



Digital voltage stabiliser

Orion Plus

three-phase
30-1250kVA



Standard features

Voltage stabilisation	Independent phase control
PC selectable output voltage	from 210V to 255V (L-N) / from 360V to 440V (L-L)
Frequency	50/60Hz $\pm 5\%$
Admitted load variation	Up to 100%
Admitted load imbalance	100%
Cooling	Natural air ventilation (aided with fans over 45°C)
Ambient temperature	-25/+45°C
Storage temperature	-25/+60°C
Max relative humidity	95%
Admitted overload	200% 2 min.
Harmonic distortion	None introduced
Colour	RAL 7035
Protection degree	IP21
Instrumentation	Input & output digital multimeter
Installation	Indoor
Overvoltage protection	– Output class II surge arrestor – Soft start through supercapacitors in case of blackout



APPROVED MANAGING SYSTEM



All ORTEA stabilisers are designed and built in compliance with the 2006/95/EEC (Low Voltage) and 2004/108/EEC (Electromagnetic Compatibility) European Directives with regard to the CE marking requirements. ORTEA products are built with suitable quality components and that the manufacturing process is constantly verified in accordance with the Quality Control Plans which the Company applies in compliance with the ISO 9001:2008 Standards. The commitment towards environmental issues and safety at work matters is guaranteed by the certification of the Management System according to the ISO 14001:2004 and OHSAS 18001:2007 Standards.

In order to obtain better performance, the products described in the present document can be altered by the Company at any date and without prior notice. Technical data and descriptions do hold therefore any contractual value.



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ORION Plus stabilisers can be chosen to match different ranges of input voltage fluctuation. In the $\pm 15\%$ / $\pm 20\%$ and $\pm 25\%$ / $\pm 30\%$ types, the change of input range is obtained through different internal connections.

They are housed in **modular cabinets** suitable for any industrial environment and able to tolerate mechanical stress that may occur during transport and installation.

The ORION Plus voltage stabilisers **regulate the output voltage independently on each phase**. Similarly to the Orion stabilisers, the stabilisers can **supply any single-phase, bi-phase and three-phase load** even in case of and up to 100% unbalanced load current and asymmetrical mains distribution.

In this configuration, the presence of the **neutral wire is required**. The stabiliser can also operate without neutral wire by adding a device able to generate it (D/zn or D /yn isolating transformer or neutral point reactor).

The stabilisers are cooled via **natural air ventilation**, assisted by extracting fans when the cabinet internal temperature exceeds 45°C .

The measuring instrumentation is incorporated in a control panel on the cabinet door and consists of **two multi-task digital line analysers**. Such instruments are able to provide with information regarding the status of the lines upstream and downstream the voltage stabiliser such as phase and linked voltages, current, power factor, active power, apparent power, reactive power, etc.

The operating status of the stabiliser can be easily **monitored** by means of the LED interface on the front

panel, which displays all the **information** regarding the operating of the three phases and the possible alarms. LED lights signal 'power on', reaching of voltage regulation limits and direction of voltage regulation (increase/decrease). **Alarms** for minimum and maximum voltages, maximum current, overtemperature and ventilation failure are also indicated. The alarm indicators are accompanied by an acoustic alarm.

- Up to 250kVA $\pm 15\%$, an **automatic circuit breaker** is mounted on the regulation circuit to protect against overload and short circuit on the voltage regulator.
- From 300kVA $\pm 15\%$, an **electronic voltage regulator protection system** activates in case of overload on the voltage regulator. In such condition, the load supply is not interrupted, but the stabiliser output voltage is automatically set to the lower between the mains voltage and the pre-set output voltage. The **service continuity is guaranteed**, although the voltage is not stabilised. When the overload condition ceases to exist, the stabiliser switches automatically back to regular functioning.

The auxiliary circuits are protected by **fuses**.

The control logic, performed on the **true RMS** voltage, is based on the 2-way DSP **microprocessor**. The unit parameters and the output voltage reference can be set by using a personal computer, thus allowing for dealing directly in the field with any problems related to voltage stability. All ORION Plus stabilisers are provided with Class II **SPD surge arrestors**.



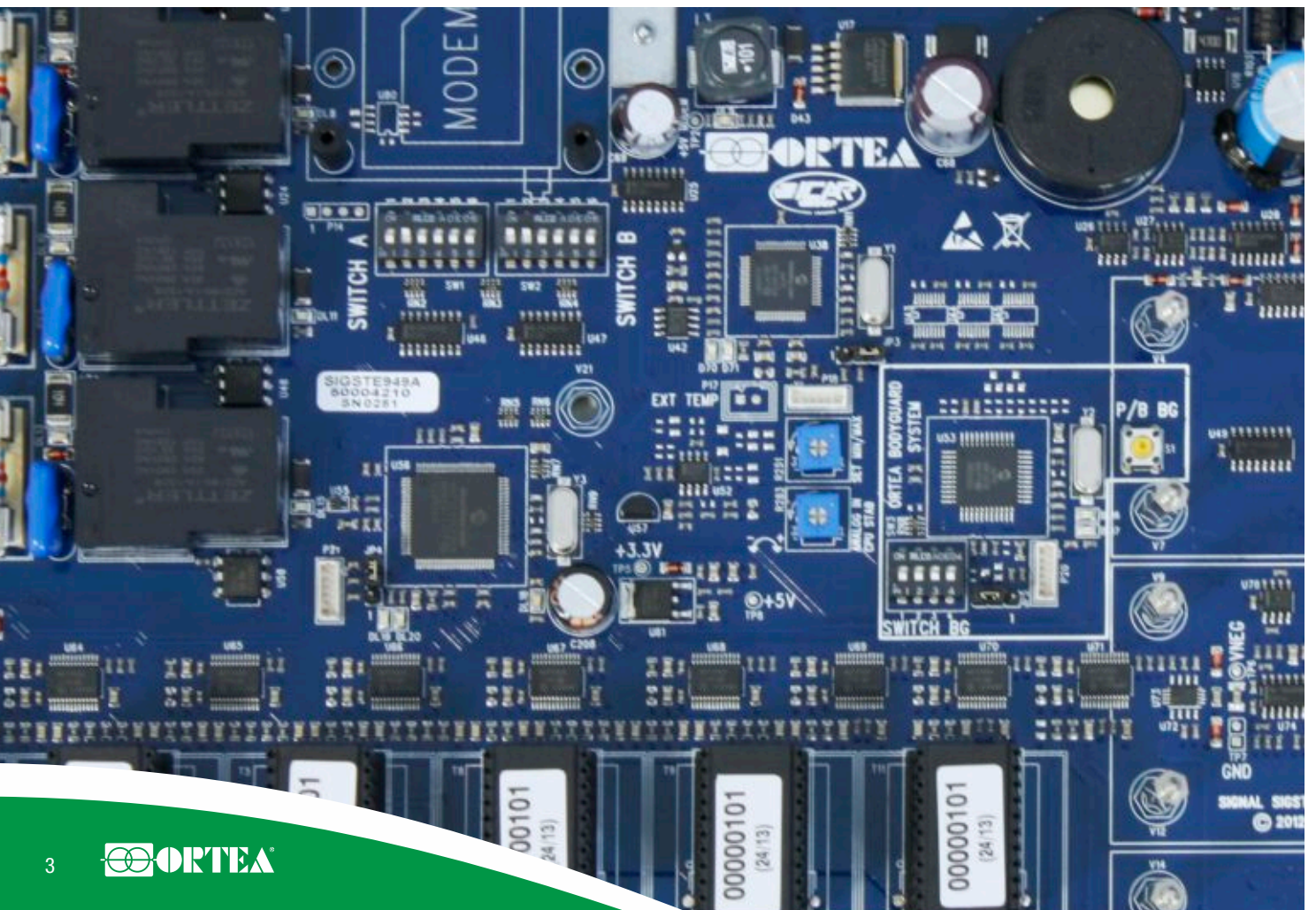


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Rating in relation to the input variation percentage

$\pm 15\%$	$\pm 20\%$	$\pm 25\%$	$\pm 30\%$	+15%/-35%	+15%/-45%
80	60	45	30	45	30
105	80	60	45	60	45
135	105	80	60	80	60
150	120	90	80	90	80
175	135	105	90	105	90
200	150	120	105	120	105
250	175	135	120	135	120
320	250	200	150	200	150
400	300	250	200	250	200
500	400	300	250	300	250
630	500	400	300	400	300
800	630	500	400	500	400
1000	800	630	500	630	500
1250	1000	800	630	800	630





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Type	Input voltage variation range	Rating	Input voltage range	Maximum input current	Output voltage $\pm 0.5\%$	Output current	Efficiency η	Speed regulation	Enclosure	Weight
	[%]	[kVA]	[V]	[A]	[V]	[A]	[%]	[ms/V]	Type	[kg]

Input voltage variation range $\pm 20\% / \pm 15\%$										
60-20	± 20	60	320-480	109	400	86	>98	12	51	430
80-15	± 15	80	340-460	136	400	116	>98	16	51	490
80-20	± 20	80	320-480	145	400	116	>98	12	51	490
105-15	± 15	105	340-460	179	400	152	>98	16	51	580
105-20	± 20	105	320-480	190	400	152	>98	12	51	580
135-15	± 15	135	340-460	229	400	195	>98	16	55	710
120-20	± 20	120	320-480	216	400	173	>98	14	55	760
150-15	± 15	150	340-460	255	400	217	>98	18	55	850
135-20	± 20	135	320-480	244	400	195	>98	14	55	850
175-15	± 15	175	340-460	298	400	253	>98	18	55	1000
150-20	± 20	150	320-480	271	400	217	>98	14	55	1000
200-15	± 15	200	340-460	340	400	289	>98	18	55	1200
175-20	± 20	175	320-480	316	400	253	>98	14	55	1200
250-15	± 15	250	340-460	425	400	361	>98	18	55	1400
250-20	± 20	250	320-480	446	400	361	>98	15	55	1400
320-15	± 15	320	340-460	544	400	462	>98	20	55	1600
300-20	± 20	300	320-480	543	400	434	>98	15	55	1600
400-15	± 15	400	340-460	680	400	578	>98	20	55	1800
400-20	± 20	400	320-480	723	400	578	>98	15	55	1800
500-15	± 15	500	340-460	851	400	723	>98	20	55	2000
500-20	± 20	500	320-480	904	400	723	>98	15	55	2000
630-15	± 15	630	340-460	1071	400	910	>98	20	55	2200
630-20	± 20	630	320-480	1138	400	910	>98	18	55	2200
800-15	± 15	800	340-460	1360	400	1156	>98	24	55	2400
800-20	± 20	800	320-480	1445	400	1156	>98	18	55	2400
1000-15	± 15	1000	340-460	1700	400	1445	>98	24	55	2400
1000-20	± 20	1000	320-480	1806	400	1445	>98	18	55	2400
1250-15	± 15	1250	340-460	2125	400	1806	>98	24	55	2400



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Type	Input voltage variation range	Rating	Input voltage range	Maximum input current	Output voltage $\pm 0.5\%$	Output current	Efficiency η	Speed regulation	Enclosure	Weight
	[%]	[kVA]	[V]	[A]	[V]	[A]	[%]	[ms/V]	Type	[kg]

Input voltage variation range $\pm 30\% / \pm 25\%$										
30-30	± 30	30	280-520	61	400	43	>98	8	51	430
45-25	± 25	45	300-500	86	400	65	>98	10	51	490
45-30	± 30	45	280-520	93	400	65	>98	8	51	490
60-25	± 25	60	300-500	116	400	87	>98	10	51	580
60-30	± 30	60	280-520	124	400	87	>98	8	51	580
80-25	± 25	80	300-500	155	400	116	>98	10	55	710
80-30	± 30	80	280-520	166	400	116	>98	9	55	710
90-25	± 25	90	300-500	173	400	130	>98	11	55	760
90-30	± 30	90	280-520	185	400	130	>98	9	55	760
105-25	± 25	105	300-500	203	400	152	>98	11	55	850
105-30	± 30	105	280-520	217	400	152	>98	9	55	850
120-25	± 25	120	300-500	231	400	173	>98	11	55	950
120-30	± 30	120	280-520	247	400	173	>98	9	55	950
135-25	± 25	135	300-500	260	400	195	>98	11	55	1200
150-30	± 30	150	280-520	310	400	217	>98	10	55	1200
200-25	± 25	200	300-500	385	400	289	>98	12	55	1300
200-30	± 30	200	280-520	413	400	289	>98	10	55	1300
250-25	± 25	250	300-500	481	400	361	>98	12	53	1400
250-30	± 30	250	280-520	515	400	361	>98	10	53	1400
300-25	± 25	300	300-500	579	400	434	>98	12	62	1600
300-30	± 30	300	280-520	620	400	434	>98	10	62	1600
400-25	± 25	400	300-500	771	400	578	>98	12	62	2000
400-30	± 30	400	280-520	826	400	578	>98	12	62	2000
500-25	± 25	500	300-500	963	400	723	>98	15	62	2200
500-30	± 30	500	280-520	1032	400	723	>98	12	62	2200
630-25	± 25	630	300-500	1214	400	910	>98	15	63	2400
630-30	± 30	630	280-520	1300	400	910	>98	12	63	2400
800-25	± 25	800	300-500	1541	400	1156	>98	15		



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Type	Input voltage variation range	Rating	Input voltage range	Maximum input current	Output voltage $\pm 0.5\%$	Output current	Efficiency η	Speed regulation	Enclosure	Weight
	[%]	[kVA]	[V]	[A]	[V]	[A]	[%]	[ms/V]	Type	[kg]

Input voltage variation range +15%/-35%										
45-15/35	+15/-35	45	260-460	100	400	65	>98	10	51	470
60-15/35	+15/-35	60	260-460	134	400	87	>98	10	51	550
80-15/35	+15/-35	80	260-460	178	400	116	>98	10	51	600
90-15/35	+15/-35	90	260-460	200	400	130	>98	11	55	850
105-15/35	+15/-35	105	260-460	234	400	152	>98	11	55	950
120-15/35	+15/-35	120	260-460	266	400	173	>98	11	55	1050
135-15/35	+15/-35	135	260-460	300	400	195	>98	11	55	1200
200-15/35	+15/-35	200	260-460	445	400	289	>98	12	55	1500
250-15/35	+15/-35	250	260-460	555	400	361	>98	12	52	1650
300-15/35	+15/-35	300	260-460	668	400	434	>98	12	52	1750
400-15/35	+15/-35	400	260-460	889	400	578	>98	12	62	2100
500-15/35	+15/-35	500	260-460	1111	400	723	>98	15	63	2900
630-15/35	+15/-35	630	260-460	1400	400	910	>98	15	63	3050
800-15/35	+15/-35	800	260-460	1778	400	1156	>98	15	64	3800

Input voltage variation range +15%/-45%										
30-15/45	+15/-45	30	220-460	78	400	43	>98	8	51	470
45-15/45	+15/-45	45	220-460	118	400	65	>98	8	51	550
60-15/45	+15/-45	60	220-460	158	400	87	>98	8	51	600
80-15/45	+15/-45	80	220-460	211	400	116	>98	9	55	850
90-15/45	+15/-45	90	220-460	236	400	130	>98	9	55	950
105-15/45	+15/-45	105	220-460	276	400	152	>98	9	55	1050
120-15/45	+15/-45	120	220-460	315	400	173	>98	9	55	1250
150-15/45	+15/-45	150	220-460	395	400	217	>98	10	55	1450
200-15/45	+15/-45	200	220-460	525	400	289	>98	10	52	1650
250-15/45	+15/-45	250	220-460	656	400	361	>98	10	52	1800
300-15/45	+15/-45	300	220-460	789	400	434	>98	10	62	2200
400-15/45	+15/-45	400	220-460	1051	400	578	>98	12	63	3000
500-15/45	+15/-45	500	220-460	1315	400	723	>98	12	63	3200
630-15/45	+15/-45	630	220-460	1655	400	910	>98	12	64	4000