

ORION PLUS

THREE-PHASE 30-2000kVA

Standard features



Voltage stabilisation	Independent phase control
PC selectable output voltage*	from 210V to 255V (L-N) from 360V to 440V (L-L)
Output voltage accuracy	±0,5%
Frequency	50Hz ±5% or 60Hz ±5%
Admitted load variation	Up to 100%
Admitted load imbalance	100%
Cooling	Natural ventilation (from 35°C aided with fans)
Ambient temperature	-25/+45°C
Storage temperature	-25/+60°C
Max relative humidity	<95% (non condensing)
Admitted overload	200% 2min.
Harmonic distortion	None introduced
Colour	RAL 7035
Protection degree	IP 21
Instrumentation	Input & Output digital multimeter
Installation	Indoor
Oversvoltage protection	<ul style="list-style-type: none"> • Class II output surge arrestors • Optimal voltage return through supercapacitors in case of black-out

* Output voltage can be adjusted by choosing one of the indicated values.
Such choice sets the new nominal value as a reference for all the stabiliser parameters.

Ratings in relation to the input variation percentage

	±10%	±15%	±20%	±25%	±30%	+15/-35%	+15/-45%
125	80	60	45	30	45	30	
160	105	80	60	45	60	45	
200	135	105	80	60	80	60	
250	160	135	105	80	90	80	
320	200	160	135	105	135	105	
400	250	200	160	135	160	135	
500	320	250	200	160	200	160	
630	400	320	250	200	250	200	
800	500	400	320	250	320	250	
1000	630	500	400	320	400	320	
1250	800	630	500	400	500	400	
1600	1000	800	630	500	630	500	
2000	1250	1000	800	630	800	630	



All ORTEA equipments are designed and built in compliance with the Low Voltage and 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 Standards. The commitment towards environmental issues and safety at work issues is guaranteed by the certification of the Management System according to the ISO14001 and OHSAS18001 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 not hold therefore any contractual value.

Accessories

Interrupting devices

Load protection against over/undervoltage

Manual by-pass line

Total protection kit

Input isolating transformer

Integrated automatic power factor correction system

SPD surge arrestor

EMI/RFI filters

Neutral point reactor

Up to IP55 protection degree for indoor and outdoor installation

Orion stabilisers are available for 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.

The Orion Plus voltage stabilisers regulate the output voltage independently on each phase.

Similarly to the Orion stabilisers, they 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 35°C .

The instrumentation consists of two multi-task digital line analysers which are able to provide with information regarding the status of the lines upstream and downstream the voltage stabiliser (phase and linked voltages, current, power factor, active power, apparent power, reactive power, etc.).

The operating status of the stabiliser can be monitored by means of the LEDs on the front panel displaying all the information regarding each phase operating mode ('power on'; reaching of voltage regulation limits; increase/decrease of voltage regulation) and the possible alarms (minimum and maximum voltage, maximum current: overtemperature; ventilation failure). The alarm indicators are accompanied by an acoustic alarm.

- Up to 250kVA $\pm 15\%$, the regulation circuit is protected against overload and short circuit on the voltage regulator by an automatic circuit breaker.
- 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.



WIDE RANGE

Symmetrical: $\pm 10\%$, $\pm 15\%$, $\pm 20\%$, $\pm 25\%$, $\pm 30\%$ (other on request).

Asymmetrical: $+15\%/-35\%$, $+15\%/-45\%$ (other on request).

Output voltage accuracy: $\pm 0.5\%$.



TECHNOLOGY

Control and stabilisation, performed on the true RMS value, are based on a digital microprocessor operating with a software specifically developed for Ortea.

Parameters and reference voltage can be set via a PC, thus allowing for adjusting the stabiliser to the actual site conditions.

Independent regulation on each phase.



LONG LIFE

Ortea system voltage regulator with rollers (without brushes, which are subject to heavy wear & tear).

Depending on the rating, the voltage regulator could be toroidal or columnar.



PROTECTION

Up to 250kVA $\pm 15\%$: The voltage regulator is protected by a three-phase automatic circuit breaker.

The auxiliary circuit is protected by fuses.

Overvoltage protection: Class II output surge arrestor.



PROTECTION

From 300kVA $\pm 15\%$: The stabiliser is provided of an electronic voltage regulator protection system activates in case of overload on the voltage regulator. In such conditions, the load supply is not interrupted.

The auxiliary circuit is protected by fuses.

Overvoltage protection: Class II output surge arrestor.



PROTECTION

Output voltage reset to the minimum value in case of blackout by means of supercapacitors banks in order to ensure the correct shutdown.



INSTRUMENTATION

Two multi-task digital analyser mounted on the front panel (linked and phase voltage current, frequency, power factor, active power, reactive power, apparent power etc.).



MONITORING

The stabiliser operating mode can be easily monitored by means of the LEDs on the front panel, which provide with information and alarms.

The auxiliary circuits are protected by fuses. The control logic, performed on the true RMS value, is based on DSP microprocessors. 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 arrester.



Type	Input variation	Rated power	Input voltage range	Max input current	Output voltage	Rated output current	Eff.	Adjus. speed	Cabinet type	Cabinet dimensions WxDxH	Weight
	[%]	[kVA]	[V]	[A]	[V]	[A]	[%]	[ms/V]		[mm]	[kg]

Orion plus ±10%

135-10	±10	135	360-440	216	400	194	>98	24	51	600x800x1800	430
160-10	±10	160	360-440	257	400	231	>98	24	51	600x800x1800	490
200-10	±10	200	360-440	321	400	289	>98	24	51	600x800x1800	580
250-10	±10	250	360-440	401	400	361	>98	30	42	800x800x2000	670
320-10	±10	320	360-440	513	400	462	>98	30	42	800x800x2000	720
400-10	±10	400	360-440	642	400	577	>98	30	42	800x800x2000	800
500-10	±10	500	360-440	802	400	722	>98	30	55	1200x800x1800	850
630-10	±10	630	360-440	1010	400	909	>98	30	55	1200x800x1800	1100
800-10	±10	800	360-440	1283	400	1155	>98	30	53	1200x800x2000	1300
1000-10	±10	1000	360-440	1604	400	1443	>98	30	62	1800x1000x2000	1530
1250-10	±10	1250	360-440	2005	400	1804	>98	36	62	1800x1000x2000	1900
1600-10	±10	1600	360-440	2566	400	2309	>98	36	63	2400x1000x2000	2400
2000-10	±10	2000	360-440	3208	400	2887	>98	36	64	3000x1000x2000	2650

The values listed in the table are referred to 400V nominal voltage

Orion plus ±20%/±15%

60-20	±20	60	320-480	108	400	87	>98	12	51	600x800x1800	430
80-15	±15	80	340-460	136	400	115	>98	16	51	600x800x1800	430
80-20	±20	80	320-480	144	400	115	>98	12	51	600x800x1800	490
105-15	±15	105	340-460	178	400	152	>98	16	51	600x800x1800	490
105-20	±20	105	320-480	189	400	152	>98	12	51	600x800x1800	580
135-15	±15	135	340-460	229	400	195	>98	16	51	600x800x1800	580
135-20	±20	135	320-480	243	400	195	>98	15	42	800x800x2000	670
160-15	±15	160	340-460	272	400	231	>98	20	42	800x800x2000	670
160-20	±20	160	320-480	289	400	231	>98	15	42	800x800x2000	720
200-15	±15	200	340-460	340	400	289	>98	20	42	800x800x2000	720
200-20	±20	200	320-480	361	400	289	>98	15	42	800x800x2000	800
250-15	±15	250	340-460	425	400	361	>98	20	42	800x800x2000	800
250-20	±20	250	320-480	451	400	361	>98	15	55	1200x800x1800	850
320-15	±15	320	340-460	543	400	462	>98	20	55	1200x800x1800	850
320-20	±20	320	320-480	577	400	462	>98	15	55	1200x800x1800	1100
400-15	±15	400	340-460	679	400	577	>98	20	55	1200x800x1800	1100
400-20	±20	400	320-480	722	400	577	>98	15	53	1200x800x2000	1300
500-15	±15	500	340-460	849	400	722	>98	20	53	1200x800x2000	1300
500-20	±20	500	320-480	902	400	722	>98	15	62	1800x1000x2000	1530
630-15	±15	630	340-460	1070	400	909	>98	20	62	1800x1000x2000	1530
630-20	±20	630	320-480	1137	400	909	>98	18	62	1800x1000x2000	1900
800-15	±15	800	340-460	1359	400	1155	>98	24	62	1800x1000x2000	1900
800-20	±20	800	320-480	1443	400	1155	>98	18	63	2400x1000x2000	2400
1000-15	±15	1000	340-460	1698	400	1443	>98	24	63	2400x1000x2000	2400
1000-20	±20	1000	320-480	1804	400	1443	>98	18	64	3000x1000x2000	2650
1250-15	±15	1250	340-460	2123	400	1804	>98	24	64	3000x1000x2000	2650

The values listed in the table are referred to 400V nominal voltage

Type	Input variation	Rated power	Input voltage range	Max input current	Output voltage	Rated output current	Eff.	Adjus. speed	Cabinet type	Cabinet dimensions WxDxH	Weight
	[%]	[kVA]	[V]	[A]	[V]	[A]	[%]	[ms/V]		[mm]	[kg]

Orion plus ±30%/±25%

30-30	±30	30	280-520	62	400	43	>98	8	51	600x800x1800	430
45-25	±25	45	300-500	87	400	65	>98	10	51	600x800x1800	430
45-30	±30	45	280-520	93	400	65	>98	8	51	600x800x1800	490
60-25	±25	60	300-500	115	400	87	>98	10	51	600x800x1800	490
60-30	±30	60	280-520	124	400	87	>98	8	51	600x800x1800	580
80-25	±25	80	300-500	154	400	115	>98	10	51	600x800x1800	580
80-30	±30	80	280-520	165	400	115	>98	10	42	800x800x2000	670
105-25	±25	105	300-500	202	400	152	>98	12	42	800x800x2000	670
105-30	±30	105	280-520	217	400	152	>98	10	42	800x800x2000	720
135-25	±25	135	300-500	260	400	195	>98	12	42	800x800x2000	720
135-30	±30	135	280-520	278	400	195	>98	10	42	800x800x2000	800
160-25	±25	160	300-500	308	400	231	>98	12	42	800x800x2000	800
160-30	±30	160	280-520	330	400	231	>98	10	55	1200x800x1800	850
200-25	±25	200	300-500	385	400	289	>98	12	55	1200x800x1800	850
200-30	±30	200	280-520	412	400	289	>98	10	55	1200x800x1800	1100
250-25	±25	250	300-500	481	400	361	>98	12	55	1200x800x1800	1100
250-30	±30	250	280-520	516	400	361	>98	10	53	1200x800x2000	1300
320-25	±25	320	300-500	616	400	462	>98	12	53	1200x800x2000	1300
320-30	±30	320	280-520	660	400	462	>98	10	62	1800x1000x2000	1530
400-25	±25	400	300-500	770	400	577	>98	12	62	1800x1000x2000	1530
400-30	±30	400	280-520	825	400	577	>98	12	62	1800x1000x2000	1900
500-25	±25	500	300-500	962	400	722	>98	15	62	1800x1000x2000	1900
500-30	±30	500	280-520	1031	400	722	>98	12	63	2400x1000x2000	2400
630-25	±25	630	300-500	1212	400	909	>98	15	63	2400x1000x2000	2400
630-30	±30	630	280-520	1299	400	909	>98	12	64	3000x1000x2000	2650
800-25	±25	800	300-500	1540	400	1155	>98	15	64	3000x1000x2000	2650

The values listed in the table are referred to 400V nominal voltage

Type	Input variation	Rated power	Input voltage range	Max input current	Output voltage	Rated output current	Eff.	Adjus. speed	Cabinet type	Cabinet dimensions WxDxH	Weight
	[%]	[kVA]	[V]	[A]	[V]	[A]	[%]	[ms/V]		[mm]	[kg]

Orion plus +15%/-35%

45-15/35	+15/-35	45	260-460	100	400	65	>98	10	51	600x800x1800	470
60-15/35	+15/-35	60	260-460	133	400	87	>98	10	51	600x800x1800	550
80-15/35	+15/-35	80	260-460	178	400	115	>98	10	51	600x800x1800	600
90-15/35	+15/-35	90	260-460	200	400	130	>98	12	68	800x1000x2000	900
135-15/35	+15/-35	135	260-460	300	400	195	>98	12	68	800x1000x2000	1000
160-15/35	+15/-35	160	260-460	355	400	231	>98	12	68	800x1000x2000	1100
200-15/35	+15/-35	200	260-460	444	400	289	>98	12	55	1200x800x1800	1200
250-15/35	+15/-35	250	260-460	555	400	361	>98	12	52	1800x800x2000	1450
320-15/35	+15/-35	320	260-460	711	400	462	>98	12	52	1800x800x2000	1700
400-15/35	+15/-35	400	260-460	888	400	577	>98	12	63	2400x1000x2000	2300
500-15/35	+15/-35	500	260-460	1110	400	722	>98	15	63	2400x1000x2000	2600
630-15/35	+15/-35	630	260-460	1399	400	909	>98	15	64	3000x1000x2000	3400
800-15/35	+15/-35	800	260-460	1777	400	1155	>98	15	70	3600x1000x2100	3850

The values listed in the table are referred to 400V nominal voltage

Orion plus +15%/-45%

30-15/45	+15/-45	30	220-460	79	400	43	>98	8	51	600x800x1800	470
45-15/45	+15/-45	45	220-460	118	400	65	>98	8	51	600x800x1800	550
60-15/45	+15/-45	60	220-460	157	400	87	>98	8	51	600x800x1800	600
80-15/45	+15/-45	80	220-460	210	400	115	>98	10	68	800x1000x2000	900
105-15/45	+15/-45	105	220-460	276	400	152	>98	10	68	800x1000x2000	1000
135-15/45	+15/-45	135	220-460	354	400	195	>98	10	68	800x1000x2000	1100
160-15/45	+15/-45	160	220-460	420	400	231	>98	10	55	1200x800x1800	1200
200-15/45	+15/-45	200	220-460	525	400	289	>98	10	52	1800x800x2000	1450
250-15/45	+15/-45	250	220-460	656	400	361	>98	10	52	1800x800x2000	1700
320-15/45	+15/-45	320	220-460	840	400	462	>98	10	63	2400x1000x2000	2300
400-15/45	+15/-45	400	220-460	1050	400	577	>98	12	63	2400x1000x2000	2700
500-15/45	+15/-45	500	220-460	1312	400	722	>98	12	64	3000x1000x2000	3400
630-15/45	+15/-45	630	220-460	1653	400	909	>98	12	70	3600x1000x2100	3850

The values listed in the table are referred to 400V nominal voltage