

State of the art Manufacturing Facilities



Haridwar, Noida Ph-I & Noida Ph-II Plant

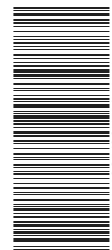


C&S Electric Ltd.

Corporate Office: 222, Okhla Industrial Estate, New Delhi - 110 020
Tel. : +91-11-3088 7520 - 29, Fax: +91-11-2684 7154, 2682 9063

International Business Division: Tel. : +91-11-4161 3503, 3088 7520-29, Fax: +91-11-2683 8291, 2684 7342
email : exports@cselectric.co.in

Central Marketing Office: Tel. : +91-11-3088 7520-29, Fax: +91-11-2684 8241, 2684 7342
email : cmo@cselectric.co.in, info@cselectric.co.in



UL CE SF RoHS Compliant



D Range Contactors

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.

D Range Contactor 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



Conforming: IS 13947-4-1 / IEC 60947-4-1



Technical Parameters

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
	AC operation 50Hz	p.f.	0.75
		Sealed	VA
	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	

D-Range Contactor

Conforming: IS 13947-4-1 / IEC 60947-4-1



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)≤40°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	≤55°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	°C	-60 ~ +80	-60 ~ +80	-60 ~ +80	-60 ~ +80	-60 ~ +80	-60 ~ +80	-60 ~ +80	-60 ~ +80	-60 ~ +80
	Operation	°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			±30° 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

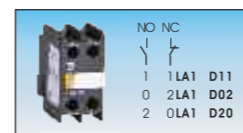
Auxiliary Contact Blocks

Time Delay Relay Blocks

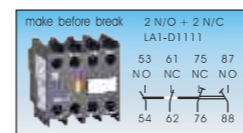
Latch Add-on Blocks



Auxiliary Contact Block



Auxiliary Contact Block



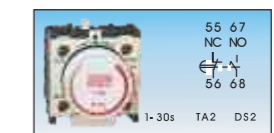
Overlapping Auxiliary Contact Block



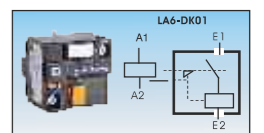
ON Delay Timer Block



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 cannot 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

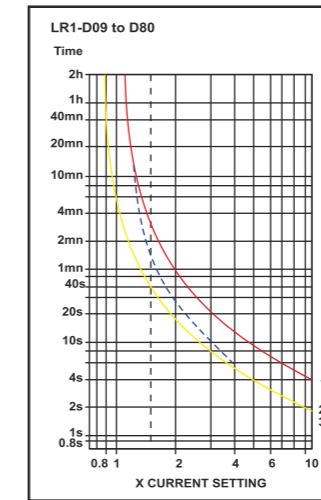
Notes :-

- Select and set the Overload Relay according to the current value on the motor Overload manufacturer's rating plate.
- * * * There is no standard power rating for these motors; select the Relay according to current drawn.
- Terminals protected against direct Finger Contact and Ready-to-Wire terminals. To order replace "A60" in the codes mentioned above by "A65"
- (1) -- For direct Mounting on the Contactor. (2) -- For Independent Mounting of the Contactor.
- Adopter plate is required to mount Overload relay with LC1D80.

Tripping Curve - Overload Relays

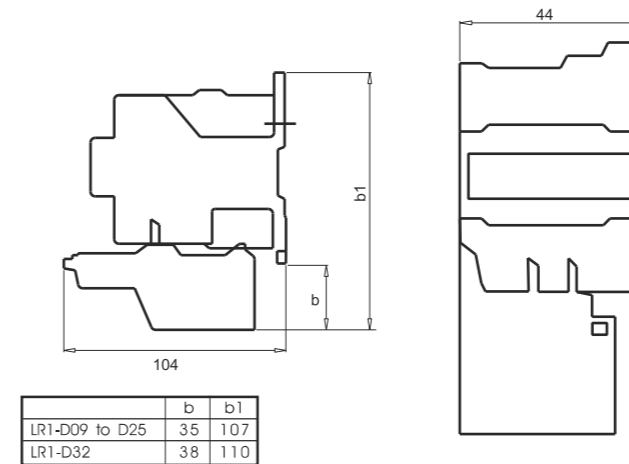
LR 1 - D09 ~ D80

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

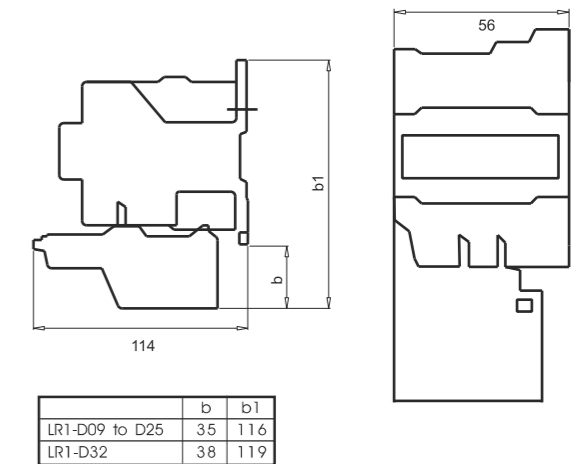


Dimensions - Overload Relays

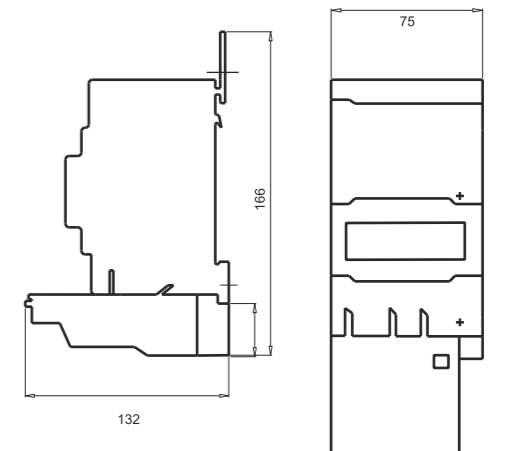
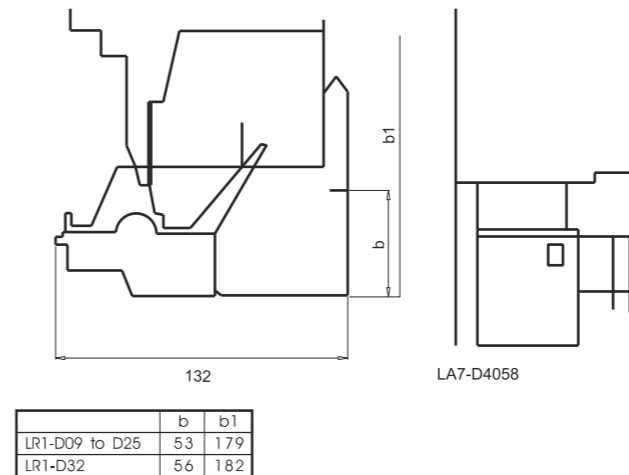
LR D09 ~ D32 mounted directly on LC1-D09 ~ D17



Mounted directly on LC1-D25 and D32



LR D09 ~ D32 mounted directly on LC1-D40, D50 & D63



(All dimensions in mm)