

MATRIX

Power Saver

AN ISO 9001, 14001 CO.

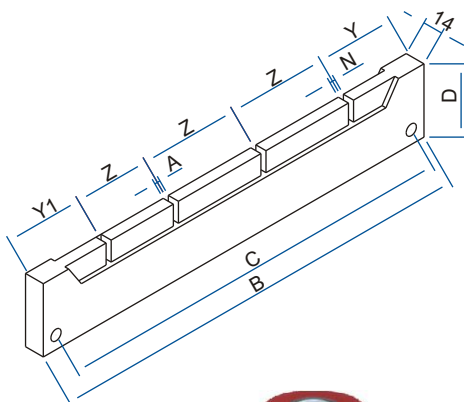
Prices effective from 01.05.2015



CATALOGUE CUM PRICE-LIST

LT INSTRUMENT TRANSFORMERS

MOULDED BUS BAR SUPPORTS / SMC/DMC BUS BAR SUPPORTS



CURRENT TRANSFORMERS

Salient Features

- Description sticker with bar code to ensure that each CT has passed through all the testing procedures, also traceability of each CT
- Individual Test Certificate with each CT
- Stud type brass terminals for firm connections
- Transparent Poly carbonate shroud with sealing provision for protection against touch and temper
- Use of high quality CRGO Silicon steel cores, having low reluctance & low iron losses
- In house core manufacturing to ensure core quality and desired B-H parameters

NOTE ON CURRENT TRANSFORMER

➤ Current Transformer

It transforms the high value current in primary circuit to low value current (e.g. 1A, 5A) in secondary circuit in respective proportion. The ratio of primary current to secondary current is called CT ratio.

➤ Application

To reduce the line current, to isolate & protect measuring instruments meters, relays etc. from direct line

➤ Burden

Accuracy of a CT mainly depends upon the % of rated current & % of rated burden on it e.g. 100/5 5VA class 1.0 CT

At 5 VA if primary current = 100 A, Then sec. current should be $5A \pm 1\%$

If burden or rated current increases or decreases from its rated value, the percentage deviation increases resulting in poor accuracy class.

➤ Accuracy Class

It is the accuracy of transformation of primary current to secondary current

e.g. 100/5 5VA CT at 5VA if Primary current = 100A

For Class 1.0 secondary current should be $5 \pm 1\%$ i.e. 4.95-5.05 A

For Class 0.5 secondary current should be $5 \pm 0.5\%$ i.e. 4.975 -5.025 A

➤ Measuring CTs are designed to use with Indicating, Measuring Instruments.

➤ Protection CTs are designed to use with protective relays. These CTs are designed to comply its class of accuracy at 5 to 20 times primary current circuit. Three basic types are 5 P 5, 5 P 10 & 5 P 20 where 5 P shows Accuracy class & 5, 10, 20 shows Accuracy Limit Factor i.e. 5, 10 & 20 times of primary rated current respectively

➤ Difference between Measurement & Protection CT

Sec. current \propto Primary current till saturation (A CT is suppose to saturate if the secondary current does not increase in proportion of primary current & becomes almost constant)

For Measuring CTs saturation current = **2 to 3 times** of rated pri. Current

For Protection CTs saturation current = **5 to 20 times** of rated pri. Current

Measurement / Protection CTs can be distinguished / checked by injecting current in its primary and corresponding secondary current

➤ PS class CT

These are Protection CTs for Special Purpose applications e.g. Distance protection systems, Balance protection system

Specification required for PS class CT

- Knee point voltage
- Max. exciting current
- Turn Ratio

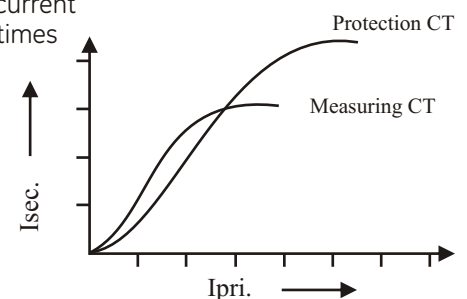
➤ CT Selection (Measuring/Protection/PS)

CT Should be selected as per its application else it may cause malfunctioning of measuring /protection relays and hence may affect the whole protection scheme.

If a measuring CT is selected in place of protection CT, during the fault when a large current will flow through the primary i.e. 5 to 20 times of the rated primary, at a value of 2-3 times of primary rated current, the CT will saturate and sec. current will become almost constant and will not increase further in proportion of primary current.

Since the protective relay is set at higher value of sec. current, it will not actuate and circuit breaking devices will not operate.

PS Class CTs are designed for specific applications as per their knee point voltage, max, exciting current, Turn Ratio so, use of general protection CT may cause malfunctioning of relays

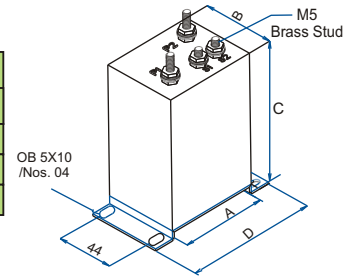


RESIN CAST CURRENT TRANSFORMER

ACCURACY CLASS 1.0, SECONDARY 5A

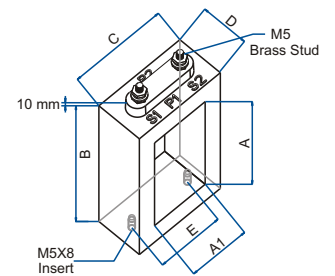
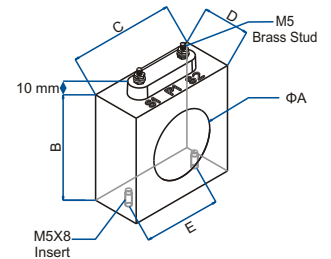
RESIN CAST WOUND PRIMARY (WPL) LTCTS

S. No.	Primary Current (AMP)	A	B	C	D	Primary Brass Stud. Size	List Price in Rs.	
							5VA	10VA
1	2.5-25	70	55	100	100	M 8	677	1073
2	30-80	70	55	100	100	M 8	734	818
3	100	70	55	100	100	M 10	818	995



RESIN CAST RING & RECTANGULAR BAR PRIMARY (BPL) LT CTs

S. No.	Primary Current (AMP)	TYPE	ID A/A*A1	OD		Height			Mounting Hole Centre E	List Price in Rs.				
				5VA B * C	10/15 VA B * C	5VA D	10VA D	D		5VA	10VA	15VA	15VA/ 5P10	PS Class upto 70 VK (MAX 30 MA)
1	100	Ring	30	90*90	90*90	40	40	*	65	677	903	*	7740	*
2	150	Ring	30	90*90	90*90	40	40	*	65	564	762	978	5590	*
3	200	Ring	35	80*80	80*80	40	40	50	55	564	592	734	2935	10011
4	250	Ring	45	90*90	90*90	40	40	50	65	621	649	705	2935	8466
5	300	Ring	55	90*90	90*90	40	50	50	65	508	630	677	2935	7901
6	400	Ring	55	90*90	90*90	35	40	40	65	508	564	677	2935	7901
7	500	Ring	55	90*90	90*90	35	35	40	65	508	564	677	2370	7901
8	600	Ring	55	95*95	95*95	35	35	40	70	562	564	677	2370	7901
9	800	Ring	70	105*105	105*105	45	45	45	85	621	677	790	2258	7901
10	800	Rectangular	105*25	*	155*65	*	40	40	40	*	677	790	3334	6773
11	1000	Rectangular	105*25	*	155*65	*	40	40	40	*	847	847	2258	6773
12	1200	Rectangular	105*40	*	155*80	*	40	40	60	*	847	847	2258	6773
13	1500	Rectangular	105*40	*	155*80	*	40	40	60	*	1016	1016	2258	6773
14	1600	Rectangular	105*40	*	155*80	*	40	40	60	*	1016	1016	2258	6773
15	2000	Rectangular	155*50	*	215*95	*	40	40	60	*	1242	1242	2483	6773
16	2500	Rectangular	155*50	*	215*95	*	40	40	60	*	1355	1355	2935	6773
17	3000	Rectangular	155*80	*	215*130	*	40	40	106	*	1355	1355	2935	7337
18	3200	Rectangular	155*80	*	215*130	*	40	40	106	*	1355	1355	2935	7337
19	4000	Rectangular	155*80	*	215*130	*	40	40	106	*	2483	2483	3725	7337
20	5000	Rectangular	230*80	*	310*160	*	40	40	100	*	2709	2709	4176	7901
21	6000	Rectangular	230*80	*	310*160	*	40	40	100	*	3386	3386	4402	7901



All Dimensions are in mm

TAPE WOUND RING & RECTANGULAR BAR PRIMARY (BPL) LT CTs

S. No.	Primary Current (AMP)	TYPE	ID	List Price in Rs.			
				ACC.CL. 1.0			15 VA
				5VA	10VA	15VA	5P10
1	50	Ring	20	452	*	*	*
2	60	Ring	20	452	*	*	*
3	75	Ring	20	452	*	*	*
4	100	Ring	30	452	677	*	6665
5	150	Ring	30	452	621	860	4515
6	200	Ring	35	396	424	677	2483
7	250	Ring	45	396	424	677	2483
8	300	Ring	55	396	424	677	2483
9	400	Ring	55	396	424	452	2483
10	500	Ring	55	396	424	452	1919
11	600	Ring	55	396	424	452	1919
12	800	Ring	70	507	508	564	1919
13	800	Rectangular	105*25	*	508	564	1919
14	1000	Rectangular	105*25	*	621	621	1919
15	1200	Rectangular	105*40	*	621	621	1919
16	1500	Rectangular	105*40	*	621	621	1919
17	1600	Rectangular	105*40	*	649	649	1919
18	2000	Rectangular	155*50	*	734	734	2145
19	2500	Rectangular	155*50	*	853	853	2596
20	3000	Rectangular	155*80	*	1016	1016	2596
21	3200	Rectangular	155*80	*	1016	1016	2596
22	4000	Rectangular	155*80	*	1355	1355	3386
23	5000	Rectangular	230*80	*	1720	1720	3763
24	6000	Rectangular	230*80	*	2258	2258	3978



Remarks:- Up to 80A Tape wound CT Accuracy class shall be 5.0.

Note:- Please consider the cost of Ct's with Sec. /1A as (above LP+15%)

CT'S ARE ALSO AVAILABLE IN ANY OTHER ID & ACCURACY CLASS AS PER CUSTOMER SPECIFICATION.

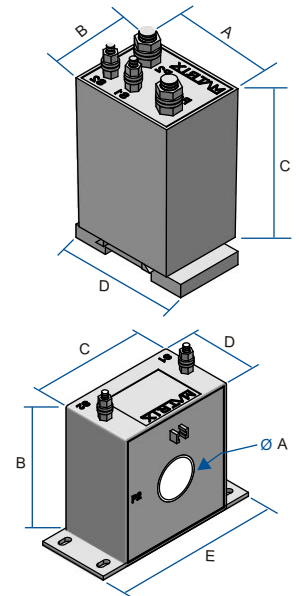
ABS ENCAPSULATED

Salient Features

- ABS case housing having working temp. 130 °C
- DIN Rail mounting provision in WPL CTs hence easy mounting, saving of man power & time.
- Provision for mounting clamp and screw to hold BPL CT with busbar
- Sealing Provision in BPL CTs for protection against temper
- Light weight , better finish & dimensional stability
- Stud type brass terminals for firm connections

WOUND PRIMARY (WPL) LTCTS

S. No.	Primary Current (AMP)	A	B	C	D	Primary Brass Stud. Size	List Price in Rs.	
							5VA	10VA
1	2.5-25	70	55	100	80	M 8	610	965
2	30-80	70	55	100	80	M 8	661	736
3	100	70	55	100	80	M 10	838	941



RING BAR PRIMARY (BPL) LT CTs

S. No.	Primary Current (AMP)	TYPE	ID	OD		Height		E	List Price in Rs.	
				5VA	10VA	5VA	10VA		5VA	10VA
				B * C	B * C	D	D			
1	100	Ring	30	100*90	100*90	45	45	128	628	813
2	150	Ring	30	100*90	100*90	45	45	128	598	686
3	250	Ring	55	100*90	100*90	45	45	128	559	586
4	300	Ring	55	100*90	100*90	45	45	128	458	574
5	400	Ring	55	100*90	100*90	45	45	128	458	508
6	500	Ring	55	100*90	100*90	45	45	128	458	508
7	600	Ring	55	100*90	100*90	45	45	128	524	508

Salient Features

CONTROL & POTENTIAL TRANSFORMER

- Description sticker with bar code to ensure the traceability of each transformer
- Casting with Epoxy Resin for better mechanical /electrical strength & higher thermal insulation class
- Stud type brass terminals for firm connections
- Transparent Poly carbonate shroud with sealing provision for protection against touch and temper
- Use of high permeable iron core, Low losses & Low Noise level design to maximize the saving

Control Transformers are used in switchgear and control gear to supply power to control or auxiliary equipments not intended for direct connection to the main circuit. These are available in preffred ratings primary-240V, 415V and Secondary-24V,48V,100V & 240 V, 25VA to 5kVA.

PTs are used with electrical measuring instruments and protective devices. These are available in single phase & three phase, 25 to 100VA.

Step Down Control Transformer

VA Rating	Tape Wound List Price (Rs.)	Resin Cast List Price (Rs.)
25	1117	1184
50	1135	1247
100	1875	2089
150	2305	2495
200	2608	2473
250	2987	2623
300	2903	3483
400	3870	4936
500	5290	5602
750	8025	9055
1000	8946	12336
1250	10180	13220
1500	12334	14097
2000	16577	16858
2500	17219	18453
5000	35205	37025

Potential Transformer Single Phase

VA Rating	Tape Wound List Price (Rs.)	Resin Cast List Price (Rs.)
25	2140	2314
50	2558	2768
100	2688	3440

Potential Transformer Three Phase Star/Star

VA Rating	Tape Wound List Price (Rs.)	Resin Cast List Price (Rs.)
25	5458	5896
50	5590	6988
100	8944	11180

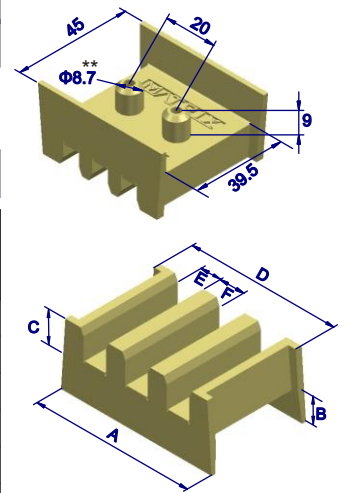


MOULDED SUPPORTS

Salient Features

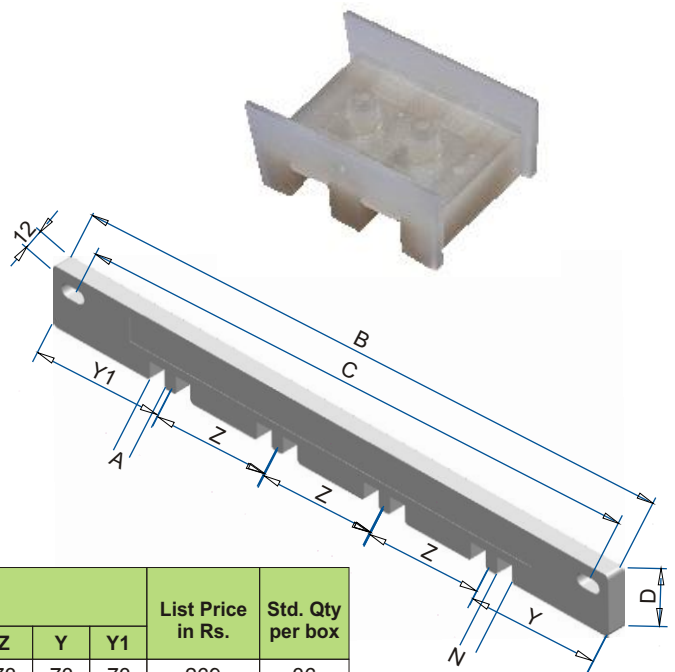
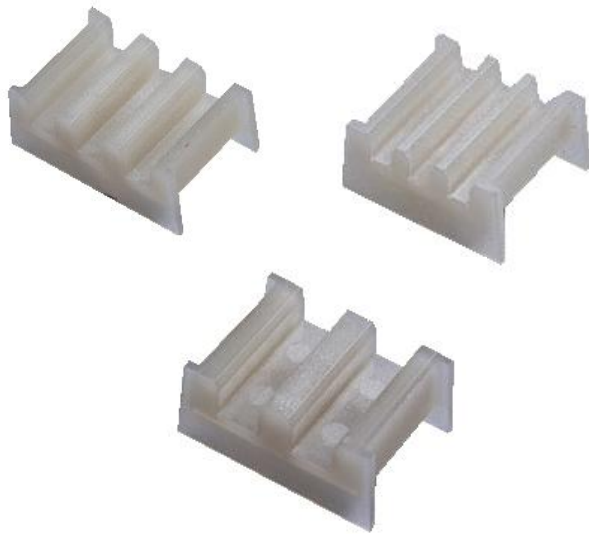
- Better Fault Level in comparison with SMC.
- Faster assembly, Hence time saving.
- Better Strength due to more gripping area.
- Inventory management is easier.
- Lighter in weight due to less specific Gravity.
- Extra durability.
- Push Fit type fitment.
- Compact & Unique design.
- Better Class of Flammability.
- Hardware & Manpower saving.

Properties	Units	Values	
		SMC	Moulded
Short Circuit	KA	65	80
Dielectric Strength	KV/mm	11	26
Flammability		Self extinguishing	FV0



Bus Bar	Product Code	Dimensions (in mm)						List Price in Rs.	Std. Qty per box
		A	B	C	D	E	F		
6mm x 3run	MAMS-306	52.7	12.4	8	48.5	6.7	5.7	48	50
6mm x 6run	MAMS-606	89.9	12.4	8	85.7	6.7	5.7	80	50
10mm x 3run	MAMS-310	72	13	12.5	67.5	10.7	9.2	54	50
10mm x 4run	MAMS-410	92	13	12.5	87.5	10.7	9.2	97	50
12mm x 2run	MAMS-212	65	13	12.5	60.5	12.8	11.2	54	50
12mm x 4run	MAMS-412	113	13	12.5	108.5	12.8	11.2	118	50

** Hole for Mounting should not be more than 8.7mm Dia.



Bus Bar	Product Code	Dimensions (in mm)								List Price in Rs.	Std. Qty per box
		A	B	C	D	N	Z	Y	Y1		
10mm x 4run	MAMS-FP-365X10	10.7	365	335	40	10.7	73	73	73	269	36
10mm x 4run	MAMS-FP-415X10	10.7	415	385	40	10.7	80	87.5	87.5	290	36
12mm x 4run	MAMS-FP-365X12	12.7	365	335	40	12.7	73	73	73	269	36
12mm x 4run	MAMS-FP-415X12	12.7	415	385	40	12.7	80	87.5	87.5	290	36
6mm x 4run	MAMS-FP-365X6	6.7	365	335	40	6.7	73	73	73	269	36
6mm x 4run	MAMS-FP-415X6	6.7	415	385	40	6.7	80	87.5	87.5	290	36
10mm x 3run*	MAMS-TPN-365X10	10.7	365	335	40	6.7	73	73	73	269	36
10mm x 3run*	MAMS-TPN-415X10	10.7	415	385	40	6.7	80	87.5	87.5	290	36
12mm x 3run*	MAMS-TPN-365X12	12.7	365	335	40	6.7	73	73	73	269	36
12mm x 3run*	MAMS-TPN-415X12	12.7	415	385	40	6.7	80	87.5	87.5	290	36

* With 6mm x 1run for Neutral

SMC & DMC BUSBAR SUPPORTS & INSULATORS

Salient Features

- High die electric ,mechanical strength & temperature withstand capacity
- Inserts are made of EN1A having better tensile strength as compared to MS & Brass (e.g. EN1A- 600 MPa, MS-300 MPa, Brass – 150 MPa)
- Insulators are available in SMC suitable up to 80KA (CPRI Tested) and DMC Suitable up to 25KA
- Identification of mfg. / size on each support
- Less combinations of mounting hole center to center distances, for common mounting
- Matrix offers hexagonal insulators having below mentioned merits
 - More creepage distance hence longer travel path for electric arc over surface
 - Symmetrical on both ends hence equal stress on both ends
 - Hexagonal Rib in center for holding the insulator to ensure proper tightness from both ends

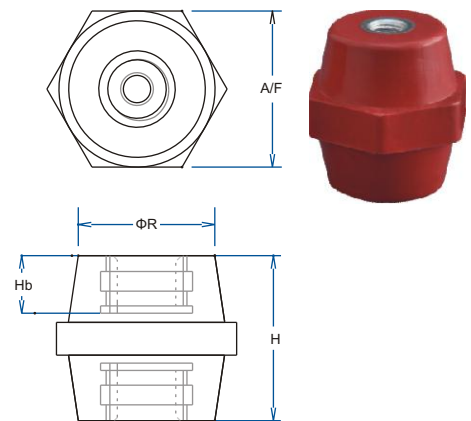
NOTE ON SMC & DMC SUPPORTS & INSULATORS

All Switch gear & Electrical panels are combination of current carrying conductors & non current carrying structure. To separate & support the current carrying busbars from the structure, busbar supports & Insulators are used. These supports / insulators should be designed to bear electrical & mechanical stress during the normal & fault conditions. They should also comply other features like Nonhygroscopic, Fire Retardant, Chemical & Corrosion Resistance

Matrix busbar supports & insulators are made of SMC (Sheet Moulded Compound) / DMC (Dough Moulded Compound) , manufactured with a combination of resin and other additives under controlled temperature and pressure, to produce components with excellent around properties and characteristics

Hexagonal Insulators

Product code	Insert	Dimension in mm				Normal Voltage AC/DC	List Price (Rs.)		Standard Qty. Per Box
		A/F	R	Hb	H		DMC	SMC*	
MH 630	M6	34	25	10	30	600/750	33	38	100
MH 840	M8	35	28	15	40	1000/1200	43	49	100
MH 1050	M10	46	36	20	50	1200/1500	77	90	50



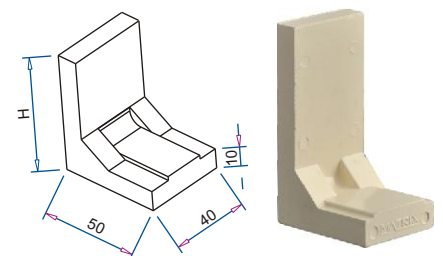
Conical Insulators

Product code	Insert	Dimension in mm				Normal Voltage AC/DC	List Price (Rs.)		Standard Qty. Per Box
		Rt	Rb	Hb	H		DMC	SMC*	
MC 630	M6	25	30	10	30	600/750	31	35	200
MC 830	M8	25	30	10	30	600/750	33	37	200
MC 840	M8	33	40	15	40	1000/1200	47	55	100
MC 1040	M10	33	40	15	40	1000/1200	59	67	100
MC 1050	M10	40	50	20	50	1200/1500	82	98	50
MC 1250	M12	40	50	20	50	1200/1500	84	100	50
MC 1060	M10	42	60	20	60	1500/1800	96	119	25
MC 1260	M12	42	60	20	60	1500/1800	98	121	25



L-Support

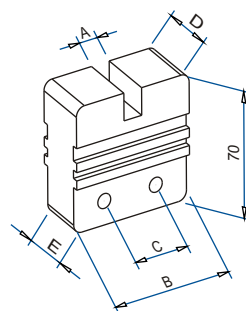
Height (H) mm	Product code	List Price (Rs.)		Standard Qty. Per Box
		DMC	SMC	
60	ML 60	41	51	160
85	ML 85	44	56	125
100	ML 100	51	64	100
125	ML 125	54	69	80



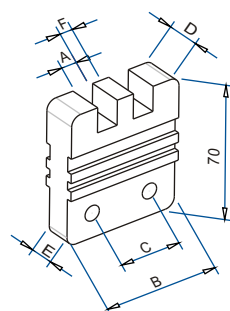
* Conical & Hexagonal insulators (SMC) will be available in ivory colour.

Finger Supports

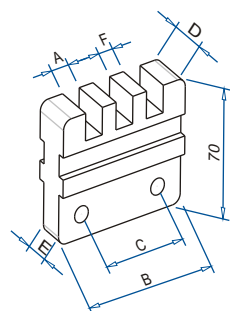
Busbar	Product code	Dimension						List Price (Rs.)		Standard Qty. Per Box
		A	B	C	D	E	F	DMC	SMC	
6mm x 1run	M106 W	7.0	60	32	14	10	-	38	47	100
10mm x 1run	M110 W	11.2	60	32	14	10	-	38	47	100
12mm x 1run	M112 W	13.2	60	32	14	10	-	38	47	100
6mm x 1run	M106 K	7.0	70	32	20	16	-	57	73	50
10mm x 1run	M110 K	11.2	70	32	20	16	-	57	73	50
12mm x 1run	M112 K	13.2	70	32	20	16	-	57	73	50
6mm x 1run	M106 S	7.2	50	22	14	10	-	34	41	120
10mm x 1run	M110 S	11.5	50	22	14	10	-	34	41	120
12mm x 1run	M112 S	13.2	50	22	14	10	-	34	41	120



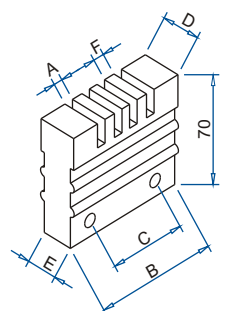
Busbar	Product code	Dimension						List Price (Rs.)		Standard Qty. Per Box
		A	B	C	D	E	F	DMC	SMC	
6mm x 2run	M206 W	7.0	60	32	14	10	5.5	37	46	100
10mm x 2run	M210 W	11.2	60	32	14	10	9	37	46	100
12mm x 2run	M212 W	13.5	60	32	14	10	11	37	46	100
6mm x 2run	M206 K	7.0	70	32	20	16	5.5	55	71	50
10mm x 2run	M210 K	11.2	70	32	20	16	9	55	71	50
12mm x 2run	M212 K	13.7	70	32	20	16	11	55	71	50



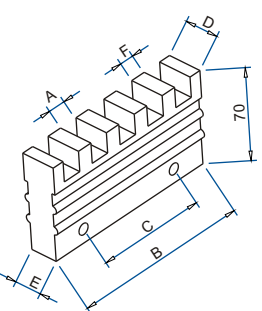
Busbar	Product code	Dimension						List Price (Rs.)		Standard Qty. Per Box
		A	B	C	D	E	F	DMC	SMC	
6mm x 3run	M306 W	7.0	60	32	14	10	5.5	40	49	100
10mm x 3run	M310 W	11.2	80	50	14	10	9	41	53	60
12mm x 3run	M312 W	13.5	90	60	15	11	11	46	68	60
6mm x 3run	M306 K	7.0	70	32	20	16	5.5	55	71	50
10mm x 3run	M310 K	11.2	100	60	20	16	9	71	91	30
12mm x 3run	M312 K	13.5	100	60	20	16	11	71	91	30



Busbar	Product code	Dimension						List Price (Rs.)		Standard Qty. Per Box
		A	B	C	D	E	F	DMC	SMC	
6mm x 4run	M406 W	7.0	80	50	14	10	5.0	41	57	60
6mm x 4run	M406 K	7.0	100	60	20	16	5.0	71	91	30
10mm x 4run	M410 K	11.2	130	60	20	16	9	102	132	25
12mm x 4run	M412 K	13.5	130	60	20	16	11	102	132	25

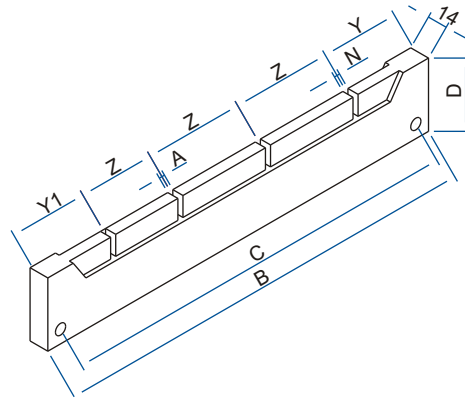


Busbar	Product code	Dimension						List Price (Rs.)		Standard Qty. Per Box
		A	B	C	D	E	F	DMC	SMC	
6mm x 5run	M506 K	7.0	100	60	20	16	5	71	91	30
10mm x 5run	M510 K	11.2	160	55	25	20	9	170	215	16
12mm x 5run	M512 K	13.5	160	55	25	20	11.9	170	215	16
6mm x 6run	M606 K	7.0	100	60	20	16	5	71	91	30
6mm x 8run	M806 K	7.0	130	60	20	16	5	135	162	25

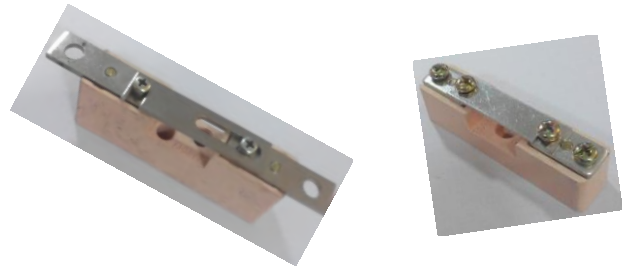


MTPN Type Supports

Busabar	Product code	Dimension								List Price (Rs.)	Standard Qty. Per Box
		A	B	C	D	N	Z	Y	Y1	SMC	
6mmx1run/ph & 6mmx1run -N	MTPN 107/30	7.2	300	280	50	7.2	65	52.5	52.5	163	26
10mmx1run/ph & 6mmx1run -N	MTPN 111/30	11.5	300	280	50	7.2	65	52.5	52.5	163	26
12mmx1run/ph & 6mmx1run -N	MTPN 114/30	13.7	300	280	50	7.2	65	52.5	52.5	163	26
6mmx1run/ph & 6mmx1run -N	MTPN 107/35	7.2	350	328	50	7.2	75	62.5	62.5	163	16
10mmx1run/ph & 6mmx1run -N	MTPN 111/35	11.5	350	328	50	7.2	75	62.5	62.5	163	16
12mmx1run/ph & 6mmx1run -N	MTPN 114/35	13.7	350	328	50	7.2	75	62.5	62.5	163	16
6mmx1run/ph & 6mmx1run -N	MTPN 107/42	7.2	420	396	60	7.2	100	52.5	62.5	233	16
10mmx1run/ph & 6mmx1run -N	MTPN 111/42	11.5	420	396	60	7.2	100	52.5	62.5	233	16
12mmx1run/ph & 6mmx1run -N	MTPN 114/42	13.7	420	396	60	7.2	100	52.5	62.5	233	16
MTPN-50	MTPN 50	-	-	-	-	-	-	-	-	181	12



Rating	Product Code	List Price in Rs.	Std. Qty per box
63A/100A	NL-100	211	20
32A	NL-32	48	100



General Terms :

- All prices are ex-factory.
- Prices are inclusive of prevailing excise duty.
- Any other Duties & Sale Tax will be charged extra as per applicable.
- Prices are subject to revision without notice.
- All disputes are subject to Haryana Jurisdiction

Authorised Channel Partner

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