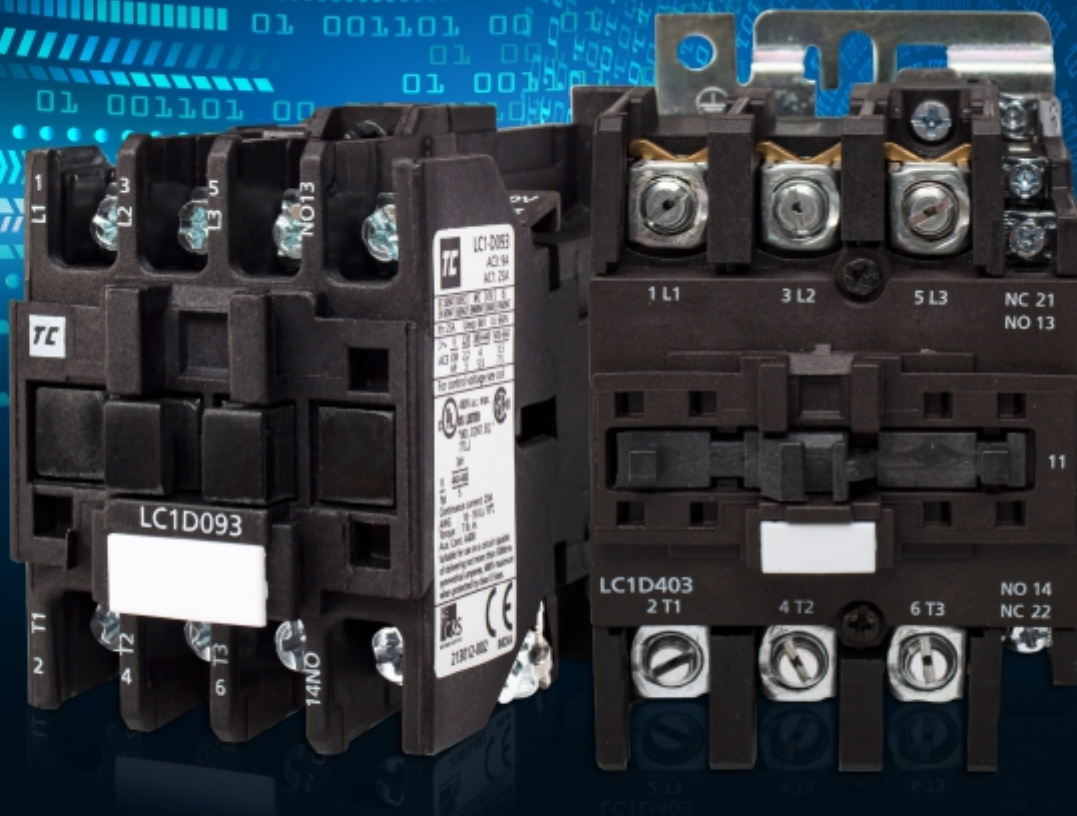
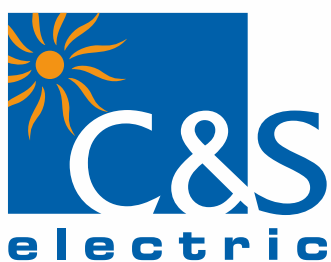


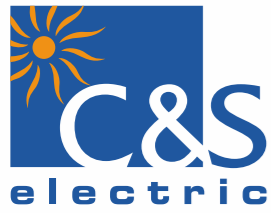
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everyday!



UL CE SP RoHS
Compliant



D Range Contactors



C&S Electric Ltd. is one of the leading manufacturer of electrical and electronic equipment in India. It is one of India's largest exporters of industrial switchgear & power busbar products. C&S Electric products are used in applications ranging from power generation, transmission and distribution, protection and final consumption.

C&S Electric has the following product verticals:

- LV Switchgear
- LV Switchboards
- Power Busbars
- Protection and Measurement Devices

MANUFACTURING FACILITIES



C&S Controlgear Plant at Noida



C&S Switchgear Plant at Noida



World-Class Manufacturing Plants at SIDCUL, Haridwar

MARKET LEADER

C&S is one of the leading supplier in the LV Switchgear business segment and a market leader in the busbar business with more than 50% share in Indian market.

10 MANUFACTURING PLANTS

C&S Electric have 10 state-of-the-art manufacturing facilities in Noida, Haridwar & Guwahati, which are equipped with latest tools and systems to ensure highest level of quality and services.

600+ STOCKISTS

A dedicated network of channel partners, ensuring access to the farthest corners of India, with an obsession for customer services. In addition C&S products are available in 8000+ retail counters nationally.

EXPORTS TO OVER 85 COUNTRIES

C&S exports the entire range of products across all 7 continents, thus reaffirming its position as one of India's largest exporters of industrial electrical products.

5000+ WORKFORCE

5000+ Workforce including over 371 engineers, dedicated sales team of 424 people & millions of satisfied customers.

R&D

4 Govt. approved labs/centres, over 20,000 sqft. space dedicated to R&D, 70 R&D engineers, state of the art testing & design facilities ... & most of the all a passion for innovation & excellence.

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- Relay Selection	
- Tripping Curve	
- Dimensional Details	

Features

D Range 3 Pole Contactor are modular design with embedded auxiliary contacts providing common accessories:

- Front mounted add-on blocks
- Pneumatic timer
- Latch block

D Range Contactor are available as Control Relay in 3 contact configuration; Power Contactor rating 9A ~ 80A conforming to IS 13947-4-1 and IEC 60947-4-1, accredited with Global Certification & 3 decades trusted and proven performance.

D Range Contactor are manufactured in our state-of-the art fully integrated ISO 9001 certified manufacturing facility possessing comprehensive infrastructure inclusive of Research & Development, tooling, component manufacturing, assembly & testing to ensure World Class Product.

Benefits

- Modular design for flexibility in cost effective solutions
- Saves inventory cost - Common Add-on Accessories
- High Mechanical & Electrical life
- Short Circuit Protection, Type -1 & 2 Co-ordination

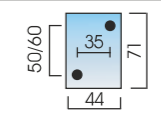
Industrial Applications

- Motor Controls
- Pumps
- Machine Tools
- Printing & Packaging Machines
- Compressors
- Power Supply Solutions
- HVAC
- Cranes
- Elevator & Escalators
- Wind Mills
- Solar System

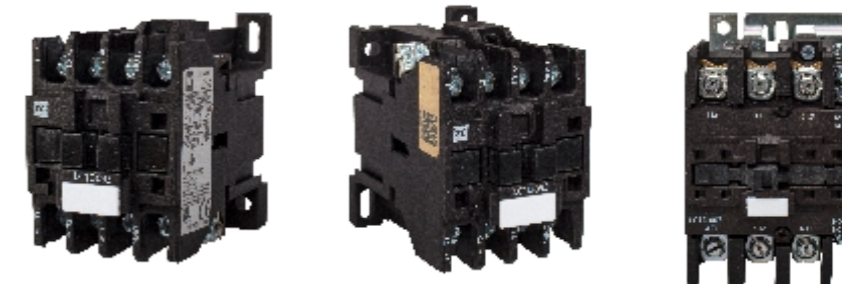


D-Range Control Relays

Technical Information

Type			CA2-DN
Rated Operational Voltage (Ue)	V		660
Rated Thermal Current (Ith) ≤40°C	A		10
Rated Operational Current / Power (Ie) ≤55°C	A		AC 15 Duty as per IEC 60947
Rated making capacity at 415V	A		AC 15 Duty as per IEC 60947
Rated breaking capacity at 415V	A		AC 15 Duty as per IEC 60947
Power rating for motor control AC 3 duty	220V	kW/HP	-
	415V	kW/HP	-
	500V	kW/HP	-
	660V	kW/HP	-
Coil Rating	Supply Frequency	Hz	50/60
(Cold Coil) 1.0 x U	In-rush	VA	70
AC operation 50Hz	p.f.		0.75
	Sealed	VA	8
	p.f.		0.3
Overall Dimension	mm		
Auxiliary Contact thermal current rating (Ith)	VA		10
Rated operational power at AC 15 up to (One million operations)	125V	VA	500
	220V	VA	500
	415V	VA	500
Auxiliary contact terminal capacity	mm ²		Min. 1 cable of 1mm ² and Max. 2 cable of 2.5 mm ²
Rated Insulation Voltage (Ui)	V		660
Rated impulse withstand voltage (Uimp)	kV		8
Ambient Air Temperature	Storage	°C	-60 ~ +80
	Operation	°C	-50 ~ +70
Operating Altitude	meters		3000
Operating Position			±30° possible in relation to normal vertical mounting plane
Mechanical Life (million operation on no-load)	Cycles		20

Global Certification



Technical Information

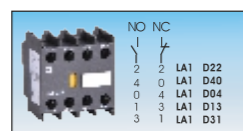
Type	3 Pole	AC	LC1-D09	LC1-D12	LC1-D17	LC1-D25	LC1-D32	LC1-D40	LC1-D50	LC1-D63	LC1-D80
Rated Operational Voltage	(Ue)	V	660	660	660	660	660	660	660	660	660
Rated Thermal Current	(Ith) $\leq 40^{\circ}\text{C}$	A	25	25	32	40	50	60	80	80	125
Rated Operational Current / Power	(Ie)	A/kW	9/4	12/5.5	17/9	25/11	32/15	40/22	50/25	63/37	80/45
3 Phase, 415/440V, 50-60Hz, AC 3 duty	$\leq 55^{\circ}\text{C}$										
Rated making capacity at 415V		A	250	250	320	450	550	800	900	1000	1100
Rated breaking capacity at 415V		A	250	250	320	450	550	800	900	1000	1100
Power rating for motor control	220V	kW/HP	2.2/3	3/4	4/5.5	5.5/7.5	7.5/10	11/15	15/20	18.5/25	22/30
AC 3 duty	4150V	kW/HP	4/5.5	5.5/7.5	9/12	11/15	15/20	22/30	25/35	37/50	45/60
	500V	kW/HP	5.5/7.5	7.5/10	10/13	15/20	18.5/25	22/30	30/40	37/50	55/75
	660V	kW/HP	5.5/7.5	7.5/10	10/10	15/20	18.5/25	30/40	33/45	37/50	45/60
Coil Rating	Supply Frequency	Hz	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
(Cold Coil) 1.0 x U	In-rush	VA	70	70	70	110	110	200	200	200	200
AC operation 50Hz	p.f.		0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
	Sealed	VA	8	8	8	11	11	20	20	20	20
	p.f.		0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Overall Dimension		mm									
Mechanical Interlock	Horizontal Mounting		Available								
Auxiliary Contact thermal current rating	(Ith)	VA	10	10	10	10	10	10	10	10	10
Rated operational power at AC 15 up to	125V	VA	500	500	500	500	500	500	500	500	500
(One million operations)	220V	VA	500	500	500	500	500	500	500	500	500
	415V	VA	500	500	500	500	500	500	500	500	500
Auxiliary contact terminal capacity		mm ²	Min. 1 cable of 1mm ² and Max. 2 cable of 2.5 mm ²								
Rated Insulation Voltage	(Ui)	V	660	660	660	660	660	660	660	660	660
Rated impulse withstand voltage	(Uimp)	kV	8	8	8	8	8	8	8	8	8
Ambient Air Temperature	Storage	$^{\circ}\text{C}$	-60 ~ +80	-60 ~ +80	-60 ~ +80	-60 ~ +80	-60 ~ +80	-60 ~ +80	-60 ~ +80	-60 ~ +80	-60 ~ +80
	Operation	$^{\circ}\text{C}$	-50 ~ +70	-50 ~ +70	-50 ~ +70	-50 ~ +70	-50 ~ +70	-50 ~ +70	-50 ~ +70	-50 ~ +70	-50 ~ +70
Operating Altitude		meters	3000	3000	3000	3000	3000	3000	3000	3000	3000
Operating Position			$\pm 30^{\circ}$ possible in relation to normal vertical mounting plane								
Mechanical Life (million operation on no-load)		Cycles	20	20	16	16	16	16	16	16	10

Front mounted Add-on Blocks

Auxiliary Contact Blocks

Time Delay Relay Blocks

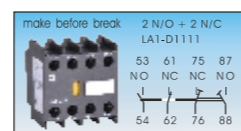
Latch Add-on Blocks



Auxiliary Contact Block



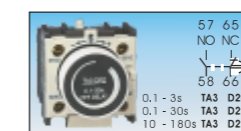
Auxiliary Contact Block



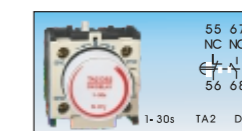
Overlapping Auxiliary Contact Block



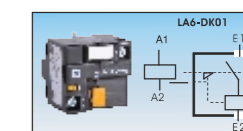
ONDelay Timer Block



Off Delay Timer Block



On Delay Timer Block with switching time of 40ms+15ms between opening of N/C contact to closing of N/O contact (front mounted)



Latch Add-on Block (Front mounted use up to 32A)

Overload Relays

LR1-D type Overload are triple pole adjustable with built-in single phasing protection. These relays provide accurate & reliable protection against overloads, unbalanced voltages field, manual reset type, single phasing as per "Class 10" in conformity to IEC 60947-4-1 & IS 13947-4-1. They are available in 22 relay ranges from 0.1A ~ 80A. It must be provided with recommended back up fuses for short circuit protection for Type 2 co-ordination requirements.

Salient Features

- Overload Relays are designed to give protection only against overloads. These can withstand currents up to 10 times the maximum setting of the range.
- Overload Relays are ambient temperature compensated. Relay can be utilised from -40°C to +60°C.
- D-Range Relays can not be reset manually immediately after tripping (hot condition) thus ensuring that the motor can not be restarted inadvertently without investigating the cause of the overloading
- A unique feature in Relays is the provision of a flag indication - you can get a positive indication when the motor stoppage is due to relay tripping
- D-Range Relays are provided with two independent electrically insulated from each other control contacts 1NO and 1NC. These can be used at different voltages for more sophisticated control schemes. Control contacts have a thermal capacity of 10A.
- D-Range Relays up to 80A are suitable for direct mounting on contactors thus reducing the labour cost for wiring. However, if you wish to mount these relays separately, special kits are provided for independent mounting.
- D-Range Relays up to 80A can also be used DC circuits. Relays up to 80A have an insulation level of 660V.

Selection Chart for Type LR 1 D

Relay Reference	Relay Setting Range (A)	Standard Power Rating of 3 Phase Motors 50/60Hz, AC3					Back-up Fuse Rating g1 (A)
		220V kW	380V kW	415V kW	440V kW	660V kW	
LR1-D09301	0.10 ~ 0.16	*	*	*	*	*	2
LR1-D09302	0.16 ~ 0.25	*	*	*	*	*	2
LR1-D09303	0.25 ~ 0.40	*	*	*	*	*	2
LR1-D09304	0.40 ~ 0.63	*	*	*	*	0.37	2
LR1-D09305	0.63 ~ 1.00	*	*	*	*	0.55	4
LR1-D09306	1.00 ~ 1.60	*	0.37	*	0.55	1.10	4
LR1-D09307	1.60 ~ 2.50	0.37	0.75	1.10	1.10	1.50	6
LR1-D09308	2.50 ~ 4.00	0.75	1.50	1.50	1.50	3.00	10
LR1-D09310	4.00 ~ 6.00	1.10	2.20	2.20	2.20	4.00	16
LR1-D09312	5.50 ~ 8.00	1.50	3.00	3.70	3.70	5.50	20
LR1-D09314	7.00 ~ 10.00	2.20	4.00	4.00	4.00	7.50	20
LR1-D12316	10.00 ~ 13.00	3.00	5.50	5.50	5.50	10.00	25
LR1-D16321	13.00 ~ 18.06	4.00	7.50	9.00	9.00	15.00	32
LR1-D25322	18.00 ~ 25.00	5.50	11.00	11.00	11.00	18.50	50
LR1-D32353	23.00 ~ 32.00	7.50	15.00	15.00	15.00	-	63
LR1-D32355	28.00 ~ 40.00	-	15.00	15.00	-	-	80
LR1-D40353	23.00 ~ 32.00	7.50	15.00	15.00	15.00	22.00	63
LR1-D40355	30.00 ~ 40.00	10.00	18.50	22.00	22.00	30.00	80
LR1-D63357	38.00 ~ 50.00	11.00	22.00	25.00	25.00	37.00	100
LR1-D63359	48.00 ~ 57.00	15.00	25.00	30.00	30.00	-	100
LR1-D63361	57.00 ~ 66.00	18.50	30.00	37.00	37.00	-	100
LR1-D80363	63.00 ~ 80.00	22.00	33.00	40.00	40.00	59.00	125

NOTE:

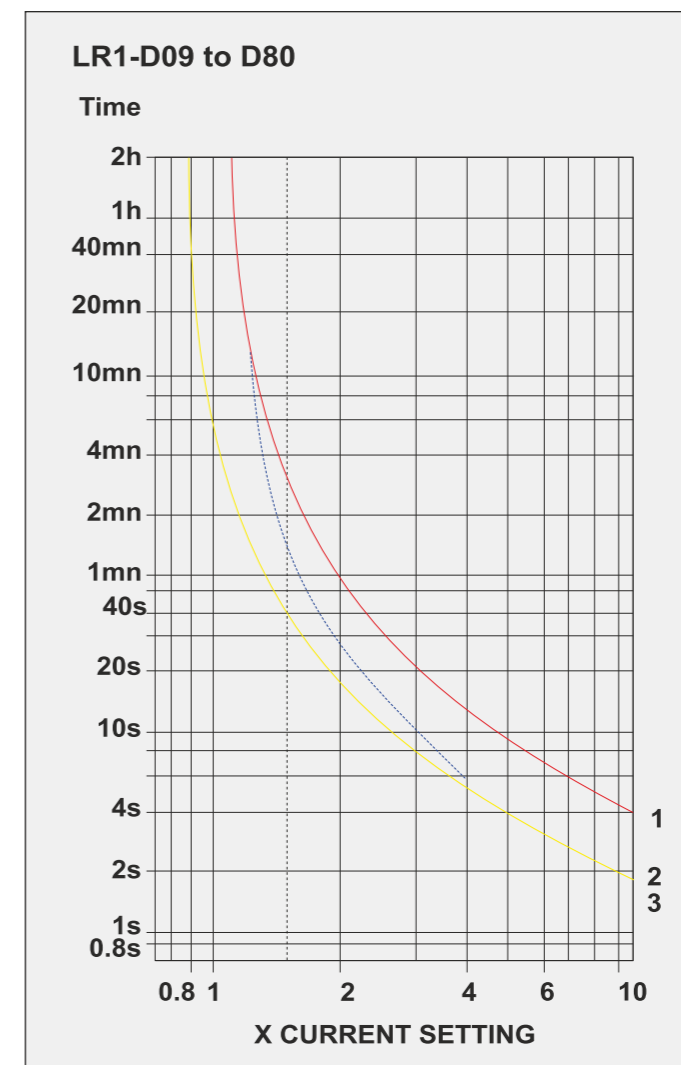
- 1 Select and set the Overload Relay according to the current value on the motor Overload manufacturer's rating plate.
2. "*" There is not standard power rating for these motors; select the Relay according to current drawn.
3. Terminals protected against direct Finger Contact and Relay-to-Wire terminals. To order replace "A60" in the codes mentioned above by "65".
4. (1)-For Direct Mounting on the Contactor. (2)-For Independent Mounting of the Contactor.
5. Adopter plate is required to mount Overload relay with LC1D80.

Tripping Curve - Overload Relays

LR 1 - D09 ~ D80



1. Balanced operation 3 phase, from cold state.
2. Balanced operation 3 phase, after a long period at the set current (hot state).
3. Operation following the loss of one phase (single phase tripping) from cold state.



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D-Range Contactor
01/02/2025

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