 - 2 NO + 2 NC																																														
Type and value of coil voltage																																														
D024 - 24 V DC																																														
A024 - 24 V AC 50 Hz																																														
A230 - 230 V AC 50 Hz																																														

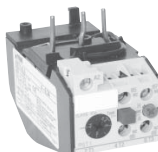
❶ See page 14 - Contactor relays CRMI00

Examples of ordering codes:

- CRMI09-30-10-A230** mini-contactor CRMI09, rated operating current 9 A AC3, three-pole, 1 auxiliary contact normally open, coil voltage 230 V AC 50 Hz
- CRNI12-30-10-D024** contactor CRNI12, rated operating current 12 A AC3, three-pole, 1 auxiliary contact normally open, coil voltage 24 V DC
- CRNI12-40-00-D024** contactor CRNI12, rated operating current 12 A AC3, four-pole, failure auxiliary contacts, coil voltage 24 V DC
- CRLI110-30-22-A230** contactor CRLI110, rated operating current 110 A AC3, three-pole, 2 auxiliary contacts normally open and 2 auxiliary contacts normally closed, coil voltage 230 V AC 50 Hz

RSTM	Ordering codes	Adjustment rated range [A]	Fuse links [A]		Contactor application	Weight [kg]
			IEC947 - 4			
			"1"	"2"		
NEW product 	RSTM-0V16	0,1 - 0,16	25	0,5	CRMI05 CRMI09	0,14
	RSTM-0V25	0,16 - 0,25	25	1		
	RSTM-0V4	0,25 - 0,4	25	1,6		
	RSTM-0V63	0,4 - 0,63	25	2		
	RSTM-1	0,63 - 1	25	4		
	RSTM-1V25	0,8 - 1,25	25	4		
	RSTM-1V6	1 - 1,6	25	6		
	RSTM-2	1,25 - 2	25	6		
	RSTM-2V5	1,6 - 2,5	25	6		
	RSTM-3V2	2 - 3,2	25	10		
	RSTM-4	2,5 - 4	25	10		
	RSTM-5	3,2 - 5	25	10		
	RSTM-6V3	4 - 6,3	25	10		
	RSTM-8	5 - 8	25	10		
	RSTM-10	6,3 - 10	25	10		

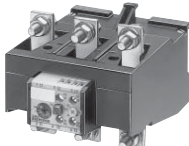
RSTN1	Ordering codes	Adjustment rated range [A]	Fuse links [A]		Contactor application	Weight [kg]
			IEC947 - 4			
			"1"	"2"		
NEW product 	RSTN1-0V6	0,1 - 0,16	35	0,5	CRNI09 CRNI12	0,14
	RSTN1-0V25	0,16 - 0,25	35	1		
	RSTN1-0V4	0,25 - 0,4	35	1,6		
	RSTN1-0V63	0,4 - 0,63	35	2		
	RSTN1-1	0,63 - 1	35	4		
	RSTN1-1V25	0,8 - 1,25	35	4		
	RSTN1-1V6	1 - 1,6	35	6		
	RSTN1-2	1,25 - 2	35	6		
	RSTN1-2V5	1,6 - 2,5	35	6		
	RSTN1-3V2	2 - 3,2	35	10		
	RSTN1-4	2,5 - 4	35	10		
	RSTN1-5	3,2 - 5	35	16		
	RSTN1-6V3	4 - 6,3	35	16		
	RSTN1-8	5 - 8	35	20		
	RSTN1-10	6,3 - 10	35	25		
	RSTN1-12V5	8 - 12,5	35	25		
	RSTN1-14V5	10 - 14,5	35	25		

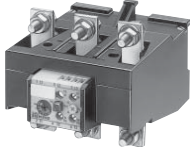
RSTN2	Ordering codes	Adjustment rated range [A]	Fuse links [A]		Contactor application	Weight [kg]
			IEC947 - 4			
			"1"	"2"		
NEW product 	RSTN2-6V3	4 - 6,3	63	16	CRNI16 CRNI22	0,14
	RSTN2-8	5 - 8	63	20		
	RSTN2-10	6,3 - 10	63	25		
	RSTN2-12V5	8 - 12,5	63	25		
	RSTN2-16	10 - 16	63	35		
	RSTN2-20	12,5 - 20	63	35		
	RSTN2-25	16 - 25	63	50		

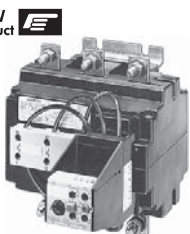
RSTN3	Ordering codes	Adjustment rated range [A]	Fuse links [A]		Contactor application	Weight [kg]
			IEC947 - 4			
			"1"	"2"		
NEW product 	RSTN3-12V5	8 - 12,5	100	25	CRNI32 CRNI38	0,20
	RSTN3-16	10 - 16	100	35		
	RSTN3-20	12,5 - 20	100	50		
	RSTN3-25	16 - 25	100	50		
	RSTN3-32	20 - 32	100	80		
	RSTN3-36	25 - 36	100	80		
	RSTN3-40	32 - 40	100	80		
	RSTN3-45	36 - 45	100	80		

RSTN4	Ordering codes	Adjustment rated range [A]	Fuse links [A]		Contactor application	Masa [kg]
			IEC947 - 4			
			"1"	"2"		
NEW product 	RSTN4-20	12,5 - 20	160	50	CRNI45	0,40
	RSTN4-25	16 - 25	160	50	CRNI63	
	RSTN4-32	20 - 32	160	63	CRNI75	
	RSTN4-40	25 - 40	160	80	CRNI85	
	RSTN4-50	32 - 50	160	100		
	RSTN4-57	40 - 57	160	100		
	RSTN4-63	50 - 63	160	100		
	RSTN4-70	57 - 70	160	125		
	RSTN4-80	63 - 80	250	160		
	RSTN4-88	70 - 88	250	160		

RSTL1	Ordering codes	Adjustment rated range [A]	Fuse links [A]		Contactor application	Weight [kg]
			IEC947 - 4			
			"1"	"2"		
NEW product 	RSTL1-80	55-80	250	160	CRLI110	0,70
	RSTL1-90	63-90	250	160		
	RSTL1-110	80-110	315	200		
	RSTL1-120	90-120	315	224		
	RSTL1-135	110-135	315	224		

RSTL2	Ordering codes	Adjustment rated range [A]	Fuse links [A]		Contactor application	Weight [kg]
			IEC947 - 4			
			"1"	"2"		
NEW product 	RSTL2-80	55-80	250	160	CRLI140	0,70
	RSTL2-90	63-90	250	160		
	RSTL2-110	80-110	315	200		
	RSTL2-120	90-120	315	224		
	RSTL2-135	110-135	315	224		
	RSTL2-150	120-150	315	224		

RSTL3	Ordering codes	Adjustment rated range [A]	Fuse links [A]		Contactor application	Weight [kg]
			IEC947 - 4			
			"1"	"2"		
NEW product 	RSTL3-80	55 - 80	250	160	CRLI170 CRLI205	0,70
	RSTL3-90	63 - 90	250	160		
	RSTL3-110	80 - 110	315	200		
	RSTL3-120	90 - 120	315	224		
	RSTL3-135	110 - 135	315	224		
	RSTL3-150	120 - 150	315	224		
	RSTL3-160	135 - 160	355	224		
	RSTL3-180	150 - 180	355	224		

RSTL4	Ordering codes	Adjustment rated range [A]	Fuse links [A]		Contactor application	Weight [kg]
			IEC947 - 4			
			"1"	"2"		
NEW product 	RSTL4-125	80 - 125	500	250	CRLI250	2,50
	RSTL4-200	125 - 200	500	315	CRLI300	
	RSTL4-250	160 - 250	500	400	CRLI400	
	RSTL4-320	200 - 320	500	400		
	RSTL4-400	250 - 400	800	500		

Add-on blocks for independent mounting of thermal overload relays

	Ordering codes	Name	Contactor application	Weight [kg]
NEW product 	CRI-310	Module for RSTM - for installing as a single unit, this module includes screw terminals	CRM105, CRM109	0,01
	CRI-320	Relay base for RSTN1 - for installing as a single unit	CRNI09, CRNI12	0,05
NEW product  	CRI-330	Relay base for RSTN2 - for installing as a single unit	CRNI16, CRNI22	0,05
	CRI-340	Relay base for RSTN3 - for installing as a single unit	CRNI32, CRNI38	0,05
	CRI-350	Relay base for RSTN4 - for installing as a single unit	CRNI45, CRNI63, CRNI75, CRNI85	0,05
	CRI-360	Box terminal block for RSTL1 - for installing as a single unit	CRLI110	0,2
NEW product  	CRI-370	Current links ① for RSTL2, RSTL3 - for connections to contactors	CRLI140, CRLI170	
	CRI-382	Current links ① for RSTL3, RSTL4 - for connections to contactors	CRLI205, CRLI250	
	CRI-390	Current links ① for RSTL4 - for connections to contactors	CRLI250, CRLI300, CRLI400	

① Set - 3 pieces

Technical data for release times up to 10 s according to PN-EN 60947-1

Type of thermal overload relay	RSTM	RSTN1 / RSTN2	RSTN3	RSTN4	RSTL1	RSTL2 / RSTL3	RSTL4				
Release time classification	Class 10 A (2 s < t _A ≤ 10 s at 7,2 x I _e from cold state and t _A ≤ 2 min. at 1,5 x I _e from hot state)										
Phase failure protection by differential phase shift	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Changeover to automatic reset	No	Yes	Yes	Yes	Yes	Yes	Yes				
RESET button with trip-free feature	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Temperature compensation	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Switch position indicator	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Test button actuates the NO and NC contacts	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Terminal for contactor coil	No ②	Yes	Yes	No ②	No ②	No ②	No ②				
Ambient temperature [°C]	-25...+55 ①	-25...+55									
Degree of protection	IP 00 (open) or IP 20 to PN-EN 60947-1 and DIN 40050										
Shock resistance [g/ms]	8/10										
Operating / main circuit											
Rated current [A]	10	14,5 / 25	45	88	135	150 / 180	400				
Rated voltage [V AC]	600	600	600	600	600	600	600				
Rated impulse strength U _{imp} [kV]	6	6	6	8	8	8	8				
Rated voltage of insulation U _i [V] ③	690	690	690	1000	1000	1000	1000				
Type and frequency of current	DC, AC up to 400 Hz						AC up to 400 Hz				
Conductor cross-sections											
Terminal screw	M3	M4	M5	M5	M6	M8	M8 / M10 ④				
• solid or stranded [mm²]	0,5 to 2,5	2,5 to 6	1,5 to 25	2,5 to 35	25 to 70	50 to 120	185 / 240 ④				
• finely stranded with end sleeve [mm²]	0,5 to 1,5	1,5 to 4	1 to 16	1,5 to 25	25 to 50	25 to 95	–				
• flat bars [mm]	–	–	–	–	–	20×3	20×3 / 20×3×5 ④				
• tightening torque [Nm]	0,4 to 0,7	1 to 1,5	2,5 to 3	2,5 to 3	6 to 8	10 to 14	10 to 14 / 14 to 24 ④				
• tightening torque [lb.in]	4 to 6,5	9 to 13	22 to 26,5	22 to 26,5	52 to 50	89 to 124	89 to 124 / 124 to 210 ④				
Max. power loss per current path											
• at lowest value [W (VA)]	0,6	0,9	1,2	2,6	5	5	4 (5)				
• at highest value of the setting range [W (VA)]	2,3	2,25	3	4	7	7 / –	10 (12)				
Auxiliary circuit											
Auxiliary contacts	1NO + 1NC / 1NC	1NO + 1NC / 1 changeover			1NO + 1NC						
Conductor cross-sections											
Terminal screw	M3	M3,5									
• solid or stranded [mm²]	2×(0,5 to 2,5)	2×(0,5 to 1) / 2×(1 to 2,5)									
• finely stranded with end sleeve [mm²]	2×(0,5 to 1,5)	2×(0,5 to 1) / 2×(0,75 to 2,5)									
• tightening torque [Nm]	0,4 to 0,7	0,8 to 1,4									
• tightening torque [lb.in]	4 to 6,5	7 to 12									
Rated voltage [V AC]	600; > 150 same polarity										
Rated impulse strength U _{imp} [kV]	6										
Rated voltage of insulation U _i [V] ③	690 	400 Unequal potential (NO + NC) 	690 Equal potential (NO + NC connected as changeover contact) 								
Switching capacity	B 600, R 300										
	AC15			DC13							
• rated operating voltage U _e [V]	24	60	125	230	400	500	690	24	60	110	220
• rated operating current I _e [A]	2	1,5	1,25	1,15	1,1	1	0,8	2	0,5	0,3	0,2
• conventional thermal current I _{th} [A]	6										
Short-circuit protection	Fusses Class gL/gG - 6 A										

② Terminal for contactor coil is not required.

③ Pollution degree 3

④ Setting range ($\leq 200 \text{ A}$ / $> 200 \text{ A}$)

① The upper set value of thermal current is to be reduced by 0,5% per 1 °C of excess temperature or a min. space of 5 mm is to be maintained the units when several overload relays are series mounted and simultaneously operated at ambient temperatures exceeding 25 °C.

Release time

Adjustment rated range [A]	Conductor cross-sections [mm²]	Release time (±20%) with three-pole symmetrical load form the cold state. Adjusted current multiplication factor (x I _e) [s]					
		3	4	5	6	7,2	8
RSTM							
0,1 - 0,16	1	23,8	14,5	10,5	8,3	6,8	5,8
0,16 - 0,25	1	22,5	14	10,1	8	6,5	5,5
0,25 - 0,4	1	22,8	14	10	7,8	6,3	5,4
0,4 - 0,63	1	23,5	14,1	10,2	8	6,5	5,6
0,63 - 1	1	25	15	10,8	8,3	6,8	5,7
0,8 - 1,25	1	27,5	16,7	11,8	9	7,2	6
1 - 1,6	1	25	15,5	11	8,6	7	5,9
1,25 - 2	1	26,5	17	12,7	10	8,4	7,2
1,6 - 2,5	1	27,4	17,3	12,7	10	8,3	7,2
2 - 3,2	1	29,5	18	12,9	10	8,1	6,7
2,5 - 4	1	28,5	17,5	12,4	9,6	7,8	6,5
3,2 - 5	1	29	17,6	12,3	9,5	7,5	6,3
4 - 6,3	1	28,5	17	11,9	9	7,2	5,8
5 - 8	1	29	17,5	12	9	7,1	5,8
6,3 - 10	1,5	25	14,1	9,4	6,8	5,2	4,2
RSTN1							
0,1 - 0,16	1	16,7	10,3	7,5	5,9	4,8	4,1
0,16 - 0,25	1	20,5	12,8	9,5	7,5	6,3	5,4
0,25 - 0,4	1	18	11,2	8,2	6,5	5,4	4,6
0,4 - 0,63	1	20,8	12,8	9,5	7,6	6,3	5,4
0,63 - 1	1	23,3	14,4	10,5	8,3	6,8	5,8
0,8 - 1,25	1	28	17,5	12,7	9,8	8,1	6,8
1 - 1,6	1	22,6	14,3	10,4	8,3	6,8	5,9
1,25 - 2	1	22,3	14	10,3	8,4	6,9	6,0
1,6 - 2,5	1	24,5	15,5	11,5	9	7,5	6,4
2 - 3,2	1	23,8	15	11	8,8	7,3	6,3
2,5 - 4	1	24,4	15,6	11,4	9,1	7,6	6,5
3,2 - 5	1	27,5	17	12,2	9,5	7,8	6,5
4 - 6,3	1	23,4	14,4	10,4	8	6,5	5,5
5 - 8	1	22,5	13,5	9,5	7,2	5,7	4,7
6,3 - 10	1,5	24	13,9	9,3	6,8	5,3	4,3
8 - 12,5	2,5	24,5	14,8	10,2	7,8	6,2	5,2
10 - 14,5	2,5	23,2	13,9	9,5	7,2	5,6	4,6
RSTN2							
4 - 6,3	1	23,4	14,4	10,4	8	6,5	5,5
5 - 8	1	22,5	13,5	9,5	7,2	5,7	4,7
6,3 - 10	1,5	24	13,9	9,3	6,8	5,3	4,3
8 - 12,5	2,5	24,5	14,8	10,2	7,8	6,2	5,2
10 - 16	2,5	23,2	13,9	9,5	7,2	5,6	4,6
12,5 - 20	2,5	23	13	8,6	6,3	4,8	3,9
16 - 25	4	31	17	11	7,7	5,8	4,6
RSTN3							
8 - 12,5	2,5	24,5	14,8	10,2	7,8	6,2	5,2
10 - 16	2,5	26,2	15,8	10,8	8,1	6,4	5,2
12,5 - 20	2,5	26,6	14,8	9,7	7	5,3	4,3
16 - 25	4	29	15,4	9,8	7	15,3	4,2
20 - 32	6	28	16,1	10,8	8,2	6,3	5,2
25 - 36	10	33,4	19	12,8	9,3	7,2	5,8
32 - 40	10	24,3	13,6	8,8	6,6	5	4,2
36 - 45	10	23	13	8,5	6,2	4,5	3,3

Release time

Adjustment rated range [A]	Conductor cross-sections [mm²]	Release time (±20%) with three-pole symmetrical load form the cold state. Adjusted current multiplication factor (x I _e) [s]					
		3	4	5	6	7,2	8
RSTN4							
12,5-20							
16 - 25	4	34	19,5	13,2	9,7	7,6	6,2
20 - 32	6	33	18,5	12,8	9,4	7,4	6
25 - 40	10	30	17	11,5	8,4	6,5	5,3
32 - 50	10	29	16,6	11	8	6,2	5
40 - 57	16	35	19,4	12,3	8,7	6,6	5,3
50 - 63	16	37	20,5	13,3	9,6	7,3	5,8
57 - 70	25	40	21,5	14	9,8	7,4	5,8
63 - 80	25	40	21,5	13,8	9,7	7,3	5,8
70 - 88	35	33,9	17,6	11,8	8	6,5	4,9
RSTL1, RSTL2, RSTL3							
55 - 80	25	36	21	13,5	9,8	7,5	6,1
63 - 90	35	44	24	15,5	11	8,5	6,7
80 - 110	35	43	22	14	10	7,7	6,1
90 - 120	50	40	21,8	14	10	7,5	5,9
110 - 135	50	32	18	11,7	8,4	6,4	5,1
120 - 150	50	35	19,5	12,8	9,4	7,2	5,8
135 - 160	70	38	20,6	13,8	10	7,6	6,2
150 - 180	95	37	20,5	13,5	9,7	7,4	6,0
RSTL4							
80 - 125	50	25	16,8	13,1	11,1	9,9	9,1
125 - 200	95	24,4	16,1	11,9	9,8	8,4	7,4
160 - 250	120	23,8	13,9	10,3	8,5	7,3	6,5
200 - 320	185	25,6	15,5	10,9	8,5	7	6,4
250 - 400	240	25	15	10,5	8,5	7	6,2

Protection characteristics

Item No.	Adjusted current multiplication factor		Release time	Test condition
1	1,05		> 2 h ❶	Cold state
2	1,20		< 2 h ❶	Hot state
3	1,50		< 2 min. ❶	Pre-heated for 2 hours with 1 adjusted current multiplication factor
4	7,2		2 s < T _p < 10 s, Class 10 A	Cold state
	Hot state means heat the thermal overload relay into steady state with the current as shown in "Item No. 1".			
	Adjusted current multiplication factor		Release time	Test condition
	Any two phases	Another phase		
5	1,0	0,9	> 2 h ❷	Cold state
6	1,15	0	> 2 h ❷	Hot state
	Hot state means heat the thermal overload relay into steady state with the current as shown in "Item No. 1".			

❶ Release time with three-pole symmetrical load at ambient temperature +20 °C

❷ Release time with three-pole unsymmetrical load (phase-failure) at ambient temperature +20 °C

Tripping characteristics

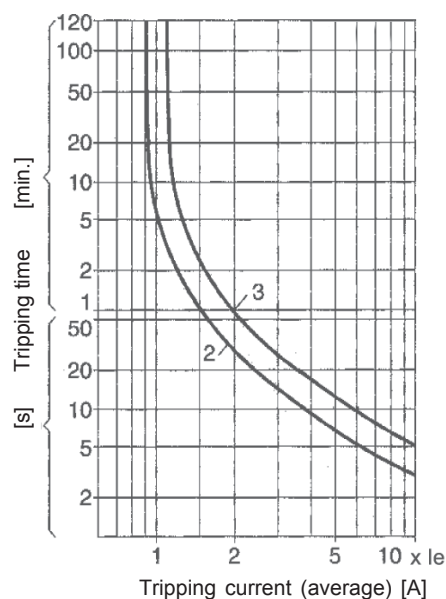
The current-time curves show the relationship between the tripping time from cold state and multiples of the set current I_e . When the relay is at operating temperature and carrying $1,0 \times I_e$, the tripping times are reduced to approximately 25%.

Tripping curve 3 is applicable to three-pole loads and curve 2 to two-pole loads. For single-pole loads the tripping curves lie between curves 2 and 3. For normal operation, all three bimetallic strips of the overload relay must be heated.

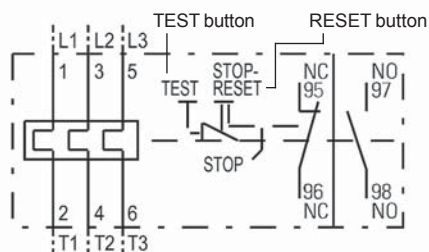
The thermal overload relays **RSTM**, **RSTN**, **RSTL** are suitable for protecting motors with phase control. For protecting single-phase or DC-loads, therefore, all three main conducting paths must be connected in series. Tripping curve 3 is then applicable.

The release current with a three-pole symmetrical load is between 105% and 120% of the set current.

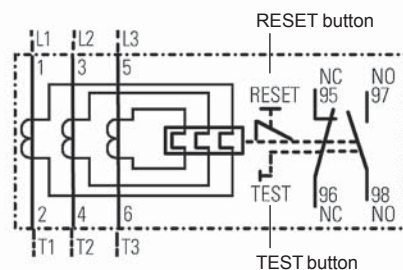
Fig. Typical tripping characteristics



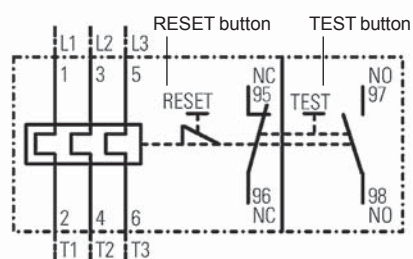
Internal connections diagrams



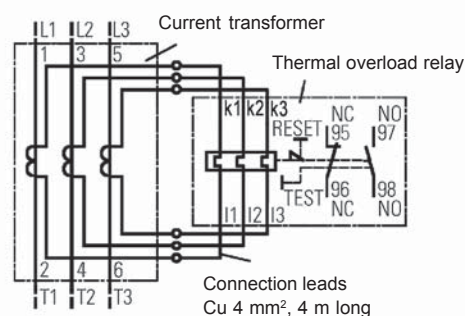
RSTM



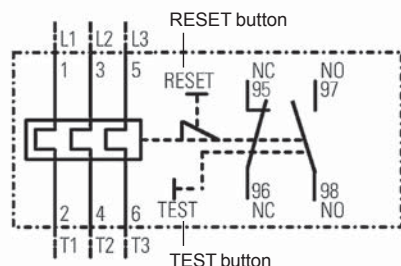
RSTL4



RSTN1, RSTN2



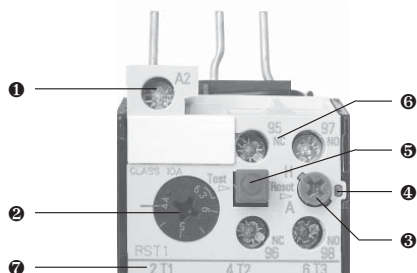
RSTL4 separate mounting of current transformer and thermal overload relay



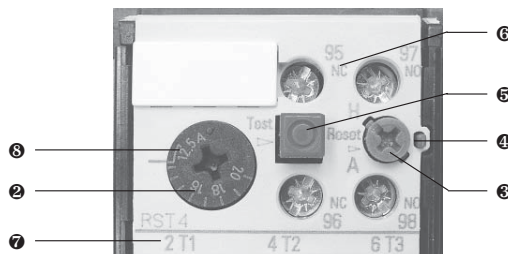
**RSTN3, RSTN4,
RSTL1, RSTL2, RSTL3**

Installation

1. Marks on panel (marks on thermal overload relays).



Panel RSTN1, RSTN2, RSTN3



Panel RSTN4, RSTL1, RSTL2, RSTL3, RSTL4

- 1 Terminal A2 must be connected for contactor coil terminal A2 before connection of overload relay to contactor (mounted device make connect of wire to contactor terminal A2 impossible). Overload relay terminal A2 and contactor terminal A1 are used to coil supply.
- 2 Setting current adjusting scale.
- 3 RESET button (blue): H - manual, A - automatic.
- 4 Switch position indicator (green). Indicator operates in the mode of manual relay resetting.
- 5 TEST button (red).
- 6 Auxiliary contacts terminals.
- 7 Main circuit connection terminal No. It must correspond with terminal No. of contactor.
- 8 In case of separate mounting of RSTL and ambient temperature higher than +55 °C there must to set a correction relay setting current. The table show indicators of maximum current value which are refer to higher value relay setting dependent on ambient temperature and additionally there show factors of current corrections. Below there show examples of setting current calculation for ambient temperature +70 °C.

Ambient temperature	Maximum permissible current loading referred to end-of-scale value of thermal overload relay	Setting current correction
+55 °C	1,00	1,00
+60 °C	0,94	1,08
+65 °C	0,88	1,09
+75 °C	0,82	1,10

Example:

Motor rated current: 60 A. Ambient temperature: +70 °C.

Overload relay fitted: 55 to 80 A.

1. Determine the permissible current loading:

Max. current loading: $80 \text{ A} \times 0,82 = 65,6 \text{ A}$.

Loading with motor rated current 60 A at +70 °C ambient temperature is permissible.

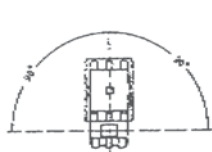
2. Calculate the setting current:

Motor rated current: 60 A.

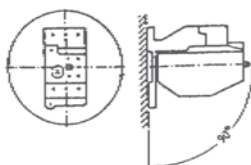
Setting current correction: $60 \text{ A} \times 1,1 = 66 \text{ A}$.

You must set the overload relay to 66 A.

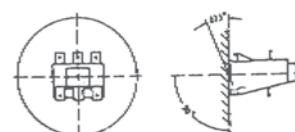
2. Set the scale to the rated current of the load 2.
3. If the reset button points to H (manual) and the relay has been tripped, pressing the button puts the relay in operation again. Changing to automatic reset by pressing and turning the button anti-clock wise from H to A.
4. When the test button is actuated, the NC contact opens and the NO contact closes, therefore the auxiliary circuit (simulation of overload tripping) can be tested. In the "manual" position, the relay is resetted when the blue reset button is pressed. In the "automatic" position, the relay is reset automatically. **In the automatic mode, there is a risk of self-switching.**
5. Mounting and operating position, the relays are shown in drawings.



Thermal overload relay with CRNI contactor

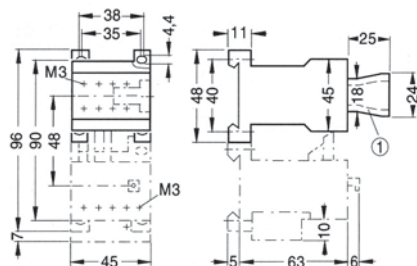


Thermal overload relay with CRI-320 to CRI-350 relay base
- for installing as a single unit

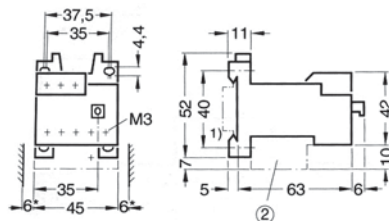


Tripping relay to be installed as a single unit

Dimensions

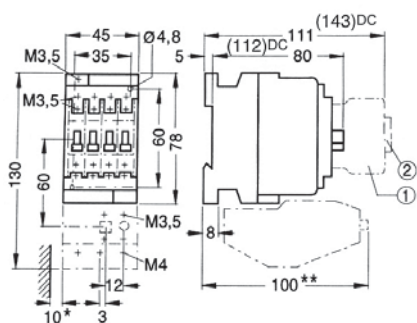


RSTM + CRMI05 or CRMI09 mini-contactor

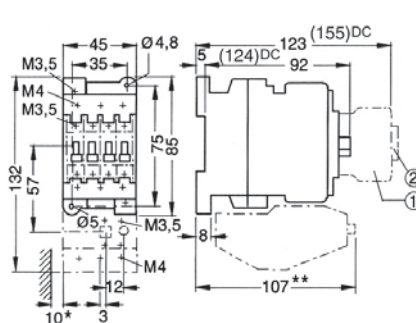


RSTM to be installed as a single unit

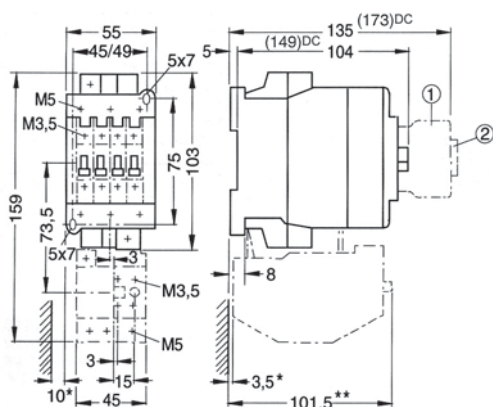
- ① Auxiliary contacts type CRI10-...
- ② Auxiliary contacts for mini-contacts



RSTN1 + CRNI09 or CRNI12 contactor

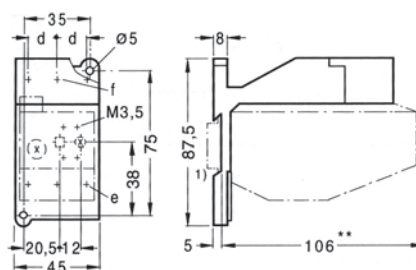


RSTN2 + CRNI16 or CRNI22 contactor



RSTN3 + CRNI32 or CRNI38 contactor

- ① Auxiliary contacts type CRI20-...
- ② Description plate



RSTN1 or RSTN2 or RSTN3
+ relay base for installing as a single unit

Thermal overload relay with relay base	d	e	f
RSTN1 with CRI-320	10	M4	M3,5
RSTN2 with CRI-330	14,3	M4	M4
RSTN3 with CRI-340	18,2	M5	M5

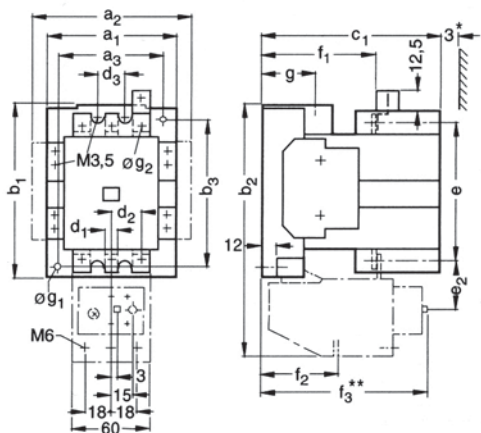
() DC - dimensions of contactor (DC control)

*) Minimum clearance from the earthed parts.

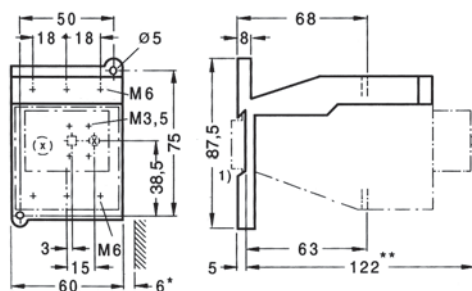
**) Dimension for the square OFF button (stroke 3 mm).
Dimension for the round RESET button (stroke 2,5 mm) less 2,5 mm.

1) For mounting on 35 mm DIN rail mount, EN 50022.

Dimensions

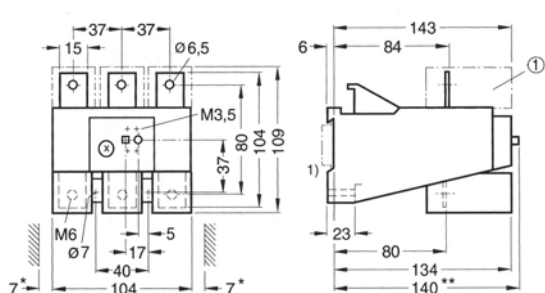


RSTN4 + CRNI45 to CRNI85 contactor



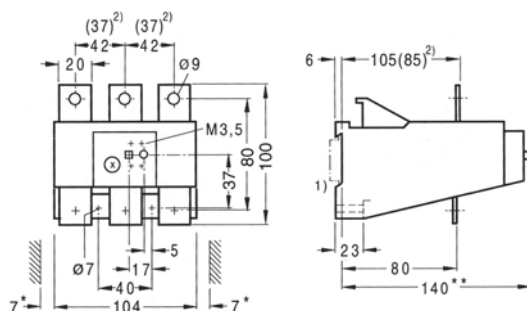
RSTN4 + relay base CRI-350 for installing as a single unit

Type	a ₁	a ₂	a ₃	b ₁	b ₂	b ₃	c ₁	d ₁	d ₂	d ₃	e	e ₂	f ₁	f ₂	f ₃	g	Øg ₁	Øg ₂
CRNI45, CRNI63	90	113	70	117	175	100	123	10,5	26,5	25	94	31,5	80	63	122	28	4,8	6,1 (M6)
CRNI75, CRNI85	100	123	80	133	194	110	140	10,5	26,5	25	107	31,5	89	71	132	39	5,5	6,1 (M6)



RSTL1 to be installed with contactor CRLI110
or with box terminal block CRI-360
for installing as a single unit

① Box terminal block CRI-360 for RSTL1 - for installing as a single unit



RSTL2 to be installed with contactor CRLI140
RSTL3 to be installed with contactor CRLI170 or CRLI205

*) Minimum clearance from the earthed parts.

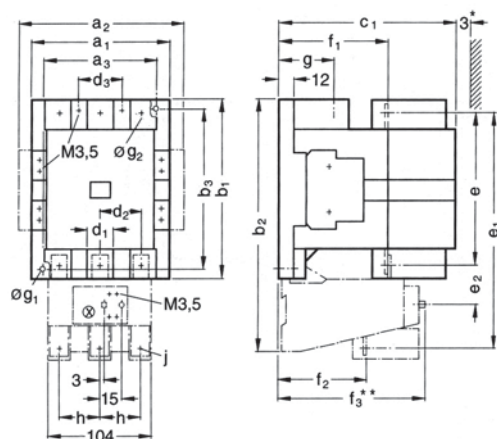
**) Dimension for the square OFF button (stroke 3 mm).

Dimension for the round RESET button (stroke 2,5 mm) less 2,5 mm.

1) For mounting on 35 mm DIN rail mount, EN 50022.

2) Height and spacing of the connection rails can accommodated to CRLI110 and CRLI170 contactors (not for RSTL2).

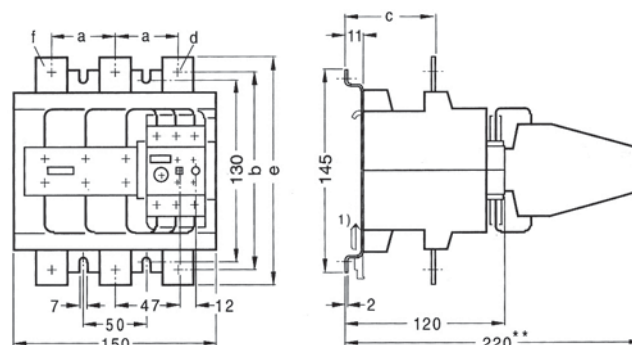
Dimensions



RSTL1 + CRLI110 contactor

RSTL2 + CRLI140 contactor

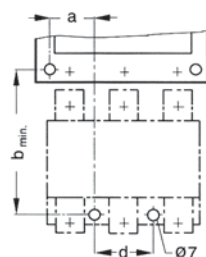
RSTL3 + CRLI170 contactor



RSTL4 to be installed as a single unit

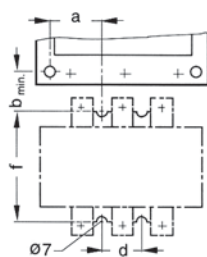
Type	a	b	c	d	e	f
RSTL4-125, -200	46	140	69	Ø9	160	20 x 3
RSTL4-250, -300, -400	50	140	70	Ø11	171	25 x 4

Type	a ₁	a ₂	a ₃	b ₁	b ₂	b ₃	c ₁	d ₁	d ₂	d ₃	e	e ₁	e ₂	f ₁	f ₂	f ₃	g	Øg ₁	Øg ₂
CRLI110	120	143	100	150	232	130	150	15	37	37	130	213	40	93	80	146	45	6,3	6,1 (M6)
CRLI140	120	143	100	150	232	130	150	20	42	37	139	215,5	40,5	93	80	146	45	6,3	9 (M8)
CRLI170	135	158	110	180	257	160	185	20	42	42	154	234	40	115	93	153	48	7	9 (M8)



RSTL3 + CRLI170 contactor

RSTL4 + CRLI205 contactor



RSTL4 + CRLI250 contactor

RSTL4 + CRLI300 contactor

RSTL4 + CRLI400 contactor

*) Minimum clearance from the earthed parts.

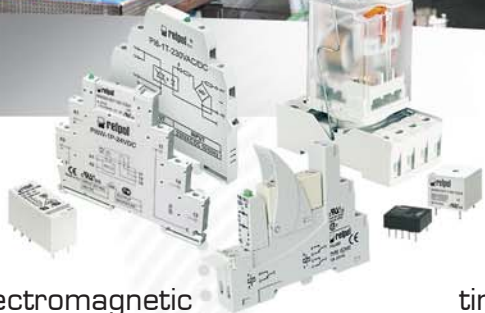
**) Dimension for the square OFF button (stroke 3 mm).
Dimension for the round RESET button (stroke 2,5 mm) less 2,5 mm.

- 1) For mounting on 75 mm DIN rail mount, EN 50023.
- 2) For type of current links type CRI-3..
- 3) Current link CRI-382 may be used for current $I_e \leq 200$ A.

Contactors CRLI170 to CRLI400 connect with **RSTL3** and **RSTL4** thermal overload relays installing as a single unit (connect by means of current links type CRI-3..)

Type of contactor	Type of current link	Type of thermal overload relay	a	b _{min} ²⁾	d	f
CRLI170	CRI-370	RSTL3	35	150	40	—
CRLI205	CRI-382 ³⁾	RSTL4	35	150	50	—
CRLI250	CRI-390	RSTL4	35	60	50	130
CRLI300	CRI-390	RSTL4	35	60	50	130
CRLI400	CRI-390	RSTL4	45	55	50	130

Trade offer of Relpol S.A.



electromagnetic
and interface relays



time and
monitoring relays



NEED
programmable relays

RPS - DIN rail
power supply



solid state relays



softstarts



contactors



motor protection
circuit breakers



switches and
rotary switches



digital protection
sets CZIP



overvoltage
arresters



Returnable card ^{3E}

Kindly send this card by fax +48 68 37 43 830 or by letter.

1 Provide us, free of charge, following catalogues and marketing materials:

- ☐ **CD - a set of catalogues**
- ☐ CD - a set of approvals, certificates and declarations
- ☐ Electromagnetic relays, interface relays, plug-in sockets and accessories for relays
- ☐ Contactors and thermal overload relays
- ☐ Time relays
- ☐ NEED programmable relays
- ☐ Solid State Relays
- ☐ **I am interested in, free of charge, training in the area of the Relpol S.A. company offer.**

2 Client's remarks:

.....

.....

3 Client's details:

I am interested in the telephone ☐ or e-mail ☐ contact.

Send the offer to:

Full name

Company

Address

Zip code

Telephone Fax

E-mail

I agree to receive by e-mail commercial informations regarding promotions, news and other events connected to the activity of Relpol S.A. company. In this scope I make my e-mail address available to the above mentioned company.

.....
Date

.....
Signature

We thank you for submitting this card to the Relpol S.A. company.

RELPOŁ S.A.
ul. 11 Listopada 37
68-200 Żary, Poland
e-mail: relpol@relpol.com.pl

Export Sales Department Phone +48 68 47 90 832
Fax +48 68 47 90 837, e-mail: export@relpol.com.pl
Marketing Department Phone +48 68 47 90 900
e-mail: marketing@relpol.com.pl

www.relpol.com.pl

Declaration of conformity RoHS

RELPOL S.A.
ul. 11 Listopada 37
68-200 Żary, Poland

RELPOL S.A. hereby confirms
that contactors and thermal overload
relays supplied by our company
meet the requirements
of the **Directive 2002/95/EC "RoHS"**.

1.11.2005 r.

Date

A handwritten signature in blue ink, appearing to read "A. Hyska".

R&D Department Director
Andrzej Hyska





Project part - financed by the EUROPEAN UNION
European Regional Development Fund



UNION FOR ENTERPRISING PEOPLE
COMPETITIVENESS PROGRAMME

The offer of Relpol S.A.
includes the following products:

- **subminiature signal relays**
rated switching capacity: from 1 A to 3 A,
coil voltage range: from 3 V to 48 V DC
- **miniature relays**
rated switching capacity: from 5 A to 20 A
- **industrial relays**
rated switching capacity: from 5 A to 30 A,
mounting: to plug-in sockets on 35 mm DIN rail mount,
EN 50022 or on panel mounting, for PCB
- **interface relays**
rated switching capacity: from 0,5 A to 16 A,
number of contacts: from 1 to 4
- **plug-in sockets for relays**
PCB plug-in sockets, plug-in sockets
for 35 mm DIN rail mount, EN 50022
- **contactors**
rated switching power: from 2,2 kW to 200 kW
/at 400 V/
- **motor protection circuit breakers**
setting range: from 0,1 A to 63 A
- **time relays**
single- and multifunction time relays,
wide range of time adjustments
- **monitoring relays**
monitoring of current, voltage, temperature
- **NEED programmable relays**
versions: 8 inputs / 4 relay outputs,
16 inputs / 8 relay outputs, programming: LAD, STL,
supply voltages: 230 V AC, 24 V DC, 12 V DC,
LED indicators of the relay and input / output status
- **RPS - DIN rail power supply**
for automation systems, output circuit: 12 or 24 V DC,
rated currents: from 1,5 A to 10 A
- **solid state relays**
rated load currents: from 1 A to 100 A,
switching at zero or at any time
- **overvoltage arresters**
classes I, II and III, available with changeover
signal contact
- **switches and rotary switches**
lever switches of 1-, 2-, 3- and 4-pole versions,
rotary switches from 1 to 6 sections
and from 2 to 12 positions
- **digital protection sets for automation,
measurements and control
for mid-voltage fields**
- **production and installation
of stationary devices for monitoring
of radioactive radiation**

Due to the permanent development policy, Relpol S.A. reserves the right to introduce changes of data and characteristics of the products. The devices shall be operated by skilled personnel in accordance with the regulations in force pertaining to electrical systems. The technical data are of informational nature. Thus, Relpol S.A. does not accept any liability for inappropriate use of the presented products.



RELPOL S.A.
ul. 11 Listopada 37
68-200 Żary, Poland
e-mail: relpol@relpol.com.pl
www.relpol.com.pl
Export Sales Department
Phone +48 68 47 90 832
Fax +48 68 47 90 837
e-mail: export@relpol.com.pl
Marketing Department
Phone +48 68 47 90 900
e-mail: marketing@relpol.com.pl

RELPOL M Minsk / Belarus
Phone +375 17 298 44 11
e-mail: info@relpol-m.com

RELPOL BG Varna / Bulgaria
Phone +359 5 261 02 57
e-mail: office@relpol.biz

RELPOL HUNGARY Budapest / Hungary
Phone +361 265 19 71
e-mail: relpol@relpol.hu

RELPOL BALTIJA Vilnius / Lithuania
Phone +370 5 275 23 01
e-mail: baltija@relpol.com.pl

RELPOL ELTIM Sankt-Petersburg / Russia
Phone +7 812 327 35 99
e-mail: relpol@mail.ru

RELPOL ALTERA Kiev / Ukraine
Phone +380 44 496 18 88
e-mail: svaltera@svaltera.kiev.ua

RELPOL FRANCE Paris / France
Phone +33 1 60 798 500
e-mail: relpol.france@relpol.fr

RELPOL LTD. London / England
Phone +44 1582 487707
e-mail: phil@relpol.com.pl

www.relpol.com.pl