Lovato electric

ENERGY AND AUTOMATION

RS

CN… MODULAR CONTACTORS DATASHEET







Order code	Rated auxiliary supply voltage	Configuration and number of contacts		Qty per pkg	Wt
	[V]❶	NO	NC	n°	[kg]
One-pole or two-pole. 1 module. Ith 20A.					
CN20 11 024❷❼	24VAC/DC	1	1❸	10	0.135
CN20 11 220❷❼	220...230VAC❻	1	1❸	10	0.135
CN20 20 024❷❼	24VAC/DC	2	—	10	0.135
CN20 20 220❷❼	220...230VAC❻	2	—	10	0.135
One-pole or two-pole. 1 module. Ith 32A.					
CN32 11 024❷❼	24VAC/DC	1	1❸	10	0.135
CN32 11 220❷❼	220...230VAC❻	1	1❸	10	0.135
CN32 20 024❷❼	24VAC/DC	2	—	10	0.135
CN32 20 220❷❼	220...230VAC❻	2	—	10	0.135
Three-pole or four-pole. 2 modules. Ith 25A.					
CN25 10 024❺	24VAC/DC	4❹	—	5	0.260
CN25 10 220❺	220...230VAC❻	4❹	—	5	0.260
CN25 01 024❺	24VAC/DC	3	1❹	5	0.260
CN25 01 220❺	220...230VAC❻	3	1❹	5	0.260
Three-pole or four-pole. 2 modules. Ith 32A.					
CN32 10 024❺	24VAC/DC	4	—	5	0.260
CN32 10 220❺	220...230VAC❻	4	—	5	0.260
CN32 01 024❺	24VAC/DC	3	1❸	5	0.260
CN32 01 220❺	220...230VAC❻	3	1❸	5	0.260
Three-pole or four-pole. 3 modules. Ith 40A.					
CN40 10 024❺	24VAC/DC	4❹	—	5	0.425
CN40 10 220❺	220...230VAC❻	4❹	—	5	0.425
CN40 01 024❺	24VAC/DC	3	1❹	5	0.425
CN40 01 220❺	220...230VAC❻	3	1❹	5	0.425
Three-pole or four-pole. 3 modules. Ith 63A.					
CN63 10 024	24VAC/DC	4❹	—	5	0.425
CN63 10 220	220...230VAC❻	4❹	—	5	0.425
CN63 01 024	24VAC/DC	3	1❹	5	0.425
CN63 01 220	220...230VAC❻	3	1❹	5	0.425

❶ Other voltages on request. Consult Technical support; see contact details on inside front cover.
❷ 2NC version supplied on request.
❸ The last (NC) pole has the same characteristics as the power pole. It can therefore be used indifferently as an auxiliary or as a NC power contact.
❹ The fourth NO or NC pole has the same characteristics as the power poles; therefore it can be used indifferently as auxiliary or as power contact.
❺ On request can be supplied: 2NO + 2NC or 4NC power poles. Consult Technical support; see contact details on inside front cover.
❻ Can also operate at 220VDC.
❼ No auxiliary contacts can be mounted.

General characteristics

- DC powered magnetic core system assuring silent operation and noise damping during the control phase
- Overvoltage protection circuit and voltage peak limitation of the magnetic core
- Equipped with 2 or 4 closing contacts of equal capacity permitting use in power or auxiliary circuits
- Operation flag indicator.

Operational characteristics

Type	IEC conventional free-air thermal current Ith in AC1 ≤400V [A]	Operational current in AC3 ≤400V [A]	Protection fuse gG (IEC) [A]
One-pole or two-pole.			
CN20...	20	9	20
CN32...	32	9	32
Three-pole or four-pole.			
CN25...	25	8.5	25
CN32...	32	8.5	32
CN40...	40	22	63
CN63...	63	30	80

- Noise level:
  - Closed contactor <20dB
  - Making/breaking operation ≤50dB
- IEC degree of protection: IP20
- Mounting on 35mm DIN rail (IEC/EN 60175).

Operational characteristics of contactor-incorporated auxiliary contacts

Type	IEC insulation voltage Ui	IEC rating (AC15 category)	
		230V	400V
	[V]	[A]	[A]
CN20...	440	6	6
CN25...	440	6	4
CN32...	440	6	4
CN40...	500	6	4
CN63...	500	6	4

Utilisation

- Lighting systems
- Electric home heating
- Heat pumps
- Conditioning
- Ventilation
- Civil installations.

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CN... MODULAR CONTACTORS DATASHEET



Order code	Rated auxiliary supply voltage	Configuration and number of contacts		Qty per pkg	Wt
	[V]❶	NO	NC	n°	[kg]
One-pole or two-pole. 1 module. Ith 20A.					
CNM20 11 024❷❼	24VAC/DC	1	1❸	10	0.135
CNM20 11 220❷❼	220...230VAC❻	1	1❸	10	0.135
CNM20 20 024❷❼	24VAC/DC	2	—	10	0.135
CNM20 20 220❷❼	220...230VAC❻	2	—	10	0.135
One-pole or two-pole. 1 module. Ith 32A.					
CNM32 20 024❷❼	24VAC/DC	2	—	10	0.135
CNM32 20 220❷❼	220...230VAC❻	2	—	10	0.135
Three-pole or four-pole. 2 module. Ith 32A.					
CNM32 10 024❷❼	24VAC/DC	4❹	—	5	0.260
CNM32 10 220❷❼	220...230VAC❻	4❹	—	5	0.260

❶ Other voltages on request. Consult Technical support; see contact details on inside front cover.
❷ 2NC version supplied on request.
❸ The last (NC) pole has the same characteristics as the power pole. It can therefore be used indifferently as an auxiliary or as a NC power contact.
❹ The fourth NO or NC pole has the same characteristics as the power poles; therefore it can be used indifferently as auxiliary or as power contact.
❺ On request can be supplied: 2NO + 2NC or 4NC power poles. Consult Technical support; see contact details on inside front cover.
❻ Can also operate at 220VDC.
❼ No auxiliary contacts can be mounted.

Maximum number of contactors side-by-side

When contactors are mounted side by side and operate in continuous service (≥1 hour), spacing is needed between equipment to consent appropriate cooling.
9mm spacing is required; there is an accessory, called half-module spacer, order code CNX 80, for this specific type of mounting. The following table indicates details of the space needed between each.

Maximum number of contactors to be mounted side-by-side without spacing; the CNX 80 spacer is required when the number of pieces is more than the indicated below:



Order code	Characteristics	Max qty per contactor	Qty per pkg	Wt
		n°	n°	[kg]
Auxiliary contacts❶.				
CNH 11❶	1NO + 1NC	1	1	0.044
CNH 20❶	2NO	1	1	0.044
Set for terminal protection (also sealable).				
CNP 0	For CN20..., CNM20... and CNM32...	2	1❷	0.001
CNP 1	For CN25... and CNM32...	2	1❷	0.002
CNP 2	For CN40... and CN63...	2	1❷	0.003
Spacer.				
CNX 80	1/2 mod. wide	1	10	0.013

General characteristics

- DC powered magnetic core system assuring silent operation and noise damping during the control phase
- Overvoltage protection circuit and voltage peak limitation of the magnetic core
- Equipped with 2 or 4 closing contacts of equal capacity permitting use in power or auxiliary circuits
- Operation flag indicator
- Handle functions
  Position A: contactor function.
  Position B: contactor permanently switched off, even in case of coil control voltage is present.
  Position I: contactor closed manually; when the coil is supplied the handle automatically moves to A position.

Operational characteristics

Type	IEC conventional free-air thermal current Ith in AC1 ≤400V [A]	Operational current in AC3 ≤400V [A]	Protection fuse gG (IEC) [A]
One-pole or two-pole.			
CNM20...	20	9	20
CNM32...	32	9	32
Three-pole or four-pole.			
CNM32...	32	8.5	32

- Noise level:
  • Closed contactor <20dB
  • Making/breaking operation ≤50dB
- IEC degree of protection: IP20
- Mounting on 35mm DIN rail (IEC/EN 60175).

Operational characteristics of contactor-incorporated auxiliary contacts

Type	IEC insulation voltage Ui	IEC rating (AC15 category)	
		230V	400V
	[V]	[A]	[A]
CNM20...	440	6	6
CNM32...	440	6	4

Operational characteristics for auxiliary contacts

- IEC rated insulation voltage: 440VAC
- IEC conventional free air thermal current Ith: 6A
- Minimum switching capacity: 5mA 12V
- Conductor section: 1...2.5mm²
- Maximum tightening torque: 1Nm.

Certifications and compliance

Certifications obtained: EAC.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1, IEC/EN 61095.

❶ Not suitable for CN20..., CN32 11..., CN32 20..., CNM20... and CNM32... modular contactors.
❷ Set of 2 pieces.

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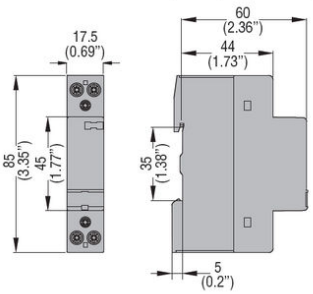
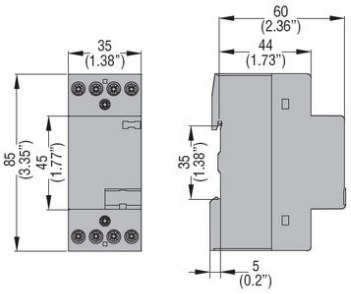
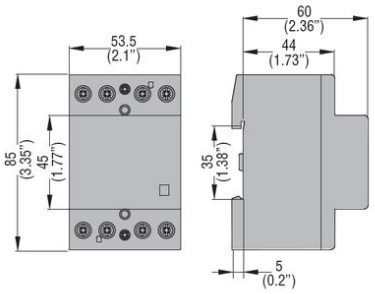
CN20... - CN32... (one-pole - two-pole)



CN25... - CN32... (three-pole - four-pole)

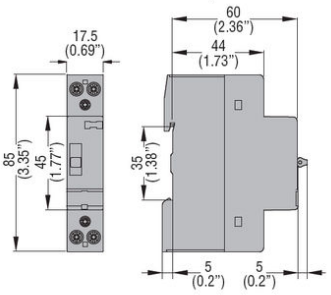


CN40... - CN63... (three-pole - four-pole)

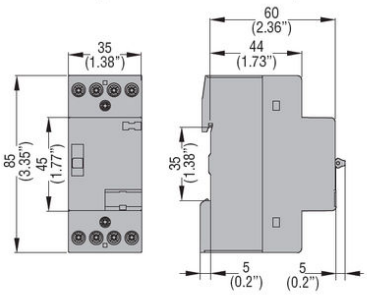


MODULAR CONTACTORS WITH MANUAL CONTROL

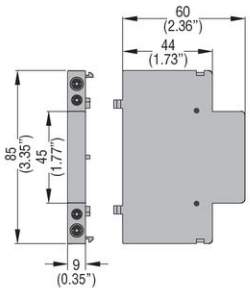
CNM20... - CNM32... (one-pole - two-pole)



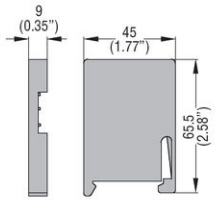
CNM32... (three-pole - four-pole)



CNH...



CNX80



TYPE			CN20... - CNM20...	CN25...	CN32... - CNM32... (one-pole and two-pole)	CN32... - CNM32... (three-pole and four-pole)	CN40...	CN63...
CONTACT CHARACTERISTICS								
IEC conventional free-air thermal current Ith (≤40°C)		A	20	25	32	32	40	63
IEC rated insulation voltage Ui		V	230	440	230	440	440	440
IEC rated impulse withstand voltage Uimp		kV	4	4	4	4	4	4
Minimum switching capacity			17V ≥50mA	17V ≥50mA	17V ≥50mA	17V ≥50mA	17V ≥50mA	17V ≥50mA
Power dissipation for Ith pole		W	1.7	2	2.5	2.5	4	8
Maximum tightening torque for coil terminals		Nm	0.6	0.6	0.6	0.6	0.6	0.6
		lbft	0.44	0.44	0.44	0.44	0.44	0.44
		Pozidr.	PZ1	PZ1	PZ1	PZ1	PZ2	PZ2
Coil conductor section	min.	mm^2	1					
	max.	mm^2	2.5					
Maximum tightening torque for power terminals		Nm	1.2	1.2	1.2	1.2	2	2
		lbft	0.9	0.9	0.9	0.9	1.48	1.48
		Tool	PZ1	PZ1	PZ1	PZ1	PZ2	PZ2
Power conductor section	min.	mm^2	2.5	2.5	2.5	2.5	1	1
	max.	mm^2	6	6	6	6	25	25
AC/DC CONTROL CIRCUIT								
Average coil consumption in-rush and holding		W	2.5	3	2.5	3	5	5
Operating voltage limits	pick-up	% Us	85...110					
	drop-out	% Us	20...75					
OPERATING TIMES								
Average time	closing NO	ms	15...45	15...45	15...45	15...45	15...20	15...20
	opening NO	ms	25...50	20...70	20...50	20...70	35...45	35...45
LIFE								
Mechanical		cycles	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Electrical (in AC3 duty)		cycles	300,000	500,000	500,000	500,000	150,000	150,000
Electrical (in AC1 duty)		cycles	200,000	200,000	150,000	150,000	100,000	100,000
AMBIENT CONDITIONS								
Operating temperature		°C	-5...+55					
Storage temperature		°C	-30...+80					