



Sirius



three-phase
60-6000kVA

Standard features

Voltage stabilisation	Independent phase control
Output voltage selectable via display, PC and/or Ethernet*	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. Above 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
User interface	10" touch panel (multilingual) remotely available via VNC
Installation	Indoor
Regulator overload protection	Digital control
Communication system	Ethernet / USB / MODBUS TCP/IP
Overvoltage protection	<ul style="list-style-type: none"> - Class I input surge arrestor - Class II output surge arrestor - 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
EMI/RFI filters
Neutral point reactor
IP54 protection degree for indoor and outdoor installation

All ORTEA stabilisers 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 9001:2015 Standards. The commitment towards environmental issues and safety at work issues is guaranteed by the certification of the Management System according to the ISO14001:2015 and OHSAS18001:2007 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 not hold therefore any contractual value.

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Rating in relation to the input variation percentage

±10%	±15%	±20%	±25%	±30%	+15%/-35%	+15%/-45%
200	125	100	80	60	80	60
250	160	125	100	80	100	80
320	200	160	125	100	125	100
400	250	200	160	125	160	125
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
2500	1600	1250	1000	800	1000	800
3200	2000	1600	1250	1000	1250	1000
4000	2500	2000	1600	1250	1600	1250
5000	3200	2500	2000	1600	2000	1600
6000	4000	3200	2500	2000	2500	2000

Sirius 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 (only up to 2000kVA ±15% and equivalent).

Sirius stabilisers are equipped with **columnar voltage regulators** which enable the achievement of **high ratings** (up to 6000kVA) and a **solid and reliable construction**, thus **meeting the most diverse industrial applications**.

The Sirius voltage stabilisers regulate the output voltage **independently on each phase**. Similarly to the other models, 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 any case, 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 user interface consists of a multilingual **10" touch panel** (fitted with RS485 port) 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 displaying all the **information** regarding each phase operating mode ('power on'; reaching of voltage regulation limits; increase/decrease of voltage regulation, etc.) and the possible **alarms** (minimum and maximum voltage, maximum current, overtemperature, etc.). The alarm indicators are accompanied by an acoustic alarm.

The display is remotable using VNC software.

It is also possible to communicate with the stabiliser with the **Modbus TCP/IP** protocol (standard communication protocol between electronic industrial equipment) via an Ethernet connection with RJ45 cable.

The control system is also provided with two **USB ports** for downloading stored data and uploading new releases of the control card software.

The Sirius stabiliser is provided with 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 control logic is managed by two **DSP microprocessors** (one performing the control and the other one managing the measurements) which obtain the output voltage stabilisation by adjusting its **true RMS** value.



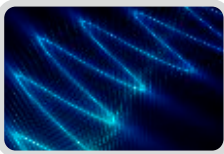
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The whole system is **supervised** by a third '**bodyguard**' microprocessor that controls the correct functioning of the other microprocessors.

The unit parameters and reference output voltage value can be **set** via a **PC** connection, allowing for promptly dealing in the field with any issues concerning voltage stability.

The output voltage is reset to the minimum value in case of blackout by means of supercapacitor banks in order to ensure the correct shutdown.

All Sirius stabilisers are provided with Class I and Class II **SPD surge arrestors**.



Wide range

- symmetrical: **±10%, ±15%, ±20%, ±25%, ±30%** (other on request)
 - asymmetrical: **+15%/-35%, +15%/-45%** (other on request)
- Output voltage accuracy: **±0.5%**.



Technology

Control and stabilisation, performed on the **true RMS** value, are based on two **two-way DSP-microprocessor** operating with a software specifically developed for Ortea and under the supervision provided by a third **microprocessor (bodyguard)**.

Parameters and reference voltage can be **set** via a **PC**, thus allowing for solving any problems related to voltage stability directly in the field.

Independent regulation on each phase.



Long life

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

Columnar voltage regulator make possible to achieve **high ratings** (up to 6000kVA) and a solid and reliable construction



Protection

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**.



Protection

Overvoltage protection:

- Class I input **surge arrestor**.
- 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.



User Interface

Multilingual **10" touch panel** fitted with RS485 port (linked and phase voltage current, frequency, power factor, active power, reactive power, apparent power etc.). The **touch panel** also displaying all the **information** regarding each phase operating mode ('power on'; reaching of voltage regulation limits; increase/decrease of voltage regulation, etc.) and the possible **alarms** (minimum and maximum voltage, maximum current, overtemperature, etc.).

The display is remotable using VNC software.

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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)

200-10	± 10	200	360-440	321	400	289	>98	30	54	600
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	1400
1000-10	± 10	1000	360-440	1604	400	1443	>98	30	62	1700
1250-10	± 10	1250	360-440	2005	400	1804	>98	36	62	2200
1600-10	± 10	1600	360-440	2566	400	2312	>98	36	63	2400
2000-10	± 10	2000	360-440	3208	400	2887	>98	36	64	2650
2500-10	± 10	2500	360-440	4009	400	3609	>98	36	70	3500
3200-10	± 10	3200	360-440	5132	400	4619	>98	36	70	4100
4000-10	± 10	4000	360-440	6415	400	5774	>98	45	80	5250
5000-10	± 10	5000	360-440	8019	400	7217	>98	45	80	6050
6000-10	± 10	6000	360-440	9623	400	8661	>98	54	90	10000

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

100-20	± 20	100	320-480	180	400	144	>98	15	54	600
125-15	± 15	125	340-460	212	400	180	>98	20	42	670
125-20	± 20	125	320-480	226	400	180	>98	15	42	670
160-15	± 15	160	340-460	272	400	231	>98	20	42	720
160-20	± 20	160	320-480	289	400	231	>98	15	42	720
200-15	± 15	200	340-460	340	400	289	>98	20	42	800
200-20	± 20	200	320-480	361	400	289	>98	15	42	800
250-15	± 15	250	340-460	425	400	361	>98	20	55	850
250-20	± 20	250	320-480	451	400	361	>98	15	55	850
320-15	± 15	320	340-460	543	400	462	>98	20	53	1400
320-20	± 20	320	320-480	577	400	462	>98	15	53	1400
400-15	± 15	400	340-460	679	400	577	>98	20	62	1700
400-20	± 20	400	320-480	722	400	577	>98	15	62	1700
500-15	± 15	500	340-460	849	400	722	>98	20	62	1700
500-20	± 20	500	320-480	902	400	722	>98	15	62	1700
630-15	± 15	630	340-460	1070	400	909	>98	20	63	2400
630-20	± 20	630	320-480	1137	400	909	>98	18	63	2400
800-15	± 15	800	340-460	1359	400	1155	>98	24	63	2400
800-20	± 20	800	320-480	1443	400	1155	>98	18	63	2400
1000-15	± 15	1000	340-460	1698	400	1443	>98	24	64	2650
1000-20	± 20	1000	320-480	1804	400	1443	>98	18	64	2650
1250-15	± 15	1250	340-460	2123	400	1804	>98	24	70	3500
1250-20	± 20	1250	320-480	2255	400	1804	>98	18	70	3500
1600-15	± 15	1600	340-460	2717	400	2309	>98	24	70	4150
1600-20	± 20	1600	320-480	2887	400	2309	>98	18	70	4150
2000-15	± 15	2000	340-460	3396	400	2887	>98	24	80	5250
2000-20	± 20	2000	320-480	3609	400	2887	>98	22	80	5250
2500-15	± 15	2500	340-460	4245	400	3609	>98	30	80	5250
2500-20	± 20	2500	320-480	4511	400	3609	>98	22	80	6050
3200-15	± 15	3200	340-460	5434	400	4619	>98	30	80	6050
3200-20	± 20	3200	320-480	5774	400	4619	>98	27	90	10000
4000-15	± 15	4000	340-460	6793	400	5774	>98	36	90	10000

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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)

60-30	± 30	60	280-520	124		87		10		
80-25	± 25	80	300-500	154	400	115	>98	12	54	600
80-30	± 30	80	280-520	165		115		10		
100-25	± 25	100	300-500	192	400	144	>98	12	42	670
100-30	± 30	100	280-520	206		144		10		
125-25	± 25	125	300-500	241	400	180	>98	12	42	720
125-30	± 30	125	280-520	258		180		10		
160-25	± 25	160	300-500	308	400	231	>98	12	42	800
160-30	± 30	160	280-520	330		231		10		
200-25	± 25	200	300-500	385	400	289	>98	12	55	850
200-30	± 30	200	280-520	412		289		10		
250-25	± 25	250	300-500	481	400	361	>98	12	55	1100
250-30	± 30	250	280-520	516		361		10		
320-25	± 25	320	300-500	616	400	462	>98	12	53	1400
320-30	± 30	320	280-520	660		462		10		
400-25	± 25	400	300-500	770	400	577	>98	12	62	1700
400-30	± 30	400	280-520	825		577		12		
500-25	± 25	500	300-500	962	400	722	>98	15	62	2200
500-30	± 30	500	280-520	1031		722		12		
630-25	± 25	630	300-500	1212	400	909	>98	15	63	2400
630-30	± 30	630	280-520	1299		909		12		
800-25	± 25	800	300-500	1540	400	1155	>98	15	64	2650
800-30	± 30	800	280-520	1650		1155		12		
1000-25	± 25	1000	300-500	1925	400	1443	>98	15	70	3500
1000-30	± 30	1000	280-520	2062		1443		12		
1250-25	± 25	1250	300-500	2406	400	1804	>98	15	70	4150
1250-30	± 30	1250	280-520	2578		1804		15		
1600-25	± 25	1600	300-500	3079	400	2309	>98	18	80	5250
1600-30	± 30	1600	280-520	3299		2309		15		
2000-25	± 25	2000	300-500	3849	400	2887	>98	18	80	6050
2000-30	± 30	2000	280-520	4124		2887		18		
2500-25	± 25	2500	300-500	4811	400	3609	>98	22	90	10000

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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)

80-15/35	+15/-35	80	260-460	178	400	115	>98	12	54	720
100-15/35	+15/-35	100	260-460	222	400	144	>98	12	68	800
125-15/35	+15/-35	125	260-460	278	400	180	>98	12	68	920
160-15/35	+15/-35	160	260-460	355	400	231	>98	12	68	1000
200-15/35	+15/-35	200	260-460	444	400	289	>98	12	55	1050
250-15/35	+15/-35	250	260-460	555	400	361	>98	12	52	1500
320-15/35	+15/-35	320	260-460	711	400	462	>98	12	52	1800
400-15/35	+15/-35	400	260-460	888	400	577	>98	12	63	2100
500-15/35	+15/-35	500	260-460	1110	400	722	>98	15	63	2900
630-15/35	+15/-35	630	260-460	1399	400	909	>98	15	64	3050
800-15/35	+15/-35	800	260-460	1777	400	1155	>98	15	70	3450
1000-15/35	+15/-35	1000	260-460	2221	400	1443	>98	15	70	3950
1250-15/35	+15/-35	1250	260-460	2776	400	1804	>98	15	72	4600
1600-15/35	+15/-35	1600	260-460	3553	400	2309	>98	18	82	7000
2000-15/35	+15/-35	2000	260-460	4441	400	2887	>98	18	82	8850
2500-15/35	+15/-35	2500	260-460	5552	400	3609	>98	22	92	12500

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

60-15/45	+15/-45	60	220-460	157	400	87	>98	10	54	800
80-15/45	+15/-45	80	220-460	210	400	115	>98	10	68	900
100-15/45	+15/-45	100	220-460	262	400	144	>98	10	68	1070
125-15/45	+15/-45	125	220-460	328	400	180	>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	1700
250-15/45	+15/-45	250	220-460	656	400	361	>98	10	52	2000
320-15/45	+15/-45	320	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
800-15/45	+15/-45	800	220-460	2100	400	1155	>98	12	70	4400
1000-15/45	+15/-45	1000	220-460	2624	400	1443	>98	12	72	5100
1250-15/45	+15/-45	1250	220-460	3280	400	1804	>98	15	82	8000
1600-15/45	+15/-45	1600	220-460	4199	400	2309	>98	15	82	8900
2000-15/45	+15/-45	2000	220-460	5249	400	2887	>98	18	92	14000