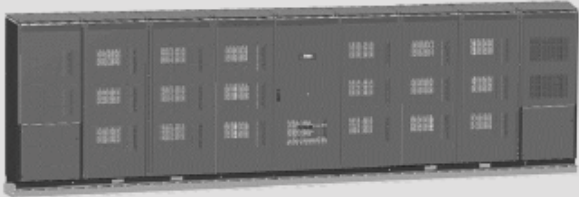


ZGR AVCE DVR HIGH POWER

DYNAMIC VOLTAGE RESTORER

ZGR AVC DVR HIGH POWER for LV and MV is an innovative voltage sag compensation system for the continuity of industrial processes.

ZGR AVC DVR HIGH POWER 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 HIGH POWER 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 HIGH POWER is to compensate disturbances, unbalanced voltages, and to regulate them in case of possible fluctuations and overvoltages. Moreover, ZGR AVC DVR HIGH POWER monitors, controls and records events that occur in the system, allowing subsequent viewing through the touch control panel.



Applications

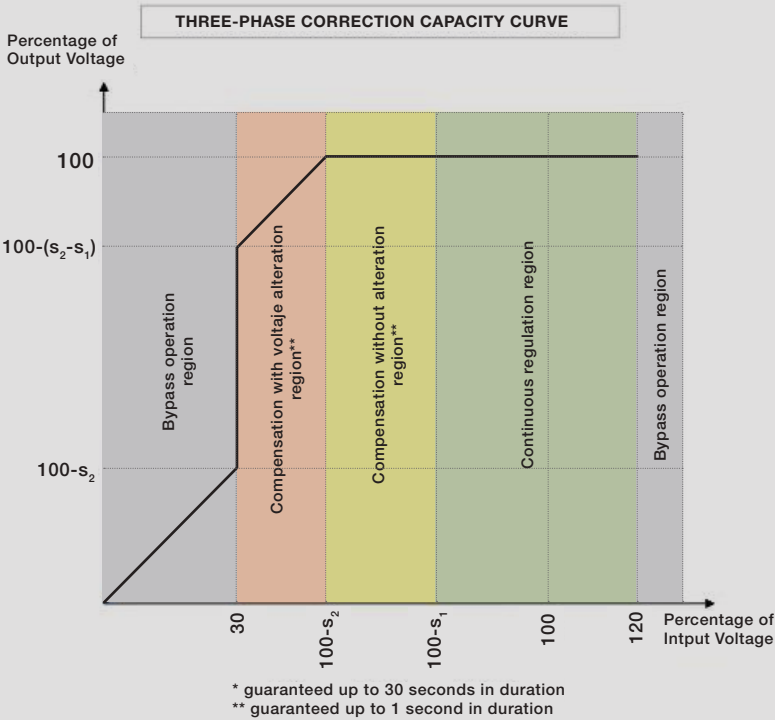
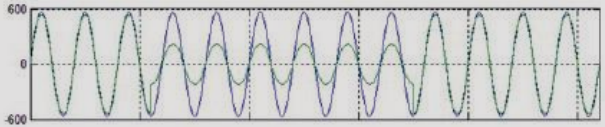


Characteristics

- Mitigates three-phase voltage sags up to 70% of depth or single-phase interruptions
- Continuous regulation to offer high stabilization ($\pm 1\%$)
- 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
- Possibility of a container solution
- 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 singlephase 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.

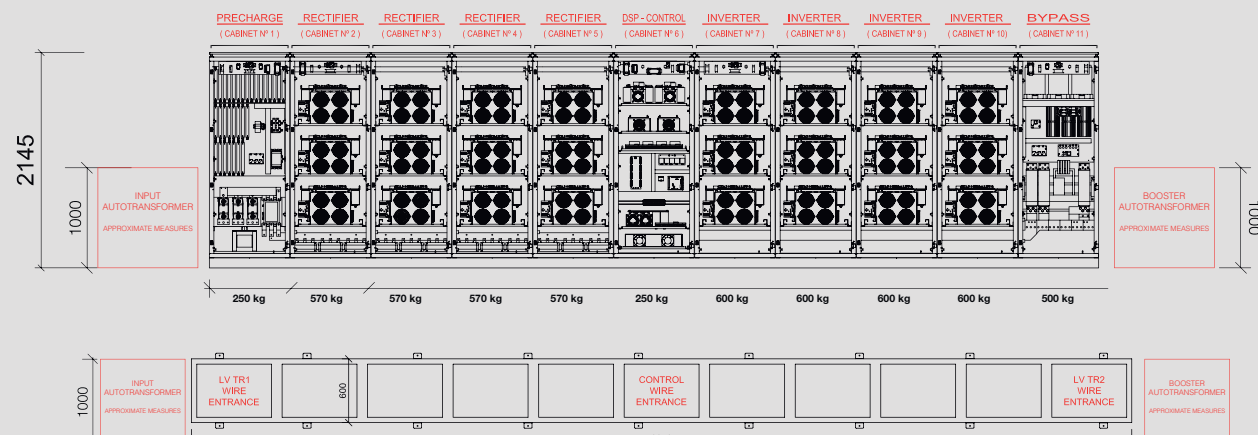


Maximum Sag Correction (S ₂)	Continuous regulation range (S ₁)	AVC DVR System Power	System Configuration	Line Voltage	Manual Bypass / Switchgear	
					LV Systems	MV Systems
-60%	$\pm 10\%$	1-6 MVA	Scalable. Adjustable to the power required	Adjustable BT - MT	3.200 A 4.000 A	Switchgear MV

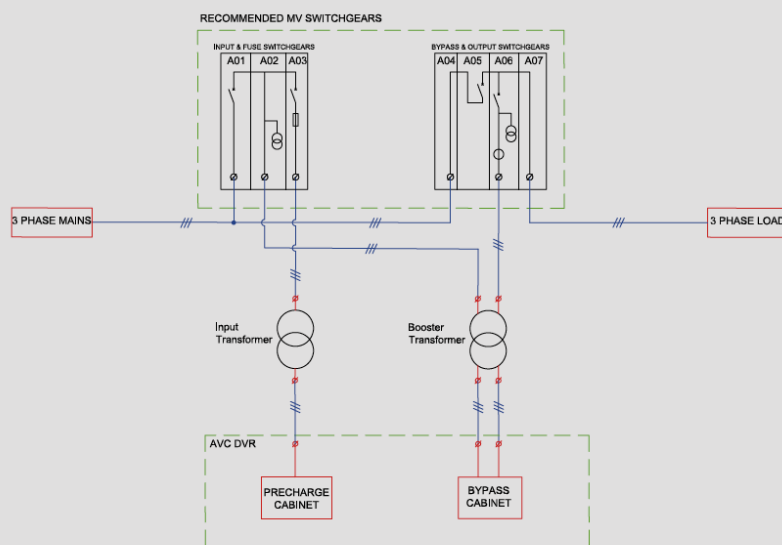
* Model	Maximum Sag Correction (S ₂)
AVC DVR 1.6 MVA	-60%
AVC DVR 2.4 MVA	-50%
AVC DVR 3.6 MVA	-40%
AVC DVR 5 MVA	-30%
AVC DVR 6 MVA	-25%

Dimensions and weights

AVC DVR High Power 3,6 MVA 40%



MT AVC DVR High Power

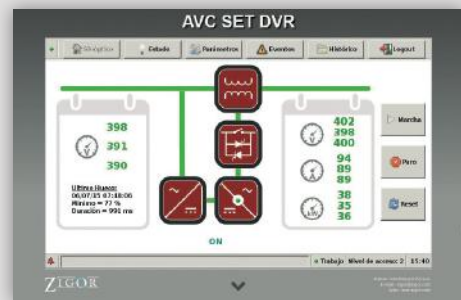


Bypass Manual 3200 A for LV Weigth: 775 kg



Monitoring

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



TECHNICAL SPECIFICATIONS

Model	ZGR AVC DVR 1-6 MVA LV-MV 0-60% Sag
INPUT ELECTRICAL CHARACTERISTICS	
Phases	3 phases + GND
Voltage range	200 - 34.500 Vac + 10% - 60%
Frequency	50/60 Hz \pm 10%
OUTPUT ELECTRICAL CHARACTERISTICS	
Nominal Power	Up to 6 MVA
Nominal Factor	1
Phases	3 phases + GND
Voltage	200 - 34.500 Vac \pm 1%
Frequency	50 / 60Hz \pm 10%
DYNAMIC REGULATIONS	
Continuous regulation range	\pm 10%
Maximum gap without voltage alteration (s2)	60%
Maximum gap without a given way to bypass (s3)	70%
Gap to give way to bypass	>70%
GENERAL SPECIFICATIONS	
Modules number (rectifier + inverter)	Maximum 12 + 12
Efficiency	> 98%
Overload	110% - 30 seconds, 150%- 1 second in normal mode
Response time	<3 msec
Transfer time to bypass	< 0.5 msec
Maintenance switch	MV switchgear or Manual Bypass for LV (as power)
Dielectric strength	2.5 kV - 1 minute
Protection degree	IP 20
Pollution degree rating	2
Cooling	Forced ventilation
Noise level	<75 dB @ 2m
Working temperature	0 - 40 °C
Storage temperature	0 - 85 °C
Altitude	1000 m (without power losses)
Relative humidity	0 - 95%, without condensation
Maximum sag to bypass	> 70%
COMMUNICATIONS	
Monitoring	Web and touch screen
Communications	Web server, Modbus, SNMP
INPUT TRAF0	
Type	Dry
Power	As power
BOOSTER TRANSFORMER	
Type	Dry
Power	As power

(1) Recommended configuration. It is the simplest configuration so that a bypass can be performed manual for maintenance or repairs and to obtain the necessary measures for the operation of the AVC DVR. Other configurations can be considered based on customer needs.