

VOLTAGE SAGS COMPENSATION SYSTEM

SET DVR

Voltage sags compensation systems to assure the continuity of industrial processes

Description



SET 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 transitory overvoltages.

Power generation, transport and distribution systems are limited and their problems can affect production processes as well as to produce economic consequences.

SET DVR guarantees the quality of the network, meeting the demands of industrial production processes, keeping stable & constant the output voltage regardless of input voltage variations.

SET DVR is a flexible voltage compensator, injecting and absorbing energy, capable of correcting drops of 40% of input voltage, to offer a highly stable voltage ($\pm 0,5 \%$) with immediate response ($>3\text{msec}$). It consists of a transformer, a reversible rectifier unit, plus an inverter. The aim of the SET DVR is to offset disturbances, voltage imbalances, and to regulate them in case of possible fluctuations and overvoltages.

The system also supervises, controls and logs all events.

The output voltage stabilization is assured both for balanced (all three phases) and unbalanced (some of the phases) voltage variations.



SET DVR

Features

- > Eliminates voltage sags of up to 50%
- > Minimises the required investment
- > It Does not require battery or other energy storage components
- > Compensation of depth and long disturbances times (up to 30 sec)
- > Surge compensation
- > Compensation irrespective of phase
- > Compensation of balanced and unbalanced voltage drops
- > Automatic bypass
- > High efficiency (97.5%)
- > Support 150% overload for 1 sec
- > Less than 3ms response
- > Continuous operation to offer high stabilization ($\pm 0.5\%$)
- > Energy flow in both directions
- > Improved response in time
- > Turnkey project: tailor-made design for special needs
- > Guarantees maximum sturdiness of the system
- > Never interrupts service

telecommunications

railway

industrial

logistics centres

industrial processes

robots



NON - STOP POWER

ZIGOR

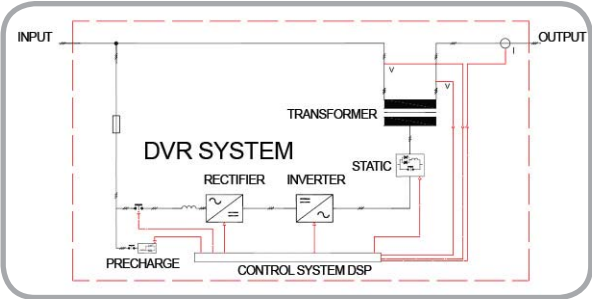
GENERAL SPECIFICATIONS				
Model	SET DVR 300	SET DVR 600	SET DVR 900	SET DVR 1200
ENTRADA				
Nominal input voltage	3 x 400V			
Frequency	50 Hz ± 10%			
OUTPUT				
Nominal output voltage	3x400 V ± 0,5%			
Frequency	50 Hz ± 10%			
Nominal Power	300 KVA	600 KVA	900 KVA	1200 KVA
GENERAL				
Maximum efficiency	> 97.5%			
Overload capacity	110% - 30 sec 150% - 1 sec			
Operation temperature	0 ° C - 40 ° C			
Storage temperature	0 ° C - 85 ° C			
Protection	IP 21 acc. To IEC 529, 944 IEC			
Relative humidity	< 95% (no condensation)			
Maximum operating altitude	< 1000m. Degrade the power at higher altitudes			
DIMENSIONS				
HxWxD mm	2143x1212x660	2 (2143x1212x660)	3 (2143x1212x660)	4 (2143x1212x660)
Weight Kg	1050	2100	3150	4200
DYNAMIC RESPONSE				
	Sag depth		Output voltage	
	30% of the rated voltage		400V ± 0.5%	
	40% of rated voltage – 30 seconds		400V ± 0.5%	
	50% of rated voltage – 30 seconds		90% x 400V ± 0.5%	
	> 50% of the nominal		Bypass: Output = Input	
STANDARDS				
Certifications	CE			
Directives	European Low Voltage Directive (2006/95 EC) Electronic equipment for use in power installations: UNE-EN 50 178 (98)			
CONNECTION CABINET FOR SET DVR *				
HxWxD mm	2143x1212x660	2145x 814x 625	2145x 814x 625	2145x1619x625
Weight Kg	1050	300	360	475

* Board cabinet needed for models over 600 KVA: dimensions and weight.

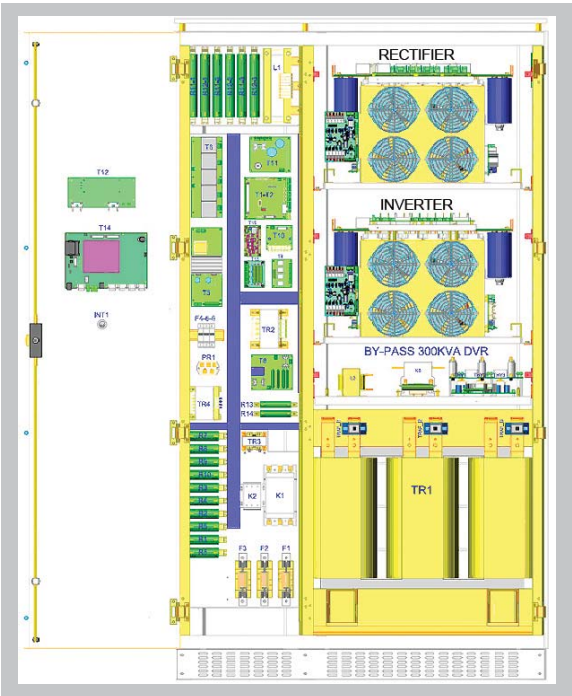
The dimensions of these cabinets can be modified.

SET DVR principle diagram

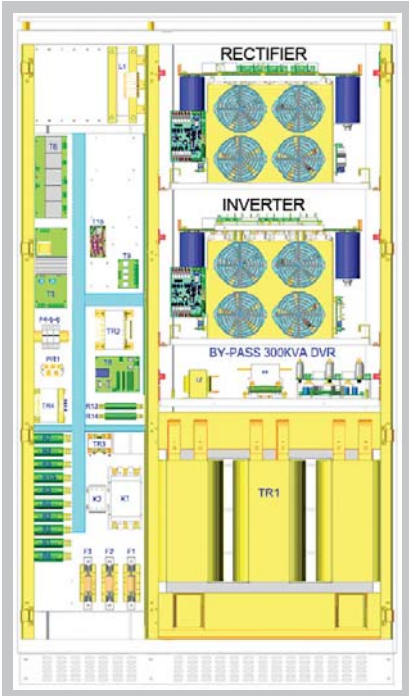
> The functionality principle of SET DVR is based on a reversible Rectifier (energy can flow both directions) and an inverter, who adds or subtract the drop or the excess to the input voltage to keep output voltage invariable, stable and constant ($\pm 0.5\%$).



SET DVR implementation master



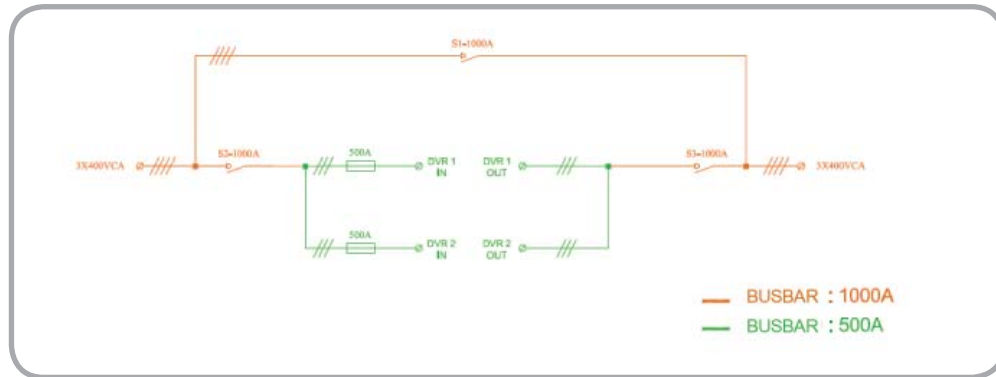
SET DVR implementation slave



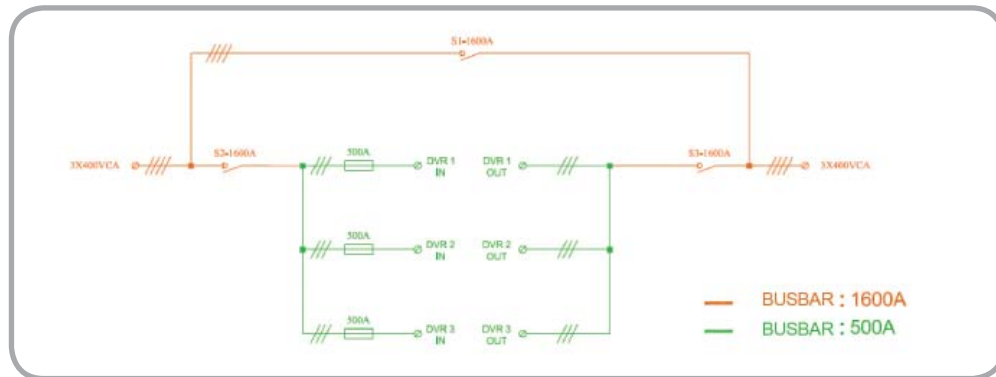
Parallel architecture of SET DVR 600, 900 & 1200

> The SET DVR 300KVA is a MASTER device capable of handling up to 3 additional SET DVR 300 KVA SLAVE, thus, the total power would be 600 KVA (1M+1S), 900 KVA (1M+2S) & 1200 KVA (1M+3S).

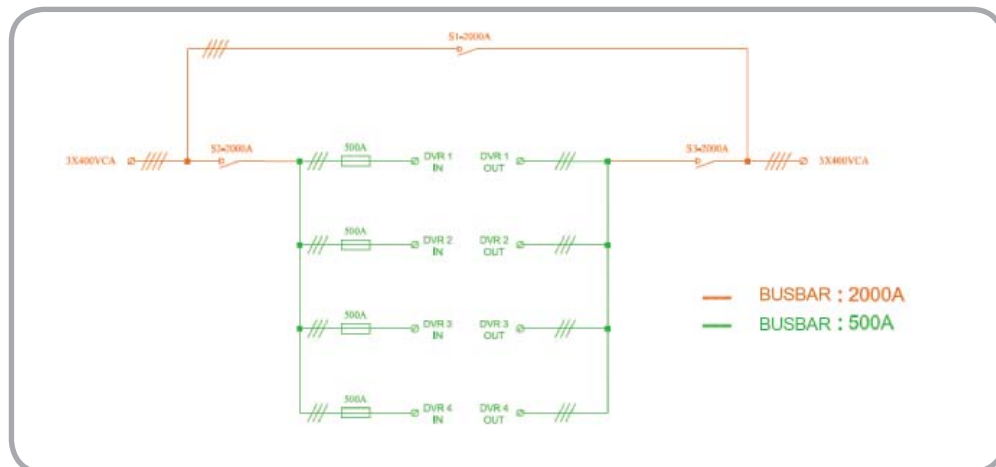
In order to connect all these SET DVR devices in parallel, it's necessary a board cabinet as defined in the pictures here below:



Interconnection cabinet of SET DVR 600 KVA (2XSET DVR 300)



Interconnection cabinet of SET DVR 900 KVA (3XSET DVR 300)



Interconnection cabinet of SET DVR 1200 KVA (4XSET DVR 300)

> In addition to the board cabinet, it's necessary the connection of fiber optics and power link between the MASTER SET DVR and the different SLAVE SET DVR.