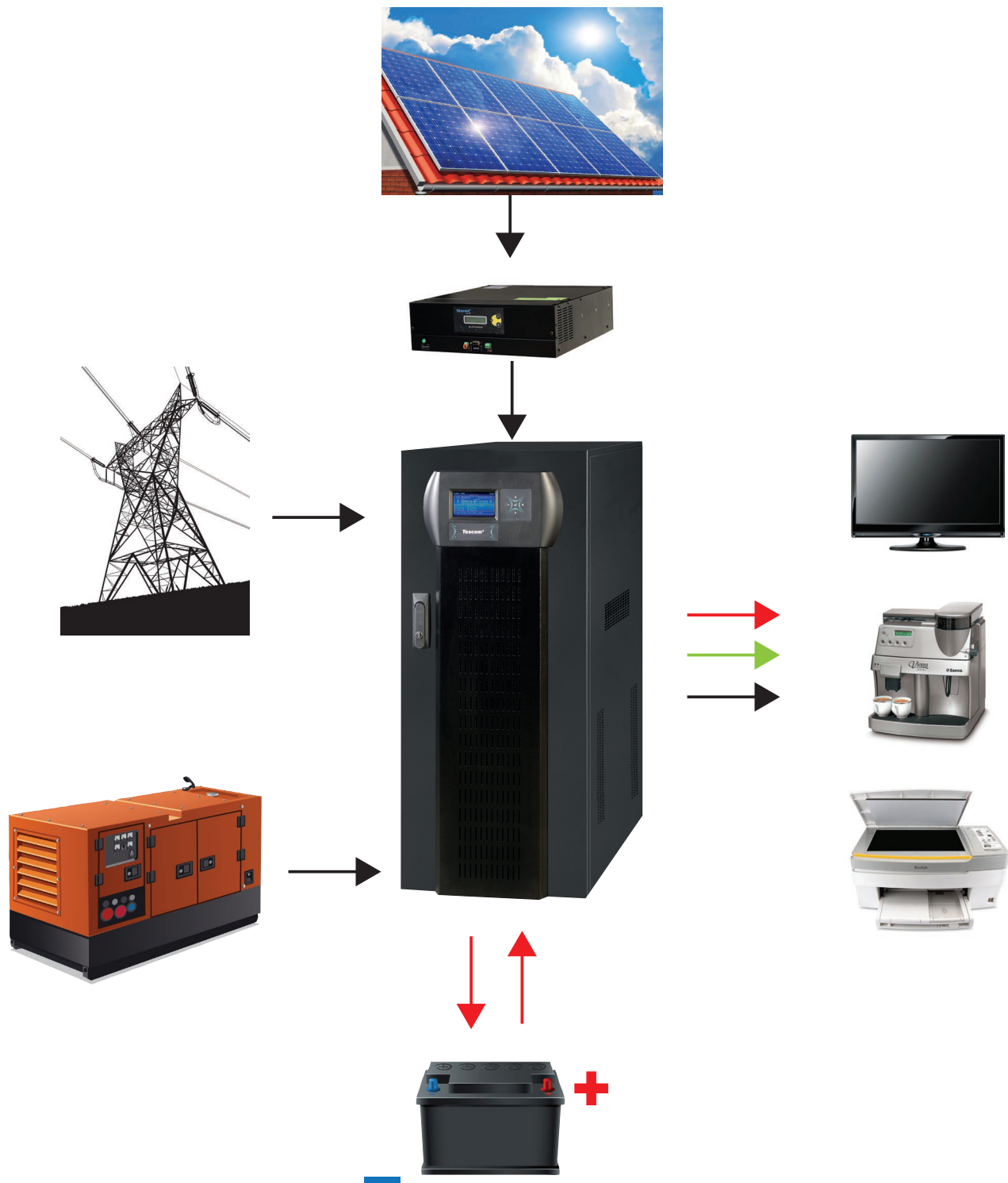


## HYBRID UPS SYSTEMS

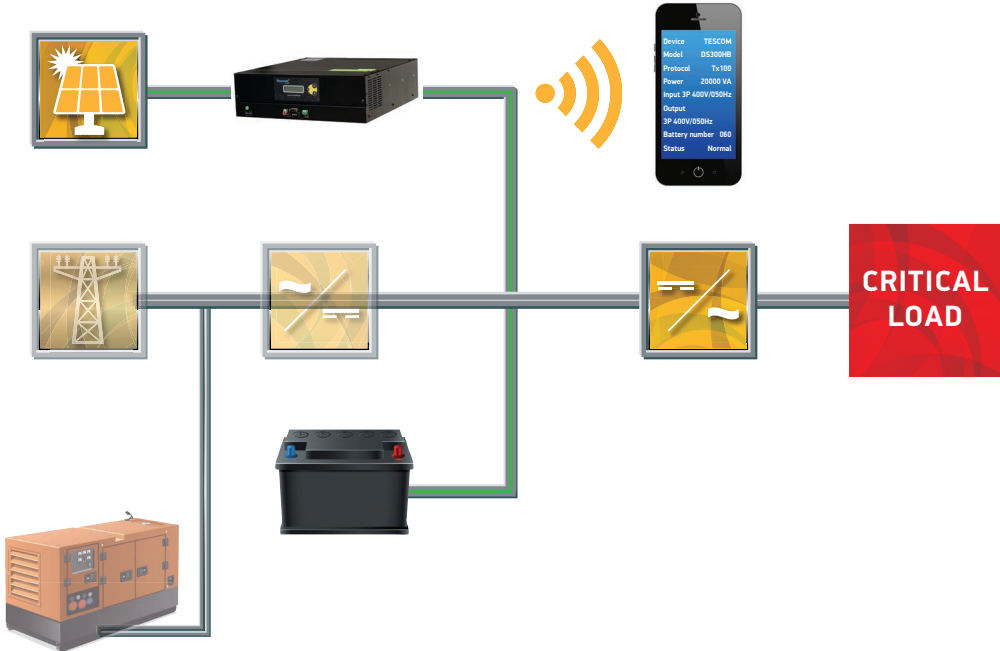
Hybrid ups senses the availability of solar power, grid power and the battery power for supping the connected loads using tne most economical and ecological combination of these energy sources. TGc series solar converter is connected to the DC bus of the Hybrid UPS and solar group is set as the primary energy source.

Diesel generator stars automatically in case of solar energy, grid and battery group unavailability. This feature will greatly simplify your life where there is no electrical network.

In addition to the hybrid operation, intelligent controller provides you "real time monitoring". That function is fully designed by Tescom and avilable for smart phones. All you need is an internet connection.



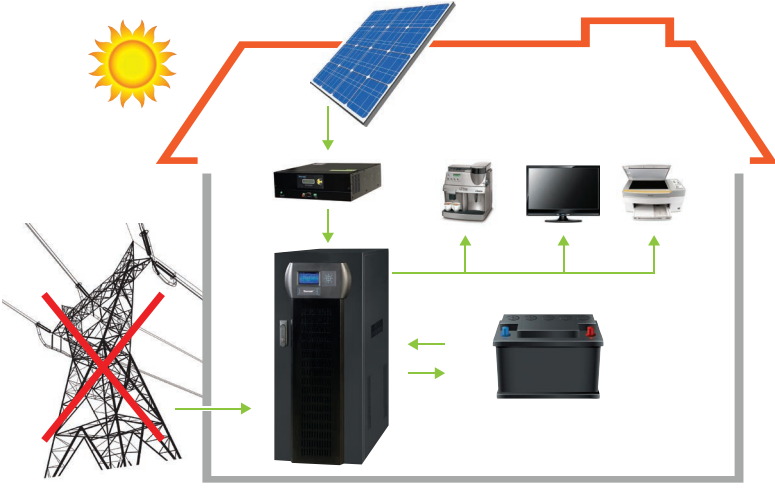
# HYBRID UPS (DS300HYB)



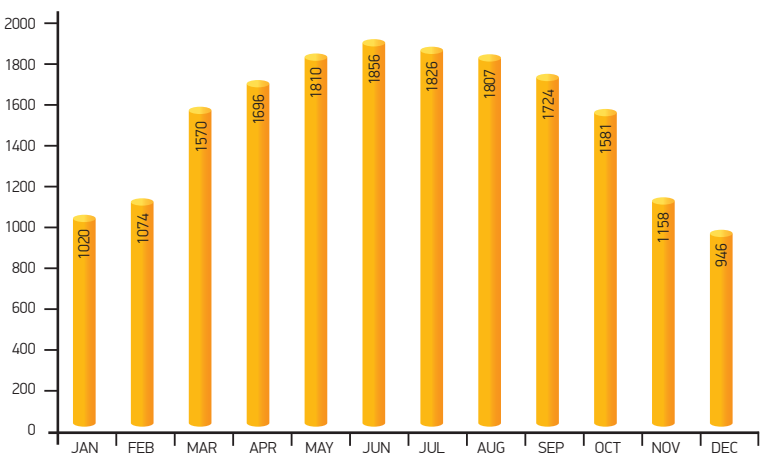
## FLEXIBLE OPERATION MODE

In case of power failure the requested energy is coming from the solar panels and/or batteries. The backup time vary with the connected load and the power of panels/batteries. The backup time vary with the connected load and the power of panels/ batteries.

Without solar energy, the load is directly supplied by the batteries.



## AVERAGE PRODUCTION VALUES BY MONTH: 10 kWp



## TECHNICAL SPECIFICATIONS

MODEL	HYB310	HYB315	HYB320	HYB330	HYB340	HYB360	HYB380	HYB3100	HYB3120	HYB3160
Power (kVA)	10	15	20	30	40	60	80	100	120	160
<b>INPUT</b>										
Voltage	380/400 VAC 3 Phase + N + E $\pm 20\%$ (415 VAC +15%, - 25% optional)									
Frequency	50Hz./60Hz. $\pm 10\%$									
Power factor	$\geq 0,99$									
(THDI) (*)	$\leq 3\%$									
By-pass voltage	380/400 VAC 3 Phase + N, $\pm 10\%$									
Protection	Fuses, Voltage & Frequency tolerance, Input power limit, Phase sequency indicator									
<b>OUTPUT</b>										
Power (kW)	9	13,5	18	27	36	54	72	90	108	144
Power factor	0,9									
Voltage	380/400 VAC 3 Phase + N, $\pm 1\%$ (415 VAC optional)									
Frequency	50Hz./60Hz.									
Frequency tolerance	Line synchronized: $\pm 2\%$ / Free running: $\pm 0,1\%$ (adjustable)									
Efficiency	up to 94%									
Crest factor	3:1									
Overload protection	100% - 125% load: 10 min, 125% - 150% load: 1 min, - >150% load: by pass									
Other protections	Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting									
THD	< 2% (at 100% linear load)									
<b>BATTERIES</b>										
Type	VRLA AGM / GEL / NiCd									
Number of batteries	2x30 ( $\pm 30$ ): 60 pieces									
Charging voltage	2x405 VDC									
End of discharge voltage	2x300 VDC									
Battery cabinet	Internal						External			
Battery ambient temperature	25°C									
Protections	3 level alarms, Battery fuses, Charging current limit, Temperature compensation (optional)									
Automatic testing	Standard every 72 hours (adjustable)									
<b>GENEL</b>										
Standards	EN62040-1, EN62040-2, EN62040-3									
User interface	4 lines LCD panel, Mimic leds, 5 vector buttons, Buzzer, Optional TFT panel									
Indicators	P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Time									
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232, operating hour meter									
Communication	2xRS232 serial ports, 4 standard and 8 optional DRY contact alarm relays									
Inputs	EPO input, Interactive battery panel input, Genset input									
Genset kit	Standard (programmable)									
Software	Standard T-Mon UPS Management Software (3 clients + 1 server management)									
Alarm logging	Standard: with time & date 512 events									
Protections	Power module over-temperature, Over current, Temperature high alarm									
Temperature range	0°C - 40°C									
Protection degree	IP20									
Relative humidity	90% max. (noncondensed)									
Altitude	< 1000m above sea level									
Acoustic noise	< 57 dBA		< 62 dBA			< 64 dBA		< 68 dBA		
Net weight (kg)	87	87	91	100	173	197	209	220	232	265
Dimensions (mm) HxWxD	1040x400x815					1440x515x855				
<b>OPTIONS</b>										
Different input / output voltage	Please ask									
Transformer	Galvanic isolation transformer at the input & output									
Software	T-Mon Admin Multi UPS monitoring 10-50-100-200 clients, T-Mon Server 50-100-200 clients									
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), USB Alarm Logger, TCP/IP, GSM/GPRS Modem, Comport multiplexer									
Parallel operation	up to 8									
(*) Depending on input line conditions and power										

## TECHNICAL SPECIFICATIONS

MODEL	HYB3200	HYB3250	HYB3300	HYB3400	HYB3500	HYB3600
Power (kVA)	200	250	300	400	500	600
<b>INPUT</b>						
Voltage	380/400 VAC 3 Phase + N + E $\pm 20\%$ (415 VAC +15%, - 25% optional)					
Frequency	50Hz / 60Hz, $\pm 10\%$					
Power factor	$\geq 0.99$					
(THDI) (*)	$\leq 3\%$					
By-pass voltage	380/400 VAC 3 Phase + N, $\pm 10\%$					
Protection	Fuses, Voltage & Frequency tolerance, Input power limit, Phase sequency indicator					
<b>OUTPUT</b>						
Power (kW)	180	225	270	400	500	600
Power factor	0.9			1.0		
Voltage	380/400 VAC 3 Phase + N, $\pm 1\%$ (415 VAC optional )					
Frequency	50Hz / 60Hz					
Frequency tolerance	Line synchronized: $\pm 2\%$ / Free running: $\pm 0,1\%$					
Efficiency	up to 94.5%					
Crest factor	3:1					
Overload protection	100% - 125% load: 10 min, 125% - 150% load: 1 min, - >150% load: by pass					
Other protections	Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting					
THD	< 2% (at 100% linear load)					
<b>BATTERIES</b>						
Type	VRLA AGM / GEL / NiCd					
Number of batteries	2x30 ( $\pm 30$ ) : 60 pieces					
Charging voltage	2x405 VDC					
End of discharge voltage	2x300 VDC					
Battery cabinet	External					
Battery ambient temperature	25°C					
Protections	3 level alarms, Battery fuses, Charging current limit, Temperature compensation (optional)					
Automatic testing	Standard every 72 hours (adjustable)					
<b>GENERAL</b>						
Standards	EN62040-1, EN62040-2, EN62040-3					
User interface	4 lines LCD panel, Mimic leds, 5 vector buttons, Buzzer, Optional TFT panel					
Indicators	P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Time					
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232, operating hour meter					
Communication	2xRS232 serial ports, 4 standard and 8 optional DRY contact alarm relays					
Inputs	EPO input, Interactive battery panel input, Genset input					
Genset kit	Standard (programmable)					
Software	Standard T-Mon UPS Management Software (3 clients + 1 server management)					
Alarm logging	Standard: with time & date 512 events					
Protections	Power module over-temperature, Over current, Temperature high alarm					
Temperature range	0°C - 40°C					
Protection degree	IP20					
Relative humidity	90% max. (noncondensed)					
Altitude	< 1000m above sea level					
Acoustic noise	< 68 dBA			< 72 dBA		
Net weight (kg)	470	525	635	780	1452	
Dimensions (mm) HxWxD	1900x880x775		1900x1250x775	2040x1250x840	1940x1610x1050	
<b>OPTIONS</b>						
Different input / output voltage	Please ask					
Transformer	Galvanic isolation transformer at the input & output					
Software	T-Mon Admin Multi UPS monitoring 10-50-100-200 clients, T-Mon Server 50-100-200 clients					
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), USB Alarm Logger, TCP/IP ,GSM/GPRS Modem, Comport multiplexer					
Parallel operation	up to 8					
(*) Depending on input line conditions and power						