

Insulated copper flexible busbars Moflex

Insulated copper flexible busbars Moflex are manufactured out of highly flexible copper strips either in bare or tinned version. They are insulated with high quality mechanical, electrical and self-extinguishing PVC.

Halogen free available

Flexible
at low temperatures

5 year
warranty

Certified according to standards EN 61439-1:2011.
Low Voltage Directive
No. 2014/35/EU



Technical details

Electrolytic copper Cu-ETP 99,90%
Available in plain or tin-plated copper

Insulation

Self-extinguishing UL 94 V-0 black PVC insulation
Elongation: > 200 %
Tensile strength: > 15 N/mm²

Electrical characteristics

Nominal voltage 1000 V AC – 1500 V DC
Dielectric strength of the insulation: > 20 KV/mm
Operating temperature: -40 °C* up to 105 °C*
* not during dynamic pressure



Remarks about the tables

Description of the order code

E.g., MMC0801001

MM – Moflex

C – red copper

(T - in case of tinned copper)

080 – width

10 – number of sheets

* Products with the length of 3 meters can be ordered separately

** Reduction factor for the use of flexible busbars in parallel (see table on page 67)

When you use the Moflex flexible busbars parallel for the same phase, you need to use the reduction factors shown in the following example.

MMC0500401 Moflex 50x1x4, 200 mm², 732A at ΔT=50

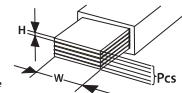
2 flexible busbars in parallel: 732 x 1,72 = 1259A

3 flexible busbars in parallel: 732 x 2,25 = 1647A

The table on the page 67 indicates the temperature rise produced by chosen current in the given cross section. This calculation does not take into account the heat dissipation from the switchboard.



* If you would like to place an order for **tin plated** copper flexible busbars, please ensure that you modify the third letter in the ordering code to "T".

Technical specification (based on width)



W (mm)	Red copper Order code	Halogen free* Order code	W x H x Pcs	Length*	Package (pcs)	Copper weight per meter (kg)
9	MMC0090201	MMC00902H1	9 x 0,8 x 2	2 m	10	0,128
	MMC0090301	MMC00903H1	9 x 0,8 x 3	2 m	10	0,193
	MMC0090401	MMC00904H1	9 x 0,8 x 4	2 m	10	0,256
	MMC0090501	MMC00905H1	9 x 0,8 x 5	2 m	10	0,321
	MMC0090601	MMC00906H1	9 x 0,8 x 6	2 m	10	0,385
15,5	MMC0160201	MMC01602H1	15,5 x 0,8 x 2	2 m	10	0,214
	MMC0160401	MMC01604H1	15,5 x 0,8 x 4	2 m	10	0,428
	MMC0160601	MMC01606H1	15,5 x 0,8 x 6	2 m	10	0,642
	MMC0161001	MMC01610H1	15,5 x 0,8 x 10	2 m	10	1,071
20	MMC0200201	MMC02002H1	20 x 1 x 2	2 m	5	0,357
	MMC0200301	MMC02003H1	20 x 1 x 3	2 m	5	0,535
	MMC0200401	MMC02004H1	20 x 1 x 4	2 m	5	0,714
	MMC0200501	MMC02005H1	20 x 1 x 5	2 m	5	0,892
	MMC0200601	MMC02006H1	20 x 1 x 6	2 m	5	1,071
	MMC0201001	MMC02010H1	20 x 1 x 10	2 m	5	1,784
24	MMC0240201	MMC02402H1	24 x 1 x 2	2 m	5	0,428
	MMC0240301	MMC02403H1	24 x 1 x 3	2 m	5	0,642
	MMC0240401	MMC02404H1	24 x 1 x 4	2 m	5	0,857
	MMC0240501	MMC02405H1	24 x 1 x 5	2 m	5	1,071
	MMC0240601	MMC02406H1	24 x 1 x 6	2 m	5	1,285
	MMC0240801	MMC02408H1	24 x 1 x 8	2 m	5	1,713
	MMC0241001	MMC02410H1	24 x 1 x 10	2 m	5	2,142
32	MMC0320201	MMC03202H1	32 x 1 x 2	2 m	5	0,571
	MMC0320301	MMC03203H1	32 x 1 x 3	2 m	5	0,857
	MMC0320401	MMC03204H1	32 x 1 x 4	2 m	5	1,142
	MMC0320501	MMC03205H1	32 x 1 x 5	2 m	5	1,428
	MMC0320601	MMC03206H1	32 x 1 x 6	2 m	5	1,713
	MMC0320801	MMC03208H1	32 x 1 x 8	2 m	5	2,284
	MMC0321001	MMC03210H1	32 x 1 x 10	2 m	5	2,851
40	MMC0400201	MMC04002H1	40 x 1 x 2	2 m	5	0,714
	MMC0400301	MMC04003H1	40 x 1 x 3	2 m	5	1,071
	MMC0400401	MMC04004H1	40 x 1 x 4	2 m	5	1,428
	MMC0400501	MMC04005H1	40 x 1 x 5	2 m	5	1,784
	MMC0400601	MMC04006H1	40 x 1 x 6	2 m	5	2,141
	MMC0400801	MMC04008H1	40 x 1 x 8	2 m	5	2,855
	MMC0401001	MMC04010H1	40 x 1 x 10	2 m	5	3,569
	50	MMC0500301	MMC05003H1	50 x 1 x 3	2 m	2
MMC0500401		MMC05004H1	50 x 1 x 4	2 m	2	1,784
MMC0500501		MMC05005H1	50 x 1 x 5	2 m	2	2,231
MMC0500601		MMC05006H1	50 x 1 x 6	2 m	2	2,677
MMC0500801		MMC05008H1	50 x 1 x 8	2 m	2	3,569
MMC0501001		MMC05010H1	50 x 1 x 10	2 m	2	4,461
63	MMC0630301	MMC06303H1	63 x 1 x 3	2 m	2	1,686
	MMC0630401	MMC06304H1	63 x 1 x 4	2 m	2	2,248
	MMC0630501	MMC06305H1	63 x 1 x 5	2 m	2	2,811
	MMC0630601	MMC06306H1	63 x 1 x 6	2 m	2	3,373
	MMC0630801	MMC06308H1	63 x 1 x 8	2 m	2	4,497
	MMC0631001	MMC06310H1	63 x 1 x 10	2 m	2	5,621
	80	MMC0800301	MMC08003H1	80 x 1 x 3	2 m	2
MMC0800401		MMC08004H1	80 x 1 x 4	2 m	2	2,851
MMC0800501		MMC08005H1	80 x 1 x 5	2 m	2	3,569
MMC0800601		MMC08006H1	80 x 1 x 6	2 m	2	4,283
MMC0800801		MMC08008H1	80 x 1 x 8	2 m	2	5,710
MMC0801001		MMC08010H1	80 x 1 x 10	2 m	2	7,138
100	MMC1000401	MMC10004H1	100 x 1 x 4	2 m	2	3,569
	MMC1000501	MMC10005H1	100 x 1 x 5	2 m	2	4,461
	MMC1000601	MMC10006H1	100 x 1 x 6	2 m	2	5,353
	MMC1000801	MMC10008H1	100 x 1 x 8	2 m	2	7,138
	MMC1001001	MMC10010H1	100 x 1 x 10	2 m	2	8,922

Technical specification (based on amperage)

Amperage (A)	Red copper Part no.	Halogen free* Part no.	Diagram			Copper weight per meter (kg)	Cu cross section (mm ²)	Ampacity at rise of temperature from 35° C to:					Reduction factor**			
			W	H	Pcs			105 °C	95 °C	85 °C	75 °C	65 °C				
			ΔT=70	ΔT=60	ΔT=50			ΔT=40	ΔT=30							
> 80	MMC0090201	MMC00902H1	9	x	0,8	x	2	0,128	14	113	105	96	86	74	1,72	2,25
> 125	MMC0090301	MMC00903H1	9	x	0,8	x	3	0,193	21,6	160	149	136	121	104	1,72	2,25
> 160	MMC0090401	MMC00904H1	9	x	0,8	x	4	0,256	29	204	189	173	155	133	1,72	2,25
	MMC0090501	MMC00905H1	9	x	0,8	x	5	0,321	36	272	253	231	206	177	1,72	2,25
> 250	MMC0160201	MMC01602H1	15,5	x	0,8	x	2	0,214	24,8	197	183	167	149	128	1,72	2,25
	MMC0090601	MMC00906H1	9	x	0,8	x	6	0,385	43,2	340	316	289	258	221	1,72	2,25
> 320	MMC0200201	MMC02002H1	20	x	1	x	2	0,357	40	329	306	280	250	215	1,72	2,25
> 320	MMC0160401	MMC01604H1	15,5	x	0,8	x	4	0,428	49,6	379	353	322	288	247	1,72	2,25
	MMC0200301	MMC02003H1	20	x	1	x	3	0,535	60	427	397	363	324	278	1,72	2,25
	MMC0240201	MMC02402H1	24	x	1	x	2	0,428	48	451	419	384	342	294	1,72	2,25
> 400	MMC0160601	MMC01606H1	15,5	x	0,8	x	6	0,642	74,4	489	455	416	371	319	1,72	2,25
	MMC0161001	MMC01610H1	15,5	x	0,8	x	10	1,071	124	539	501	458	409	351	1,72	2,25
	MMC0200401	MMC02004H1	20	x	1	x	4	0,714	80	478	444	406	363	311	1,72	2,25
	MMC0200501	MMC02005H1	20	x	1	x	5	0,892	100	497	463	423	378	324	1,72	2,25
	MMC0200601	MMC02006H1	20	x	1	x	6	1,071	120	547	509	465	415	356	1,72	2,25
	MMC0240301	MMC02403H1	24	x	1	x	3	0,642	72	491	457	418	373	320	1,72	2,25
	MMC0240401	MMC02404H1	24	x	1	x	4	0,857	96	553	514	470	420	360	1,72	2,25
	MMC0320201	MMC03202H1	32	x	1	x	2	0,571	64	483	450	411	367	315	1,72	2,25
	MMC0320301	MMC03203H1	32	x	1	x	3	0,857	96	569	529	484	432	371	1,72	2,25
	MMC0400201	MMC04002H1	40	x	1	x	2	0,714	80	535	498	455	406	349	1,72	2,25
> 500	MMC0240501	MMC02405H1	24	x	1	x	5	1,071	120	610	568	519	463	398	1,72	2,25
	MMC0240601	MMC02406H1	24	x	1	x	6	1,285	144	674	626	573	511	439	1,72	2,25
	MMC0320401	MMC03204H1	32	x	1	x	4	1,142	128	652	606	554	495	425	1,72	2,25
	MMC0400301	MMC04003H1	40	x	1	x	3	1,071	120	618	575	525	469	403	1,72	2,25
	MMC0400401	MMC04004H1	40	x	1	x	4	1,428	160	727	676	618	552	474	1,72	2,25
MMC0500301	MMC05003H1	50	x	1	x	3	1,338	150	701	652	597	532	457	1,72	2,25	
> 630	MMC0201001	MMC02010H1	20	x	1	x	10	1,784	200	763	709	649	579	497	1,72	2,25
	MMC0240801	MMC02408H1	24	x	1	x	8	1,713	192	800	744	681	607	522	1,72	2,25
	MMC0241001	MMC02410H1	24	x	1	x	10	2,142	240	875	814	744	664	570	1,72	2,25
	MMC0320501	MMC03205H1	32	x	1	x	5	1,428	160	762	708	648	578	496	1,72	2,25
	MMC0320601	MMC03206H1	32	x	1	x	6	1,713	192	850	790	723	645	554	1,72	2,25
	MMC0400501	MMC04005H1	40	x	1	x	5	1,784	200	903	840	768	686	589	1,72	2,25
	MMC0500401	MMC05004H1	50	x	1	x	4	1,784	200	861	801	732	654	561	1,72	2,25
	MMC0630301	MMC06303H1	63	x	1	x	3	1,686	189	802	746	683	609	523	1,65	2,12
> 800	MMC0320801	MMC03208H1	32	x	1	x	8	2,284	256	1023	951	870	777	667	1,72	2,25
	MMC0400601	MMC04006H1	40	x	1	x	6	2,141	240	1018	947	866	773	663	1,72	2,25
	MMC0500501	MMC05005H1	50	x	1	x	5	2,231	250	1098	1021	934	834	716	1,72	2,25
	MMC0630401	MMC06304H1	63	x	1	x	4	2,248	252	1013	942	861	769	660	1,65	2,12
	MMC0800301	MMC08003H1	80	x	1	x	3	2,141	240	977	909	831	742	637	1,65	2,12
> 1000	MMC0321001	MMC03210H1	32	x	1	x	10	2,851	320	1233	1147	1049	936	804	1,72	2,25
	MMC0400801	MMC04008H1	40	x	1	x	8	2,855	320	1233	1146	1048	936	803	1,72	2,25
	MMC0401001	MMC04010H1	40	x	1	x	10	3,569	400	1397	1300	1189	1061	911	1,65	2,12
	MMC0500601	MMC05006H1	50	x	1	x	6	2,677	300	1226	1140	1043	931	799	1,65	2,12
	MMC0500801	MMC05008H1	50	x	1	x	8	3,569	400	1392	1295	1184	1057	907	1,65	2,12
	MMC0630501	MMC06305H1	63	x	1	x	5	2,811	315	1223	1137	1040	928	797	1,65	2,12
	MMC0630601	MMC06306H1	63	x	1	x	6	3,373	378	1442	1341	1226	1095	940	1,65	2,12
	MMC0800401	MMC08004H1	80	x	1	x	4	2,851	320	1202	1118	1022	912	783	1,65	2,12
	MMC0800501	MMC08005H1	80	x	1	x	5	3,569	400	1395	1298	1187	1059	909	1,65	2,12
	MMC1000401	MMC10004H1	100	x	1	x	4	3,569	400	1449	1348	1233	1100	945	1,6	2,02
> 1250	MMC0501001	MMC05010H1	50	x	1	x	10	4,461	500	1651	1535	1404	1253	1076	1,65	2,12
	MMC0630801	MMC06308H1	63	x	1	x	8	4,497	504	1656	1540	1409	1257	1079	1,65	2,12
	MMC0800601	MMC08006H1	80	x	1	x	6	4,283	480	1630	1516	1387	1238	1063	1,65	2,12
	MMC1000501	MMC10005H1	100	x	1	x	5	4,461	500	1638	1523	1393	1243	1067	1,6	2,02
	MMC1000601	MMC10006H1	100	x	1	x	6	5,353	600	1845	1715	1569	1400	1202	1,6	2,02
> 1600	MMC0631001	MMC06310H1	63	x	1	x	10	5,621	630	1901	1768	1617	1443	1239	1,65	2,12
	MMC0800801	MMC08008H1	80	x	1	x	8	5,71	640	1902	1769	1618	1444	1240	1,65	2,12
	MMC0801001	MMC08010H1	80	x	1	x	10	7,138	800	2106	1958	1791	1599	1372	1,65	2,12
	MMC1000801	MMC10008H1	100	x	1	x	8	7,138	800	2152	2001	1830	1634	1402	1,6	2,02
> 2000	MMC1001001	MMC10010H1	100	x	1	x	10	8,922	1000	2353	2188	2001	1786	1533	1,6	2,02

Selection of Moflex

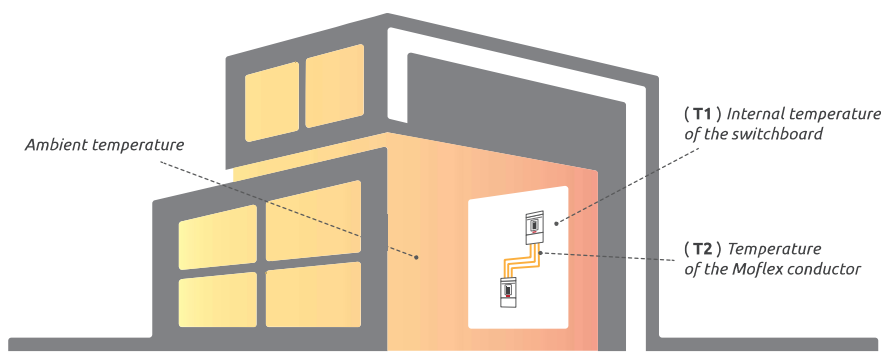
ΔT = temperature rise of the Moflex conductor (°C)
 T1 = internal temperature of the switchboard (°C)
 T2 = temperature of the Moflex conductor (°C)

For example, In = 1000A connection

Step 1: T1 = 35 °C and T2 = 85 °C
 $\Delta T = T2 - T1$
 $\Delta T = 85 °C - 35 °C$
 $\Delta T = 50 °C$

Step 2: Please find from the page 67 table on the column $\Delta T = 50$ the closest value of the 1000A. MMC0321001 Moflex 32x1x10, 320 mm², 1049A or MMC0630501 Moflex 63x1x5, 315 mm², 1040A.

Step 3: Select the Moflex flexible busbar according to the equipment terminal width.



Moflex saves you time and money



Does not require additional connection parts and saves the time of installation

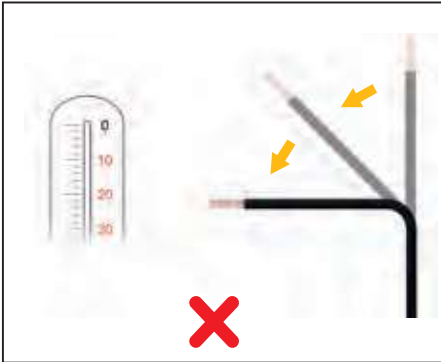


Makes direct connection without additional connectors, enables you to save space in the panel

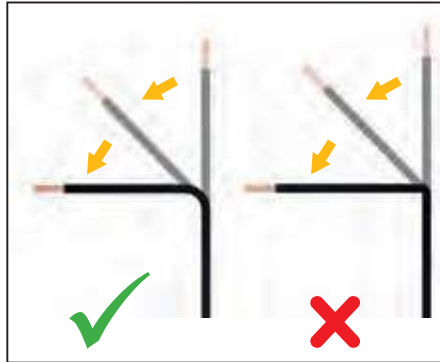


Gives additional flexibility comparing to standard rigid bar and it is easily adapted to unexpected project change

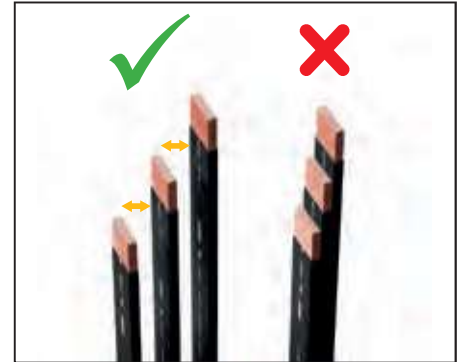
Assembly instructions



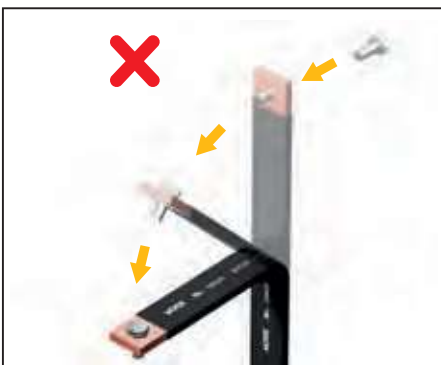
No bending at low temperatures (< 0°C or < 30F)
Elongation of the coating before breakage is reduced at low temperatures. Recommended is bending at room temperature.



No sharp-edged bending
Recommended inner radius for bending:
busbar thickness 1 - 5 mm: radius 5 mm
busbar thickness 6 - 10 mm: radius = thickness



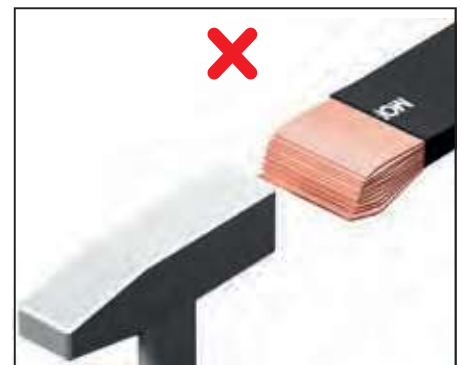
Parallel assembly has influence to heat radiation
Recommended distance between bars = min. 1 x bar width. Please pay attention to correction factors for parallel assembly!



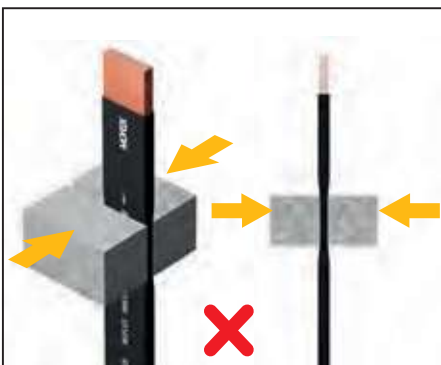
Copper files slide when bending to compensate the different length of inner and outer file
No fixation before bending! It hinders the slide and may lead to burst of PVC-coating.



Bars must be cut if copper slides emerge after bending



Heavy push back of copper files may cause deformation with resulting damage of PVC-coating



Please avoid crushing of the PVC coating
Damage of coating or reduced wall thickness endangers function of isolation.



Do not expose to dirt, water and humidity
Humidity may invade by the open ends of the busbars. This causes copper oxidation and endangers operating safety.



Do not drill holes exceeding half of the width of the bar