



**Power Factor Correction Capacitors
Harmonic Filter Reactors
Capacitor Duty Contactors**





ABOUT US:

TIBREWALA ELECTRONICS LIMITED (TEL) is a leading manufacturer of Capacitors in India and our products are exported to all reputed brands globally. Our revenues exceed US\$ 30 Million and our manufacturing infrastructure boasts of top quality machinery, quality systems and man power.

Our product range includes Power Factor Correction Capacitors, Harmonic Filter Reactors, Capacitor Duty Contactors, Motor Run Capacitors and Power Electronic Capacitors. Heavy Duty Capacitors are made with strong resistance to voltage fluctuation.

Agri Capacitors are designed for outdoor agricultural applications to correct the Power Factor of the Pumps and Motors in store in agricultural applications.



QUALITY

TIBCON is a well-known brand of Capacitors Globally for its Performance, Reliability and Durability. The Quality of our products has been a key driver of our growth and prominence in the Capacitor industry. TIBCON products conform to global industry norms and international standards.

- UL 810 (Underwriters Laboratories)
- CSA (Canadian Standards)
- CE (European-Declaration of Conformity)
- ISI (Indian Standards Institution)





Power Factor Correction Capacitors

The efficiency of power generation, transmission or conversion is improved when operated at near unity power factor. The least expensive way to achieve the same is by installing Power Factor Correction Capacitors. Power Factor Correction Capacitors must be able to withstand high voltage transients and power line variations without breakdown.

TIBCON PFC Capacitors are designed and manufactured for the most demanding applications and toughest ambient conditions. These capacitors are durable, safe, reliable for power factor correction in industrial & semi-industrial application.



Design & Construction

TIBCON PFC Capacitors are made using Metallized Polypropylene film with built in SELF HEALING properties. We mastered this technology over a period of last 30 years. We have the best manufacturing facility for MPP film. The Capacitors are wound on fully automatic winding machine that ensure no corona discharge & ionization. The elements are housed in cylindrical shaped aluminum case with inbuilt explosion proof safety device.

Unique Features

- Compact Cylindrical Construction
- 3 Phase - Delta Connection
- Non - PCB Oil Encapsulation
- High Temperature Withstanding Capacity
- Self Healing Properties
- Explosion Proof Design Safe-Touch, Shock-Proof Terminals
- Longer Life Expectancy
- ECO-Friendly
- Wide Range-Standard Duty, Heavy Duty & Super Heavy Duty

Explosion Proof Safety Device

Sometimes Capacitors may explode due to very high voltages in repetitive peaks, which cannot be 'self healed' by the regenerative with an internal Over-Pressure Disconnecter, which disconnects the Capacitor from the power source and prevents it from exploding.

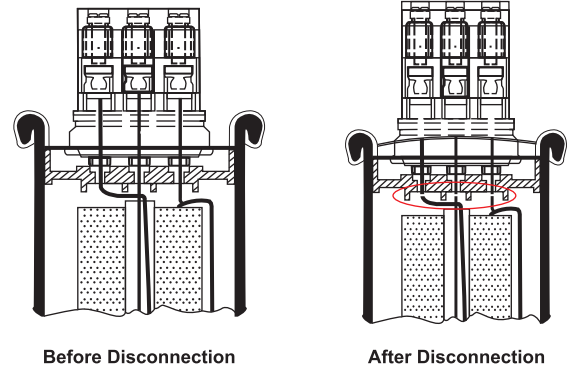
Construction details of capacitors

TEL manufacture three different types of PFC Capacitors - Heavy Duty (440V), Super Heavy Duty (440/525/690V) and Agricap (415/440V).

Heavy Duty Capacitors are manufactured with thicker dielectric material, housed in a bigger aluminium can.

Super Heavy Duty Capacitors are made of internal series Metallized Film, which will reduce the terminal voltage at the Capacitor level by half. This will help in drastic reduction of temperature within the capacitor.

INTERNAL OVER PRESSURE DISCONNECTOR

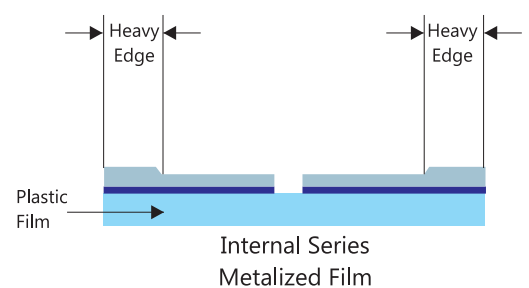


Application

- APFC Control Panels
- Wind Turbines
- Commercial Establishments
- Industrial and Semi Industrial Applications
- De-tuned and Tuned Harmonic Filters
- Fixed Compensation (Individual and Group)
- Motors and Transforms
- Welding
- Furnaces

Range of PFC Capacitors

Series	Voltage	Type	Output
HEAVY DUTY	440V	Cylindrical	1-30 KVAR
		Box Type	1-50 KVAR
SUPER HEAVY DUTY	440V	Cylindrical	5-25 KVAR
	525V	Cylindrical	5-25 KVAR
	690V	Cylindrical	5-25 KVAR
AGRICAP	415V	Cylindrical	1-15 KVAR
	440V	Box Type	1-25 KVAR



ALUMINIUM CYLINDER & MS BOX TYPE

• Standard	IEC 60831-1 & 2, IS :13340 PART 1 & 2
• Type	MKP Cylindrical / MS Box
• Rated Voltage	230-690 Volts
• Rated Frequency	50/60 Hz
• Maximum Over Voltage U Max	U _N + 10% 8 h in every 24 h U _N + 15% 30 min in every 24 h U _N + 20% 5 min in every 24 h U _N + 30% 1 min in every 24 h
• Dielectric System	Metallized Polypropylene film with Zn/Al, alloy, slpe profile, special edge (wave cut)
• Losses	<0.2 Watt/Kvar (Without Resistor) & <0.5 Watt/Kvar
• Protecting Class	Ip 20
• Cooling	Natural Air Cooled
• Max Above Sea Level	2000 as per IEC 60831
• Case:	Extruded Aluminum Can/Powder Coated MS Box
• Discharge Resistor	Special Design Internal Discharge, Resistance 50 V In Less Than 60 Sec
• Terminals	Three phase terminal with electric shock protection (finger proof), designed for up to 25sq.mm cable termination Double fast-on with cable (< 8kVAR) Tin Plated MS Studs for Box Type Capacitors
• Execution	Indoor
• Tolerance On Capacitance	-5% To +10%
• Test Voltage Terminal To Terminal	Type Test : 2.15U _N , 10 Sec, Routine Test : 2.15 U _N , 2 Sec
• Test Voltage Terminal To Casing	U _N ≤ 600 V: 3000V AC 10 Sec, U _N = 660 V : 6000V AC 10 Sec
• Temperature Category	-25° c / + 55°c (Class D)
• Max Humidity	95%
• Grounding And Mounting	With M12 Stud At The Bottom Of Case
• Mounting Position	Vertical
• Connection	Three Phase Delta Connection (Single Phase on Request)
• Protection Type	Dry Type, Self-Healing, Internal Over Pressure Disconnecter
• Impregnant	Non PCB, Biodegradable, High Viscosity Resin

HEAVY DUTY - CYLINDRICAL

• Rated reactive Power	5-30 KVAR Single Unit
• Over Current	2.0 × I _n
• Inrush Current	300 × I _n
• Life Expectancy	> 1,50,000 Operation Hours
• No. of Annual Switching Operations	10,000

SUPER HEAVY - CYLINDRICAL

• Rated reactive Power	5-33 KVAR Single Unit
• Over Current	2.7 × I _n
• Inrush Current	400 × I _n
• Life Expectancy	> 2,20,000 Operation Hours
• No. of Annual Switching Operations	20,000

AGRICAP - CYLINDRICAL

• Rated reactive Power	0.25-25 KVAR Single Unit
• Over Current	1.54 × I _n
• Inrush Current	200 × I _n
• Life Expectancy	> 1,00,000 Operation Hours
• No. of Annual Switching Operations	5,000

HEAVY DUTY CYLINDRICAL POWER FACTOR CORRECTION CAPACITORS Rated Voltage 440V, 50Hz, 3-Phase

Part No.	voltage	Out put Kvar		Dim.(LXWXH) mm	Capacitance (uF)	Current
		440	415			
1	440	1.0	0.89	50X135	3x5.48	1.31
2	440	2.0	1.80	50X135	3x10.96	2.62
3	440	3.0	2.70	50X150	3x16.44	3.93
4	440	4.0	3.60	63.5X135	3x21.92	5.24
5	440	5.0	4.50	63.5x150	3x27.4	6.55
6	440	7.5	6.67	75x175	3x41.1	9.84
7	440	8.33	7.41	75x175	3x45.65	10.91
8	440	10.0	8.90	75x210	3x55	13.12
9	440	12.5	11.20	75x210	3x68.5	16.37
10	440	15.0	13.40	75x278	3x82.2	19.65
11	440	20.0	17.79	85x278	3x109.60	26.20
12	440	25.0	22.24	90x278	3x137	32.75
13	440	28.0	25.00	85x353	3x153.4	36.74
14	440	30.0	26.69	90x353	3x164.4	39.36

HEAVY DUTY BOX TYPE POWER FACTOR CORRECTION CAPACITORS Rated Voltage 440V, 50Hz, 3-Phase

Part No.	voltage	Out put Kvar		Dim.(LXWXH) mm	Capacitance (uF)	Current
		440	415			
15	440	1.0	0.89	121x42x145	3x5.48	1.31
16	440	2.0	1.80	121x42x145	3x10.96	2.62
17	440	3.0	2.70	121x42x145	3x16.44	3.93
18	440	4.0	3.60	174x56x260	3x21.92	5.24
19	440	5.0	4.50	174x56x260	3x27.4	6.55
20	440	6.0	6.70	174x56x260	3x33	7.90
21	440	7.5	6.67	174x56x260	3x41.1	9.84
22	440	8.0	7.12	174x56x260	3x43.84	10.49
23	440	10.0	8.90	212X76X320	3x55	13.12
24	440	12.0	10.68	212Xx76x320	3x65.8	15.80
25	440	12.5	11.20	212Xx76x320	3x68.50	16.37
26	440	15.0	13.40	212Xx76x320	3x82.20	19.65
27	440	20.0	17.79	212x142x320	3x109.60	26.20
28	440	25.0	22.24	212x142x320	3x137	32.75
29	440	28.0	25.00	212x142x320	3x153.4	36.74
30	440	30.0	26.69	212x142x320	3x164.4	39.36
31	440	35.0	31.14	245x170x415	3x192	45.80
32	440	40.0	35.58	245x170x415	3x219.2	52.40
33	440	50.0	44.48	245x170x415	3x274	65.50

SUPER HEAVY DUTY CYLINDRICAL POWER FACTOR CORRECTION CAPACITORS
Rated Voltage 440V, 50Hz, 3-Phase

Part No.	voltage	Out put Kvar		Dim.(LXWXH) mm	Capacitance (uF)	Current
		440	415			
34	440	5.0	5.95	76x175	3x27.4	6.55
35	440	7.5	8.92	76x210	3x41.1	9.84
36	440	10.0	11.89	76x278	3x55	13.12
37	440	12.5	14.86	85x278	3x68.50	16.37
38	440	15.0	17.83	85x278	3x82.20	19.65
39	440	20.0	23.77	95x278	3x109.60	26.20
40	440	25.0	29.75	116x278	3x137	32.75

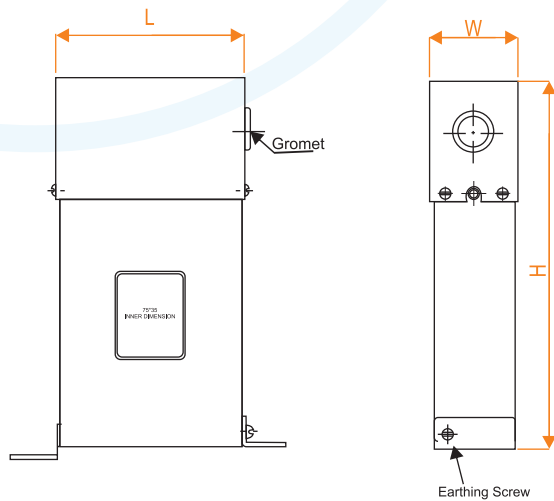
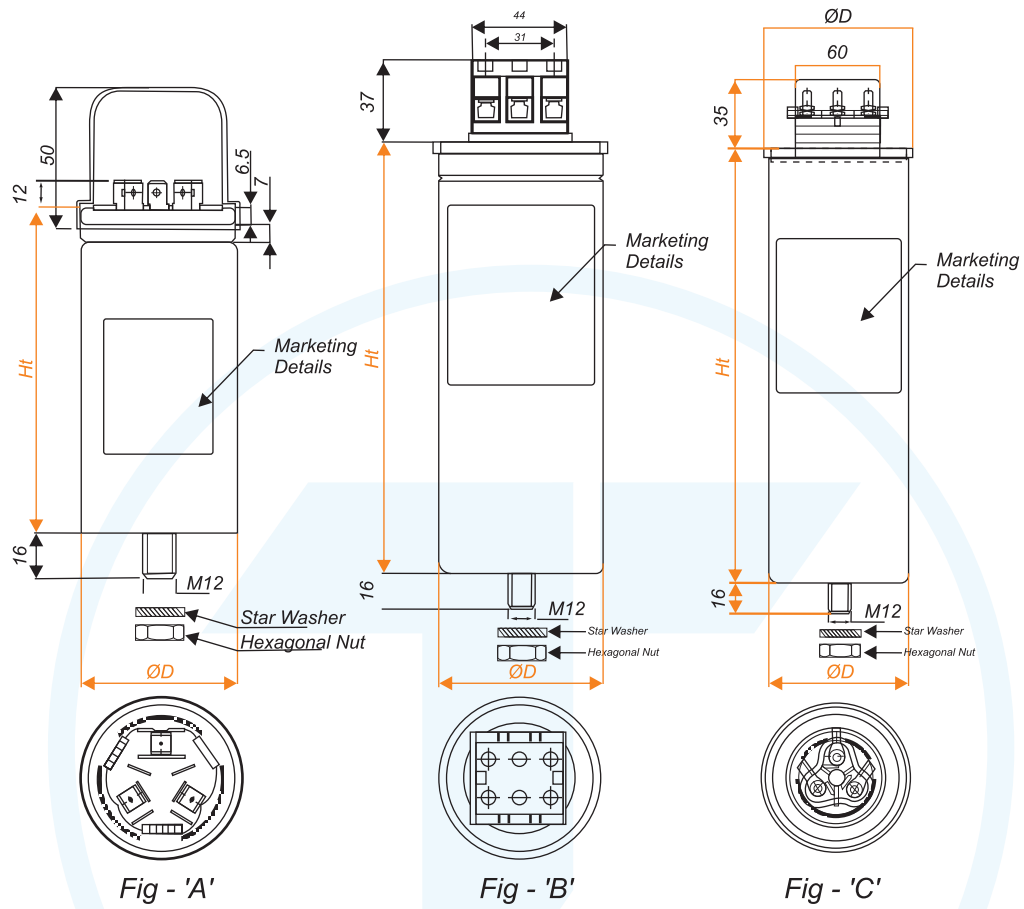
SUPER HEAVY DUTY CYLINDRICAL POWER FACTOR CORRECTION CAPACITORS
Rated Voltage 525V, 50Hz, 3-Phase

Part No.	Voltage	Kvar	Dim.(diaxht) mm	Capacitance (uF)	Current
41	525	5.0	76x175	3x19.17	5.50
42	525	7.5	76x175	3x28.87	8.25
43	525	10.0	85x210	3x38.34	11.00
44	525	12.5	85x210	3x47.93	13.75
45	525	15.0	85x278	3x57.51	16.50
46	525	20.0	95x278	3x76.70	22.00
47	525	25.0	116x247	3x95.85	27.50

SUPER HEAVY DUTY CYLINDRICAL POWER FACTOR CORRECTION CAPACITORS
Rated Voltage 690V, 50Hz, 3-Phase

Part No.	Voltage	Kvar	Dim.(diaxht) mm	Capacitance (uF)	Current
48	690	5.0	76x210	3x11.13	4.20
49	690	7.5	76x210	3x16.72	6.30
50	690	8.33	76x210	3x18.54	7.00
51	690	10.0	76x210	3x22.26	8.36
52	690	12.5	85x210	3x27.83	10.50
53	690	15.0	76x278	3x33.50	12.60
54	690	20.0	85x278	3x44.52	16.80
55	690	25.0	85x353	3x55.65	21.00

DRAWINGS



AGRICAP CYLINDRICAL POWER FACTOR CORRECTION CAPACITORS

Rated Voltage 415V, 50Hz, 3-Phase

Part No.	Voltage	Kvar	Dim.(diaxht) mm	Capacitance (uF)	Current
56	415	1.0	50.0x147	3x6.16	1.39
57	415	2.0	50.0x147	3x12.3	2.80
58	415	3.0	50.0x147	3x18.5	4.20
59	415	4.0	63.5x157	3x24.7	5.60
60	415	5.0	63.5x157	3x31	7.00
61	415	6.0	63.5x157	3x37	8.35
62	415	7.0	68.0x160	3x43.2	9.80
63	415	8.0	68.0x160	3x49.3	11.12
64	415	10.0	68.0x200	3x61.6	13.90
65	415	12.5	75.0x200	3x77.0	17.40
66	415	15.0	85.0x200	3x92.4	20.85
67	415	20.0	85.0x250	3x123.5	27.80
68	415	25.0	85.0x285	3x154	34.75

AGRICAP BOX TYPE COMPACT POWER FACTOR CORRECTION CAPACITORS

Rated Voltage 440V, 50Hz, 3-Phase

Part No.	voltage	Out put Kvar		Dim.(LXWXH) mm	Capacitance (uF)	Current
		440	415			
69	440	1.0	0.89	108x38x123	3x5.48	1.31
70	440	2.0	1.80	121x42x145	3x10.96	2.62
71	440	3.0	2.70	121x42x145	3x16.44	3.93
72	440	4.0	3.60	140x48x213	3x21.92	5.24
73	440	5.0	4.50	140x48x213	3x27.4	6.55
74	440	6.0	5.34	140x48x213	3x32.88	7.86
75	440	7.0	6.23	155x52x213	3x38.36	9.20
76	440	7.5	6.67	155x52x213	3x41.1	9.84
77	440	8.0	7.12	155x52x213	3x44	10.50
78	440	9.0	8.01	155x52x213	3x49.32	11.80
79	440	10.0	8.90	155x52x213	3x55	13.12
80	440	12.5	11.20	202x72x236	3x68.5	16.40
81	440	15.0	13.40	202x72x236	3x82.20	19.65

Influence of Harmonics & the need for Harmonic Filters

Development in modern semiconductor technology have led to a significant increase in the number of thyristor-and inverter fed loads. The growing use of these types of power electronic devices is causing an increasing level of harmonic distortion in the electrical system which very often leads to problems with capacitor installations. This can be controlled with the installation of Detuned Harmonic Reactors along with Capacitors, which will form Harmonic Filter.

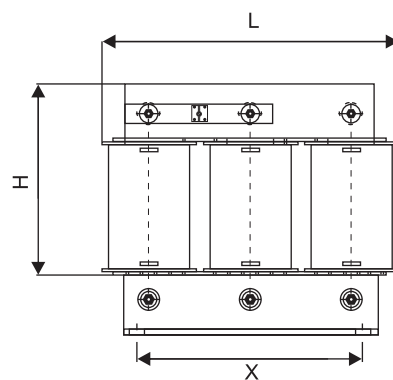
Installation of a Detuned Harmonic Filters is recommended, if your Harmonic generating load is more than 10% of the transformer power. We strongly advise to conduct a comprehensive mains analysis, including measurement of the content, before designing and installing your power factor correction equipment.

TIBCON Detuned filter reactors are high quality reactors designed to be used in detuned power factor correction units. Our reactors are made with special air hap configurations and the latest winding technology and as a result, there is a very small power loss in operation with a high degree of reliability. An integrated bimetal switch is provided for additional operational reliability. These reactors are compatible with Indian & European standards.

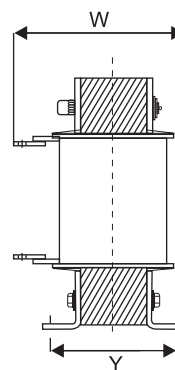


Features

- Three phase, high permeable CRGO iron core, air cooled
- High conductive Copper or Aluminium Windings
- High harmonic loading capability
- Designed for very low power losses
- Low noise emissions of <65dB
- Stud type Terminals for easy Termination in up to 20KVAR & above
- Thermal Switch for overload protection
- Vacuum impregnated varnish to ensure silent and moisture-immune operation
- Manufactured under ISO 9000 quality management
- Wide range from 5KVAR to 100KVAR both in Aluminium & Copper



Elevation



R.H.Side View

Technical Data of Three Phase Reactors

Manufacturing Standard	IS 555/IEC60289
Design	3Phase Iron Cored
Harmonics*	$V_3 = 0.5\%$ VR (duty cycle = 100%) $V_5 = 6.0\%$ VR (duty cycle = 100%) $V_7 = 5.0\%$ VR (duty cycle = 100%) $V_{11} = 3.5\%$ VR (duty cycle = 100%) $V_{13} = 3.0\%$ VR (duty cycle = 100%)
Efficient current	$I_{rms} = (I_1^2 + I_3^2 + \dots + I_n^2)$
Fundamental Current	$I_1 = 1.06 \cdot I_a + (50 \text{ Hz or } 60 \text{ Hz current of capacitor})$
Rated Voltage	400V & 440V AC
Detuning	5.67%, 7% & 14%
Output	5 - 100KVAR
Cooling	AN
Noise Level	65dB
Enclosure	Ip00
Type of Core (Core Material)	CRGO
Nominal Line Frequency	50Hz
Ambient Temperature	-10 to + 40°C
Storage Temperature	-25 to + 60°C
Temperature Rise Limited to	90°C
Temperature Protection	Micro Switch (NC-140°C)
Insulation Class	H
Seperate coil test voltage (HV Test)	3KV
Tolerance of Inductance	±5%

400V, 50Hz, 5.67% REACTOR (f = 210 Hz Linearity: L ≥ 0.95, L_r for current up to 2.08 × 11)

Reactor Rating	5KVAR	10KVAR	12.5KVAR	15KVAR	20KVAR	25KVAR	50KVAR	100KVAR
Rated Inductance mH	6.12	3.06	2.45	2.04	1.53	1.22	0.61	0.31
RMS Current A	9.2	18.4	23.0	27.6	36.9	46.1	92.1	184.3
Terminal	STUD TYPE	STUD TYPE	STUD TYPE	STUD TYPE	STUD TYPE	BUS BAR	BUS BAR	BUS BAR
COPPER REACTOR								
Weight (Approx) in Kgs	6	9	11	12	14	16	28	50
Length in mm (L)	180	180	180	180	210	210	240	270
Depth in mm (W)	70	85	95	100	80	90	100	120
Height in mm (H)	165	165	165	165	215	215	265	315
Mounting Dimensions X	136	136	136	136	136	175	175	175
Mounting Dimensions Y	60	75	85	90	80	90	110	140
Part No	HRC3400-50-5.67-5	HRC3400-50-5.67-10	HRC3400-50-5.67-12.5	HRC3400-50-5.67-15	HRC3400-50-5.67-20	HRC3400-50-5.67-25	HRC3400-50-5.67-50	HRC3400-50-5.67-100
ALUMINIUM REACTOR								
Weight (Approx) in Kgs	6	8	12	11	12	12	29	46
Length in mm (L)	180	180	210	180	210	210	240	270
Depth in mm (W)	71	86	80	100	80	80	110	120
Height in mm (H)	165	165	215	165	215	215	265	315
Mounting Dimensions X	136	136	16	136	136	175	175	175
Mounting Dimensions Y	61	76	80	90	80	80	120	140
Part No	HRC3400-50-5.67-5	HRC3400-50-5.67-10	HRC3400-50-5.67-12.5	HRC3400-50-5.67-15	HRC3400-50-5.67-20	HRC3400-50-5.67-25	HRC3400-50-5.67-50	HRC3400-50-5.67-100

400V, 50Hz, 7% REACTOR (fr = 189 Hz, Linearity: L ≥ 0.95, L_r for current up to 2.08 × 11)

Reactor Rating	5KVAR	10KVAR	12.5KVAR	15KVAR	20KVAR	25KVAR	50KVAR	100KVAR
Rated Inductance mH	7.67	3.83	3.07	2.56	1.92	1.53	0.77	0.38
RMS Current A	8.2	16.4	20.5	24.6	32.8	41.0	81.9	163.9
Terminal	STUD TYPE	STUD TYPE	STUD TYPE	STUD TYPE	STUD TYPE	BUS BAR	BUS BAR	BUS BAR
COPPER REACTOR								
Weight (Approx) in Kgs	6	9	10	12	14	13	23	40
Length in mm (L)	180	180	180	180	210	210	210	240
Depth in mm (W)	73	90	95	102	90	80	110	125
Height in mm (H)	150	150	150	165	195	195	215	265
Mounting Dimensions X	136	136	136	136	136	175	175	175
Mounting Dimensions Y	60	80	85	92	90	80	110	130
Part No	HRC3400-50-7-5	HRC3400-50-7-10	HRC3400-50-7-12.5	HRC3400-50-7-15	HRC3400-50-7-20	HRC3400-50-7-25	HRC3400-50-7-50	HRC3400-50-7-100
ALUMINIUM REACTOR								
Weight (Approx) in Kgs	7	9	9	12	12	15	27	44
Length in mm (L)	180	180	180	210	210	210	240	240
Depth in mm (W)	80	95	95	81	81	90	105	150
Height in mm (H)	150	150	150	215	215	215	265	265
Mounting Dimensions X	136	136	136	136	136	175	175	175
Mounting Dimensions Y	70	85	85	81	81	90	115	160
Part No	HRC3400-50-7-5	HRC3400-50-7-10	HRC3400-50-7-12.5	HRC3400-50-7-15	HRC3400-50-7-20	HRC3400-50-7-25	HRC3400-50-7-50	HRC3400-50-7-100

400V, 50Hz, 14% REACTOR (fr = 135 Hz, Linearity: L ≥ 0.95, L_r for current up to 1.37 × 11)

Reactor Rating	5KVAR	10KVAR	12.5KVAR	15KVAR	20KVAR	25KVAR	50KVAR	100KVAR
Rated Inductance mH	16.58	8.29	6.63	5.53	4.15	3.32	1.66	0.83
RMS Current A	7.7	15.5	19.3	23.2	30.9	38.6	77.3	154.5
Terminal	STUD TYPE	STUD TYPE	STUD TYPE	STUD TYPE	STUD TYPE	BUS BAR	BUS BAR	BUS BAR
COPPER REACTOR								
Weight (Approx) in Kgs	8	10	12	14	17	20	37	54
Length in mm (L)	180	180	180	180	210	210	240	240
Depth in mm (W)	80	90	102	110	95	105	125	160
Height in mm (H)	175	175	175	175	225	225	275	275
Mounting Dimensions X	136	136	136	136	136	175	175	175
Mounting Dimensions Y	70	80	92	100	95	105	135	170
Part No	HRC3400-50-14-5-5	HRC3400-50-14-10	HRC3400-50-14-12.5	HRC3400-50-14-15	HRC3400-50-14-20	HRC3400-50-14-25	HRC3400-50-14-50	HRC3400-50-14-100
ALUMINIUM REACTOR								
Weight (Approx) in Kgs	8	11	12	16	15	18	35	65
Length in mm (L)	180	180	210	210	210	210	240	270
Depth in mm (W)	83	105	80	95	95	105	125	155
Height in mm (H)	175	175	225	225	225	225	275	325
Mounting Dimensions X	136	136	136	136	136	175	175	175
Mounting Dimensions Y	73	95	80	95	95	105	135	175
Part No	HRC3400-50-14-5-5	HRC3400-50-14-10	HRC3400-50-14-12.5	HRC3400-50-14-15	HRC3400-50-14-20	HRC3400-50-14-25	HRC3400-50-14-50	HRC3400-50-14-100

440V, 50Hz, 5.67% REACTOR (f_r = 210 Hz Linearity: L ≥ 0.95, L_r for current up to 2.08 × 11)

Reactor Rating	5KVAR	10KVAR	12.5KVAR	15KVAR	20KVAR	25KVAR	50KVAR	100KVAR
Rated Inductance mH	7.41	3.7	2.96	2.47	1.85	1.48	0.74	0.37
RMS Current A	8.4	16.8	21	25.2	33.7	42.1	84.1	168.3
Terminal	STUD TYPE	STUD TYPE	STUD TYPE	STUD TYPE	STUD TYPE	BUS BAR	BUS BAR	BUS BAR
COPPER REACTOR								
Weight (Approx) in Kgs	7	9	11	13	13	14	24	42
Length in mm (L)	180	180	180	180	180	180	240	240
Depth in mm (W)	76	90	100	105	100	110	90	130
Height in mm (H)	150	150	150	165	165	165	265	265
Mounting Dimensions X	136	136	136	136	136	175	175	175
Mounting Dimensions Y	66	80	90	95	90	100	100	100
Part No	HRC3400-50-5-67-5	HRC3400-50-5-67-10	HRC3400-50-5-67-12.5	HRC3400-50-5-67-15	HRC3400-50-5-67-20	HRC3400-50-5-67-25	HRC3400-50-5-67-50	HRC3400-50-5-67-100
ALUMINIUM REACTOR								
Weight (Approx) in Kgs	7	9	10	11	13	16	24	51
Length in mm (L)	180	180	180	180	210	210	240	240
Depth in mm (W)	80	95	100	105	85	95	95	165
Height in mm (H)	150	150	165	165	215	215	265	265
Mounting Dimensions X	136	136	136	136	136	175	175	175
Mounting Dimensions Y	70	85	90	95	85	95	105	175
Part No	HRC3400-50-5-67-5	HRC3400-50-5-67-10	HRC3400-50-5-67-12.5	HRC3400-50-5-67-15	HRC3400-50-5-67-20	HRC3400-50-5-67-25	HRC3400-50-5-67-50	HRC3400-50-5-67-100

440V, 50Hz, 7% REACTOR (fr = 189 Hz, Linearity: L ≥ 0.95, L_r for current up to 2.08 × 11)

Reactor Rating	5KVAR	10KVAR	12.5KVAR	15KVAR	20KVAR	25KVAR	50KVAR	100KVAR
Rated Inductance mH	9.28	4.64	3.71	3.09	2.32	1.86	0.93	0.46
RMS Current A	7.4	14.9	18.6	22.3	29.8	37.2	74.5	149.0
Terminal	STUD TYPE	STUD TYPE	STUD TYPE	STUD TYPE	STUD TYPE	BUS BAR	BUS BAR	BUS BAR
COPPER REACTOR								
Weight (Approx) in Kgs	7	8	10	10	13	14	25	42
Length in mm (L)	180	180	180	180	180	180	240	240
Depth in mm (W)	80	85	95	90	105	110	90	130
Height in mm (H)	150	150	150	165	165	165	265	265
Mounting Dimensions X	136	136	136	136	136	175	175	175
Mounting Dimensions Y	70	75	85	80	95	100	100	140
Part No	HRC3400-50-7-5	HRC3400-50-7-10	HRC3400-50-7-12.5	HRC3400-50-7-15	HRC3400-50-7-20	HRC3400-50-7-25	HRC3400-50-7-50	HRC3400-50-7-100
ALUMINIUM REACTOR								
Weight (Approx) in Kgs	7	10	10	13	11	14	25	45
Length in mm (L)	180	180	180	210	210	210	240	240
Depth in mm (W)	80	100	95	86	77	86	100	150
Height in mm (H)	150	150	165	215	215	215	265	265
Mounting Dimensions X	136	136	136	136	136	175	175	175
Mounting Dimensions Y	70	90	85	86	77	86	110	160
Part No	HRC3400-50-7-5	HRC3400-50-7-10	HRC3400-50-7-12.5	HRC3400-50-7-15	HRC3400-50-7-20	HRC3400-50-7-25	HRC3400-50-7-50	HRC3400-50-7-100

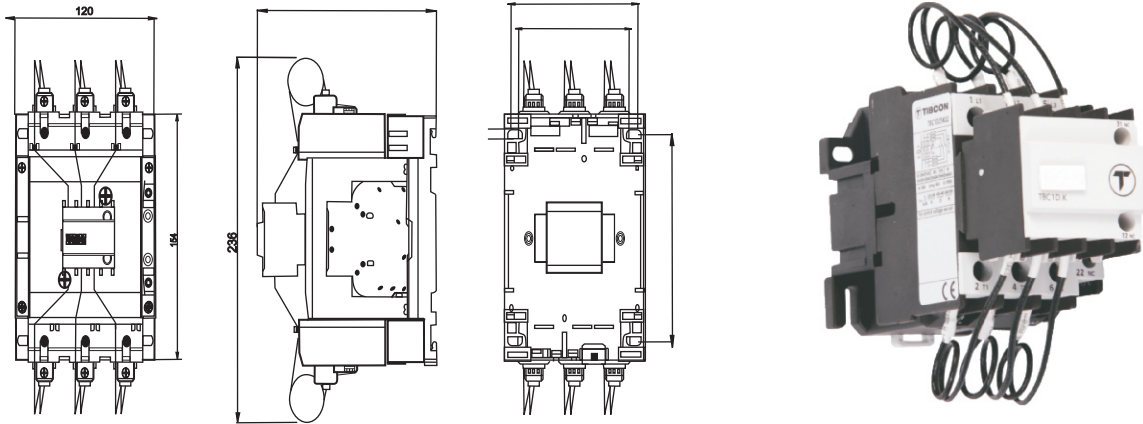
440V, 50Hz, 14% REACTOR (fr = 135 Hz, Linearity: L ≥ 0.95, L_R for current up to 1.37 × 11)

Reactor Rating	5KVAR	10KVAR	12.5KVAR	15KVAR	20KVAR	25KVAR	50KVAR	100KVAR
Rated Inductance mH	20.06	10.03	8.03	6.69	5.02	4.01	2.01	1.00
RMS Current A	7.0	14.0	17.6	21.1	28.1	35.1	70.02	140.5
Terminal	STUD TYPE	STUD TYPE	STUD TYPE	STUD TYPE	STUD TYPE	BUS BAR	BUS BAR	BUS BAR
COPPER REACTOR								
Weight (Approx) in Kgs	8	11	13	15	19	23	39	57
Length in mm (L)	180	180	180	180	210	210	240	240
Depth in mm (W)	83	95	110	115	100	115	130	165
Height in mm (H)	165	165	165	165	215	215	265	265
Mounting Dimensions X	136	136	136	136	136	175	175	175
Mounting Dimensions Y	73	85	100	105	100	115	140	175
Part No	HRC3400-50-14.5-5	HRC3400-50-14.5-10	HRC3400-50-14.5-12.5	HRC3400-50-14.5-15	HRC3400-50-14.5-20	HRC3400-50-14.5-25	HRC3400-50-14.5-50	HRC3400-50-14.5-100
ALUMINIUM REACTOR								
Weight (Approx) in Kgs	9	12	13	17	17	21	37	67
Length in mm (L)	180	180	210	210	210	210	240	270
Depth in mm (W)	90	110	85	100	100	115	130	160
Height in mm (H)	165	165	215	215	215	215	265	315
Mounting Dimensions X	136	136	136	136	136	175	175	175
Mounting Dimensions Y	80	100	85	100	100	115	140	180
Part No	HRC3400-50-14.5-5	HRC3400-50-14.5-10	HRC3400-50-14.5-12.5	HRC3400-50-14.5-15	HRC3400-50-14.5-20	HRC3400-50-14.5-25	HRC3400-50-14.5-50	HRC3400-50-14.5-100

CAPACITOR SELECTION CHART FOR HARMONIC FILTER APPLICATION

INPUT VOLTAGE 400V AC		INPUT VOLTAGE 415V AC		INPUT VOLTAGE 440V AC	
KVAR Output	5.67% DETUNED HARMONIC FILTER APPLICATION	KVAR Output	5.67% DETUNED HARMONIC FILTER APPLICATION	KVAR Output	5.67% DETUNED HARMONIC FILTER APPLICATION
05.0	415V 5KVAR /440V 5.6KVAR	05.0	440V 5KVAR /480V 6.0KVAR	05.0	525V 7.5KVAR
10.0	415V 10KVAR /440V 11.2KVAR	10.0	440V 10KVAR /480V 12.5KVAR	10.0	525V 15KVAR
12.5	415V 12.5KVAR /440V 14KVAR	12.5	440V 12.5KVAR /480V 15KVAR	12.5	525V 17KVAR
15.0	415V 15KVAR /440V 16.8KVAR	15.0	440V 15KVAR /480V 18.0KVAR	15.0	525V 20KVAR
20.0	415V 20KVAR /440V 22.5KVAR	20.0	440V 20KVAR /480V 25.0KVAR	20.0	525V 28KVAR
25.0	415V 25KVAR /440V 28.1KVAR	25.0	440V 25KVAR /480V 30.0KVAR	25.0	525V 33.3KVAR
50.0	415V 25KVAR - 2NOS	50.0	440V 25KVAR /480V 30KVAR -2NOS	50.0	525V 33.3KVAR - 2NOS
100.0	415V 25KVAR - 4NOS	100.0	440V 25KVAR /480V 30KVAR -4NOS	100.0	525V 33.3KVAR - 4NOS
KVAR Output	7% DETUNED HARMONIC FILTER APPLICATION	KVAR Output	7% DETUNED HARMONIC FILTER APPLICATION	KVAR Output	7% DETUNED HARMONIC FILTER APPLICATION
05.0	415V 5KVAR /440V 5.6KVAR)	05.0	440V 5KVAR /480V 6.0KVAR	05.0	525V 7.5KVAR
10.0	415V 10KVAR /440V 11.2KVAR	10.0	440V 10KVAR /480V 12.5KVAR	10.0	525V 15KVAR
12.5	415V 12.5KVAR /440V 14KVAR	12.5	440V 12.5KVAR /480V 15.0KVAR	12.5	525V 17KVAR
15.0	415V 15KVAR /440V 16.8KVAR	15.0	440V 15KVAR /480V 18.0KVAR	15.0	525V 20KVAR
20.0	415V 20KVAR /440V 22.5KVAR	20.0	440V 20KVAR /480V 25.0KVAR	20.0	525V 28KVAR
25.0	415V 25KVAR /440V 28.1KVAR	25.0	440V 25KVAR /480V 30.0KVAR	25.0	525V 33.3KVAR
50.0	415V 25KVAR - 2NOS	50.0	440V 25KVAR-2NOS /480V 30KVAR-2NOS	50.0	525V 33.3KVAR - 2NOS
100.0	415V 25KVAR - 4NOS	100.0	440V 25KVAR-4NOS /480V 30KVAR-4NOS	100.0	525V 33.3KVAR - 4NOS
KVAR Output	14% DETUNED HARMONIC FILTER APPLICATION	KVAR Output	14% DETUNED HARMONIC FILTER APPLICATION	KVAR Output	14% DETUNED HARMONIC FILTER APPLICATION
10.0	480V 12.5KVAR	10.0	525V 15KVAR	10.0	525V 12.5KVAR
12.5	480V 15KVAR	12.5	525V 17KVAR	12.5	525V 15KVAR
15.0	480V 20KVAR	15.0	525V 20KVAR	15.0	525V 20KVAR
20.0	480V 25KVAR	20.0	525V 28KVAR	20.0	525V 25KVAR
25.0	480V 30KVAR	25.0	525V 33.3KVAR	25.0	525V 30KVAR
50.0	480V 30KVAR - 2NOS	50.0	525V 33.3KVAR - 2NOS	50.0	525V 30KVAR - 2NOS
75.0	480V 30KVAR - 3NOS	75.0	525V 33.3KVAR - 3NOS	75.0	525V 30KVAR - 3NOS
100.0	480V 30KVAR - 4NOS	100.0	525V 33.3KVAR - 4NOS	100.0	525V 30KVAR - 4NOS

Dimensional Drawing



AC Coil Voltage - Capacitor Duty Contactors

Contactor TC1-D**K	24V	110V	220V	240V	415V
50Hz	B5	F5	M5	U5	N5
50/60Hz	B7	F7	M7	U7	N7

Specifications

KVAR ratings at 50/60 Hz		Instantaneous Auxiliary Contacts		Maximum Operating Rate	Electical life at rated load	Product Reference
55° c (3)		NO	NC	Operation hour	Operations	
200 / 240	400 / 440V					
4	7.5	1	1	240	200000	TBC1D07K11U7
		0	2			TBC1D07K02U7
5.5	10	1	1	240	200000	TBC1D10K11U7
		0	2			TBC1D10K02U7
6.7	12.5	1	1	240	200000	TBC1D12K11U7
		0	2			TBC1D12K02U7
8.5	16.7	1	1	240	200000	TBC1D16K11U7
		0	2			TBC1D16K02U7
10	20	1	1	240	200000	TBC1D20K11U7
		0	2			TBC1D20K02U7
15	25	1	1	240	200000	TBC1D25K11U7
		0	2			TBC1D25K02U7
20	33.3	1	2	240	150000	TBC1D33K12U7
25	40	1	2	100	100000	TBC1D40K12U7
40	60	1	2	100	100000	TBC1D60K12U7
40	75	1	2	100	100000	TBC1D75K12U7
48	80	1	2	100	100000	TBC1D80K12U7
60	100	1	2	100	100000	TBC1D100K12U7

NOTES:

- Additional Auxiliary Contact block (Side mounted) type TA8DN20 can be mounted, if required
- Contactor Type TC1-D07K-TC1-D25K: Suitable type clip-on mounting into 35mm DIN rail Contactor Type TC1-D33K-TC1-D100K: Suitable type clip-on mounting into 65mm DIN rail
- Average temperature over a 24-hour period, in accordance with IEC 70 and 831
- Standard Control Circuit Voltage / Frequency



TIBCON[®]
CAPACITORS

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Dealer Stamp