



three-phase
30-2000kVA

Orion Plus



Standard features

Voltage stabilisation	Independent phase control
PC selectable output voltage*	from 210 to 255V (L-N) from 360 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 air 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% 2 min.
Harmonic distortion	None introduced
Colour	RAL 7035
Protection degree	IP21
Instrumentation	Input & output digital multimeter
Installation	Indoor
Overvoltage protection	– Class II output surge arrester – Optimal voltage return through supercapacitors – in case of blackout

* The 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.

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 arrester
EMI/RFI filters
Neutral point reactor
IP54 protection degree for indoor and outdoor installation

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Rating 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	90	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

Orion Plus stabilisers are available for different ranges of input voltage fluctuation. In the ±15%/ ±20% and ±25%/ ±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 ±15%, the regulation circuit is protected against overload and short circuit on the voltage regulator by an **automatic circuit breaker**.

– From 300kVA ±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**.

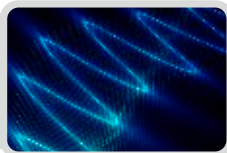
The control logic, performed on the **true RMS** value, is based on **DSP microprocessors**.

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 arrestors**.



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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: $\pm 0.5\%$.

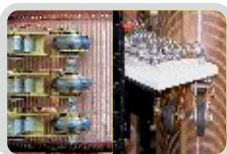


Technology

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 arrester**.



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 arrester**.



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**.

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

Input voltage variation range $\pm 10\%$ (the values listed in the table are referred to 400V nominal voltage)

135-10	± 10	135	360-440	216	400	194	>98	24	51	430
160-10	± 10	160	360-440	257	400	231	>98	24	51	490
200-10	± 10	200	360-440	321	400	289	>98	24	51	580
250-10	± 10	250	360-440	401	400	361	>98	30	42	670
320-10	± 10	320	360-440	513	400	462	>98	30	42	720
400-10	± 10	400	360-440	642	400	577	>98	30	42	800
500-10	± 10	500	360-440	802	400	722	>98	30	55	850
630-10	± 10	630	360-440	1010	400	909	>98	30	55	1100
800-10	± 10	800	360-440	1283	400	1155	>98	30	53	1300
1000-10	± 10	1000	360-440	1604	400	1443	>98	30	62	1530
1250-10	± 10	1250	360-440	2005	400	1804	>98	36	62	2200
1600-10	± 10	1600	360-440	2566	400	2309	>98	36	63	2400
2000-10	± 10	2000	360-440	3208	400	2887	>98	36	64	2650

Input voltage variation range $\pm 20\%/\pm 15\%$ (the values listed in the table are referred to 400V nominal voltage)

60-20	± 20	60	320-480	108		87		12		
80-15	± 15	80	340-460	136	400	115	>98	16	51	430
80-20	± 20	80	320-480	144		115	>98	12	51	490
105-15	± 15	105	340-460	178	400	152	>98	16	51	580
105-20	± 20	105	320-480	189		152	>98	12	51	580
135-15	± 15	135	340-460	229	400	195	>98	16	51	580
135-20	± 20	135	320-480	243		195	>98	15	42	670
160-15	± 15	160	340-460	272	400	231	>98	20	42	670
160-20	± 20	160	320-480	289		231	>98	15	42	720
200-15	± 15	200	340-460	340	400	289	>98	20	42	720
200-20	± 20	200	320-480	361		289	>98	15	42	800
250-15	± 15	250	340-460	425	400	361	>98	20	42	800
250-20	± 20	250	320-480	451		361	>98	15	55	850
320-15	± 15	320	340-460	543	400	462	>98	20	55	850
320-20	± 20	320	320-480	577		462	>98	15	55	1100
400-15	± 15	400	340-460	679	400	577	>98	20	55	1100
400-20	± 20	400	320-480	722		577	>98	15	53	1300
500-15	± 15	500	340-460	849	400	722	>98	20	53	1300
500-20	± 20	500	320-480	902		722	>98	15	62	1530
630-15	± 15	630	340-460	1070	400	909	>98	20	62	1530
630-20	± 20	630	320-480	1137		909	>98	18	62	2200
800-15	± 15	800	340-460	1359	400	1155	>98	24	62	2200
800-20	± 20	800	320-480	1443		1155	>98	18	63	2400
1000-15	± 15	1000	340-460	1698	400	1443	>98	24	63	2400
1000-20	± 20	1000	320-480	1804		1443	>98	18	64	2650
1250-15	± 15	1250	340-460	2123	400	1804	>98	24	64	2650

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

Input voltage variation range $\pm 30\%/\pm 25\%$ (the values listed in the table are referred to 400V nominal voltage)

30-30	± 30	30	280-520	62	400	43	>98	8	51	430
45-25	± 25	45	300-500	87	400	65	>98	10	51	430
45-30	± 30	45	280-520	93	400	65	>98	8	51	490
60-25	± 25	60	300-500	115	400	87	>98	10	51	490
60-30	± 30	60	280-520	124	400	87	>98	8	51	580
80-25	± 25	80	300-500	154	400	115	>98	10	51	580
80-30	± 30	80	280-520	165	400	115	>98	10	42	670
90-25	± 25	90	300-500	173	400	130	>98	12	42	670
105-30	± 30	105	280-520	217	400	152	>98	10	42	720
135-25	± 25	135	300-500	260	400	195	>98	12	42	720
135-30	± 30	135	280-520	278	400	195	>98	10	42	800
160-25	± 25	160	300-500	308	400	231	>98	12	42	800
160-30	± 30	160	280-520	330	400	231	>98	10	55	850
200-25	± 25	200	300-500	385	400	289	>98	12	55	850
200-30	± 30	200	280-520	412	400	289	>98	10	55	1100
250-25	± 25	250	300-500	481	400	361	>98	12	55	1100
250-30	± 30	250	280-520	516	400	361	>98	10	53	1300
320-25	± 25	320	300-500	616	400	462	>98	12	53	1300
320-30	± 30	300	280-520	660	400	462	>98	10	62	1530
400-25	± 25	400	300-500	770	400	577	>98	12	62	1530
400-30	± 30	400	280-520	825	400	577	>98	12	62	2200
500-25	± 25	500	300-500	962	400	722	>98	15	62	2200
500-30	± 30	500	280-520	1031	400	722	>98	12	63	2400
630-25	± 25	630	300-500	1212	400	909	>98	15	63	2400
630-30	± 30	630	280-520	1299	400	909	>98	12	64	2650
800-25	± 25	800	300-500	1540	400	1155	>98	15	64	2650

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

Input voltage variation range **+15%/-35%** (the values listed in the table are referred to 400V nominal voltage)

45-15/35	+15/-35	45	260-460	100	400	65	>98	10	51	470
60-15/35	+15/-35	60	260-460	133	400	87	>98	10	51	550
80-15/35	+15/-35	80	260-460	178	400	115	>98	10	51	600
90-15/35	+15/-35	90	260-460	200	400	130	>98	12	68	900
135-15/35	+15/-35	135	260-460	300	400	195	>98	12	68	1000
160-15/35	+15/-35	160	260-460	355	400	231	>98	12	68	1100
200-15/35	+15/-35	200	260-460	444	400	289	>98	12	55	1200
250-15/35	+15/-35	250	260-460	555	400	361	>98	12	52	1450
320-15/35	+15/-35	320	260-460	711	400	462	>98	12	52	1700
400-15/35	+15/-35	400	260-460	888	400	577	>98	12	63	2300
500-15/35	+15/-35	500	260-460	1110	400	722	>98	15	63	3200
630-15/35	+15/-35	630	260-460	1399	400	909	>98	15	64	3400
800-15/35	+15/-35	800	260-460	1777	400	1155	>98	15	70	3850

Input voltage variation range **+15%/-45%** (the values listed in the table are referred to 400V nominal voltage)

30-15/45	+15/-45	30	220-460	79	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	157	400	87	>98	8	51	600
80-15/45	+15/-45	80	220-460	210	400	115	>98	10	68	900
105-15/45	+15/-45	105	220-460	276	400	152	>98	10	68	1000
135-15/45	+15/-45	135	220-460	354	400	195	>98	10	68	1100
160-15/45	+15/-45	160	220-460	420	400	231	>98	10	55	1200
200-15/45	+15/-45	200	220-460	525	400	289	>98	10	52	1450
250-15/45	+15/-45	250	220-460	656	400	361	>98	10	52	1700
320-15/45	+15/-45	300	220-460	840	400	462	>98	10	63	2300
400-15/45	+15/-45	400	220-460	1050	400	577	>98	12	63	3200
500-15/45	+15/-45	500	220-460	1312	400	722	>98	12	64	3400
630-15/45	+15/-45	630	220-460	1653	400	909	>98	12	70	3850