ZGR AVC DVR
DYNAMIC VOLTAGE RESTORER

ZGR AVC DVR is an innovative system of compensation of voltage sags for the continuity of industrial processes industriales

ZGR AVC DVR is an innovating system designed to mitigate and eliminate the effect of electrical disturbances on critical industrial processes through the elimination of sags and a continuous regulation for minor disturbances. ZGR AVC DVR guarantees the quality of the grid meeting the demands of industrial production processes while keeping stable and constant the output voltage regardless of energy grid voltage variations. It consists of a transformer, a bidirectional rectifier unit, plus an inverter. The aim of the ZGR AVC DVR is to compensate disturbances, unbalanced voltages, and to regulate them in case of possible fluctuations and overvoltages. Moreover, ZGR AVC DVR monitors, controls and records events that occur in the system, allowing subsequent viewing through the touch control panel.

Applications

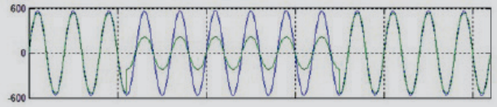
TELECOM
INDUSTRY
DATA CENTERS
RAILWAY SECTOR
ROBOTS
LOGISTICS SECTOR

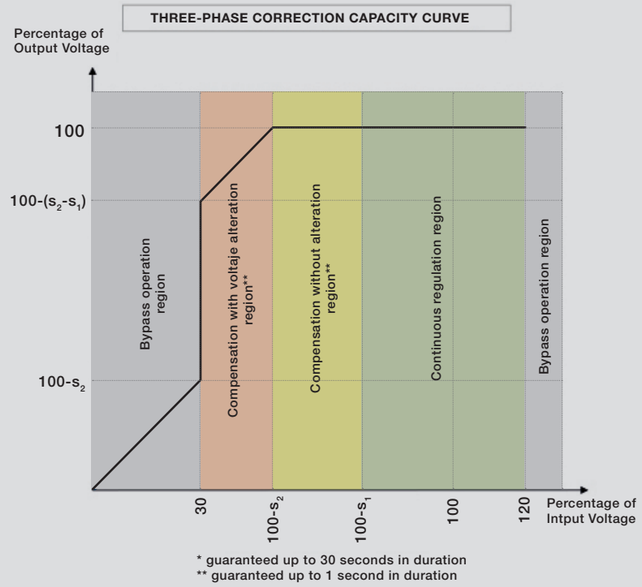
Characteristics

- Mitigates three-phase voltage sags up to 70% of depth or single-phase interruptions
- Continuous regulation to offer high stabilization (± 1 %)
- High efficiency supply system > 98 %
- Not battery required or other energy storage components
- Compensation of voltage sags even for long times (up to 30 sec)
- Swell and overvoltage compensation
- Independent compensation per phase
- Compensation of balanced and unbalanced voltage drops
- Automatic bypass
- Withstand 150 % overload for 1 second in normal mode
- Less than 3 milliseconds response-time
- Energy flow in both directions
- Quick response speed
- Touch control panel
- Customizable for other powers powers, sags and/or voltage
- Modular design which facilitates O&M
- Easy for connecting in parallel up to 3 equipments
- Mitigates voltage sags according the standards: SEMI F47, IEC 61000-4-11 and IEC 61000-4-34 (depends on the model)

Operation

ZGR AVC DVR eliminates both three-phase and single-phase sags, considering that it compensates each phase independently. When a sudden drop in the input voltage (in green) occurs, ZGR AVC DVR acts quickly compensating it to ensure that the output voltage (in blue) remains stable.



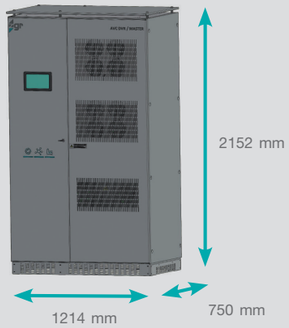


Maximum Sag Correction (S_2)	Continuous regulation range (S_1)	AVC DVR System Power	System Configuration	Power per Unit	Manual Bypass	
					380/400/415 Vac Systems	200/208/220 Vac Systems
-40 %	±20 %	300 kVA	M	300 kVA	630 A	1250 A
		600 kVA	M+S	300 kVA	1250 A	3200 A
		900 kVA	M+2S	300 kVA	2000 A	3200 A
-50 %	+20 % -25 %	220 kVA	M	220 kVA	630 A	1250 A
		440 kVA	M+S	220 kVA	1250 A	2000 A
		660 kVA	M+2S	220 kVA	2000 A	3200 A
-60 %	+20 % -30 %	150 kVA	M	150 kVA	630 A	630 A
		300 kVA	M+S	150 kVA	1250 A	1250 A
		450 kVA	M+2S	150 kVA	1250 A	2000 A

Dimensions and weights

AVC DVR 380 / 400 / 415 Vac

Weight: 1250 kg

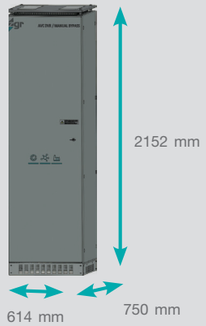


AVC DVR 200 / 208 / 220 / 480 Vac

Weight: 1600 kg

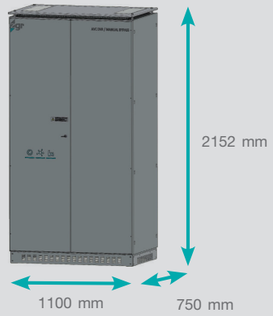
Bypass Manual 630 A

Weight: 200 kg



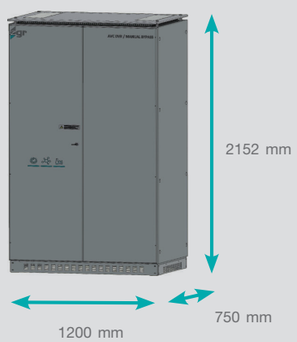
Bypass Manual 1250 / 2000 A

Weight: 375 kg (1250 A) / 575 kg (2000 A)



Bypass Manual 3200 A

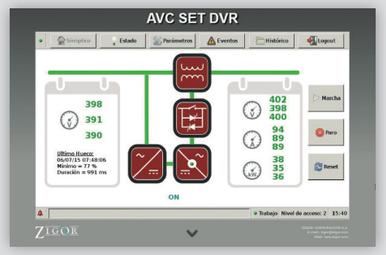
Weight: 775 kg



** Sistems that are not 380/400/415 Vac check dimensions.*

Monitoring

The control panel allows the user to access the following data: status, measurements, configuration, alarms, control, network, equipment, etc.



TECHNICAL SPECIFICATIONS			
Model	40 % sag models	50 % sag models	60 % sag models
INPUT ELECTRICAL CHARACTERISTICS			
Nominal voltage	200/208/220 or 380/400/415 or 480 Vac		
Voltage range (Vac)	± 20 %	+ 20 % - 25 %	+ 20 % - 30 %
Phase	3 phases + ground (neutral opcional)		
Frequency	50/60 Hz ± 10 %		
Frequency variation (df/dt)	4 Hz		
OUTPUT ELECTRICAL CHARACTERISTICS			
Voltage	200/208/220 or 380/400/415 or 480 Vac		
Power range	150 - 900 kVA/kW	220 - 660 kVA/kW	150 - 450 kVA/kW
Regulation	± 1 %		
Phase	3 phases + ground (neutral optional)		
Frequency	50 / 60 Hz		
Response time	< 3 ms		
Transfer time to Bypass	< 0.5 ms		
Overcharge capacitity in normal mode	110 % - 30 s, 150 % - 1 s		
Overcharge capacitity in bypass mode	200 % - 60 s, 500 % - 10 s, 3000% - 0.2 s		
GENERAL CHARACTERISTICS			
Maximum efficiency	> 98%		
Dielectric rigidity	2.5 kV – 1 minute		
Control panel	Touch panel		
Protections	Short circuits, current limitation, overload, RFI filter, necessary disconnections		
Paralellable	Up to 3 equipments (Master + 2 slaves)		
Maintenance switch	Yes (in slave equipments). Optional (in master equipments)		
Protection degree	IP 20		
Protective class	Class I		
Pollution degree rating	2		
Overvoltage category	III		
Vibration	Class 3M1		
IK impact degree	IK07		
Cooling	Forced ventilation		
Working temperature	0ºC ~ +40ºC		
Storage temperature	0ºC ~ +85ºC		
Noise level	< 65 dB		
Altitude	< 1000 m		
Relative humidity	0 ~ 95 %, without condensation		
STANDARDS			
Marks	CE		
General directives	IEC 62477-1, IEC 61000-6-2, IEC 61000-6-4, IEC 60721-3-3		

AVC DVR of Medium Voltage available up to 3,6 MVA
For different voltages, powers, or configurations for other kind of sags, consult ZIGOR
For any other technical need or modification of existing ones, consult ZIGOR
These specifications may change without notice