MODUTEC

Simplifying Panel Building

MODFLX

FLEXIBLE COPPER BUSBARS

FASTER

FLEXIBLE

FAIR PRICED

FASTER | FLEXIBLE | FAIR PRICED

MODFLX

What is Flexible Busbar?

Flexible busbar consists of pure electrolytic copper laminates within a protective PVC jacket. The individual laminates slide smoothly against one another allowing the flexible busbar to be easily shaped, twisted and bent to fit a wide range of panel layouts. When compared to standard round cable, flexible busbar offers space saving advantages due to a tighter bend radius and the ability to replace multiple round conductors with a single piece of flexible busbar. Modification of fewer conductors and the elimination of ring terminals can result in significant cost reduction.

The Flexible Busbar Advantage

Space Advantage

- Requires less wire bending space than cable.
- With greater ampacities, a single piece of flexible busbar can replace multiple runs of cable.
- Protective PVC jacket allows the flexible busbar to be mounted in tight areas where rigid busbar could not be used.

Time Advantage

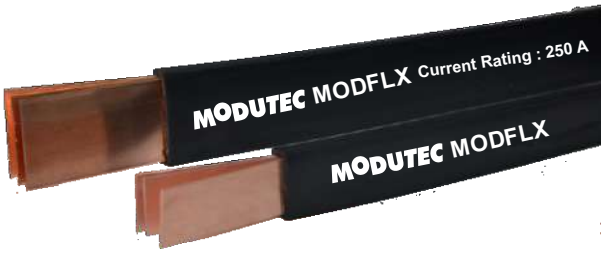
- Eliminates the need for lugs which reduces installation time and cost.
- Can replace rigid busbar designs eliminating the time spent engineering and fabricating rigid busbar.
- Easier to bend and shape than large cables, so installation is quicker.

Operating Advantage

- Greater surface area is utilized when making connections with flexible busbar, so the connection points are at a lower operating temperature.
- Can replace rigid busbar designs eliminating the time spent engineering and fabricating rigid busbar.

Aesthetic Advantage

- Increases design flexibility.
- Neatly organizes hard-to-make connections.



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Applications

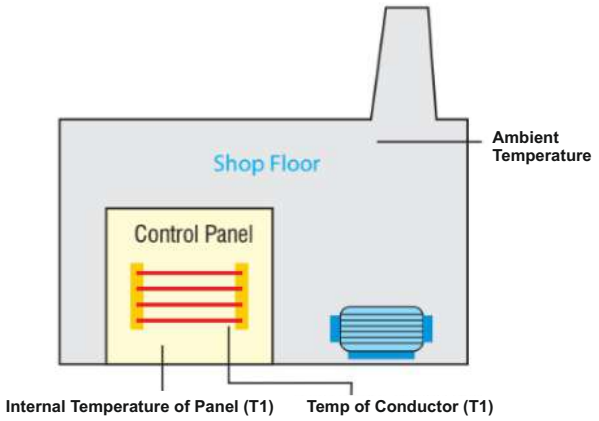
- Low Voltage Power Distribution and Control Applications
- Busbar Systems
- Motor Control Centers
- Drive Systems
- Transformers
- Switchboards
- Panel boards
- Control Panels
- Power Supplies
- Electrical Machinery
- UPS Systems

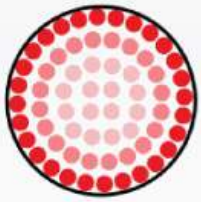
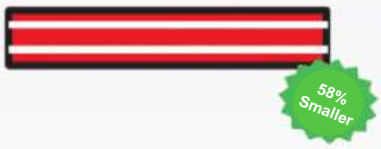
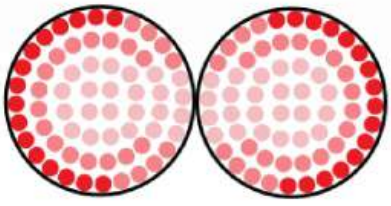
Selection of Flexible Copper Busbar

Ex: For a current of 400A with

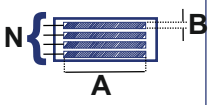
T1 = 40° C - T2 = 90° C

- T = 90 - 40 = 50° C (T2- T1)
- In 50° C column, find the closest current value to 400A
- Size : 5 x 20 x 1.00mm
  OR 3 x 24 x 1.00mm = 413 Amp.
  Select according to size of Terminal, from the table below.



Comparison of the penetration depth between COPPER CABLE & ROLYCAB POWERFLEX		
250 A	 1 X 95 SQMM COPPER CABLES 95 SQMM	 1 X ROLYCAB POWERFLEX 2 X 20 X 1 40 SQMM
630 A	 2 X 150 SQMM COPPER CABLES 300 SQMM	 1 X ROLYCAB POWERFLEX 5 X 32 X 1 160 SQMM

MODFLX - FLEXIBLE COPPER BUSBAR SIZES & AMPACITY TABLE

SL No	Current Rating (AMPS)	CAT No	 N X A X B	Cross Section Area	ΔT(K)					MOQ
					70	60	50	40	30	
1	125 A	MTFC1258605	8 X 6 X 0.5	24	196	182	166	143	128	10
2		MTFC1253908	3 X 9 X 0.8	22	158	147	134	120	104	10
3		MTFC1253135	3 X 13 X 0.5	20	198	184	167	150	130	10
4		MTFC1252158	2 X 15.5 X 0.8	26	252	234	212	191	165	10
5	250 A	MTFC2504158	4 X 15.5 X 0.8	50	380	350	320	286	248	10
6		MTFC2502201	2 X 20 X 1	40	326	300	275	246	214	10
7		MTFC2503201	3 X 20 X 1	60	428	395	360	323	280	10
8		MTFC2502241	2 X 24 X 1	48	450	416	380	340	295	10
9		MTFC2506135	6 X 13 X 0.5	39	300	277	253	226	196	10
10	400 A	MTFC4005201	5 X 20 X 1	100	498	460	420	376	326	10
11		MTFC4003241	3 X 24 X 1	72	490	453	413	370	320	10
12		MTFC4004241	4 X 24 X 1	96	550	510	465	416	360	10
13		MTFC4002321	2 X 32 X 1	64	480	445	406	363	315	10
14		MTFC4002401	2 X 40 X 1	80	538	500	455	406	352	8
15		MTFC4006158	6 X 15.5 X 0.8	74	476	440	402	360	318	5
16	500 A	MTFC5005241	5 X 24 X 1	120	608	563	514	460	398	5
17		MTFC5004321	4 X 32 X 1	128	648	600	548	490	425	5

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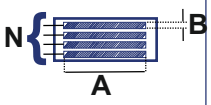
SL No	Current Rating (AMPS)	CAT No	 N X A X B	Cross Section Area	ΔT(K)					MOQ
					70	60	50	40	30	
18	630 A	MTFC6308241	8 X 24 X 1	192	802	743	678	606	525	5
19		MTFC6305321	5 X 32 X 1	160	758	702	640	573	496	5
20		MTFC6306321	6 X 32 X 1	192	846	783	715	640	555	5
21		MTFC6305401	5 X 40 X 1	200	900	832	760	680	590	5
22		MTFC6301201	10 X 20 X 1	200	762	706	645	576	500	5
23	800 A	MTFC8000241	10 X 24 X 1	240	948	877	800	716	592	3
24		MTFC8008321	8 X 32 X1	256	1018	943	860	770	667	3
25		MTFC8006401	6 X 40 X 1	240	1018	943	860	770	667	3
26		MTFC8005501	5 X 50 X 1	250	1100	1016	930	830	718	3
27	1000 A	MTFC1008401	8 X 40 X 1	320	1230	1140	1040	930	805	3
28	1250 A	MTFC1008501	8 X 50 X 1	400	1393	1290	1175	1050	912	3
29		MTFC1251501	10 X 50 X 1	500	1650	1525	1395	1245	1080	2

Notes :

This table indicates the temperature rise produced by chosen current in the given section. This calculation does not take into account the heat dissipation from the switchgear.

Length: One Quantity = 2 Meters.

Sleeve Color : Black

When using 2 or 3 Flexible busbar on edge in parallel for the same phase, the current coefficient will be :

1.72 - for 2 Busbars in Parallel
2.25 - for 3 Busbars in Parallel

Example: For 640 Amps,
Amps capacity for 2 bars in Parallel : 640A x 1.72 = 1100A
Amps capacity for 3 bars in Parallel : 640A x 2.25 = 1440A

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Technical Benefits :

- Weight and volume saving within the panel, i.e. cross section area 40% lower than a cable.
- Allows ultimate twisting and bending.
- Time saver while assembling or installing.
- Easy to use and cost effective.
- Aesthetically improves the appearance of the panel.
- Improves safety and reliability of your panel due to the reduced amount of connection.
- Guaranteed isolation thickness, including the corner.

Conductor:

- Copper strip Electrolytic grade (> 99.9% Cu)
- Surface : uncoated bare
- Tensile : > 200N/mm
- Extensibility : > 20% (minimum)
- Lamination thickness : 0.5mm to 1.00mm

Insulation:

- High grade polymer
- Colour : Black
- Thickness : 2mm
- Shore Hardness: A 85(I 3)
- ROHS Compliance
- Electrical Strength : > 20 kV/mm
- Flammability : UL 94 VO
- Tensile Strength: > 9N/mm
- Elongation: > 250%
- Dielectric rigidity: 20 kV/mm

Finished Product:

- Operation Temperature: -20 C to +105 C
- Operating Voltage: 1100 volts AC & 1500 volts DC
- Test Voltage: 3000 volts/5 minutes

SIMPLIFYING PANEL BUILDING

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