

Voltage transformers

MBEV
MBER
MBE

1-pole isolated

MBZV
MBZR
MBZ

2-pole isolated



Voltage transformers

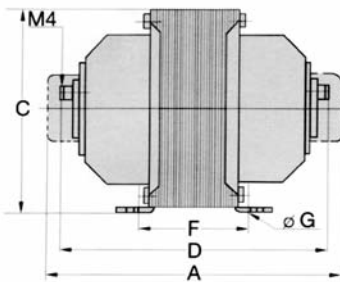
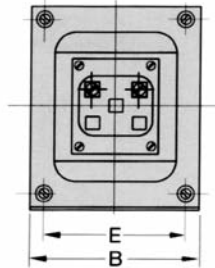
1-pole isolated



Rated voltage	Secondary rated voltage 100 V / $\sqrt{3}$ V				
Type	MBEV 6	MBEV 10	MBEV 20	MBEV 50	MBEV 100
Accuracy class	1	0.5 / 1	0.5 / 1	0.5 / 1	0.5 / 1
Burden	VA 3	VA 5/10	VA 10/20	VA 25/50	VA 50/100
Primary V	Art.-no.	Art.-no.	Art.-no.	Art.-no.	Art.-no.
100/ $\sqrt{3}$	SEV1001	SEV1010	SEV1019	SE V1028	SEV1037
110/ $\sqrt{3}$	SEV1002	SEV1011	SEV1020	SEV1029	SEV1038
220/ $\sqrt{3}$	SEV1003	SEV1012	SEV1021	SEV1030	SEV1039
380/ $\sqrt{3}$	SEV1004	SEV1013	SEV1022	SEV1031	SEV1040
400/ $\sqrt{3}$	SEV1005	SEV1014	SEV1023	SEV1032	SEV1041
500/ $\sqrt{3}$	SEV1006	SEV1015	SEV1024	SEV1033	SEV1042
600/ $\sqrt{3}$	SEV1007	SEV1016	SEV1025	SEV1034	SEV1043
800/ $\sqrt{3}$			SEV1026	SEV1035	SEV1044
1000/ $\sqrt{3}$			SEV1027	SEV1036	SEV1045

2-pole isolated

Rated voltage	Secondary rated voltage 100 V				
Type	MBZV 6	MBZV 10	MBZV 20	MBZV 50	MBZV 100
Accuracy class	1	0.5 / 1	0.5 / 1	0.5 / 1	0.5 / 1
Burden	VA 6	VA 10/20	VA 20/40	VA 50/100	VA 100/200
Primary V	Art.-no.	Art.-no.	Art.-no.	Art.-no.	Art.-no.
100	SZV1001	SZV1010	SZV1019	SZ V1028	SZV1037
110	SZV1002	SZV1011	SZV1020	SZV1029	SZV1038
220	SZV1003	SZV1012	SZV1021	SZV1030	SZV1039
380	SZV1004	SZV1013	SZV1022	SZV1031	SZV1040
400	SZV1005	SZV1014	SZV1023	SZV1032	SZV1041
500	SZV1006	SZV1015	SZV1024	SZV1033	SZV1042
600	SZV1007	SZV1016	SZV1025	SZV1034	SZV1043
800			SZV1026	SZV1035	SZV1044
1000			SZV1027	SZV1036	SZV1045



Technical data of the standard design

standard	IEC 60044-2	
max. voltage for equipment	0.72 kV up to 600 V - 1.2 kV up to 1000 V	
test voltage	0.72 kV / 3 kV; 1 kV / 6 kV	
rated frequency	50 / 60 Hz	
place of application	indoors up to 2000 m above normal sea level	
climatic conditions	IEC 60721-3-3	3K4
mechanical conditions	IEC 60721-3-3	3M3
vibration proof	IEC 60068-2	2.5 g (25...100 Hz)
isolating class	IEC 60085	E (120 °C)
housing protection class	IEC 60529	housing: IP 50 terminals with cover: IP 20
isolating material	UL E44423 UL E47960 UL E93687 UL E51047	copper coated wire winding contacts isolation coating imprinted coating

Type	Housing in mm							Weight kg	Standard accessories
	A	B	C	D	E	F	Ø G		
MBEV 6	140	85	100	125	68	52	4.5	2.3	terminal covers
MBEV 10	165	90	105	145	70	67	4.5	3	
MBEV 20	175	90	105	155	70	82	4.5	4.1	
MBEV 50	195	105	125	175	81	95	5.5	6	
MBEV 100	210	128	155	190	101	97	8	8	
MBZV 6	140	85	100	125	68	52	4.5	2.3	terminal covers
MBZV 10	165	90	105	145	70	67	4.5	3	
MBZV 20	175	90	105	155	70	82	4.5	4.1	
MBZV 50	195	105	125	175	81	95	5.5	6	
MBZV 100	210	128	155	190	101	97	8	8	

Voltage transformers

1-pole isolated

Rated voltage	Primary V	Type	Size	Secondary rated voltage 100 V / $\sqrt{3}$ V								P _i VA	L _{2th} A
				Accuracy class									
				0.2		0.5		1		3			
VA	Art.-no.	VA	Art.-no.	VA	Art.-no.	VA	Art.-no.	VA	Art.-no.				
100 / $\sqrt{3}$ 110 / $\sqrt{3}$ 200 / $\sqrt{3}$ 220 / $\sqrt{3}$ 230 / $\sqrt{3}$ corresponding isolation level	MBER 60	2	-	-	-	-	0.5	SE1001	1.5	SE1002	0.3	0.6	
	MBER 70		0.2	SE1003	0.5	SE1004	1	SE1005	3	SE1006	0.6	0.8	
	MBER 100		1	SE1007	2.5	SE1008	5	SE1009	15	SE1010	1.5	1.2	
	MBER 104		5	SE1011	15	SE1012	30	SE1013	30	SE1014	2	0.9	
	MBE 100		-	-	10	SE1015	15	SE1016	50	SE1017	5	1	
	MBE 150	1	7.5	SE1018	20	SE1019	50	SE1020	120	SE1021	10	3	
	MBE 150	2	10	SE1022	30	SE1023	60	SE1024	150	SE1025	12	3	
	MBE 150	3	15	SE1026	50	SE1027	100	SE1028	200	SE1029	15	3	
MBE 150	4	25	SE1030	60	SE1031	120	SE1032	250	SE1033	20	3		
380 / $\sqrt{3}$ / 3. 400 / $\sqrt{3}$ 500 / $\sqrt{3}$ / 3. 600 / $\sqrt{3}$ 660 / $\sqrt{3}$ corresponding isolation level	MBER 100		0.5	SE1034	1.5	SE1035	3	SE1036	10	SE1037	1.5	1.2	
	MBER 104		5	SE1038	10	SE1039	25	SE1040	25	SE1041	2	0.9	
	MBE 100		-	-	10	SE1042	15	SE1043	50	SE1044	5	1	
	MBE 150	1	7.5	SE1045	20	SE1046	50	SE1047	120	SE1048	10	3	
	MBE 150	2	10	SE1049	30	SE1050	60	SE1051	150	SE1052	12	3	
	MBE 150	3	15	SE1053	50	SE1054	100	SE1055	200	SE1056	15	3	
690 / $\sqrt{3}$ 750 / $\sqrt{3}$ 1000 / $\sqrt{3}$ corresponding isolation level U _M = 1.2 kV	MBER 100/1		-	-	1	SE1061	2	SE1062	5	SE1063	1.5	1.2	
	MBER 104/1		5	SE1064	10	SE1065	25	SE1066	25	SE1067	2	0.9	
	MBE 100/1		-	-	7.5	SE1068	15	SE1069	30	SE1070	5	1	
	MBE 150/1	1	7.5	SE1071	20	SE1072	45	SE1073	100	SE1074	10	3	
	MBE 150/1	2	10	SE1075	30	SE1076	60	SE1077	120	SE1078	12	3	
	MBE 150/1	3	15	SE1079	45	SE1080	90	SE1081	150	SE1082	15	3	
	MBE 150/1	4	20	SE1083	60	SE1084	100	SE1085	180	SE1086	20	3	

additional charges for special configurations

Auxiliary winding for production of an open delta winding (VA rating of measuring winding reduced by approx. 30 %): ... / $\sqrt{3}$ / ... / $\sqrt{3}$ / 100 / $\sqrt{3}$ V

Type	Size	Long time current
MBE 150	-	1 A / 8 h

Type	Size	Long time current
MBE 100	-	1 A / 8 h
MBE 150	1	5 A / 8 h
MBE 150	2	6 A / 8 h
MBE 150	3	8 A / 8 h

Intermediate voltage transformer for production of an open delta winding (without measuring winding):
100 / $\sqrt{3}$ / 100 / $\sqrt{3}$ V

Type	Tropical design	Resin hardened
MBE (Z) R 60		
MBE (Z) R 70		
MBE (Z) R 100 (/1)		
MBE (Z) R 104 (/1)		
MBE (Z) 100 (/1)		-
MBE (Z) 150 (/1)		-

snap-on mountings for:

Type	
MBE (Z) R 60	
MBE (Z) R 70	

joint foot mounting for:

Type	
MBE (Z) R 70	

additional special configurations upon request

see page 234

Voltage transformers

2-pole isolated

Rated voltage Primary V	Type	Size	Secondary rated voltage 100 V								P _i VA	L _{2th} A
			Accuracy class									
			0.2		0.5		1		3			
VA	Art.-no.	VA	Art.-no.	VA	Art.-no.	VA	Art.-no.	VA	Art.-no.			
100, 110, 200, 220, 230 corresponding isolation level U _M = 0.72 kV	MBZR 60	2	-	-	0.5	SZ1001	1	SZ1002	3	SZ1003	0.5	0.4
	MBZR 70		1	SZ1004	2.5	SZ1005	5	SZ1006	15	SZ1007	2	0.5
	MBZR 100		2	SZ1008	5	SZ1009	10	SZ1010	25	SZ1011	2.5	0.8
	MBZR 104		5	SZ1012	15	SZ1013	30	SZ1014	30	SZ1015	3	0.9
	MBZ 100		-	-	15	SZ1016	30	SZ1017	60	SZ1018	9	1
	MBZ 150	1	10	SZ1019	25	SZ1020	60	SZ1021	150	SZ1022	12	3
	MBZ 150	2	15	SZ1023	45	SZ1024	90	SZ1025	200	SZ1026	15	3
	MBZ 150	3	20	SZ1027	60	SZ1028	120	SZ1029	250	SZ1030	18	3
		4	30	SZ1031	75	SZ1032	150	SZ1033	300	SZ1034	24	3
380, 400, 500, 600, 660 corresponding isolation level U _M = 0.72 kV	MBZR 60	2	-	-	*	*	1	SZ1035	3	SZ1036	0.5	0.4
	MBZR 70		0.5	SZ1037	1.25	SZ1038	2.5	SZ1039	7.5	SZ1040	1.5	0.5
	MBZR 100		1.5	SZ1041	3	SZ1042	10	SZ1043	20	SZ1044	2	0.8
	MBZR 104		5	SZ1045	10	SZ1046	25	SZ1047	25	SZ1048	2.5	0.9
	MBZ 100		-	-	15	SZ1049	30	SZ1050	60	SZ1051	9	1
	MBZ 150	1	10	SZ1052	25	SZ1053	60	SZ1054	150	SZ1055	12	3
	MBZ 150	2	15	SZ1056	45	SZ1057	90	SZ1058	200	SZ1059	15	3
	MBZ 150	3	20	SZ1060	60	SZ1061	120	SZ1062	250	SZ1063	18	3
		4	30	SZ1064	75	SZ1065	150	SZ1066	300	SZ1067	24	3
690, 750, 1000 corresponding isolation level U _M = 1.2 kV	MBZR 60/1	2	-	-	*	*	*	*	*	*	0.5	0.4
	MBZR 70/1		*	*	*	*	*	*	*	*	1.5	0.5
	MBZR 100/1		1	SZ1068	2.5	SZ1069	5	SZ1070	15	SZ1071	1.5	0.8
	MBZR 104/1		5	SZ1072	10	SZ1073	25	SZ1074	25	SZ1075	2.5	0.9
	MBZ 100/1		-	-	7.5	SZ1076	15	SZ1077	30	SZ1078	9	0.8
	MBZ 150/1	1	7.5	SZ1079	20	SZ1080	50	SZ1081	120	SZ1082	12	2
	MBZ 150/1	2	10	SZ1083	30	SZ1084	60	SZ1085	150	SZ1086	15	2
	MBZ 150/1	3	15	SZ1087	45	SZ1088	100	SZ1089	200	SZ1090	18	2
		4	20	SZ1091	60	SZ1092	120	SZ1093	250	SZ1094	24	2

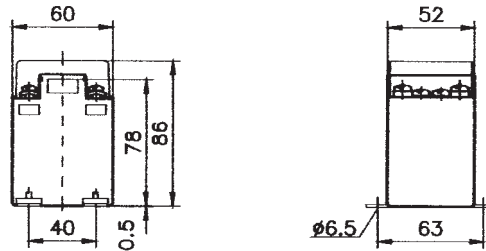
* upon request

Technical data of the standard design		
standard	IEC 60044-2 DIN VDE 0414 T.2	
max. voltage for equipment	U _m 0.72 kV MBE.... MBZ... (U _m 1.2 kV) MBE.../1. MBZ.../1	
test voltage	3 kV. 50 Hz. 1 min (6 kV. 50 Hz. 1 min)	
rated frequency	50...60 Hz	
place of application	indoors up to 2000 m above normal sea level	
climatic conditions	IEC 721 3K4	
mechanical conditions	IEC 721 3K3	
vibration proof	IEC 68-2 2.5 g (25...100 Hz)	
isolating class	DIN IEC 85 VDE 0301-1 E 120 °C	
housing protection class	IEC EN 60529 DIN VDE 0470 housing: IP 50 terminals with cover: IP 20	

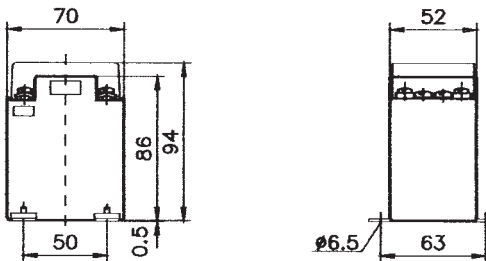
Voltage transformers

Type	Size	Housing in mm				Weight kg	Standard accessories
		Width	Height	Depth	H		
MBZR 60 (/1)	2	60	78	52		0.5	foot mounting terminal covers
MBZR 70 (/1)		70	86	52		0.6	
MBZR 100 (/1)		100	118	73		1.1	
MBZR 104 (/1)		104	127	75		2.0	
MBZ 100 (/1)		102	105	111		3.1	
MBZ 150 (/1)	1	150	123	142	40	7.0	
MBZ 150 (/1)	2	150	123	152	50	8.0	
MBZ 150 (/1)	3	150	123	162	60	9.0	
MBZ 150 (/1)	4	150	123	182	80	11.5	

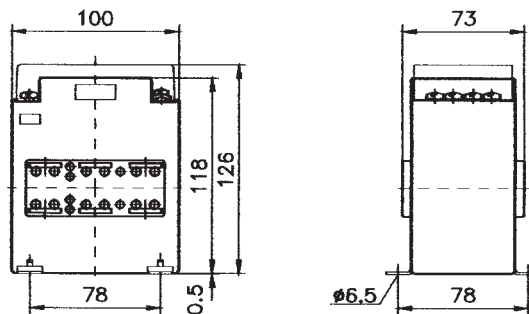
MBZR 60 (/1)
(MBER 60)



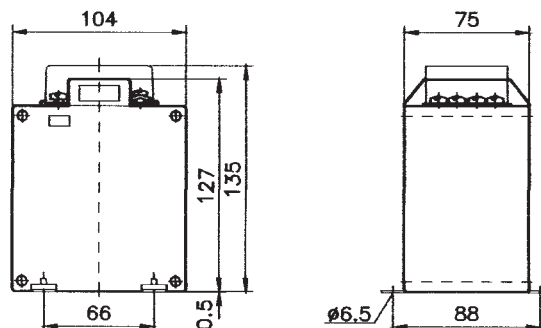
MBZR 70 (/1)
(MBER 70)



MBZR 100 (/1)
(MBER 100)



MBZR 104 (/1)
[MBER 104 (/1)]



Order example

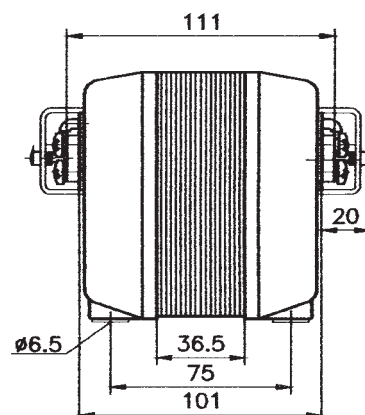
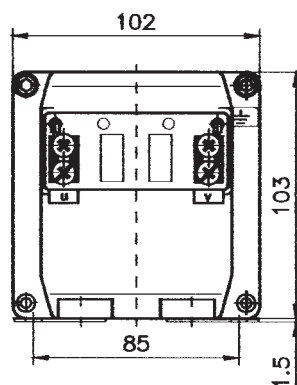
type: MBZR 60
 rated measuring ratio: 200/100 V
 rated burden: 0.5 VA
 accuracy class: 0.5
 art.-no.: SZ1001-200

Voltage transformers

Type	Size	Housing in mm				Weight kg	Standard accessories
		Width	Height	Depth	H		
MBER 60 (/1)	2	60	78	52		0.5	foot mounting terminal covers
MBER 70 (/1)		70	86	52		0.6	
MBER 100 (/1)		100	118	73		1.1	
MBER 104 (/1)		104	127	75		2.0	
MBE 100 (/1)		102	105	111		3.1	
MBE 150 (/1)	1	150	123	142	40	7.0	
MBE 150 (/1)	2	150	123	152	50	8.0	
MBE 150 (/1)	3	150	123	162	60	9.0	
MBE 150 (/1)	4	150	123	182	80	11.5	

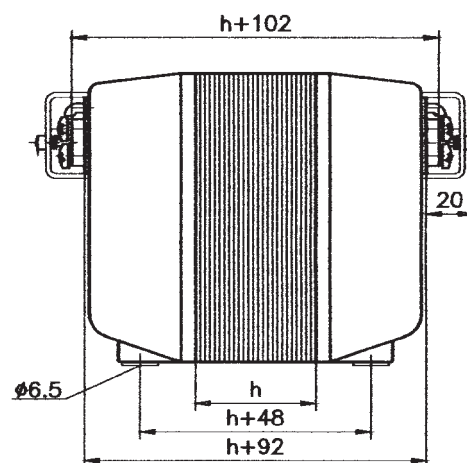
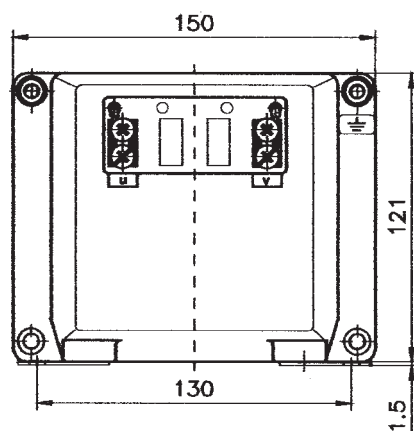
MBER 60, MBER 70, MBER 100(/1), MBER 104 (/1) drawings see page 235

MBE 100 (/1)
[MBZ 100 (/1)]



MBE 150 (/1)
[MBZ 150 (/1)]

size 1 – size 4



Order example

type	MBE 100/1
rated measuring ratio	750/3/100/3
rated burden	15 VA
accuracy class	1
art.-no.	SE1069-750