CUSTOMER NEEDS

The customer is a textile company in Bogota, Colombia. Due to unpredictable and random voltage SAGs the company has frequent problems in production lines and relatives costs:

- Costs for raw materials lost
- Costs for work not done or gone anyway lost
- Costs for damage and/or malfunction of machinery

In this cases voltage SAGs are caused by faults in the public network.

The local utility, through the support of **SICE Ltda** Power Quality Consultant, analyzed problems and possible solutions to avoid the damages of voltage SAGs for the textile company.

They need to cover SAGs up to -50% of rated voltage, for a duration of few milliseconds.

ORTEA SOLUTION

Power Quality Consultant has chosen Ortea solution for voltage SAGs instead of On Line UPS, indeed the latter is more expensive as product and as for maintenance. Moreover, the customer could not create any air conditioned room for UPS.

Supplied solution: **OXYGEN | SAG compensator**, 320kVA, 460V, 60Hz

To date, the machine is carrying a maximum load of 187A (load of 148.81kVA), meaning that the equipment is operating at a capacity of 46.5% of its nominal capacity of 320kVA.

Example of a single-phase voltage SAG and OXYGEN action:
SAG depth: *-65,48% of rated voltage*
Duration: *0,133 seconds*
Rated Voltage: *460V*
Frequency: *60Hz*

Values monitored during voltage sag:

CHANNEL	Min Voltage during event	Max Voltage during event
L1-N Input Oxygen	268.4V	269.1V
L2-N Input Oxygen	91.8V	264.3V
L3-N Input Oxygen	268.7V	269.2V
L1-L2 Input Oxygen	312.1V	466.6V
L2-L3 Input Oxygen	315.8V	466.9V
L3-L1 Input Oxygen	464.2V	465.9V
L1-N Output Oxygen	261.66V	267.47V
L2-N Output Oxygen	264.45V	268.07V
L3-N Output Oxygen	263.67V	266.92V

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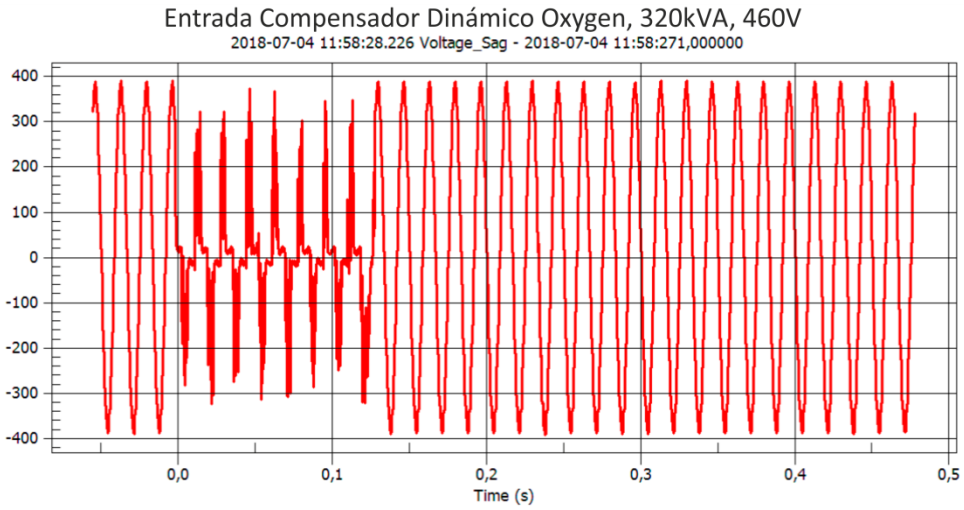
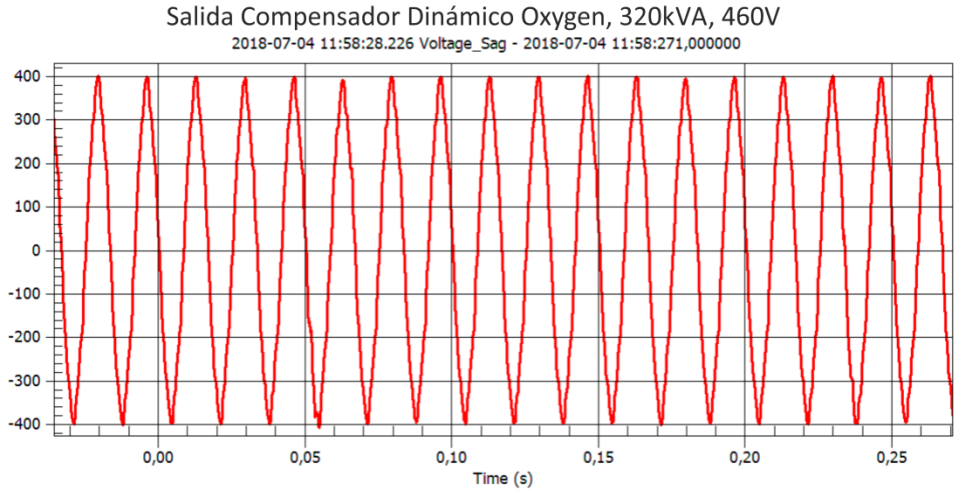
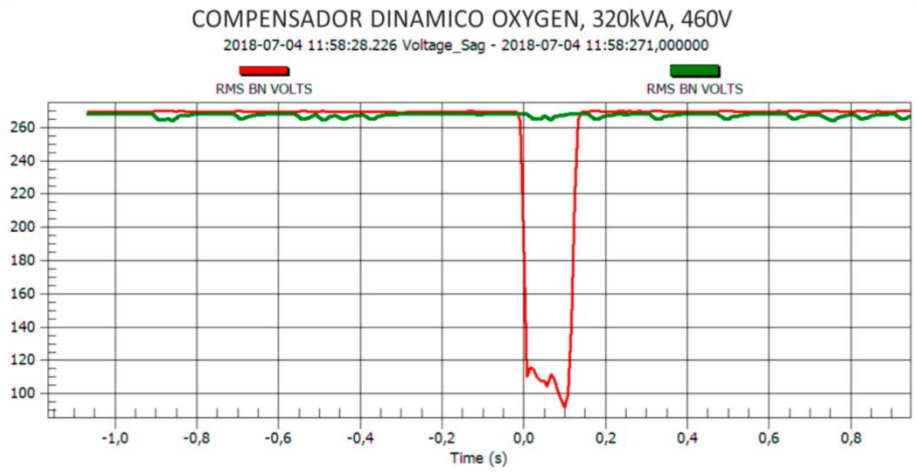
OXYGEN Voltage
Input (only phase L2-N)



OXYGEN Voltage
Output (only phase L2-N)





The red line represents the input voltage where the voltage drops down up to 91.8 volts and the green line represents the same phase but compensated by OXYGEN.

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ADVANTAGES

During the measurement period, the neutral phase voltage delivered by the network was between 91.8 volts and 281.7 volts and OXYGEN | SAG compensator is regulating adequately and protecting against voltage SAGs.

The customer has not any more problems and damages to equipment's and production cycle interruptions.

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