

Ministab and Sterostab IP54 indoor

Electrodynamic Voltage Regulators with IP54 protection degree for indoor installation.

Guide to selection and technical data.

M2 Symmetrical Models for SINGLE-PHASE 230V mains

M2 AS Asymmetrical Models for SINGLE-PHASE 230V mains

T3 Models for THREE-PHASE 400V mains (common regulation of the three phases)

Y3 Models for THREE-PHASE 400V mains (independent regulation of each phase)

Y3 AS Asymmetrical Models for THREE-PHASE 400V mains (independent regulation of each phase)

The models listed in the following tables are contained in metallic cabinets characterized by a protection degree IP54, ensuring protection from dust and splashed water.

These AVR's are therefore suitable for installation in dusty and very hot indoor environment.

Two different cooling systems are available, depending on the ambient temperature and the amount of dust that would interfere with the operation of the equipment: forced ventilation with fans or air conditioning.

1) The AVR's with forced ventilation by means of fan, identified in the tables by the suffix ...AP, are designed for a max ambient temperature of 40°C. If the ambient temperature is higher, it is necessary to check the efficacy of the fan, keeping in mind the max level of cooling performed. As a matter of fact, it may happen that the forced ventilation system provided for the models in the catalogue is not enough and that a different solution (air conditioner or a fan of bigger capacity) is necessary in certain cases.

2) On the contrary, air conditioning always ensures a safe cooling when the ambient temperature exceeds 40°C and/or when the environment is extremely dusty. The models equipped with air conditioner are identified by the suffix ...AK.

In case of order of either version, it is always necessary to mention the max ambient temperature

The following tables only show models for single-phase 230V and three-phase 400V mains. Upon request, stabilizers can be manufactured for 100, 110, 115, 120, 127, 200, 220, 240, 265, 277 V single-phase mains, and for 208, 220, 230, 240, 380, 415, 440, 460, 480 and 500V three phase mains.

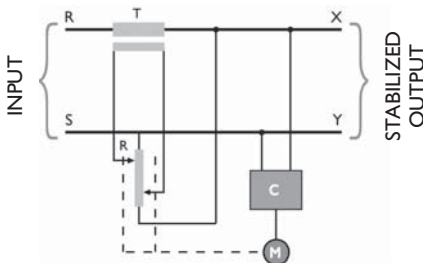
The models listed in the T3 tables perform the voltage regulation on the average of the three phases and are therefore suitable for balanced lines and for a maximum unbalance between phases up to 50%. T3 models, being equipped with just one stabilizing circuit ensuring a common regulation of the 3 phases, are less expensive.

They can be connected to input mains without neutral.

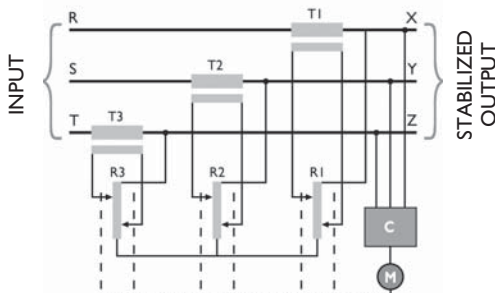
The models listed in the Y3 tables are equipped with one stabilizing circuit for each phase, hence they are suitable for unbalanced mains and a maximum unbalance between phases up to 100%. For their correct operation, neutral is mandatory. Therefore, the input line must have 4 wires (3 phases + neutral).

Optional fittings & special versions:

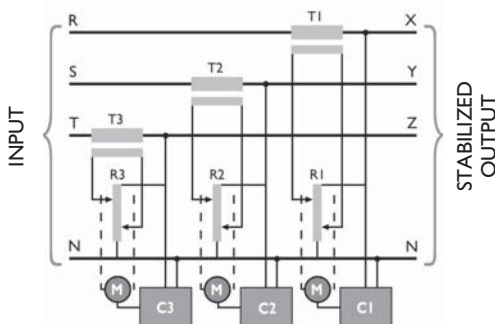
- Ammeter
- Frequency meter
- Multi-function meter
- Input or output circuit breaker (with or without earth leakage)
- Manual or automatic by-pass
- Isolating transformer
- Surge arrester (lightning protection)
- Over/under voltage protection
- Thermal relay
- Soft start
- Reversed phase sequence and phase failure protection



SINGLE-PHASE M STABILIZERS



THREE-PHASE T STABILIZERS



THREE-PHASE Y STABILIZERS

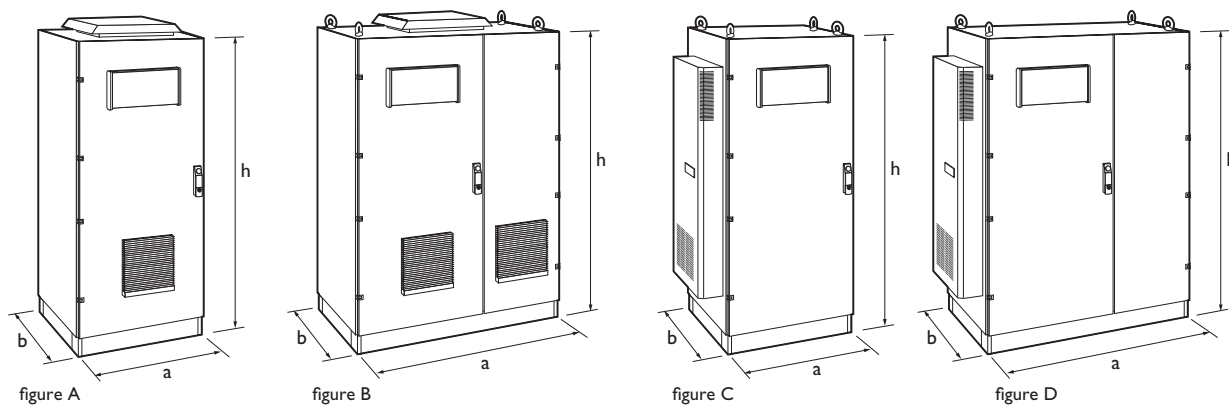
T = buck-boost transformer
R = variable transformer
C = electronic control circuit
M = servomotor

M2..AP Models for SINGLE-PHASE 230V 50/60 Hz MAINS, protection degree IP54 indoor, cooling by fan

Model	Rated Power kVA	Rated current Amps	Voltage variation %	Response time ms/V	Accuracy ±%	Standard fittings	Size mm a x b x h	Weight kg	Figure
M211AP11	11	48	±25	24					
M211AP14	14	61	±20	28					
M211AP21	21	91	±15	31	±1	V, L	650x650x1400	120	A
M211AP33	33	143	±10	36					
M212AP15	15	65	±25	26					
M212AP21	21	91	±20	42					
M212AP30	30	130	±15	58	±1	V, L	650x650x1400	130	A
M212AP40	40	174	±10	64					
M213AP18	18	78	±25	10					
M213AP25	25	109	±20	10					
M213AP36	36	157	±15	12	±1	V, L	650x650x1400	195	A
M213AP56	56	243	±10	18					
M214AP25	25	109	±25	19					
M214AP35	35	152	±20	21					
M214AP51	51	222	±15	24	±1	V, L	650x650x1900	250	A
M214AP78	78	339	±10	31					
M216AP40	40	174	±25	19					
M216AP53	53	230	±20	21					
M216AP76	76	330	±15	24	±1	V, L	650x650x1900	285	A
M216AP103	103	448	±10	31					
M217AP56	56	243	±25	16					
M217AP76	76	330	±20	17					
M217AP105	105	457	±15	20	±1	V, L	650x650x1900	370	A
M217AP160	160	696	±10	26					
M218AP76	76	330	±25	21					
M218AP103	103	448	±20	23					
M218AP150	150	652	±15	26	±1	V, L	1100x650x1900	450	B
M218AP216	216	939	±10	33					
M219AP104	104	452	±25	29					
M219AP156	156	678	±20	33					
M219AP203	203	883	±15	38	±1	V, L	1100x650x1900	620	B
M219AP276	276	1200	±10	47					

M2..AK Models for SINGLE-PHASE 230V 50/60 Hz MAINS, protection degree IP54 indoor, cooling by air conditioner

M211AK11	11	48	±25	24					
M211AK14	14	61	±20	28					
M211AK21	21	91	±15	31	±1	V, L	830x650x1300	170	C
M211AK33	33	143	±10	36					
M212AK15	15	65	±25	26					
M212AK21	21	91	±20	42					
M212AK30	30	130	±15	58	±1	V, L	830x650x1300	180	C
M212AK40	40	174	±10	64					
M213AK18	18	78	±25	10					
M213AK25	25	109	±20	10					
M213AK36	36	157	±15	12	±1	V, L	830x650x1300	246	C
M213AK56	56	243	±10	18					
M214AK25	25	109	±25	19					
M214AK35	35	152	±20	21					
M214AK51	51	222	±15	24	±1	V, L	830x650x1800	296	C
M214AK78	78	339	±10	31					
M216AK40	40	174	±25	19					
M216AK53	53	230	±20	21					
M216AK76	76	330	±15	24	±1	V, L	830x650x1800	336	C
M216AK103	103	448	±10	31					
M217AK56	56	243	±25	16					
M217AK76	76	330	±20	17					
M217AK105	105	457	±15	20	±1	V, L	830x650x1800	420	C
M217AK160	160	696	±10	26					
M218AK76	76	330	±25	21					
M218AK103	103	448	±20	23					
M218AK150	150	652	±15	26	±1	V, L	1340x650x1800	520	D
M218AK216	216	939	±10	33					
M219AK104	104	452	±25	29					
M219AK156	156	678	±20	33					
M219AK203	203	883	±15	38	±1	V, L	1340x650x1800	690	D
M219AK276	276	1200	±10	47					

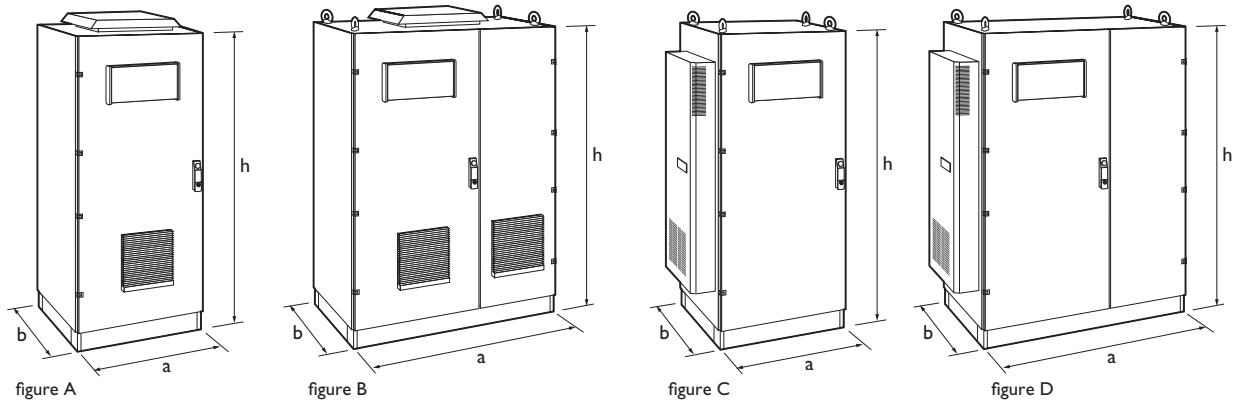


M2..APAS Asymmetrical models for SINGLE-PHASE 230V 50/60 Hz MAINS, protection degree IP54 indoor, cooling by fan

Model	Rated Power kVA	Rated current Amps	Voltage variation %	Response time ms/V	Accuracy ±%	Standard fittings	Size mm a x b x h	Weight kg	Figure
M211AP10AS	10	43	+15%, -35%	24	±1	V, L	650x650x1400	121	A
M212AP14AS	14	61	+15%, -35%	10	±1	V, L	650x650x1400	131	A
M213AP18AS	18	78	+15%, -35%	10	±1	V, L	650x650x1900	245	A
M214AP25AS	25	109	+15%, -35%	19	±1	V, L	650x650x1900	320	A
M216AP35AS	35	152	+15%, -35%	19	±1	V, L	650x650x1900	390	A
M217AP54AS	54	235	+15%, -35%	28	±1	V, L	1100x650x1900	510	B
M218AP72AS	72	313	+15%, -35%	21	±1	V, L	1100x650x1900	570	B
M219AP107AS	107	465	+15%, -35%	30	±1	V, L	1100x1100x1900	760	B

M2..AKAS Asymmetrical models for SINGLE-PHASE 230V 50/60 Hz MAINS, protection degree IP54 indoor, cooling by air conditioner

Model	Rated Power kVA	Rated current Amps	Voltage variation %	Response time ms/V	Accuracy ±%	Standard fittings	Size mm a x b x h	Weight kg	Figure
M211AK10AS	10	43	+15%, -35%	24	±1	V, L	830x650x1300	172	C
M212AK14AS	14	61	+15%, -35%	10	±1	V, L	830x650x1300	182	C
M213AK18AS	18	78	+15%, -35%	10	±1	V, L	830x650x1300	296	C
M214AK25AS	25	109	+15%, -35%	19	±1	V, L	830x650x1800	370	C
M216AK35AS	35	152	+15%, -35%	19	±1	V, L	830x650x1800	440	C
M217AK54AS	54	235	+15%, -35%	28	±1	V, L	1340x650x1800	576	D
M218AK72AS	72	313	+15%, -35%	21	±1	V, L	1340x650x1800	636	D
M219AK107AS	107	465	+15%, -35%	30	±1	V, L	1460x1100x1800	840	D



T3..AP Models for THREE-PHASE 400V 50/60 Hz MAINS with regulation on the average of the three phases, protection degree IP54 indoor, cooling by fan

Model	Rated Power kVA	Rated current Amps	Voltage variation %	Response time ms/V	Accuracy ±%	Standard fittings	Size mm a x b x h	Weight kg	Figure
T308AP10	10	14	±25	16	±1	V,L	650x650x1400	130	A
T308AP15	15	22	±20	18					
T308AP21	21	30	±15	21					
T308AP31	31	45	±10	21					
T310AP21	21	30	±25	11	±1	V, L	650x650x1400	256	A
T310AP25	25	36	±20	12					
T310AP35	35	51	±15	14					
T310AP50	50	72	±10	18					
T312AP42	42	61	±25	11	±1	V, L	650x650x1900	330	A
T312AP55	55	73	±20	12					
T312AP80	80	115	±15	14					
T312AP105	105	152	±10	18					
T314AP55	55	73	±25	11	±1	V, L	650x650x1900	365	A
T314AP80	80	115	±20	12					
T314AP110	110	159	±15	14					
T314AP183	183	264	±10	18					
T315AP80	80	115	±25	16	±1	V, L	650x650x1900	430	A
T315AP100	100	145	±20	17					
T315AP150	150	217	±15	20					
T315AP230	230	332	±10	26					
T316AP110	110	159	±25	13	±1	V, L	1100x650x1900	575	B
T316AP155	155	224	±20	14					
T316AP220	220	318	±15	17					
T316AP350	350	506	±10	22					
T318AP175	175	253	±25	16	±1	V, L	1100x650x1900	1040	B
T318AP220	220	318	±20	18					
T318AP330	330	476	±15	20					
T318AP515	515	743	±10	32					

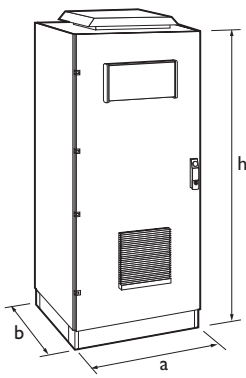


figure A

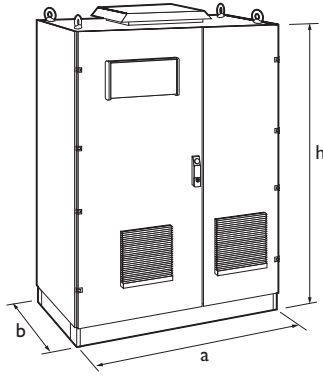


figure B

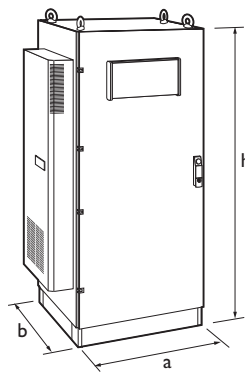


figure C

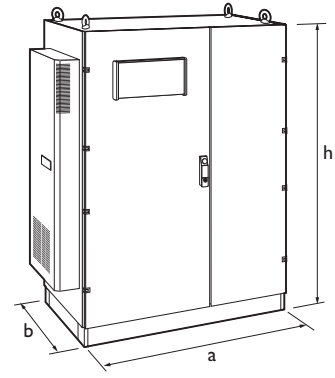


figure D

T3..AK Models for THREE-PHASE 400V 50/60 Hz MAINS with regulation on the average of the three phases, protection degree IP54 indoor, cooling by air conditioner

Model	Rated Power kVA	Rated current Amps	Voltage variation %	Response time ms/V	Accuracy ±%	Standard fittings	Size mm a x b x h	Weight kg	Figure
T308AK10	10	14	±25	16					
T308AK15	15	22	±20	18					
T308AK21	21	30	±15	21	±1	V,L	830x650x1300	180	C
T308AK31	31	45	±10	21					
T310AK21	21	30	±25	11					
T310AK25	25	36	±20	12					
T310AK35	35	51	±15	14	±1	V, L	830x650x1300	305	C
T310AK50	50	72	±10	18					
T312AK42	42	61	±25	11					
T312AK55	55	73	±20	12					
T312AK80	80	115	±15	14	±1	V, L	830x650x1300	380	C
T312AK105	105	152	±10	18					
T314AK55	55	73	±25	11					
T314AK80	80	115	±20	12					
T314AK110	110	159	±15	14	±1	V, L	830x650x1800	415	C
T314AK183	183	264	±10	18				480	
T315AK80	80	115	±25	16					
T315AK100	100	145	±20	17					
T315AK150	150	217	±15	20	±1	V, L	830x650x1800	480	C
T315AK230	230	332	±10	26					
T316AK110	110	159	±25	13				640	
T316AK155	155	224	±20	14					
T316AK220	220	318	±15	17	±1	V, L	1340x650x1800	680	D
T316AK350	350	506	±10	22				700	
T318AK175	175	253	±25	16					
T318AK220	220	318	±20	18					
T318AK330	330	476	±15	20	±1	V, L	1460x1100x1800	1120	D
T318AK515	515	743	±10	32				1170	
T319AK250	250	361	±25	23					
T319AK325	325	469	±20	26					
T319AK470	470	678	±15	29	±1	V, L	1460x1100x1800	1500	D
T319AK720	720	1040	±10	46					

Y3..AP Models for THREE-PHASE+N 400V 50/60 Hz MAINS with independent regulation on each phase , protection degree IP54 indoor, cooling by fan

Model	Rated Power kVA	Rated current Amps	Voltage variation %	Response time ms/V	Accuracy ±%	Standard fittings	Size mm a x b x h	Weight kg	Figure
Y306AP9	9	13	±25	12	±1	V, L	650x650x1400	125	A
Y306AP12	12	17	±20	14					
Y306AP15	15	22	±15	16					
Y306AP24	24	35	±10	19					
Y308AP15	15	22	±25	14	±1	V, L	650x650x1400	150	A
Y308AP18	18	26	±20	16					
Y306AP21	21	30	±15	18					
Y310AP24	24	35	±25	14	±1	V, L	650x650x1400	262	A
Y310AP30	30	43	±20	16					
Y310AP45	45	65	±15	18					
Y310AP60	60	87	±10	21					
Y311AP33	33	48	±25	14	±1	V, L	650x650x1900	272	A
Y311AP44	44	64	±20	16					
Y311AP63	63	91	±15	18					
Y311AP100	100	145	±10	21					
Y312AP45	45	65	±25	15	±1	V, L	650x650x1900	340	A
Y312AP60	60	87	±20	24					
Y312AP90	90	130	±15	33					
Y312AP120	120	173	±10	37					
Y313AP55	55	79	±25	6	±1	V, L	1100x650x1900	472	B
Y313AP75	75	108	±20	6					
Y313AP110	110	159	±15	7					
Y313AP170	170	245	±10	11					
Y314AP75	75	108	±25	11	±1	V, L	1100x650x1900	560	B
Y314AP100	100	145	±20	12					
Y314AP155	155	224	±15	14					
Y314AP235	235	339	±10	18					
Y316AP120	120	173	±25	11	±1	V, L	1100x650x1900	630	B
Y316AP160	160	231	±20	12					
Y316AP230	230	332	±15	14					
Y316AP310	310	447	±10	18					
Y317AP170	170	245	±25	16	±1	V, L	1100x650x1900	760	B
Y317AP230	230	332	±20	17					
Y317AP315	315	455	±15	20					
Y317AP480	480	694	±10	26					
Y318AP230	230	332	±25	12	±1	V, L	1100x1100x1900	1245	B
Y318AP310	310	447	±20	13					
Y318AP450	450	650	±15	15					
Y318AP650	650	938	±10	19					
Y320AP430	430	621	±25	14	±1	V, L	3x1100x1100x1900	3x940	3B
Y320AP630	630	910	±20	16					
Y320AP830	830	1198	±15	19					
Y320AP1200	1200	1734	±10	25					

Y3..AK Models for THREE-PHASE+N 400V 50/60 Hz MAINS with independent regulation on each phase, protection degree IP54 indoor, cooling by air conditioner

Model	Rated Power kVA	Rated current Amps	Voltage variation %	Response time ms/V	Accuracy ±%	Standard fittings	Size mm a x b x h	Weight kg	Figure
Y306AK9	9	13	±25	12					
Y306AK12	12	17	±20	14	±1	V, L	830x650x1300	173	C
Y306AK15	15	22	±15	16					
Y306AK24	24	35	±10	19					
Y308AK15	15	22	±25	14					
Y308AK18	18	26	±20	16	±1	V, L	830x650x1300	200	C
Y306AK21	21	30	±15	18					
Y310AK24	24	35	±25	14					
Y310AK30	30	43	±20	16	±1	V, L	830x650x1300	312	C
Y310AK45	45	65	±15	18					
Y310AK60	60	87	±10	21					
Y311AK33	33	48	±25	14					
Y311AK44	44	64	±20	16	±1	V, L	830x650x1800	323	C
Y311AK63	63	91	±15	18					
Y311AK100	100	145	±10	21					
Y312AK45	45	65	±25	15					
Y312AK60	60	87	±20	24	±1	V, L	830x650x1800	390	C
Y312AK90	90	130	±15	33					
Y312AK120	120	173	±10	37					
Y313AK55	55	79	±25	6					
Y313AK75	75	108	±20	6	±1	V, L	1340x650x1800	535	D
Y313AK110	110	159	±15	7					
Y313AK170	170	245	±10	11					
Y314AK75	75	108	±25	11					
Y314AK100	100	145	±20	12	±1	V, L	1340x650x1800	630	D
Y314AK155	155	224	±15	14					
Y314AK235	235	339	±10	18					
Y316AK120	120	173	±25	11					
Y316AK160	160	231	±20	12	±1	V, L	1340x650x1800	700	D
Y316AK230	230	332	±15	14					
Y316AK310	310	447	±10	18					
Y317AK170	170	245	±25	16					
Y317AK230	230	332	±20	17	±1	V, L	1340x650x1800	830	D
Y317AK315	315	455	±15	20					
Y317AK480	480	694	±10	26					
Y318AK230	230	332	±25	12					
Y318AK310	310	447	±20	13	±1	V, L	1460x1100x1800	1320	D
Y318AK450	450	650	±15	15					
Y318AK650	650	938	±10	19					
Y319AN330	330	476	±25	17					
Y319AN450	450	650	±20	19	±1	V, L	1460x1100x1800	1920	D
Y319AN630	630	909	±15	22					
Y319AN830	830	1198	±10	27					
Y320AK430	430	621	±25	14					
Y320AK630	630	910	±20	16	±1	V, L	3x1460x1100x1800	3x1050	3D
Y320AK830	830	1198	±15	19					
Y320AK1200	1200	1734	±10	25					

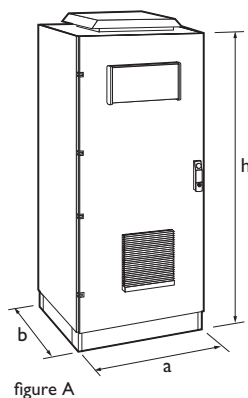


figure A

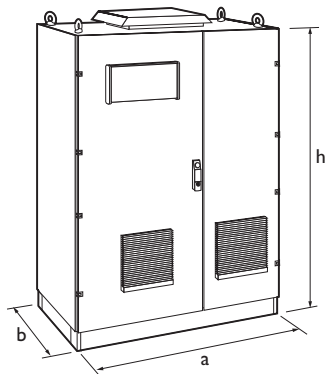


figure B

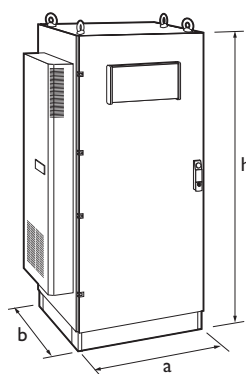


figure C

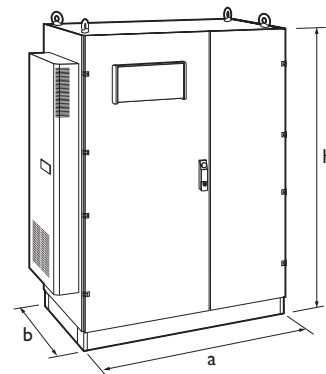


figure D

Y3..APAS *Asymmetrical models for THREE-PHASE+N 400V 50/60 Hz MAINS with independent regulation on each phase, protection degree IP54 indoor, cooling by fan*

Model	Rated Power kVA	Rated current Amps	Voltage variation %	Response time ms/V	Accuracy ±%	Standard fittings	Size mm a x b x h	Weight kg	Figure
Y304AP3,3AS	3,3	4,8	+15%, -35%	8	±1	V, L	650x650x1400	115	A
Y306AP7,5AS	7,5	11	+15%, -35%	12	±1	V, L	650x650x1400	130	A
Y308AP10,5AS	10,5	15	+15%, -35%	14	±1	V, L	650x650x1400	145	A
Y310AP21AS	21	30	+15%, -35%	14	±1	V, L	650x650x1900	285	A
Y311AP30AS	30	43	+15%, -35%	14	±1	V, L	650x650x1900	345	A
Y312AP40AS	40	58	+15%, -35%	15	±1	V, L	650x650x1900	460	A
Y313AP55AS	55	79	+15%, -35%	6	±1	V, L	1100x650x1900	570	B
Y314AP75AS	75	108	+15%, -35%	11	±1	V, L	1100x650x1900	780	B
Y316AP105AS	105	152	+15%, -35%	11	±1	V, L	1100x1100x1900	930	B
Y317AP163AS	163	236	+15%, -35%	16	±1	V, L	1100x1100x1900	1280	B
Y318AP217AS	217	314	+15%, -35%	12	±1	V, L	2x1100x1100x1900	1160+460	2B
Y320AP400AS	400	577	+15%, -35%	16	±1	V, L	4x1100x1100x1900	3x870+700	3B

Y3..AKAS *Asymmetrical models for THREE-PHASE+N 400V 50/60 Hz MAINS with independent regulation on each phase, protection degree IP54 indoor, cooling by air conditioner*

Model	Rated Power kVA	Rated current Amps	Voltage variation %	Response time ms/V	Accuracy ±%	Standard fittings	Size mm a x b x h	Weight kg	Figure
Y304AK3,3AS	3,3	4,8	+15%, -35%	8	±1	V, L	830x650x1300	140	C
Y306AK7,5AS	7,5	11	+15%, -35%	12	±1	V, L	830x650x1300	180	C
Y308AK10,5AS	10,5	15	+15%, -35%	14	±1	V, L	830x650x1300	200	C
Y310AK21AS	21	30	+15%, -35%	14	±1	V, L	830x650x1800	340	C
Y311AK30AS	30	43	+15%, -35%	14	±1	V, L	830x650x1800	390	C
Y312AK40AS	40	58	+15%, -35%	15	±1	V, L	830x650x1800	520	C
Y313AK55AS	55	79	+15%, -35%	6	±1	V, L	1340x650x1800	630	D
Y314AK75AS	75	108	+15%, -35%	11	±1	V, L	1460x650x1800	840	D
Y316AK105AS	105	152	+15%, -35%	11	±1	V, L	1460x1100x1800	1010	D
Y317AK163AS	163	236	+15%, -35%	16	±1	V, L	1460x1100x1800	1350	D
Y318AK217AS	217	314	+15%, -35%	12	±1	V, L	2x1460x1100x1800	1240+510	2D
Y319AK320AS	320	462	+15%, -35%	17	±1	V, L	2x1460x1100x1800	1740+540	2D
Y320AK400AS	400	577	+15%, -35%	16	±1	V, L	4x1460x1100x1800	3x980+770	4D

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