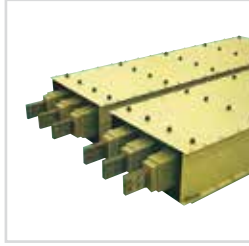






24 kV



17,5 kV



12 kV



7,2 kV

# GMT 7,2-24 kV

## Medium voltage busbars

### 7,2-24 kV

- Aluminium external housing
- Copper conductors ETP 99,9
- Protection degree from IP40 to IP68
- Cast resin insulation (optional)
- Insulation up to 24 KV insulation
- On request segregated phases and IPB
- Nominal current up to 9000 A



GMT complies with the following standard:  
IEC 60298

## ELEMENTI RETTILINEI • STRAIGHT ELEMENTS

### ELEMENTI RETTILINEI • STRAIGHT ELEMENTS

A	7,2 kV		Tipo Type
	L = 1001-2000 mm	L = 600-1000 mm	
	Codice Code	Codice Code	
800	GMT708R2	GMT708R1	A
1250	GMT712R2	GMT712R1	A
1600	GMT716R2	GMT716R1	A
2000	GMT720R2	GMT720R1	B
2500	GMT725R2	GMT725R1	B
3200	GMT732R2	GMT732R1	B
4000	GMT740R2	GMT740R1	C

### ELEMENTI RETTILINEI • STRAIGHT ELEMENTS

A	12 kV		Tipo Type
	L = 1001-2000 mm	L = 600-1000 mm	
	Codice Code	Codice Code	
800	GMT108R2	GMT108R1	A
1250	GMT112R2	GMT112R1	A
1600	GMT116R2	GMT116R1	A
2000	GMT120R2	GMT120R1	B
2500	GMT125R2	GMT125R1	B
3200	GMT132R2	GMT132R1	B
4000	GMT140R2	GMT140R1	C

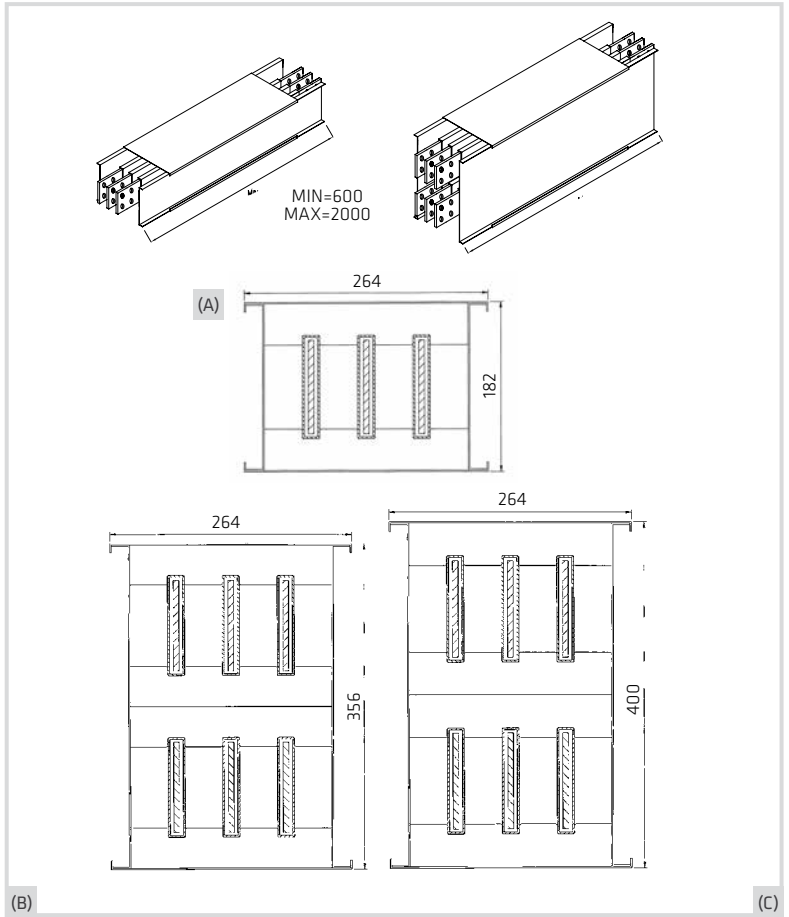
Joints screws and cover joint are always included in every element.

### INVOLUCRO ESTERNO • EXTERNAL HOUSING

	Materiale Material	Codice Code
Standard	Alluminio 2 mm Aluminium 2mm	-
In opzione As option	Alluminio verniciato Painted aluminium	COP V
	Acciaio INOX Stainless steel	COP I

### CONDUTTORI • CONDUCTORS

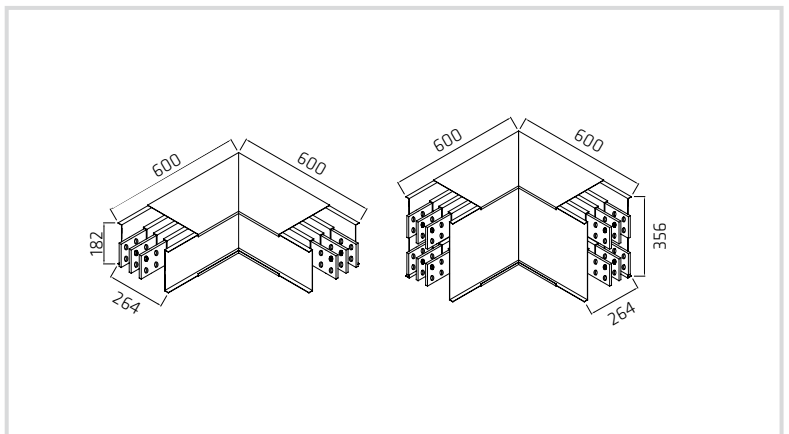
	Materiale Material	Codice Code
Standard	Rame Copper (cu etp 99,9)	-
In opzione As option	Rame stagnato Tinned copper (CU+SN)	STAGN
	Rame argentato Silvered copper (CU+AG)	ARG



## ANGOLI ORIZZONTALI • HORIZONTAL ELBOWS

A	7,2 kV	12 kV	7,2 kV	12 kV
	L = 600x600 mm		L = su misura L = customised	
	Codice Code	Codice Code	Codice Code	Codice Code
800	GMT708AO	GMT108AO	GMT708AOM	GMT108AOM
1250	GMT712AO	GMT112AO	GMT712AOM	GMT112AOM
1600	GMT716AO	GMT116AO	GMT716AOM	GMT116AOM
2000	GMT720AO	GMT120AO	GMT720AOM	GMT120AOM
2500	GMT725AO	GMT125AO	GMT725AOM	GMT125AOM
3200	GMT732AO	GMT132AO	GMT732AOM	GMT132AOM
4000	GMT740AO	GMT140AO	GMT740AOM	GMT140AOM

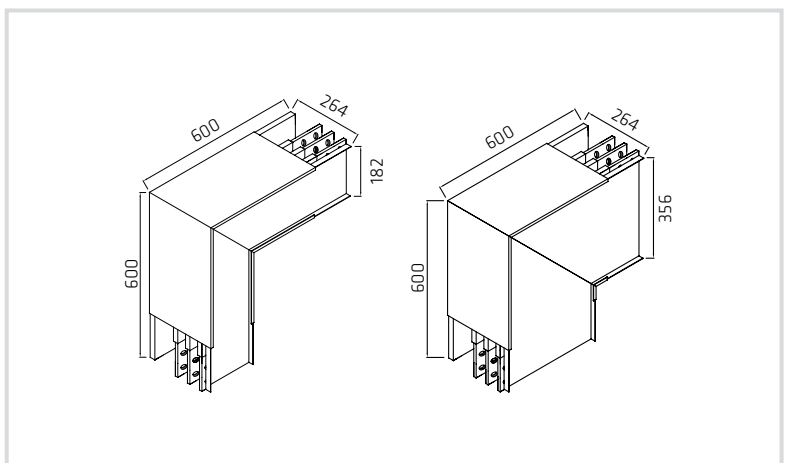
Joints screws and cover joint are always included in every element.



## ANGOLI VERTICALI • VERTICAL ELBOWS

A	7,2 kV	12 kV	7,2 kV	12 kV
	L = 600x600 mm		L = su misura L = customised	
	Codice Code	Codice Code	Codice Code	Codice Code
800	GMT708AV	GMT108AV	GMT708AVM	GMT108AVM
1250	GMT712AV	GMT112AV	GMT712AVM	GMT112AVM
1600	GMT716AV	GMT116AV	GMT716AVM	GMT116AVM
2000	GMT720AV	GMT120AV	GMT720AVM	GMT120AVM
2500	GMT725AV	GMT125AV	GMT725AVM	GMT125AVM
3200	GMT732AV	GMT132AV	GMT732AVM	GMT132AVM
4000	GMT740AV	GMT140AV	GMT740AVM	GMT140AVM

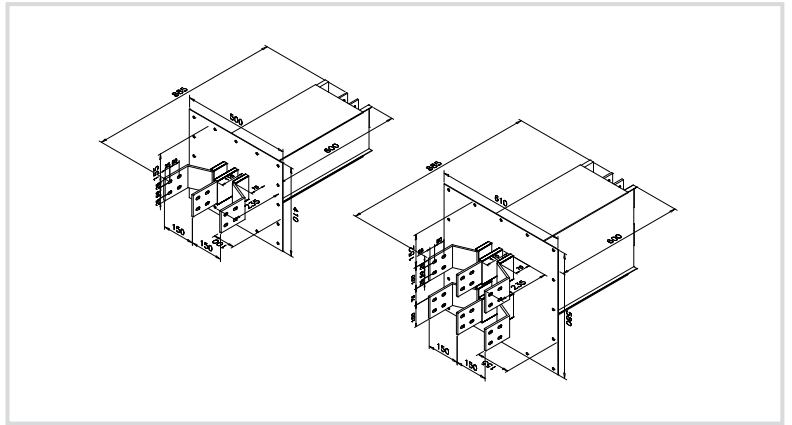
Joints screws and cover joint are always included in every element.



## TESTATE TERMINALI • TERMINAL HEADERS

A	7,2 kV	12 kV	7,2 kV	12 kV
	L = 600 mm		L = su misura L = customised	
	Codice Code	Codice Code	Codice Code	Codice Code
800	GMT708T	GMT108T	GMT708TM	GMT108TM
1250	GMT712T	GMT112T	GMT712TM	GMT112TM
1600	GMT716T	GMT116T	GMT716TM	GMT116TM
2000	GMT720T	GMT120T	GMT720TM	GMT120TM
2500	GMT725T	GMT125T	GMT725TM	GMT125TM
3200	GMT732T	GMT132T	GMT732TM	GMT132TM
4000	GMT740T	GMT140T	GMT740TM	GMT140TM

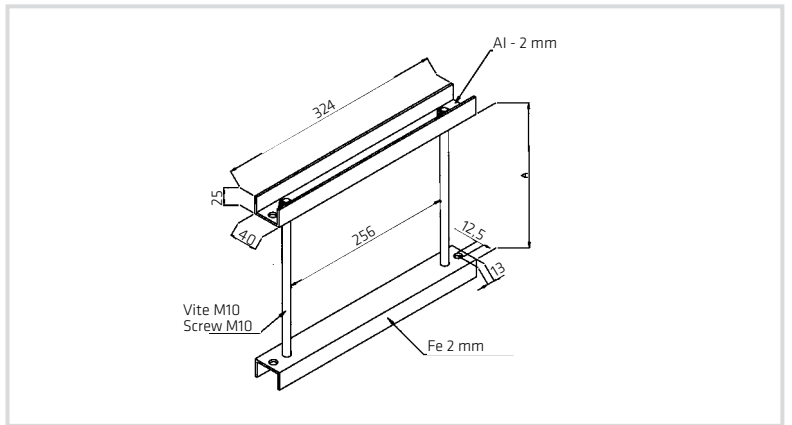
For flexible connection see ISOLFLEX section.



## STAFFA DI SOSPENSIONE • FIXING HANGER

A	kV	Codice Code	Interesse di fissaggio Mounting distance
800/1600	7,2/12	GMTSS1	1,5 m
2000/3200	7,2/12	GMTSS2	
4000	7,2/12	GMTSS3	

For consoles check in ISOLSBARRA section.



## ESECUZIONE IP55 • IP55 EXECUTION

A	kV	Codice Code	Descrizione Description
800/1600	7,2/12	SE55	IP55 execution IP55 extra price that is calculated to the total linear meters of the line.
2000/4000	7,2/12	SE55	

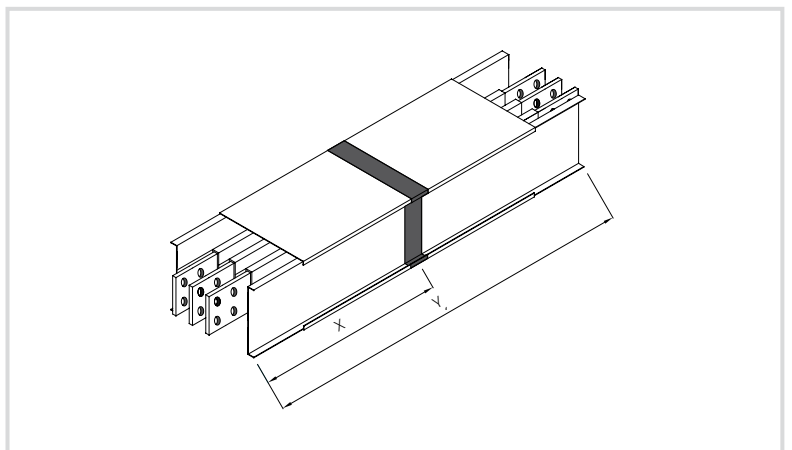
For cast resing busbars RAL 7032 standard color it is possible the execution up to IP68.



## PASSAMURO TAGLIAFIAMMA • FIRE BARRIER

A	kV	Codice Code
800/1600	7,2/12	GMTFIRE1
2000/4000	7,2/12	GMTFIRE2

The fire barrier is installed inside the busbar and it has a fire resistance REI120 (2 h). When ordering indicates the position of fire barrier.

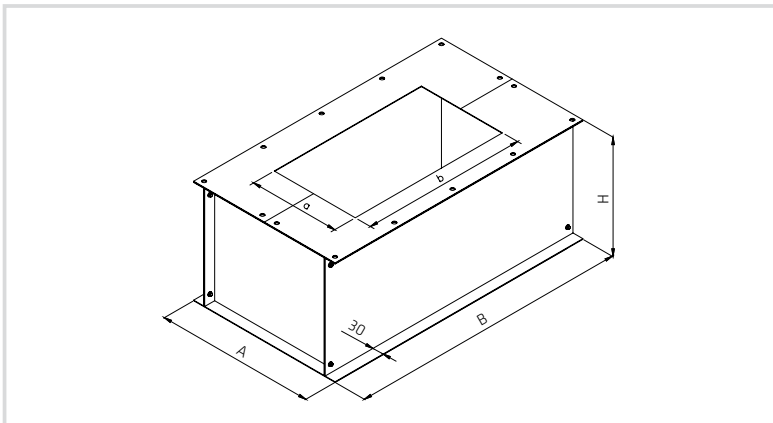


## CASSONETTO DI PROTEZIONE • PROTECTION BOX

A	kV	Codice Code	Codice in alluminio Code in aluminium
800/1600	7,2/12	CFI/3	CFI/3A
2000/3200	7,2/12	CFI/6	CFI/6A
4000	7,2/12	CFI/9	CFI/9A

. Protection box dimensions are made on costumer specifications.

For technical datas about 4000 - 4500 - 5000 A ask to our technical office.



## CAVO E GIUNTO SCALDANTE • SPACE HEATER AND JOINT

CAVO SCALDANTE • SPACE HEATER			
A	kV	Codice Code	
800/4000	7,2/12	CAVOMCA8	
GIUNTO CAVO SCALDANTE • SPACE HEATER JOINT			
A	kV	Codice Code	
800/4000	7,2/12	MCAUNIVERSAL	

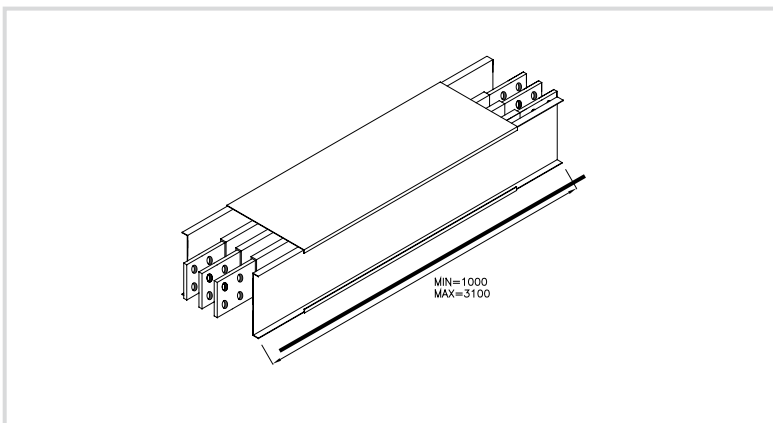
Self regulating cables that can be used to avoid condensation inside busduct. They are feed with 230 V and they have a power at 10°C of 25 W/m.



## CONDUTTORE "PE" LATERALE • EARTH BAR

A	kV	Codice Code
800/4000	7,2/12	

When requested it is possible to add an extra PE bar outside of busduct. The dimension can be choosen indicating on the CODE the width and thickness in "mm".



## SCARICO CONDENSA • DRAIN BREATHERS

A	kV	Codice Code
800/4000	7,2/12	DRAIN

To use with space heater in very high humid ambient.



## VITERIA INOX · STAINLESS STEEL SCREWS

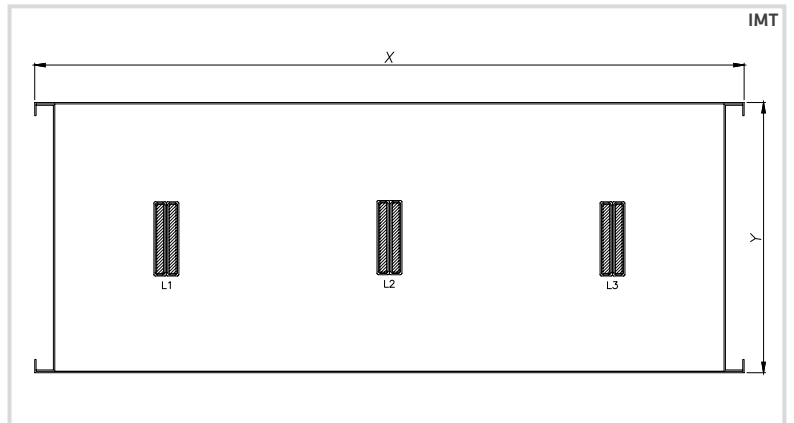
A	kV	Codice Code
800/4000	7,2/12	X

On request the joint screws can be supplied in stainless steel.



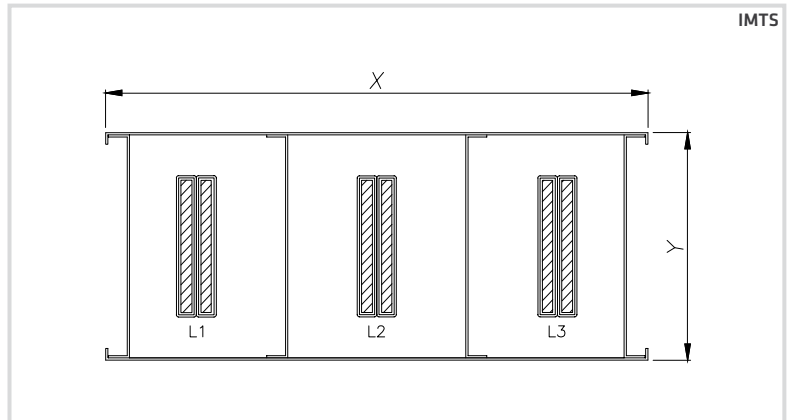
## MV RESINATO · CAST RESIN MV

The busbar IMT is cast resin encapsulated phase trunking developed to meet other advantages than standard medium voltages busbar systems. These busbars are designed and manufactured in accordance with the applicable standards as IEC-466, IEC-694, ANSI C37.20, ANSI C37.23, IEC-298 and equivalents. The copper conductors are completely isolated prior to be installed in the cast resin isolation.



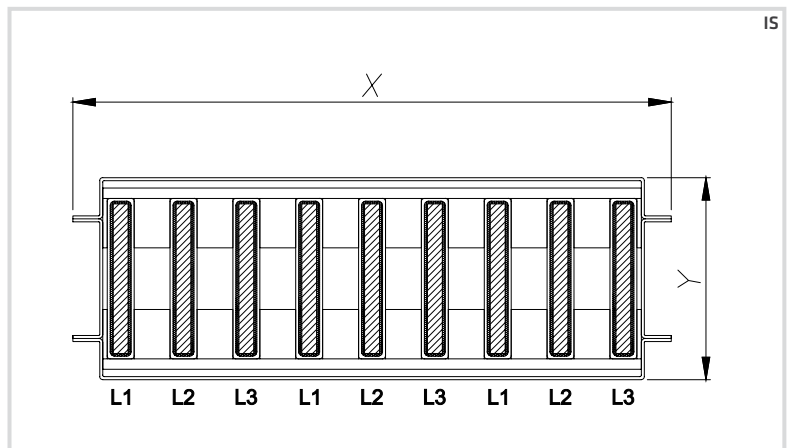
## SEGREGATO RESINATO · CAST RESIN SEGREGATED

Similar to IMT (always for voltage greater than 1000 V), it is different for the phases segregated with dedicated metallic frames.



## BT RESINATO · CAST RESIN LV

Low voltage busbar with cast resin insulation (up to 1000 V). Standard with copper or aluminium conductors. They are available with many variants with executions 3P with or without neutral and eventually dedicated PE. Ask for more information to our offices.



# Conformity declaration

GMT busbar described in this publication complies with the following standards:



CEI EN50102  
CEI EN60298-1  
CEI EN60694-2  
CEI EN60529

# Type test

- Short-circuit resistance
- Casing degree of protection (IP code)
- Insulation resistance
- Overheating limit
- Applied voltage resistance
- Resistance to normal loads
- Protective circuit efficiency
- Air and surface distances
- Casing degree of protection (IK code)

The product object of this declaration exceeds the test types above mentioned and therefore this material is marked:

Rivoli, 27/01/2003  
GRAZIADIO & C. S.p.A.

# Certifications



# GMT

# CE



GMT TECHNICAL DATA											
Nominal current	$I_n$	[A]	800	1250	1600	2000	2500	3200	4000	4500	5000
Insulation voltage		[kV]	7,2	7,2	7,2	7,2	7,2	7,2	7,2	7,2	7,2
Operational voltage		[kV]	7,2	7,2	7,2	7,2	7,2	7,2	7,2	7,2	7,2
Conductors material			CU	CU	CU	CU	CU	CU	CU	CU	CU
Phase resistance (20°C)	$R_{t_1}$	[mΩ/m]	0,0425	0,0283	0,0213	0,0142	0,0106	0,0085	0,0071	0,0047	0,0043
Phase reactance	X	[mΩ/m]	0,063	0,063	0,063	0,066	0,066	0,066	0,061	0,0116	0,0118
Phase impedance (20°C)	$Z_{20}$	[mΩ/m]	0,0760	0,0691	0,0665	0,0675	0,0668	0,0665	0,0614	0,0117	0,0119
Phase section	$S_F$	[mm <sup>2</sup> ]	400	600	800	1200	1600	2000	2400	3600	4000
Rated short circuit withstand current triphase (1s)	$I_{cw}$	[kA]	20	25	25	60	65	70	70	70	100
Losses for the Joule effect	$P_J$	[W/m]	91,2	148,3	182,9	190,5	222,2	291,9	368	657,8	910,7
Weight		kg/m	19	25	30	47	58	68	80,5	232,7	265,5
Dimensions		mm x mm	264 182	264 182	264 182	264 356	264 356	264 356	264 400	670 360	670 360

GMT TECHNICAL DATA											
Nominal current	$I_n$	[A]	800	1250	1600	2000	2500	3200	4000	4500	5000
Insulation voltage		[kV]	12	12	12	12	12	12	12	12	12
Operational voltage		[kV]	12	12	12	12	12	12	12	12	12
Conductors material			CU	CU	CU	CU	CU	CU	CU	CU	CU
Phase resistance (20°C)	$R_{t_1}$	[mΩ/m]	0,0425	0,0283	0,0213	0,0142	0,0106	0,0085	0,0071	0,0047	0,0043
Phase reactance	X	[mΩ/m]	0,063	0,063	0,063	0,066	0,066	0,066	0,061	0,0125	0,0129
Phase impedance (20°C)	$Z_{20}$	[mΩ/m]	0,0760	0,0691	0,0665	0,0675	0,0668	0,0665	0,0614	0,0126	0,0130
Phase section	$S_F$	[mm <sup>2</sup> ]	400	600	800	1200	1600	2000	2400	3600	4000
Rated short circuit withstand current triphase (1s)	$I_{cw}$	[kA]	20	25	25	60	65	70	70	70	100
Losses for the Joule effect	$P_J$	[W/m]	91,2	148,3	182,9	190,5	222,2	291,9	368	702,1	704,0
Weight		kg/m	21	27	32	50	61	72	85	248,8	282,2
Dimensions		mm x mm	264 182	264 182	264 182	264 356	264 356	264 356	264 400	670 360	670 360



## GMT TECHNICAL DATA

Nominal current	$I_n$	[A]	1000	1250	1600	1750	2000	2500	3000	3500	4000	4500	5000
Insulation voltage		[kV]	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5
Operational voltage		[kV]	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5
Conductors material			CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU
Phase resistance (20°C)	$R_{t_1}$	[mΩ/m]	35,85	26,89	21,51	17,21	14,34	10,76	8,61	7,17	5,74	4,78	4,30
Phase reactance	X	[mΩ/m]	165,5	164,1	151,4	138,6	139,9	148,3	137,1	141,7	135,7	133,7	136,7
Phase impedance (20°C)	$Z_{20}$	[mΩ/m]	170,1	166,9	153,4	140,2	141,1	149,1	137,7	142,2	136	133,9	137,0
Rated short circuit withstand current triphase (1s)	$I_{cw}$	[kA]	42	42	42	42	55	65	70	70	70	70	100
Losses for the Joule effect	$P_J$	[W/m]	156,8	197,4	275,4	283,1	303,5	357,0	518,8	511,4	719,6	639,3	945,3
Weight		kg/m	127,2	130,4	144,7	159,8	163,9	184,3	206,0	239,9	252,2	264,4	298,4
Dimensions		mm x mm	760 410	760 410	760 430	760 450	760 450	820 430	820 450	880 450	880 450	880 450	940 450

## GMT TECHNICAL DATA

Nominal current	$I_n$	[A]	1000	1250	1600	1750	2000	2500	3000	3500	4000	4500	5000
Insulation voltage		[kV]	24	24	24	24	24	24	24	24	24	24	24
Operational voltage		[kV]	24	24	24	24	24	24	24	24	24	24	24
Conductors material			CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU
Phase resistance (20°C)	$R_{t_1}$	[mΩ/m]	35,85	26,89	21,51	17,21	14,34	10,76	8,61	7,17	5,74	4,78	4,30
Phase reactance	X	[mΩ/m]	165,1	173,7	160,9	148	149,3	157,1	145,8	149,7	143,7	141,8	144,1
Phase impedance (20°C)	$Z_{20}$	[mΩ/m]	179,4	176,3	162,8	149,5	150,4	157,8	146,3	150,1	144,0	142,0	144,3
Rated short circuit withstand current triphase (1s)	$I_{cw}$	[kA]	42	42	42	42	55	65	70	70	70	70	100
Losses for the Joule effect	$P_J$	[W/m]	154,4	189,3	251,8	223,8	311,9	382,7	533,3	484,9	687,6	816,0	816,0
Weight		kg/m	146,3	149,5	164,3	179,9	184,0	204,5	226,7	261,2	273,5	285,8	320,3
Dimensions		mm x mm	880 460	880 460	880 480	880 500	880 500	940 480	940 500	1000 500	1000 500	1000 500	1060 500

