

Solutions for grid-connected systems





ULTRAFLEX



ULTRAFLEX & UFLEX Headquarter in Busalla



UCS - Ultraflex Control System Borgo Fornari factory



IL - Industira di Leivi Leivi factory



UFLEX USA Headquarter in Sarasota



UFLEX Tregnago factory



The Ultraflex Group has 89 years of experience in manufacturing and distributing the most innovative and high-quality products. The Ultraflex Group is affiliated with companies that design and manufacture widely known equipment in the alternative energy, marine, industrial, architectural and Led technology sectors.





INDEX

Hybrid Inverters Supercapacitor Storage Photovoltaic Panels

Monitoring Solutions

04-09
10-13
14-15
16

HYBRID INVERTERS

Innovative solutions for a more sustainable future

The UFLEX solution, which includes hybrid inverters and supercapacitor storage systems, casts its gaze toward a more sustainable, high-performance future. The UFLEX line is perfectly suited to pursue energy independence goals in both residential and commercial settings, starting from a 3kW single-phase configuration up to a 10kW three-phase configuration. UFLEX inverters are distinguished by:

- inverter and supercapacitor certification CEI-021
- innovative and high-performance products
- high degree of reliability
- easy installation and intuitive configuration.
- full anti-black out function (back-up power equal to rated power)
- stand-alone and zero input mode function



In combination with inverters, we find supercapacitor storage systems. These innovative systems, which have already been on the market for a few years, address the inherent problems of lithium batteries, eliminating fire hazards, memory effect, 100% depth of discharge, and have no temperature-related problems. In addition, they are parallelable and offer many other advantageous features. The entire UFLEX range offers comprehensive monitoring systems, accessible via Wi-Fi, LAN and Bluetooth, making the installation totally transparent to the eyes of users and installers. In addition, each system can be programmed and monitored remotely, without the need to travel to the installation site.



Maximum Efficiency:

UFLEX systems operate with precision in automating energy withdrawal from the grid, minimizing it and ensuring a continuous supply of energy even during possible blackouts.

Photovoltaic Field Oversizing:

UFLEX inverters are designed with the ability to accommodate more panels than their rated output. This results in a wider production curve throughout the day, with significant benefits in terms of expected production and self-consumption.

Total Connectivity:

Through the inverter's integrated Wi-Fi or LAN communication system, the system can be monitored very easily and programmed remotely, providing total control over efficiency and energy management.



UFLEX SINGLE-PHASE HYBRID INVERTER HY-SP-3/3.6/5/6-IT

Certifications and standards				
Grid Regulation Safety EMC/Standard	CEI 0-21, VDE-AR-N 4105, NSR 097, IEC 62116, IEC 61727, G99, G98, VDE 016-1-1, RD1699,C10-11 IEC/EN61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2			
Protection				
Integrated	Photovoltaic input lightning protection Anti-island protection Reverse polarity protection PV string input Insulation resistance detection Residual current monitoring unit Output overcurrent protection Output short-circuit protection Overvoltage protection			
Output overvoltage protection	CC Type II / CA Type III			
(Ve) 16 16 140	blored Touch LCD ery quick and easy system programming. 5 Inverters in Parallel In the same battery bank I can connect up 16 inverters, both on-grid and off-grid. igh Current aximum charge/discharge current of 40A.			



6 Stages of Battery Charging/Discharging.



Supports the Management Of a Diesel Generator.

MODEL HY:SP:3.0-TT HY:SP:3.6-TT HY:SP:5.TT HY:SP:6.TT Battery Type Supercapacitors Supercapacitors Battery Vitage Range (V) 40-60 120 135 Max. Charging Current (A) 70 90 120 135 External Temperature Sensor YES Self-adaption to BMS Charging Strategy for Li-An Battary Self-adaption to BMS VSTRING INPUT DATA Max DC Input Power (W) 3900 4660 6500 7800 Rate DV Input Voltage (V) 370 (125-500) Start-up Voltage (V) 150-425 Full Load DC Voltage Range (V) 300-425 Full Load DC Voltage Range (V) 300-425 Full Load DC Voltage Range (V) 300-425 Full Load DC Voltage Range (V) 300-425 Full Comment (A) 13 Max PV Iso(A) 17 17-17 No of MPP Trackers 1/1 2/1+1 No of MPP Trackers 1/1 2/1+1 Startup Viso(A) 3000 3600 5600 6600 Normal AC output Power (W) 3300 3960 5500 6600 Startup VISO(A) </th <th>BATTERY INPUT DATA</th> <th></th> <th></th> <th></th> <th></th>	BATTERY INPUT DATA				
Battery Viple Supercapacitors Battery Voltage Range (V)	MODEL	HY-SP-3-IT	HY-SP-3.6-IT	HY-SP-5-IT	HY-SP-6-IT
Battery Voltage Range (V) 40-60 Max. Charging Current (A) 70 90 120 135 Max. Discharging Current (A) 70 90 120 135 External Temperature Sensor YES YES YES Charging Strategy for Li-Ion Battery Self-adaption to BMS PV V9 STRING INPUT DATA 390 4680 6500 7800 Rated PV Input Voltage (V) 370 (125-500) Start-up Voltage (V) 370 (125-500) Start-up Voltage (V) 130-425 Full Load DC Voltage Range (V) 100-425 FUI Load DC Voltage Range (V) 300-425 PV Input Current (A) 13 13+13 Max.PV Isc(A) 17 No.of MPP Trackers 1/1 2/1+1 No.of Strings for MPP Tackers 1+1 2/1+1 No.of MPP Trackers 1+1 2/1+1 AC Output Power (M) 3000 3600 6000 Normal AC output Fower (M) 3000 3600 5000 6600 Normal AC output Fower (M) 3000 3600 5000 6600 Normal AC	Battery Type	Supercapacitors			
Max. Charging Current (A) 70 90 120 135 Max. Discharging Current (A) 70 90 120 135 Stetmal Temperature Sensor YES Self-adaption to BMS Charging Curve 3 Phases/Equalization Self-adaption to BMS PV STRING INPUT DATA Self-adaption to BMS Max. DC Input power (W) 3900 4680 6500 7800 Rated PV Input Voltage (V) 150-425 PV Trottage Range (V) 150-425 PV Input Current (A) 13 13+13 No of MPP Trackers 1/1 2/1+1 No of Strings for MPP Trackers 1/1 2/1+1 </td <td>Battery Voltage Range (V)</td> <td colspan="2">40</td> <td>-60</td> <td></td>	Battery Voltage Range (V)	40		-60	
Max Discharging Current (A) 70 90 120 135 External Temperature Sensor YES	Max. Charging Current (A)	70	90	120	135
External Temperature Sensor YES Charging Curve 3 Phases/Equalization Charging Strategy for Likon Battery Self-adaption to BMS PY STRING INPUT DATA max.DC Input power (W) 3900 4680 6500 7800 Rated PV Input Voltage (V) 370 (125-500) Start-up Voltage Range (V) 150-425 MPPT Voltage Range (V) 130-425 FVI Input Current (A) 13 13+13 Max.PV Iso(A) 17 17+17 No of MPP Trackers 1/1 2/1+1 No of Strings for MPP Trackers 1/1 2/1+1 No of Strings for MPP Trackers 1/1 2/1+1 No of Strings for MPP Trackers 1/1 2/1+1 No of Strings for MPP Trackers 1/1 2/1+1 Nonfa/CodynardUPSpxwr(A) 3000 3600 5000 6600 Nomiral AC output current (A) 13.6/13 16.4/15.7 22.7/21.7 27.3/26.1 Max AC Coutput Current (A) 15/14.3 18/17.2 25/23.9 30/28.7 Max AC Current (A) 15/14.3 18/17.2 25/23.9 30/28.7 Max C	Max. Discharging Current (A)	70	90	120	135
Charging Curve 3 Phases/Equalization Charging Strategy for Li-lon Battery Self-adaption to BMS PV STRING INPUT DATA Max DC Input power (W) 3900 4660 6500 7800 Rated PV Input Voltage (V) 370 (125-500) 125 125 MPPT Voltage Range (V) 100-425 150-425 125 PV Input Current (A) 13 13+13 13+13 Max, PC Input Soviets 11 2/1+1 No.of Strings for MPP Trackers 1/1 2/1+1 No.of Strings for MPP Trackers 1+1 2/1+1 No.of Strings for MPP Trackers 6600 Noninal AC output Power (W) 3300 3600 5500 6600 Max AC Current (A) 15/14.3 16/4/15.7 22.7/21.7 27.3/26.1 Max AC Current (A) 15/14.3 18/17.2 26/23.9 30/28.7 Max AC Current (A) 15/14.3 18/17.2 26/23.9 30/28.7 Max AC Current (A) 15/14.3 18/17.2 26/23.9 30/28.7 Max AC Current (A) 15/14.3 18/17.2 26/23.9 </td <td>External Temperature Sensor</td> <td></td> <td>Y</td> <td>ES</td> <td></td>	External Temperature Sensor		Y	ES	
Charging Strategy for Li-lon Battery Self-adaption to BMS PV STRING INPUT DATA	Charging Curve		3 Phases/E	Equalization	
PV STRING INPUT DATA Max.DC Input power (W) 3900 4680 6500 7800 Rated PV Input Voltage (V) 370 (125-500) 370 (125-500) Start-up Voltage Range (V) 150-425 900 300-425 PV Input Current (A) 13 31+13 3000 300-425 PV Input Current (A) 13 2/1+1 3000 3600 6000 Max.PV IsG(A) 17 7 7/17-17 3000 3600 5000 6600 NormalAC adputard UPS power (A) 3000 3600 5000 6600 NormalAC adput Power (W) 3300 3660 5500 6600 NormalAC adput Power (A) 3000 3600 5000 6600 NormalAC adput Power (A) 3000 3600 5000 6600 NormalAC adput Power (A) 15/14.3 18/17.2 25/23.9 30/28.7 Max AC Current (A) 15/14.3 18/17.2 25/23.9 30/28.7 Max AC Current (A) 15/14.3 18/17.2 25/23.9 30/28.7	Charging Strategy for Li-Ion Battery		Self-adapt	ion to BMS	
Max.DC Input power (W) 3900 4680 6500 7800 Rated PV Input Voltage (V) 370 (125-500) 125 125 125 125 125 125 125 121	PV STRING INPUT DATA				
Rated PV Input Voltage (V) 370 (125-500) Start-up Voltage Range (V) 150-425 MPPT Voltage Range (V) 300-425 PV Input Current (A) 13 13+13 Max PV Isc(A) 17 17+17 No.of MPP Trackers 1/1 2/1+1 No.of MPP Trackers 1/1 2/1+1 No.of Strings for MPP Trackers 1/1 2/1+1 AC OUTPUT DATA Norfial/CodutadUPSpower(M) 3000 3600 5000 6600 Nominal AC output Power (W) 3300 3960 5500 6600 6600 Nominal AC output current (A) 13.6/13 16.4/15.7 22.7/21.7 27.3/26.1 Max AC Current (A) 15/14.3 18/17.2 25/23.9 30/28.7 Max C Current (A) 15/14.3 18/17.2 25/23.9 30/28.7 Max Continuos AC pass (A) 35 40 40 Peak power (6f'grid) 2 times power rating, 10 S Power Factor 8 Output frequency and voltage 50/60/Hz;L/N/PE 220/23/Vac (single-phases) 5/5/5 15 <td>Max.DC Input power (W)</td> <td>3900</td> <td>4680</td> <td>6500</td> <td>7800</td>	Max.DC Input power (W)	3900	4680	6500	7800
Start-up Voltage (V) 125 MPPT Voltage Range (V) 300-425 Ful Load DC Voltage Range (V) 300-425 Ful Load DC Voltage Range (V) 13 13-13 Max.PV Isc(A) 17 17-17 No. of MPP Trackers 1/1 2/1+1 No. of Strings for MPP Trackers 1+1 2/1+1 AC OUTPUT DATA 13.6/13 16.4/15.7 22.7/21.7 27.3/26.1 Max AC Output Power (W) 3300 3960 5500 6600 Nominal AC output Current (A) 13.6/13 16.4/15.7 22.7/21.7 27.3/26.1 Max AC Current (A) 13.6/13 16.4/15.7 22.7/21.7 27.3/26.1 Max AC Current (A) 13.6/13 16.4/15.7 22.7/21.7 27.3/26.1 Max AC Current (A) 15/14.3 18/17.2 25/23.9 30/28.7 Max Continuos AC pass (A) 2 times power rating, 10 S 40 Peak power (off-grid) 2 times power rating, 10 S 5 Power Factor 0.8 leading to 0.8 leaging 0utput frequency and voltage 50/60H2:LI/N/E 220/2.3/0xc (single-phase) Type of network Single-phase	Rated PV Input Voltage (V)		370 (12	25-500)	
MPPT Voltage Range (V) 150-425 Full Load DC Voltage Range (V) 300-425 PV Input Current (A) 13 13+13 Max PV Isc(A) 17 17+17 No. of MPT Trackers 1/1 2/1+1 AC OUTPUT DATA 2/1+1 AC OUTPUT DATA Nomiral AC output rower (W) 3300 3600 5000 6600 Nomiral AC output rower (W) 3300 3960 5500 6600 Nomiral AC output rower (W) 3300 3960 5500 6600 Nomiral AC output rower (W) 3300 3960 5500 6600 Nomiral AC output rower (W) 3300 3960 5500 6600 Nax AC Output rower (W) 3300 3960 5500 6600 Nax AC Output rower (W) 13 fi14.3 16.4/15.7 22.7/21.7 27.3/26.1 Max Continuos AC pass (A) 35 40 90 92 90/28.7 40 Peak power (off-grid) 2 times power rating, 10 S 90 90 90 90 90 9	Start-up Voltage (V)		1:	25	
Full Load DC Voltage Range (V) 300-425 PV Input Current (A) 13 13+13 Max PV Isc(A) 17 17+17 No. of MIPP Trackers 1/1 2/1+1 AC OUTPUT DATA 2/1+1 AC OUTPUT DATA Nomral AC output Orgen (W) 3000 3600 5000 6600 Nomral AC output ourrent (A) 13.6/13 16.4/15.7 22.7/21.7 27.3/26.1 Max AC Output ourrent (A) 13.6/13 16.4/15.7 22.7/21.7 27.3/26.1 Max AC Current (A) 15/14.3 18/17.2 25/23.9 30/28.7 Max Continuos AC pass (A) 35 40 40 Peak power (off-grid) 2 times power rating. 10 S 40 Power Factor 0.8 leading to 0.8 lagging 50/60Hz;L/N/PE 220/230Vac (single-phases) Type of network Single-phase 5% In GENERAL DATA -45% C downgrade Cooling Natural Cooling -30dB Noise (dB) -30:04 -5% C downgrade Cooling -40 -60°C, >45°C downgrade -5% C down	MPPT Voltage Range (V)		150	-425	
PV Input Current (A) 13 13+13 Max.PV Isc(A) 17 17+17 No.of MPP Trackers 1/1 2/1+1 No.of Strings for MPP Trackers 1+1 2/1+1 AC OUTPUT DATA Normiral/Acutputard/PSpore (N) 3000 3600 5000 6000 Max. AC Output Power (W) 3300 3960 5500 6600 Nominal AC output current (A) 13.6/13 16.4/15.7 22.7/21.7 27.3/26.1 Max AC Current (A) 15/14.3 18/17.2 25/23.9 30/28.7 Max Continuos AC pass (A) 35 40 40 Peak power (off-grid) 2 times power rating, 10 S 40 Power Factor 0.8 leading to 0.8 lagging 0.40 Output frequency and voltage 50/60Hz;L/N/PE 220/23/Vac (single-phases) Type of network Total harmonic distortion (THD) <3% (Nominal Power)	Full Load DC Voltage Range (V)		300	-425	
Max.PV isc(A) 17 17+17 No.of MPP Trackers 1/1 2/1+1 No.of Strings for MPP Trackers 1+1 2/1+1 AC OUTPUT DATA 2/1+1 AC OUTPUT DATA Nominal AC output Power (W) 3000 3600 5500 6600 Nominal AC output Power (W) 3300 3960 5500 6600 Nominal AC output Ower (W) 3300 3960 5500 6600 Nominal AC output Current (A) 13.6/13 16.4/15.7 22.7/21.7 27.3/26.1 Max AC Current (A) 15/14.3 18/17.2 25/23.9 30/28.7 Max Continuos AC pass (A) 35 40 90 90 90/28.7 Max Continuos AC pass (A) 25/23.9 30/28.7 40 90 90/28.7 Peak power (off-grid) 2 times power rating.10 S 90/28.7 40 90 90/28.7 90/28.7 10 90/28.7 10 10 10 10 10 10 10 10 10 10 10 10 10 <td>PV Input Current (A)</td> <td>13</td> <td></td> <td>13+13</td> <td></td>	PV Input Current (A)	13		13+13	
No.of MPP Trackers 1/1 2/1+1 No.of Strings for MPP Trackers 1+1 2/1+1 AC OUTPUT DATA	Max.PV lsc(A)	17		17+17	
No.of Strings for MPP Trackers 1+1 2/1+1 AC OUTPUT DATA	No.of MPP Trackers	1/1		2/1+1	
AC OUTPUT DATA Nominal AC output and UPS power (VA) 3000 3600 5000 6000 Max. AC Output Power (W) 3300 3960 5500 6600 Nominal AC output current (A) 13.6/13 16.4/15.7 22.7/21.7 27.3/26.1 Max AC Current (A) 15/14.3 18/17.2 25/23.9 30/28.7 Max Continuos AC pass (A) 35 40 Peak power (off-grid) 2 times power rating, 10 S 40 Power Factor 0.8 leading to 0.8 leaging 0.15/14.2 Output frequency and voltage 50/60Hz;L/N/PE 220/230Vac (single-phases) Type of network Total harmonic distortion (THD) <3% (Nominal Power)	No.of Strings for MPP Trackers	1+1		2/1+1	
Nominal AC output Power (VA) 3000 3600 5000 6600 Max. AC Output Power (W) 3300 3960 5500 6600 Nominal AC output current (A) 13.6/13 16.4/15.7 22.7/21.7 27.3/26.1 Max AC Current (A) 15/14.3 18/17.2 25/23.9 30/28.7 Max Continuos AC pass (A)	AC OUTPUT DATA				
Max. AC Output Power (W) 3300 3960 5500 6600 Nominal AC output current (A) 13.6/13 16.4/15.7 22.7/21.7 27.3/26.1 Max AC Current (A) 15/14.3 18/17.2 25/23.9 30/28.7 Max Continuos AC pass (A) 35 40 Peak power (off-grid) 2 times power rating, 10 S 90/28.7 Power Factor 0.8 leading to 0.8 lagging 0.18 leading to 0.8 lagging Output frequency and voltage 50/60/Hz;L/N/PE 220/23/0Vac (single-phases) Total harmonic distortion (THD) Continuous power supply - - - Continuous power supply - - - GENERAL DATA - - - - Operating Temperature Range(°C) - - - - Cooling Natural Cooling Natural Cooling - - Noise (dB) 20,5 - - - - Cabinet Size (WxHxD mm) 238x433x330 - - - Protection Degree IP65 - <td>Nominal AC output and UPS power (VA)</td> <td>3000</td> <td>3600</td> <td>5000</td> <td>6000</td>	Nominal AC output and UPS power (VA)	3000	3600	5000	6000
Nominal AC output current (A) 13.6/13 16.4/15.7 22.7/21.7 27.3/26.1 Max AC Current (A) 15/14.3 18/17.2 25/23.9 30/28.7 Max Continuos AC pass (A) 35 40 Peak power (off-grid) 2 times pow=rating, 10 S 40 Power Factor 0.8 leading to 0.8 lagging 40 Output frequency and voltage 50/60Hz;L/N/PE 220/230Vac (single-phases) 50/60Hz;L/N/PE 220/230Vac (single-phases) Type of network Single-phase 50/60Hz;L/N/PE 220/230Vac (single-phases) 50/60Hz;L/N/PE 220/230Vac (single-phases) Total harmonic distortion (THD) <3% (Nominal Power)	Max. AC Output Power (W)	3300	3960	5500	6600
Max AC Current (A) 15/14.3 18/17.2 25/23.9 30/28.7 Max Continuos AC pass (A) 35 40 Peak power (off-grid) 2 times power rating, 10 S 40 Power Factor 0.8 leading to 0.8 lagging 00/28.7 Output frequency and voltage 50/60Hz;L/N/PE 220/230Vac (single-phases) 50/60Hz;L/N/PE 220/230Vac (single-phases) Type of network Single-phase 50/60Hz;L/N/PE 220/230Vac (single-phases) 50/60Hz;L/N/PE 220/230Vac (single-phases) Total harmonic distortion (THD) <3% (Nominal Power)	Nominal AC output current (A)	13.6/13	16.4/15.7	22.7/21.7	27.3/26.1
Max Continuos AC pass (A) 35 40 Peak power (off-grid) 2 times power rating, 10 S Power Factor 0.8 leading to 0.8 lagging Output frequency and voltage 50/60Hz;L/N/PE 220/230Vac (single-phases) Type of network Single-phase Total harmonic distortion (THD) <3% (Nominal Power)	Max AC Current (A)	15/14.3	18/17.2	25/23.9	30/28.7
Peak power (off-grid) 2 times power rating, 10 S Power Factor 0.8 leading to 0.8 lagging Output frequency and voltage 50/60Hz;L/N/PE 220/230Vac (single-phases) Type of network Single-phase Total harmonic distortion (THD) <3% (Nominal Power)	Max Continuos AC pass (A)		35		40
Power Factor0.8 leading to 0.8 laggingOutput frequency and voltage50/60Hz;L/N/PE 220/230Vac (single-phases)Type of networkSingle-phaseTotal harmonic distortion (THD)<3% (Nominal Power)	Peak power (off-grid)		2 times powe	er rating, 10 S	
Output frequency and voltage50/60Hz;L/N/PE 220/230Vac (single-phases)Type of networkSingle-phaseTotal harmonic distortion (THD)<3% (Nominal Power)	Power Factor		0.8 leading t	o 0.8 lagging	
Type of networkSingle-phaseTotal harmonic distortion (THD)<3% (Nominal Power)	Output frequency and voltage	ļ	50/60Hz;L/N/PE 220/2	230Vac (single-phase	es)
Total harmonic distortion (THD)<3% (Nominal Power)Continuous power supply<5% In	Type of network		Single	-phase	
Continuous power supply<5% InGENERAL DATAOperating Temperature Range(°C)-40 -60°C, >45°C downgradeCoolingNatural CoolingNoise (dB)<30dB	Total harmonic distortion (THD)		<3% (Nominal Power)		
GENERAL DATAOperating Temperature Range(°C)-40 -60°C, >45°C downgradeCoolingNatural CoolingNoise (dB)<30dB	Continuous power supply	<5% In			
Operating Temperature Range(°C)-40 -60°C, >45°C downgradeCoolingNatural CoolingNoise (dB)<30dB	GENERAL DATA				
CoolingNatural CoolingNoise (dB)<30dB	Operating Temperature Range(°C)		-40 -60°C, >45	5°C downgrade	
Noise (dB)<30dBCommunication with BMSRS485; CANWeight (kg)20,5Cabinet Size (WxHxD mm)238x433x330Protection DegreeIP65Installation StyleWall-mountingWarranty10 yearsEFFICIENCYMax Efficiency97.60%Euro Efficiency96.50%MPPT Efficiency99.90%	Cooling	Natural Cooling			
Communication with BMSRS485; CANWeight (kg)20,5Cabinet Size (WxHxD mm)238x433x330Protection DegreeIP65Installation StyleWall-mountingWarranty10 yearsEFFICIENCYMax Efficiency97.60%Euro Efficiency96.50%MPPT Efficiency99.90%	Noise (dB)	<30dB			
Weight (kg)20,5Cabinet Size (WxHxD mm)238x433x330Protection DegreeIP65Installation StyleWall-mountingWarranty10 yearsEFFICIENCYMax Efficiency97.60%Euro Efficiency96.50%MPPT Efficiency99.90%	Communication with BMS	RS485; CAN			
Cabinet Size (WxHxD mm)238x433x330Protection DegreeIP65Installation StyleWall-mountingWarranty10 yearsEFFICIENCYMax Efficiency97.60%Euro Efficiency96.50%MPPT Efficiency99.90%	Weight (kg)	20,5			
Protection DegreeIP65Installation StyleWall-mountingWarranty10 yearsEFFICIENCYMax Efficiency97.60%Euro Efficiency96.50%MPPT Efficiency99.90%	Cabinet Size (WxHxD mm)	238x433x330			
Installation StyleWall-mountingWarranty10 yearsEFFICIENCY97.60%Max Efficiency96.50%MPPT Efficiency99.90%	Protection Degree	IP65			
Warranty10 yearsEFFICIENCY97.60%Max Efficiency96.50%MPPT Efficiency99.90%	Installation Style	Wall-mounting			
EFFICIENCYMax Efficiency97.60%Euro Efficiency96.50%MPPT Efficiency99.90%	Warranty	10 years			
Max Efficiency97.60%Euro Efficiency96.50%MPPT Efficiency99.90%	EFFICIENCY				
Euro Efficiency96.50%MPPT Efficiency99.90%	Max Efficiency	97.60%			
MPPT Efficiency 99.90%	Euro Efficiency		96.50%		
	MPPT Efficiency	99.90%			

UFLEX THREE-PHASE HYBRID INVERTER HY-TP- 5/6/8/10/12-IT

		:
Certification	s and standards	
Grid Regulation	CEI 0-21, VDE-AR-N 4105, NSR 097, IEC 62116, IEC 61727, G99, G98, VDE 016-1-1, RD1699,C10-11	
Safety EMC/Standard	IEC/EN61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2	
Protection		
Integrated	Photovoltaic input lightning protection Anti-island protection Reverse polarity protection PV string input Insulation resistance detection Residual current monitoring unit Output overcurrent protection Output short-circuit protection Overvoltage protection	
Output overvoltage protection	CC Type II / CA Type III	
	ach Phases Max. output up to 50% rated	48
10) Inverters in Parallel n the same battery bank I can connect up 10 inverters, both on-grid and off-grid.	6
240	ax. Current ax. charging/discharging current of 240A	\sim



48V Low Voltage Battery

6 Stages of Battery Charging/Discharging.

Supports the Management Of a Diesel Generator.

BATTERY INPUT DATA					
MODEL	HY-TP-5-IT	HY-TP-6-IT	HY-TP-8-IT	HY-TP-10-IT	HY-TP-12-IT
Battery Type	Supercapacitors				
Battery Voltage Range (V)	40-60				
Max. Charging Current (A)	120	150	190	210	240
Max. Discharging Current (A)	120	150	190	210	240
External Temperature Sensor		<u>`</u>	YES		
Charging Curve		3	Phases/Equaliz	ation	
Charging Strategy for Li-Ion Battery		9	Self-adaption to	BMS	
PV STRING INPUT DATA					
Max.DC Input power (W)	6500	7800	10400	13000	15600
Rated PV Input Voltage (V)			550 (160-800))	
Start-up Voltage (V)			160		
MPPT Voltage Range (V)			200-655		
Full Load DC Voltage Range (V)			350-650		
PV Input Current (A)		13+13		2	6+13
Max.PV Isc(A)		17+17		34	4+17
No.of MPP Trackers			2		
No.of Strings for MPP Trackers		1+1			2+1
AC OUTPUT DATA					
Rated AC Output and Active Power (W)	5000	6000	8000	10000	12000
Max. AC Output Active Power (W)	5500	6600	8800	1100	13200
AC output Rated current (A)	8.4/8	9.1/8.7	12.1/11.6	15.2/14.5	18.2/17.4
Max AC Output Current (A)	7.6/7.2	10/9.6	13.4/12.8	16.7/15.9	20/19.1
Max Three-phase Unbalanced Output Current (A)	11.4/10.9	13.6/13	18.2/17.4	22.7/21.7	27.3/26.1
Max Output short circuit current (A)			75		
Max Continuous AC passthrought (A)			45		
Peak power (off-grid)		2 ti	mes power ratin	g, 10 S	
Power Factor		0.8	leading to 0.8 l	agging	
Output frequency and voltage		50/60Hz; 3	3L/N/PE 220/380	0, 230/400Vac	
Type of network	Three-Phase				
Total harmonic distortion (THD)	<3% (Nominal Power)				
Continuous power supply	ly <0.5% ln				
GENERAL DATA			C090 > 4590 -		
Operating Temperature Range(°C)	-40 -60°C, >45°C derating				
	Smart Cooling				
Noise (dB)	<45dB				
	RS485; CAN				
Cohinet Size (M/vHvD mm)	30.6				
	422x/02x281 (Excluding Connectors and Brackets)				
Installation Style			COJI Wall_mountin		
Warranty	vvaii-mounting				
FEFICIENCY			it years		
Furo Efficiency	97%				
MPPT Efficiency	99.90%				
			55.5070		

SUPERCAPACITOR STORAGE SYSTEM

ADVANTAGES OF HAVING A STORAGE SYSTEM

Storage using UFLEX products enables a significant increase in the percentage of self-consumption. Through storing the energy produced by photovoltaic panels in supercapacitors, it can be released during periods when there is no solar production, such as in the evening or at night. This eliminates the need to purchase additional energy from the national grid, providing several advantages:

Maximum Independence: Even in situations when the public grid is down, you can continue to use the energy 1. produced sustainably. This provides a valuable level of autonomy, ensuring a constant supply of energy.

Less Worry about Energy Cost Increases: Self-consumption of produced energy reduces dependence on 2. the variable costs of energy supplied by the national grid. This means greater economic stability and less worry about energy cost increases.

3. Active Contribution to Energy Transition: The production of clean energy represents a concrete and active engagement in the energy transition. By participating in this process, you contribute significantly to environmental sustainability by playing a key role in promoting renewable energy sources.

In summary, the use of UFLEX storage not only optimizes self-consumption, but also offers key benefits in terms of energy independence, economic stability, and positive contribution to the transition to more sustainable energy.

WHY CHOOSE SUPERCAPACITORS?

Supercapacitor-based storage systems are a safe, efficient and viable alternative to chemical batteries and surpass them in many applications.

EFFICIENCY	High forward and reverse efficiency from DC to DC
EFFICIENCE	Rated capacity = Usable capacity
CAEETV	No risk of thermal runaway
SAFETT	No heat generation during the cycle
	Long cycle and calendar duration
LONGEVITY	No memory effect
	Self-discharge, in sleep mode, of 2% or less per month.
	Wide ambient operating temperature range
	High C-rate capacity without affecting cycle life or capacity
VERSATILITY	Commercially acceptable form factor for low, medium or high voltage applications
	Modular and scalable. Economical production plant.

WHY CHOOSE SUPERCAPACITORS OVER TRADITIONAL BATTERIES?

Reduction in operating costs

- Reduction of oversizing to compensate for DOD, C-rate, ambient temperature, round-trip efficiency
- Reduction in safety infrastructure requirements
- Reduced disposal costs and environmental impact
- No cost in terms of maintenance
- Faster return on investment

Benefits

- Longer service life (>20'000 cycles)
- No memory effect: I can expand my storage whenever I want
- No problem with temperature, they work from -20 to 60°C
- 100% DOD, so there is no need to oversize the storage system.
- Very fast charging.
- Lower energy consumption during the life cycle



 Lithium (1 cycle/day) **Replacement lithium** battery pack 10 12 14 16 [Year]

SUPERCAPACITOR UFLEX UFSC48- 5.5 / 7.6 kWh



LATEST TECHNOLOGY SUPERCAP CELLS	
SAFEST TECHNOLOGY	
ULTRALONG CYCLE LIFE	

EXTREME TEMPERATURE RANGE
EASY TO INSTALL
NO MAINTENANCE NEEDED

Enviromental Specifications

Bluetooth Display Function

This Bluetooth APP can be operated by both Android and IOS. It establish a Bluetooth connection between your smartphone and the battery.

Usage includes:
Managing the battery pack Gathering the data and displaying them Conducting modifications on settings
BLUETOOTH APP CAN ACHIVE BELOW FUNCTIONS:
Display the basic data of battery pack Modifying the communication between BMS and inverter Settings Alert Parameters and Switch on/off Support Single and Parallel operation

Indoor IP20
0-90% RH Non- considering
0°C ~ +55°C
-20°C ~ +60°C
SOC>30%,-20°C ~+40°C,25% ~ 95% RH, One full charge needed per two month
50% SOC,-20°C ~+40°C
IEC62619
CEI0-21:2022
EN 62133:2013, EN 55032:2015+AC:2016, EN 55035:2017, EN 61000-3-2:2014,
UN38.3,MSDS
RoHS

Remark:*1 (1) At room temperature 25°C, charge-discharge at 100A. (2) Limited charge at 100A for resident energy storage, (3) At the beginning of *2on testing,certificate will come soon.

DATASHEET			
MODEL	UFSC48-5.5kWh	UFSC48-7.6kWh	
Energy storage	5.5 kWh	7.6 kWh	
Capacity	105Ah	147Ah	
Nominal Voltage	48V	/DC	
Max. Charge Voltage	58V	/DC	
Discharge Cut-off Voltage	42V	/DC	
ESR/AC @ 1KHz 50% SOC	<10	mΩ	
Max. Continuous Charge Current	10	0A	
Max. Continuous Discharge Current	10	0A	
Cells Self-discharge Rate	2% per month		
Round Trip Efficiency	97.8%		
Projected cycle life (25°C)	20000	times	
Projected life (25°C)	15 years		
Reccommended Depth of Discharge	≤90%		
Maximum Depth of Discharge	100%		
Cooling Method	Natural		
Shell Material	Metal & ABS plastic		
Parallel Connection	Up to 16 sets		
Compatible Protocol	CAN, RS485		
Monitoring Data	System voltage, current, temperature, SOC, SOH, cycle, cell's voltage		
Dimensions (WxDxH)	470x462x170(mm) 470x520x170(mm)		
Weight	38kg	50kg	



Note: If the charger needs to set the floating charge voltage, it is recommended to set the U Float value to 57V

PHOTOVOLTAIC PANELS UFLEX UFX430MM-T-M10



Junction box Class of protection: IP68 Safety level: class II Maximum system voltage: 1500V Withstands the harshest environments	Frame Great mechanical strength Resistant up to 5400Pa Available with an anodic oxidation layer resistant to chemical corrosion
Cell Size 182mm x 91mm	Resistance against extreme environmental conditions Resistant against ammonia and salt spray
OMDD To us also me	Incompany of the open is all actions with

SMBB Tecnology Improved light capture and current collection for better power output and reliability Improved mechanical strength Certified to withstand: wind load (2400Pa) and snow load (5400Pa)

PID resistance

Excellent Anti-PID performance ensured by mass production process and material control

Available on request sizes from 410 to 700 Wp

UFXxxxMM-T-M10 (xxx= 410-620) UFXxxxMM-P-G12 (xxx=490-670) UFXxxxMM-T-G12 (xxx=510-700)

ELECTRIC DATA (STC)

MODEL	UFX430MM-T-M10
Peak Power (Pmax)	430.00
Optimal Operating Voltage (Vmp)	31.88
Optimal Operating Power (Imp)	13.49
Open Circuit Voltage (Voc)	38.49 ± 3%
Short-Circuit Current (Isc)	14.23 ± 3%
Module efficiency	22.02
*STC: irradiated: 1000W/m2; AM 1.5; cell temperature of 25°C	
ELECTRIC DATA (NMOT)	
Peak Power (Pmax)	323.00
Optimal Operating Voltage (Vmp)	29.63
Optimal Operating Power (Imp)	10.91
Open Circuit Voltage (Voc)	36.56 ± 3%
Short-Circuit Current (Isc)	11.49 ± 3%
*NMOT: irradiated: 800W/m ² ; AM1.5; ambient temperature 20°C; wind s	speed 1 m/s
TEMPERATURE AND MAXIMUM VALUES	
Maximum System Voltage (V)	1500V
Maximum Capacity of Series Fuses (A)	25V
Peak Power Tolerance	0 ~ +3W
Temperature Coefficient Pmax (W/°C)	-0.300%/°C
Temperature Coefficient Voc (V/°C)	-0.250%/°C
NMOT Nominal Operating Temperature of the Module (°C)	45 ± 2°C
Operating and Storage Temperature (°C)	-40 ~+85°C
MECHANICAL FEATURES	
Cell Type	182*91 N Type Mono
Number of Cells	108 (12*9)
Dimension	1722*1134*30 mm
Weight	21,50 Kg
Front Glass	3.2 mm high transmission, low iron content, tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68 3 diodes
Output cable	4 mm ² cable 140cm (MC4 connectors included)
Maximum Wind/Snow Load	2400Pa / 5400Pa
PACKAGING	
20FT container	6 pallets/222pz

40HQ container

6 pallets/222pz
26 pallets/962pz

MONITORING SOLUTIONS

ALWAYS CONNECTED

UFLEX inverters offer a built-in remote monitoring system, either via Wi-Fi or via LAN.

Remotely, i.e., via APP or web portal, you can check your system and intervene if necessary. You have all the necessary graphs regarding production, consumption and other key quantities.

UFLEX places collective self-consumption at the center of its goals, and an intelligent monitoring system is the basis from which to start.

The SOLARMAN APP can be downloaded directly from the App Store and Google Play and is easily configured.









NOTES:



Via Milite Ignoto 8A 16012 Busalla (Genova) Italy +39 010 96201 service@ultraflexgroup.it www.uflexenergia.it

