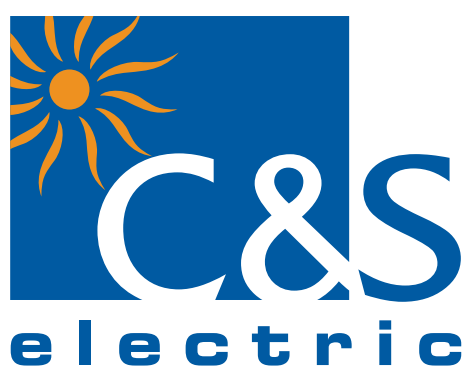


We touch your **electricity** everyday!



Contactors



robusta
Power Contactors

Safety First

- Finger Safe IEC rated IP 20 Terminals
- Power & Control Terminals Touch-Safe

Compact Modular Design

- Design Flexibility
- Space Saving

Auxiliary Contact In-built

- Stocking & Specifying Made Easy

Low Power Consumption Coils

- Energy Saving
- Down Sizing of Control Transformer

Installation Made Easy


- DIN Rail Mounting or Screw Mount
- Assembly Time & Labour Saving

Protective Security Cover

- Prevents Accidental Manual Operation
- Prevents Dust Entry

It's all about...

Life & Performance



TC robusTa Contactor is manifestation of understanding discerning customer's requirements and applications. As the name suggests, robusTa Contactor are built for high performance assuring designs flexibility, safety and cost effective solutions.

robusTa Contactor are manufactured in our State-of-the-Art fully integrated ISO 90001 Certified manufacturing facility possessing comprehensive infrastructure inclusive of design, tooling, component manufacturing, assembling and testing to ensure World Class Products.

robusTa Contactors are user friendly, highly reliable & its modular design affords product selection with cost effective solutions.

robusTa Contactor & Overload Relay meets latest IEC, UL, CSA & CE Standards possessing Global accreditation. They conform to IEC60947-4-1.

robusTa Contactor starting solutions advantages

- World Class Superior functional aesthetics
- Complete & harmonized Contactor range
 - Contactor with AC3 rating 9~860A, AC/DC
 - Contactor with AC1 rating 25~2600A, AC/DC
- Safety first - Power & Control terminals are finger touch proof
- Energy Saving magnet coils in both AC & DC variants
- Compact Modular design for flexibility
- 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

robusta Contactor Series



Conforming to IEC60947-4-1 VDE 0106
BS 5424; NFC 63-110

Code TC1D	robusta2								Control Relay
	711	911	1211	1811	2511	3211	3811		
Maximum rated operational voltage		690	690	690	690	690	690	690	690
Maximum insulation voltage (Ui)	V	1000	1000	1000	1000	1000	1000	1000	1000
Maximum rated current for motor control	A	7	9	12	18	25	32	38	
Maximum Standard power rating (AC 3, 415V)	Kw	2.2	4	5.5	9	11	15	18.5	
	240V HP	2	3	3	7.5	7.5	10	10	
	460/480V HP	3	5	10	10	15	20	20	
	575/600V HP	5	7.5	10	15	20	25	25	
Mounting position (w.r.t. normal vertical mounting plane)*		+30°	+30°	+30°	+30°	+30°	+30°	+30°	+30°
Maximum Thermal current Ith (AC1)	A	25	25	25	32	40	50	50	10
Maximum operating rate (operations / hr.)	AC	3600	3600	3600	3600	3600	3600	3600	3600
	DC	-	-	-	-	-	-	-	3600
Average coil consumption (VA)	50 Hz	60/7	60/7	60/7	60/7	90/7.5	90/7.5	200/20	60/7
(inrush / sealed) at 20o C & at Uc	60 Hz	60/7.5	60/7.5	60/7.5	60/7.5	90/8.5	90/8.5	200/22	60/7.5
	50/60 Hz	70	70	70	70	100	100	245	70/8
	DC	-	-	-	-	-	-	-	9/9W
Heat dissipation at	50 and 60 Hz	2~3W	2~3W	2~3W	2~3W	2.5~3.5W	2.5~3.5W	6~10W	2~3W
	DC	-	-	-	-	-	-	-	9W
Mechanical life (in millions of operations)	50 or 60 Hz	15	15	15	15	15	15	15	30
	50/60 Hz	15	15	15	15	15	15	15	20
Power contact terminal capacity	mm ²	0.75/10	0.75/10	0.75/10	0.75/10	0.75/16	0.75/16	0.75/16	
Over all dimensions in mm	AC/DC								

Accessories

Coil Suppressor
TAD4VN

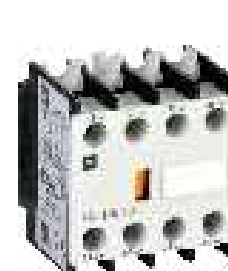


Auxiliary Contact Block
(Side mounted) **TA8-DN**

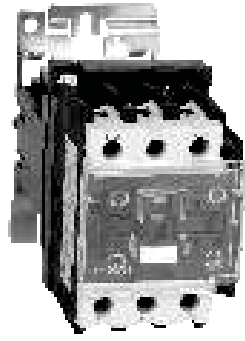
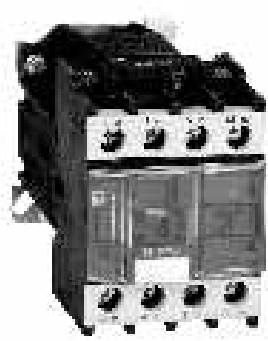


NO	NC	
2	0	TA8-DN20
1	1	TA8-DN11

Auxiliary Contact Block
(Front mounted) **TA1-DN**



NO	NC	
0	1	TA1-DN01
1	0	TA1-DN10
1	1	TA1-DN11
0	2	TA1-DN02
2	0	TA1-DN20
4	0	TA1-DN40
3	1	TA1-DN31
2	2	TA1-DN22
1	3	TA1-DN13
0	4	TA1-DN04



robusta

09**	12**	18**	22**	25**	32**	38**	4011	4511	5011	6511	7011	8011	9511	115	150
690	690	690	690	690	690	690	690	690	690	690	690	690	690	1000	1000
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
9	12	18	22	25	32	38	40	45	50	65	70	80	95	115	150
4	5.5	9	11	11	15	18.5	22	25	25	37	37	45	45	55	75
2	3	5	5	7.5	10	10	10	20	15	20	25	25	25	40	54
5	7.5	10	10	15	20	20	30	40	40	50	40	60	60	73	101
7.5	10	15	15	20	25	25	30	45	40	50	45	60	60	107	134
+30°	+30°	+30°	+30°	+30°	+30°	+30°	+30°	+30°	+30°	+30°	+30°	+30°	+30°	+30°	+30°
25	25	32	32	40	50	50	60	80	80	80	100	125	125	250	250
3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	2400	12 00
3600	3600	3600	3600	3600	3600	3600	3600	-	3600	3600	-	3600	-	300	1200
60/7	60/7	60/7	60/7	90/7.5	90/7.5	90/7.5	200/20	200/20	200/20	200/20	200/20	200/20	200/20	-	-
60/7.5	60/7.5	60/7.5	60/7.5	90/8.5	90/8.5	90/8.5	200/22	200/22	200/22	200/22	200/22	200/22	200/22	-	-
70/8	70/8	70/8	70/8	100/8.5	100/8.5	100/8.5	245/26	245/26	245/26	245/26	245/26	245/26	245/26	-	-
9/9W	9/9W	9/9W	9/9W	11/11W	11/11W	11/11W	22/22W	22/22W	22/22W	22/22W	22/22W	22/22W	22/22W	-	-
2~3W	2~3W	2~3W	2~3W	2.5~3.5W	2.5~3.5W	2.5~3.5W	6~10W	6~10W	6~10W	6~10W	6~10W	6~10W	6~10W	2~18W	2~18W
9W	9W	9W	9W	11W	11W	11W	22W	22W	22W	22W	22W	22W	-	-	-
20	20	20	20	16	16	16	16	16	16	16	10	10	10	8	-
15	15	15	15	12	12	12	6	6	6	6	4	4	4	-	-
1/4	1/4	1.5/6	1.5/6	1.5/10	2.5/10	2.5/10	2.5/25	2.5/25	4/50	4/50	4/50	4/50	4/50		

Note: 1) Replace** with 01 if required with 1NC aux., with 10 if required with 1NO aux.2)

Timer Block → On Delay → Star Delta → Off Delay

Latch Add-on Block (Front mounted) LA6-DK01

Mechanical Interlock LA9D09978



0.1~3s TA2-DT0
0.1~30s TA2-DT2
0.1~180s TA2-DT4

1~30s TA2-DS2

0.1~3s TA3-DR0
0.1~30s TA3-DR2
0.1~180s TA3-DR4



robusta Contactor Series



Conforming to IEC60947-4-1 VDE 0106
BS 5424; NFC 63-110

Code LC1FDP		115A	150A	185A	200A	225A	265A	300A	330A
Maximum rated operational voltage	Volt, As per IEC 60947	1000	1000	1000	1000	1000	1000	1000	1000
Maximum insulation voltage (Ui)	Volt, As per IEC 60947	1000	1000	1000	1000	1000	1000	1000	1000
Maximum rated current for motor control	A	115	150	185	200	225	265	300	330
Maximum Standard power rating (AC3, 415V)	Kw	59	80	100	110	110	140	110	180
	230V HP	40	50	60	60	65	75	75	100
	460/480V HP	75	100	125	125	130	150	150	200
	675/600V HP	100	125	150	150	155	200	200	250
Mounting position (w.r.t. normal vertical mounting plane)*		+30°	+30°	+30°	+30°	+30°	+30°	+30°	+30°
Maximum Thermal current Ith (AC1)	A	200	250	275	275	315	350	400	400
Maximum operating rate(operations / hr.)	AC	2400	2400	2400	2400	2400	2400	2400	2400
Average coil consumption (VA)	50 Hz	550/45	550/45	970/55	805/55	970/55	1200/95	700/10	1200/95
(inrush / sealed) at 20° C & at Uc	60 Hz	660/55	660/55	970/55	-	970/55	1445/110	-	1445/110
	50/60 Hz	-	-	-	-	-	-	-	1075/15
	DC	560/4.5	560/4.5	800/5	902/5.07	800/5	750/5	803/4.53	750/5
Mechanical life (in millions of operations)	(AC) 50 or 60 Hz	10	10	10	10	10	10	10	10
	50/60 Hz	-	-	-	-	-	-	-	10
Power contact terminal capacity	mm ²	95	120	150	150	185	240	240	2 X 150
Over all dimensions in mm	AC/DC								





robustA

	400A	460A	500A	580A	630A	780A	800A	860A	1250	1400	1700	2100	2600
	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	1000	1000	1000	1000	1000	1000	1000	1000	1500	1500	1500	1500	1500
	400	460	500	580	630	780	800	860A	1260	1400	1700	2100	2600
	220	220	280	355	375	425	450	-	-	-	-	-	-
	125	125	200	-	300	-	-	-	-	-	-	-	-
	250	250	400	-	600	-	-	-	-	-	-	-	-
	300	300	500	-	800	-	-	-	-	-	-	-	-
	+30°	+30°	+30°	+30°	+30°	+30°	+30°	+30°	30°	30°	30°	30°	30°
	500	600	700	800	1000	1600	1000	1260	1260	1400	1700	2100	2600
	2400	2400	1200	1200	600	1200	1200	1200	1200	600	600	600	600
	1075/15	1100/18	1100/18	1650/22	1730/25	2400/53	1730/25	1650/22	NA	NA	NA	NA	NA
	1075/15	-	1100/18	-	1730/25	2400/53	1730/25	1650/22	NA	NA	NA	NA	NA
	1100/18	-	1650/22	-	1730/25	2400/53	1730/25	1650/22	1730/25	2500/37	2500/37	2500/37	2700/50.6
	1000/6	1220/8	1100/6	1920/12.5	1920/12.5	2500/55	1920/12.5	1650/9	1920/12.5	2200/10	2500/10	2500/10	2880/25
	10	10	10	5	5	5	5	5	5	0.5	0.5	0.5	0.5
	10	10	10	5	5	5	5	5	5	0.5	0.5	0.5	0.5
	2X240	2X240	2X60X5	2X60X5	2X60X5	2x60x5	2x60x5	2X50X10	2x50x10	2x100x5	3x100x5	4x100x5	3x100x10



robusta Contactor Series

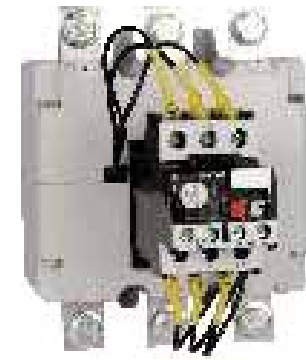
Overload Relays



robusta2



robusta



robusta

Relay Reference	Relay setting range (A)	Standard power ratings of 3-Ph. Motors 50/60Hz, AC3					Back Up		Base Plate* reference
		220V	380V	415V	440V	660V	Fuse Rating		
		KW	KW	KW	KW	KW	aM (A)	g1 (A)	
TR2■09301	0.1 to 0.16	-	-	-	-	-	0.25	2	TA7D0964
TR2■09302	0.16 to 0.25	-	-	-	-	-	0.5	2	
TR2■09303	0.25 to 0.4	-	-	-	-	-	1	2	
TR2■09304	0.4 to 0.63	-	-	-	-	0.37	1	2	
TR2■09305	0.63 to 1	-	-	-	-	0.55	2	4	
TR2■09306	1 to 1.6	-	0.37	-	0.55	1.1	2	4	
TR2■093X6	1.25 to 2	-	0.55	0.75	0.75	1.3	4	6	
TR2■09307	1.6 to 2.5	0.37	0.75	1.1	1.1	1.5	4	6	
TR2■09308	2.5 to 4	0.75	1.5	1.5	1.5	3	6	10	
TR2■09310	4 to 6	1.1	2.2	2.2	2.2	4	8	16	
TR2■09312	5.5 to 8	1.5	3	3.7	3.7	5.5	12	20	
TR2■09314	7 to 10	2.2	4	4	4	7.5	12	20	
TR2■12316	9 to 13	3	5.5	5.5	5.5	10	16	25	
TR2■18321	12 to 18	4	7.5	9	9	15	20	35	
TR2■25322	17 to 25	5.5	11	11	11	18.5	25	50	TA7D3264
TR2■32353	23 to 32	7.5	15	15	15	-	40	63	
TR2■32355	28 to 36	9	15	18.5	18.5	-	40	80	
TR2■40355	30 to 40	10	18.5	22	22	30	40	100	TA7D4064
TR2■65357	37 to 50	11	22	25	25	37	63	100	
TR2■65359	48 to 65	18.5	25	30	30	50	63	100	
TR2■65361	55 to 70	20	30	37	37	55	80	125	
TR2■80363	63 to 80	22	33	40	40	59	80	125	
TR2■95365	80 to 93	25	45	49	50	80	100	160	
LR1-F105	65 to 105	25	51	55	59	90	0.25	160	
LR1-F125	80 to 125	30	59	59	63	110	125	200	
LR1-F160	100 to 160	45	80	80	90	140	160	250	
LR1-F200	125 to 200	55	90	100	110	160	200	315	
LR1-F250	160 to 250	63	110	129	140	200	250	400	
LR1-F315	200 to 315	80	150	160	160	257	315	500	
LR1-F400	250 to 400	110	185	200	220	335	400	630	
LR1-F500	315 to 500	140	250	257	280	445	500	800	
LR1-F630	400 to 630	180	315	355	375	500	630	800	
*LR1-F800	500 to 800	220	400	425	450	-	-	1000	
*LR1-F1000	630 to 1000	295	500	500	500	-	-	1250	

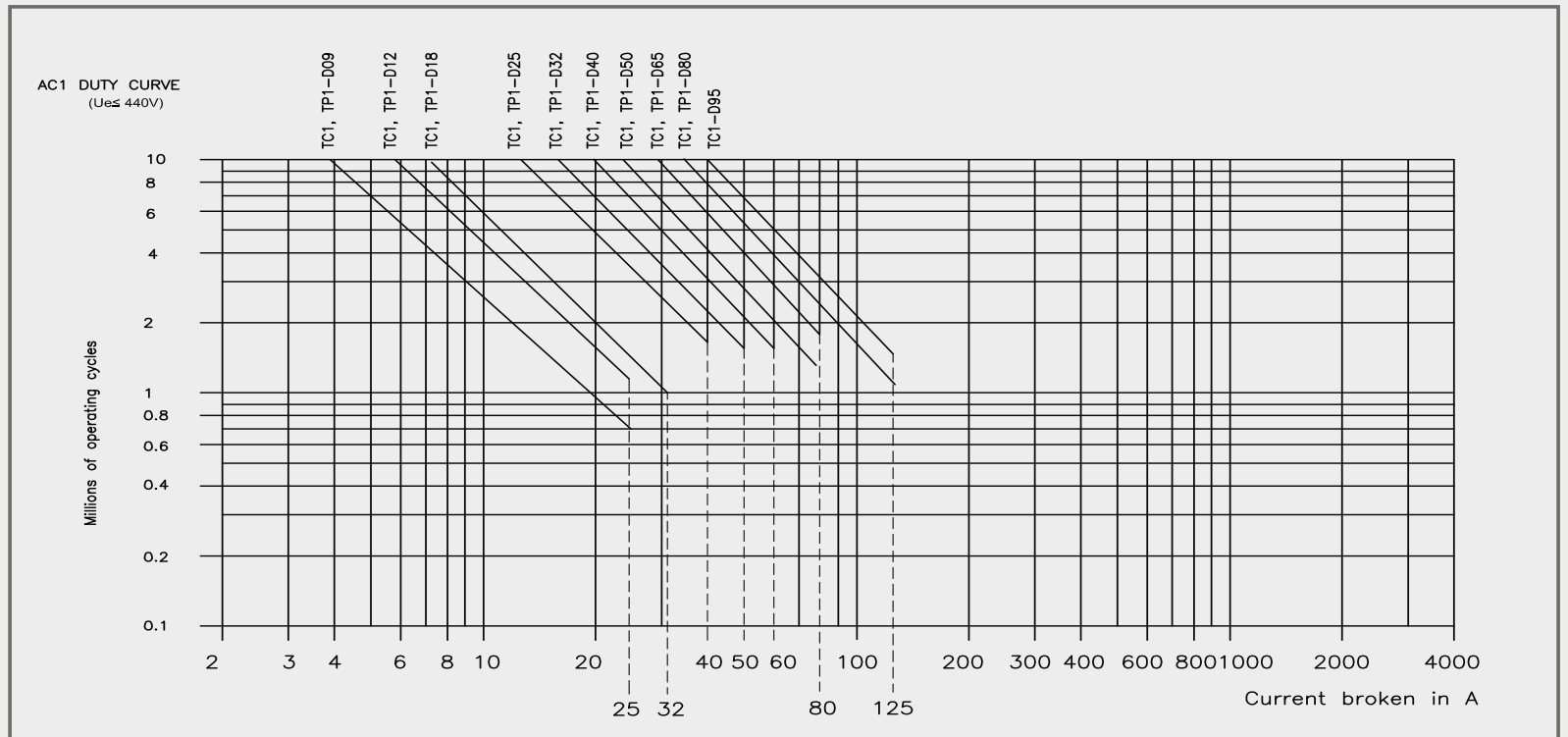
Note: Replace ■ with D for relays compatible with robusta or DM for relays compatible with robust 2 contactors.

robusta Contactor Series

Electrical Life Curve - TC1D Type

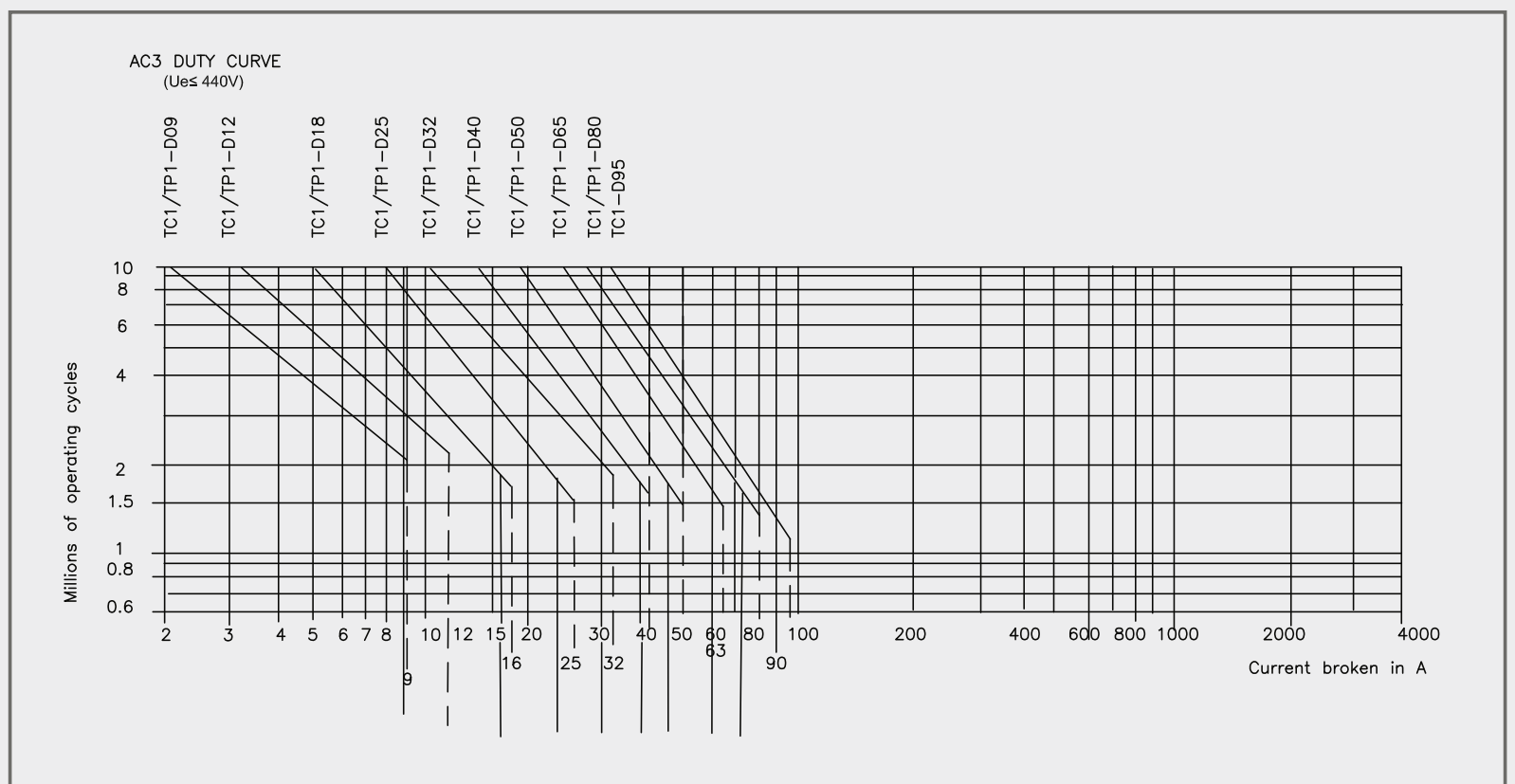
Use in Category AC-1 ($U_e \leq 440V$).

Control of resistive circuits ($\cos\phi > 0.95$). The current broken (I_c) in category AC-1 is equal to the current (I_n) normally drawn by the load.



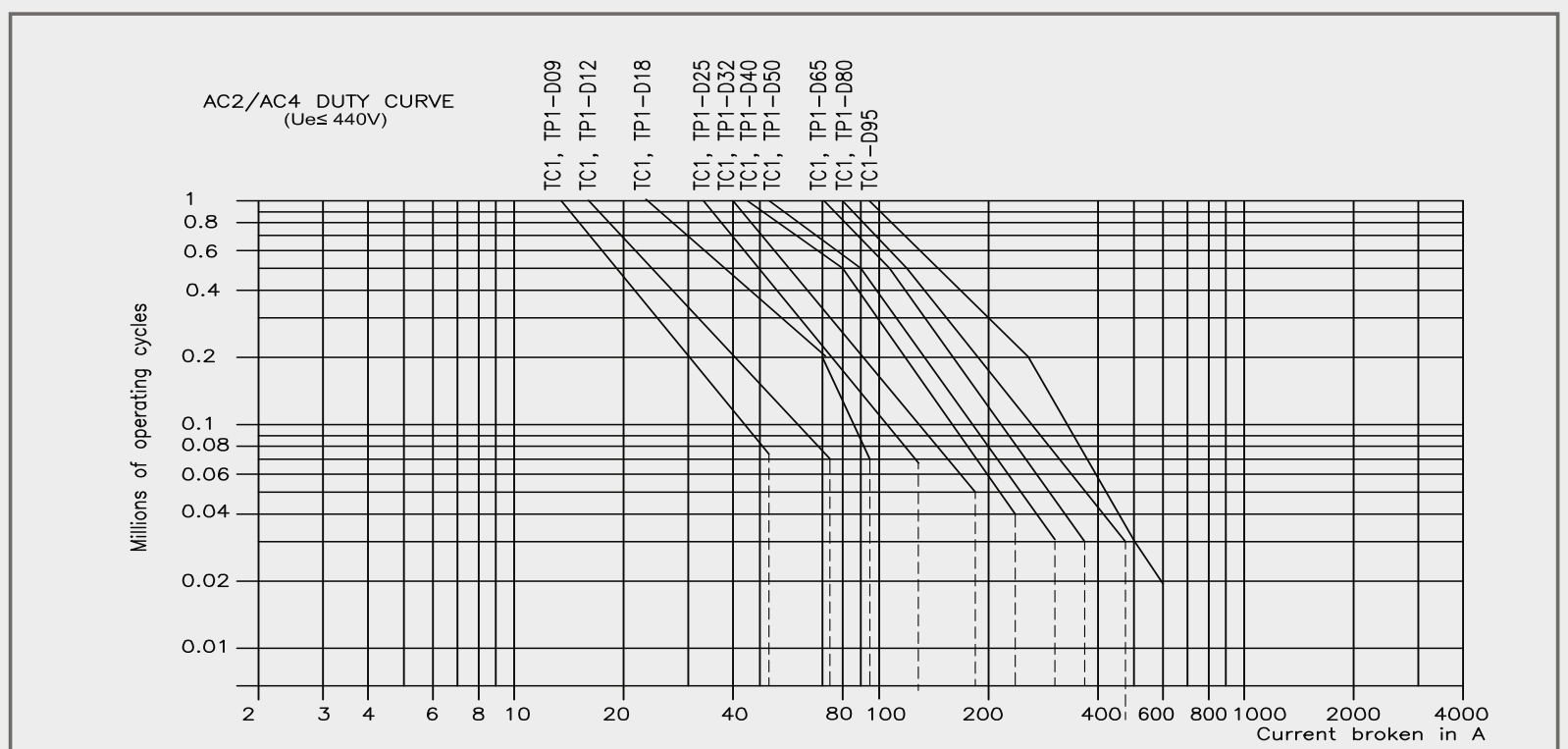
Use in Category AC-3 ($U_e \leq 440V$).

Control of 3-phase asynchronous squirrel cage motors with breaking whilst motor running. The current broken (I_c) in category AC-3 is equal to the current (I_n) normally drawn by the load.



Use in Categories AC-2, AC-4 ($U_e \leq 440V$).

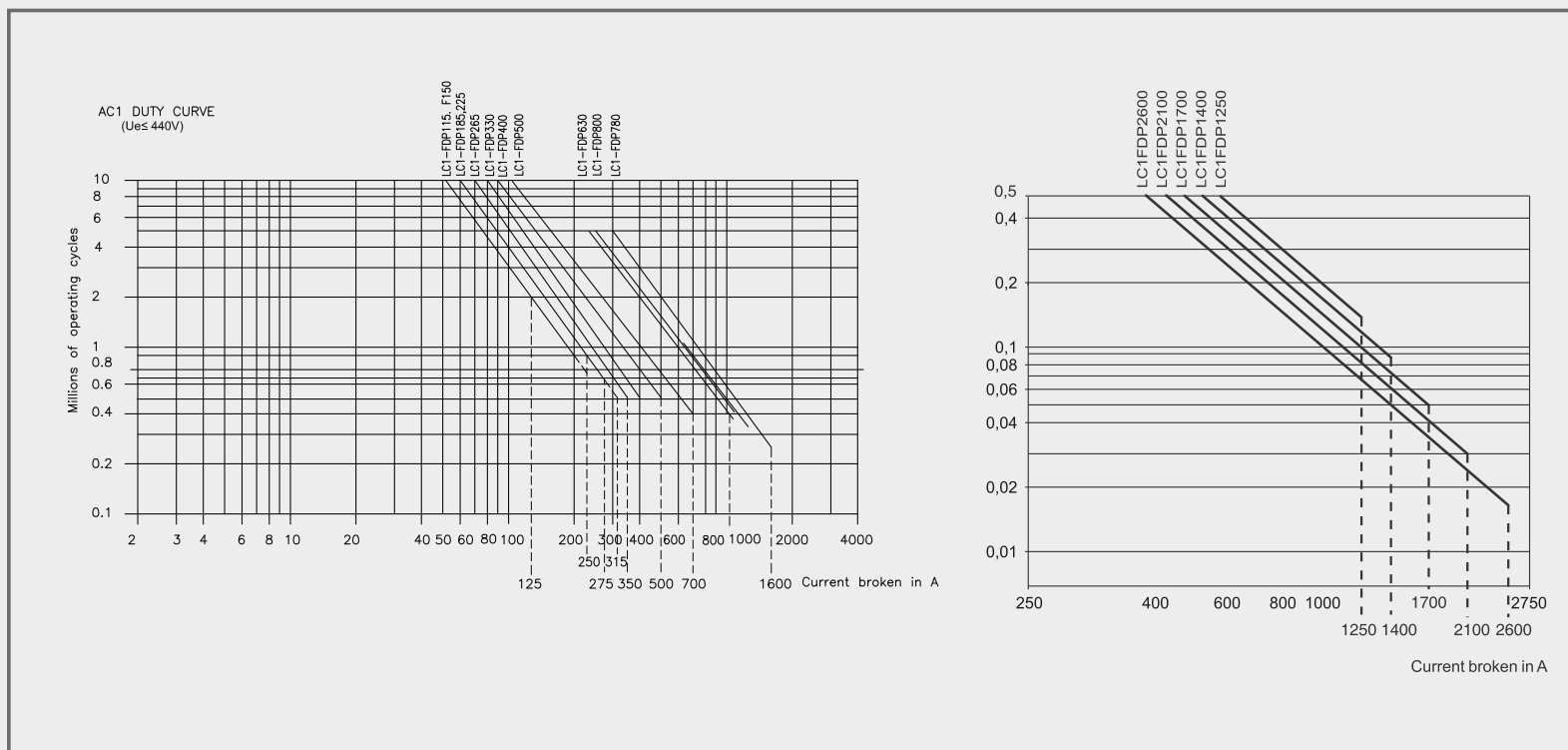
Control of 3-phase asynchronous squirrel cage (AC-4) or slip ring (AC-2) motors with breaking whilst motor stalled. The current broken in category AC-4 is equal to $6 \times I_n$. (I_n = rated operational current of the motor).



Electrical Life Curve - LC1FDP Type

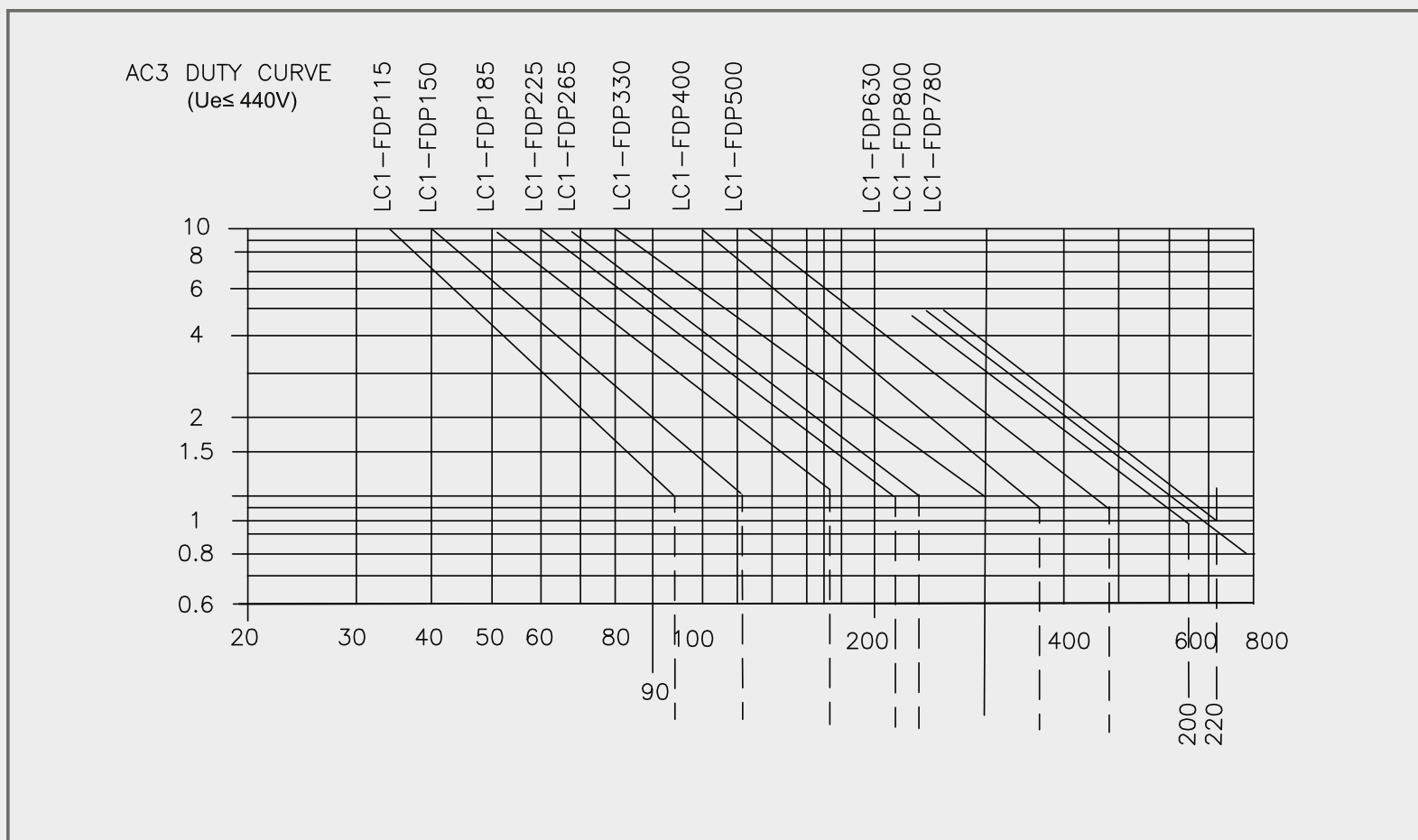
Use in Category AC-1 ($U_e \leq 440V$).

Control of resistive circuits ($\cos\phi \geq 0.95$). The current broken (I_c) in category AC-1 is equal to the current (I_n) normally drawn by the load.



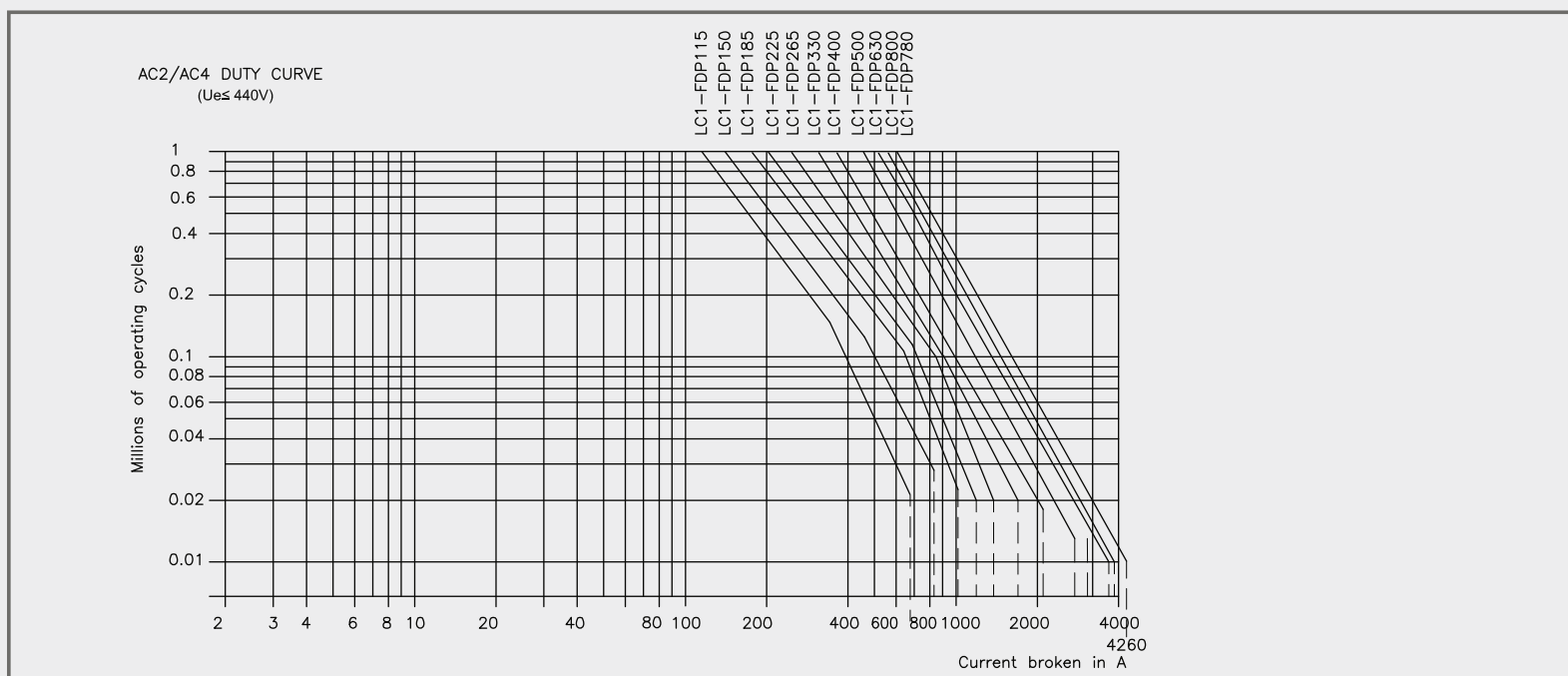
Use in Category AC-3 ($U_e \leq 440V$).

Control of 3-phase asynchronous squirrel cage motors with breaking whilst motor running. The current broken (I_c) in category AC-3 is equal to the current (I_n) normally drawn by the load.



Use in Categories AC-2, AC-4 ($U_e \leq 440V$).

Control of 3-phase asynchronous squirrel cage (AC-4) or slip ring (AC-2) motors with breaking whilst motor stalled. The current broken in category AC-4 is equal to $6 \times I_n$. (I_n = rated operational current of the motor).

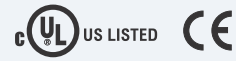


Other Contactor Series



Mini Contactor

- Conforms IEC 60947-4-1; IS/IEC 60947-4-1
- Power contactor range: 9A~16A; 3P with 1 built in auxiliary contact
- Control relays in 5 variants in AC & DC coil
- Common add-on accessories-front/side auxiliary contact block, electronics timer, mechanical interlock & coil suppressor
- Compatible overload relays range: 0.1A~16A; auto/manual reset with built-in single phase protection



D Range Contactor

- Conforms IEC 60947-4-1; IS/IEC 60947-4-1
- Power contactor range: 9A~16A; 3P with 1 built in auxiliary contact
- Control relays in 5 variants in AC & DC coil
- Common add-on accessories-front/side auxiliary contact block, electronics timer, mechanical interlock & coil suppressor
- Compatible overload relays range: 0.1A~16A; auto/manual reset with built-in single phase protection



Capacitor Duty Contactor

- Conforms IEC 60947-4-1; IS/IEC 60947-4-1
- Range: 7kVAR ~ 100kVAR
- 3 Pole, 415V AC
- AC -6b utilization category
- Excellent damping of In-rush current
- Switching of capacitor banks without derating
- Wide range AC coil options 50/60Hz



Definite Purpose Contactor

- Range: 20A, 25A, 30A & 40A in 1P, 2P & 3P variants
- Electrical life: 200,000 operations
- Ambient air temperature : -40° to +65 °C
- Ambient air dampness around the device: 45% to 85% RH
- Coil voltage: 80% to 110% of rate voltage
- Application: Ventilation & HVAC: Heating elements, power supplies & compressors



2 Pole Contactor

- Range: 20A, 25A & 40A AC3
- Extra wide band Coil
- Add on block



4 Pole Contactor

- Heavy duty contactor range: 20, 25 & 40A AC3
- Extra wide band coil
- Mechanical interlock & add-on block

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Ph. : (+91 141) 4037651

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RESIDENT ENGINEERS

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Mangalore | Mehsana | Nashik | Patna | Rajkot | Rourkela | Siliguri | Srinagar | Tirupathi | Trichey | Udaipur | Una | Vapi | Visakhapatnam

WAREHOUSES

NATIONAL WAREHOUSE

NOIDA - A-7 & 8, Sector-VIII, Noida -201 301, Distt. Gautam Budh Nagar, (UP) Ph.: (+91 120) 3914301-02 Fax: (+ 91 120) 3914303

REGIONAL WAREHOUSES

DELHI Khasra No. 915 & 916, 2nd Floor, Near Rice Mill, Village Rithala, Delhi-85 Ph.: (+91 11) 27049211

LUCKNOW 3rd Floor, E-143, Phase-I, Transport Nagar, Kanpur Road, Lucknow - 17 Ph.: (+91 522) 4103460

INDORE Liberty Agencies 53, Udyog Nagar, Near Musakhedi Square, Ring Road, Indore-452001 Ph.: (+91) 88780-62000 / 64000

KOLKATA 113, Chetla Road, New Alipur, Kolkata - 700 053, Ph.: (+91 33) 22275849 - 51

RANCHI Plot No. 145/C, Mandir Marg-D, Road No. 4, Ashok Nagar, Distt. Ranchi, Jharkhand - 834002 Ph.: (91 651) 2242202, 2242224

BHUBANESWAR Rasharaj Geetikunj, Plot No. 224/A, Sec-A, Zone-B, Mancheswar Industrial Estate, Bhubaneswar-751 010 Ph.: (+91 674) 2580788

MUMBAI E-5, Parasnath Complex. Gala No.8, Village 'VAL' Dapode Road, Taluka Bhiwandi, District, Thane - 421302 Ph.: (+91 2522) 314830

AHMEDABAD B-25-B/C Meldi Industrial Estate, Opp. West Coast Pharmaceutical, Nr. Gota Over Bridge, Gota, Ahmedabad - 382481 Ph.: (+91 79) 65453044

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