TOMMATECH GmbH

GERMAN-based company

MARINE

Boat and Caravan Systems

2022

MARINE CATALOG

SOLAR PANELS

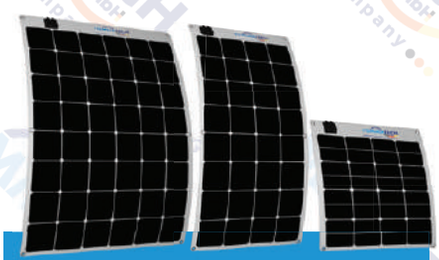
166mm
M6 cell
166mm

TommaTech M6 Half-Cut
MB PERC Monocrystalline
Small Solar Panels
230-35Wp

TommaTech M6 Half-Cut
MB PERC Monocrystalline
Solar Panels
120PM6 385-360Wp

TommaTech M6 Half-Cut
MB PERC Monocrystalline
Solar Panels
144PM6 465-420Wp

125mm
IBC cell
125 mm



TommaTech Flexible Series
Solar Panels
170-110-55Wp

TommaTech Easy Life Series
Mobile Solar
Charging Panels
12-10-8Wp

PERC MONOCRYSTALLINE 36-48-72

TOMMATECH GmbH
GERMAN-based company

- TT230-72MB6 (230 Wp)
- TT150-48MB6 (150 Wp)
- TT110-36MB6 (110 Wp)
- TT75-36MB6 (75 Wp)
- TT60-36MB6 (60 Wp)
- TT50-36MB6 (50 Wp)
- TT35-36MB6 (35 Wp)

30 - YEARS - Performance Warranty

High Conversion Efficiency
High panel efficiency to guarantee high power output

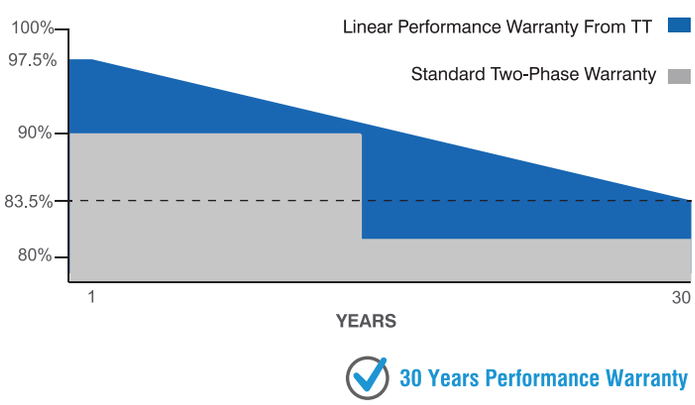
Self-Cleaning And Anti-Reflection Glass
Coating glass for self-cleaning reduces surface dust

Outstanding Low Irradiation Glass
Outstanding panel performance even in weak light conditions

Excellent Durability
Wind load up to 2400 Pa, Snow load up to 5400 Pa

0～+5Wp Positive Power Tolerance

Easy Installation



30 Years Performance Warranty

Allianz

Model Type	TT35 36MB6	TT50 36MB6	TT60 36MB6	TT75 36MB6	TT110 36MB6	TT150 48MB6	TT230 72MB6
Peak Power (P_{max})	35 Wp	50 Wp	60 Wp	75 Wp	110 Wp	150 Wp	230 Wp
Maximum Power Voltage (V_{mp})	20.95	20.95	20.95	20.95	20.95	27.94	21.20
Maximum Power Current (I_{mp})	1.68	2.39	2.87	3.60	5.30	5.37	10.85
Open Circuit Voltage (V_{oc})	24.60	24.60	24.60	24.60	24.60	32.80	24.66
Short Circuit Current (I_{sc})	1.82	2.43	3.02	3.76	5.67	5.73	11.42
Cell per Module	36(4x9)	36(4x9)	36(4x9)	36(4x9)	36(4x9)	48 (4x12)	72(4x18)
Cell Dimensions (mm)	56 x 83	74 x 83	92 x 83	110 x 83	166 x 83	166 x 83	166 x 83
Panel Dimensions (mm)	385x562x20	493x562x20	601x562x20	483x817x20	704x811x20	706x1067x30	706x1588x30
Weight (kg)	3.48	4.37	5.26	5.72	8.10	9.39	13.00
Voltage (V)	12	12	12	12	12	12	12
Operating Temperature	-40 ~ +85°C						

MECHANICAL SPECIFICATIONS

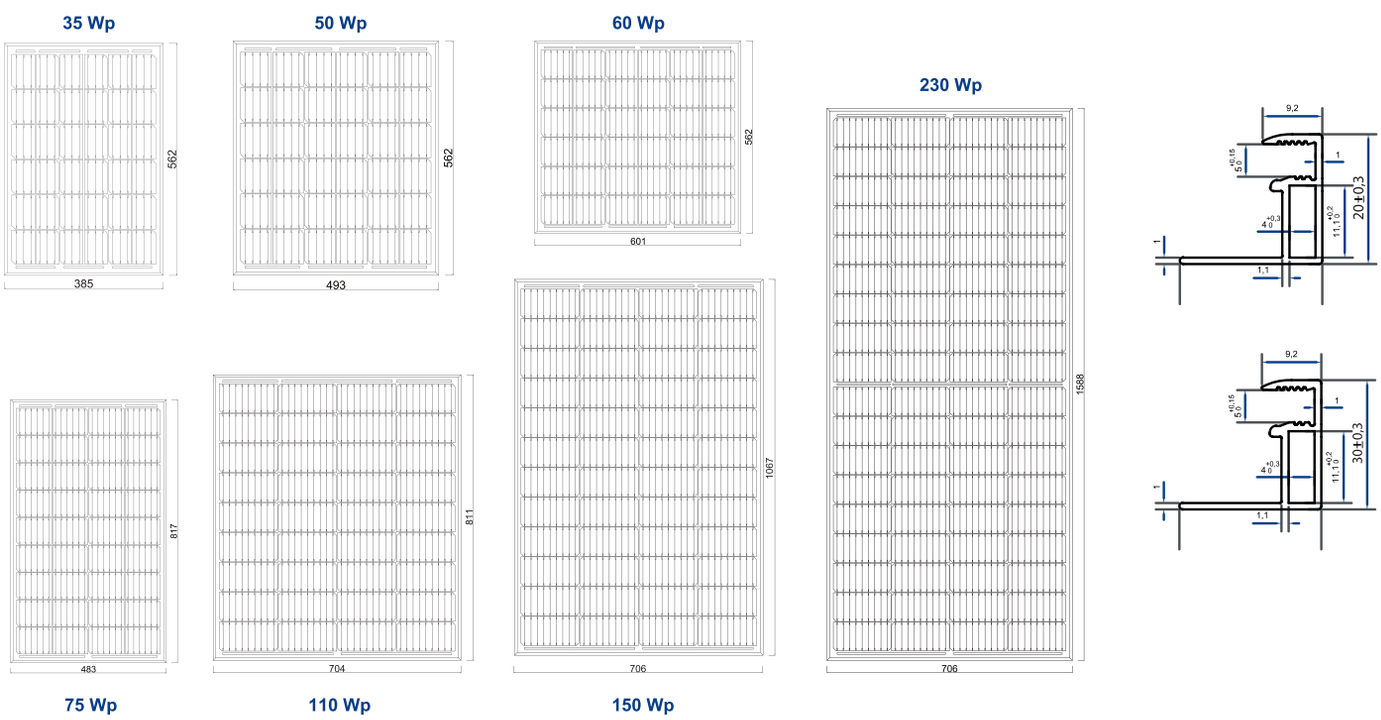
Solar Glass	3.2mm Low iron, Tempered Glass		
Frame	Anodized Aluminum		
Junction Box	IP65 (35-100 Wp)		
Junction Box	IP68 (150-230 Wp)		
Cable	4mm²		
Cable Length	75Wp 500mm	150Wp 500mm	230 Wp 1000mm

TEMPERATURE CHARACTERISTICS

Temp. Coeff. of (I_{sc})	0.050%/°C
Temp. Coeff. of (V_{oc})	-0.304%/°C
Temp. Coeff. of (P_{max})	-0.360%/°C

PHYSICAL CHARACTERISTICS

Unit: mm



*Note: The specifications are obtained under the standard test conditions: 1000W/m2 solar irradiance, 1.5 Air Mass and cell temperature of 25°C. Measurement uncertainty for all panels is 6%. The actual transactions will be subject to the contracts. These parameters are for reference only and it is not a part of the contracts. The specifications are subject to change without prior notice.

PERC MONOCRYSTALLINE 120PM-HC

TOMMATECH GmbH
GERMAN-based company

- TT385-120PM-HC 385 Wp
- TT380-120PM-HC 380 Wp
- TT375-120PM-HC 375 Wp
- TT370-120PM-HC 370 Wp
- TT365-120PM-HC 365 Wp
- TT360-120PM-HC 360 Wp

15 - YEARS - Product Warranty

30 - YEARS - Performance Warranty

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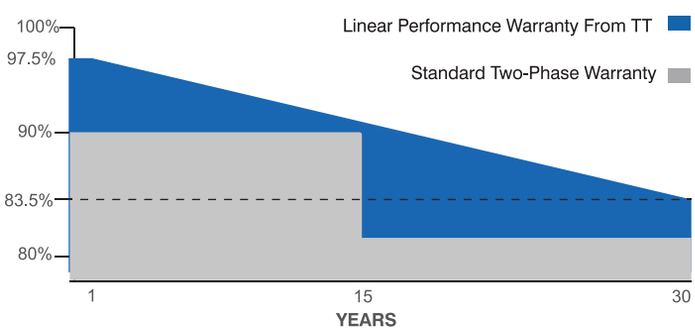
Wind load up to 2400 Pa, Snow load up to 5400 Pa

0～+5Wp Positive Power Tolerance

Easy Installation



30 Years Performance Warranty

15 Years Product Warranty

Half Cut

IEC 61215, IEC 61730-1, IEC 61730-2
IEC 62804 PID (POTENTIAL INDUCED DEGRADATION)
IEC 61701 SALT MIST CORROSION
IEC 62716 AMMONIA CORROSION
ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

Allianz

TommaTech GmbH - München / GERMANY
www.tommatech.de
mail@tommatech.de

Half-Cut

TOMMATECH GmbH
GERMAN-based company

Model Type	TT360 120PM-HC	TT365 120PM-HC	TT370 120PM-HC	TT375 120PM-HC	TT380 120PM-HC	TT385 120PM-HC
Peak Power (Pmax)	360 Wp	365 Wp	370 Wp	375 Wp	380 Wp	385 Wp
Module Efficiency	19.46	19.73	20.00	20.27	20.54	20.81
Maximum Power Voltage (Vmp)	34.00	34.20	34.40	34.60	34.80	35.00
Maximum Power Current (Imp)	10.59	10.67	10.76	10.84	10.92	11.00
Open Circuit Voltage (Voc)	40.90	41.10	41.30	41.50	41.70	42.00
Short Circuit Current (Isc)	11.08	11.16	11.26	11.34	11.42	11.51
Power Tolerance	0~+5W					
Maximum System Voltage	1500V DC					
Operating Temperature	-40 ~ +85°C					
Fire Safety Class	C					
Maximum Series Fuse Rating	20A					

MECHANICAL SPECIFICATIONS

Cell Dimensions (mm)	166x83
Cells per Module (pcs)	120 (20x6)
Weight (kg)	20.5
Panel Dimensions (mm)	1765x1048x30
Max. Wind/Snow Load (Pa)	2400/5400
Junction Box	IP68
Junction Box Cable Length (mm)	350-1200

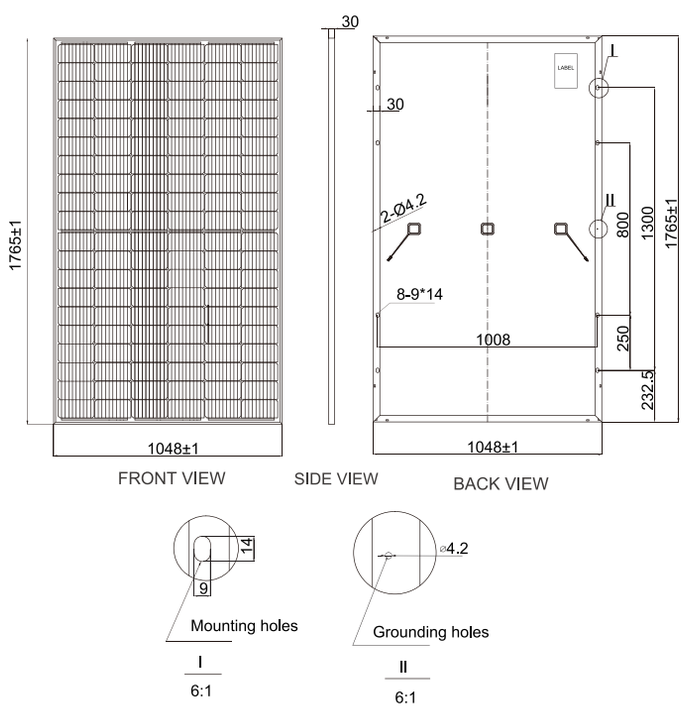
TEMPERATURE CHARACTERISTICS

Temp. Coeff. of (Isc)	0.050%/°C
Temp. Coeff. of (Voc)	-0.290%/°C
Temp. Coeff. of (Pmax)	-0.360%/°C

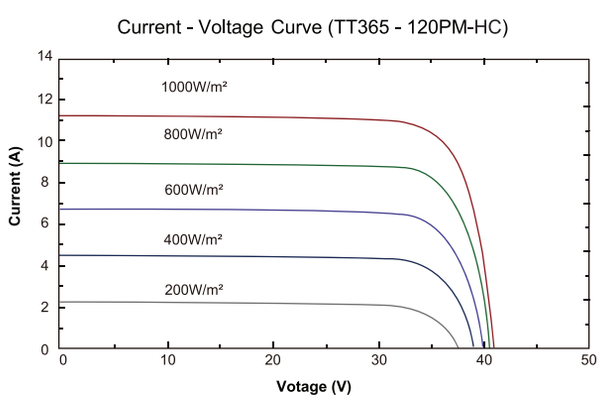
PACKING CONFIGURATION

Container	40' GP
Pieces per Pallet	36
Pieces per Container	888
Pallets per Container	24

PHYSICAL CHARACTERISTICS



ELECTRICAL CHARACTERISTICS



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PERC MONOCRYSTALLINE 144PM-HC

TOMMATECH GmbH
GERMAN-based company

- TT465-144PM-HC 465 Wp
- TT460-144PM-HC 460 Wp
- TT455-144PM-HC 455 Wp
- TT450-144PM-HC 450 Wp
- TT445-144PM-HC 445 Wp
- TT440-144PM-HC 440 Wp
- TT435-144PM-HC 435 Wp
- TT430-144PM-HC 430 Wp
- TT425-144PM-HC 425 Wp
- TT420-144PM-HC 420 Wp

15 - YEARS - Product Warranty

30 - YEARS - Performance Warranty

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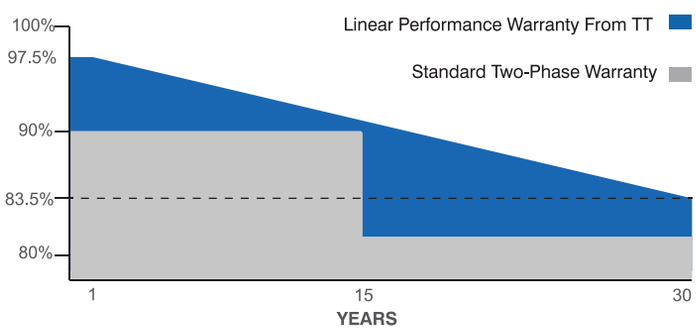
0～+5Wp Positive Power Tolerance

Easy Installation



30 Years Performance Warranty

15 Years Product Warranty

Half Cut

IEC 61215, IEC 61730-1, IEC 61730-2
IEC 62804 PID (POTENTIAL INDUCED DEGRADATION)
IEC 61701 SALT MIST CORROSION
IEC 62716 AMMONIA CORROSION
ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

Allianz

TommaTech GmbH - München / GERMANY
www.tommatech.de
mail@tommatech.de

Half-Cut

TOMMATECH GmbH
GERMAN-based company

Model Type	TT420 144PM-HC	TT425 144PM-HC	TT430 144PM-HC	TT435 144PM-HC	TT440 144PM-HC	TT445 144PM-HC	TT450 144PM-HC	TT455 144PM-HC	TT460 144PM-HC	TT465 144PM-HC
Peak Power (P_{max})	420 Wp	425 Wp	430 Wp	435 Wp	440 Wp	445 Wp	450 Wp	455 Wp	460 Wp	465 Wp
Module Efficiency	19.30	19.52	19.75	20.00	20.20	20.40	20.70	20.90	21.13	21.36
Maximum Power Voltage (V_{mp})	40.20	40.40	40.60	40.80	41.00	41.20	41.40	41.60	41.80	42.00
Maximum Power Current (I_{mp})	10.45	10.52	10.60	10.67	10.74	10.81	10.87	10.94	11.00	11.07
Open Circuit Voltage (V_{oc})	48.00	48.20	48.40	48.60	48.80	49.00	49.20	49.40	49.60	49.80
Short Circuit Current (I_{sc})	11.17	11.25	11.32	11.40	11.47	11.54	11.61	11.67	11.74	11.80
Power Tolerance	0~+5W									
Maximum System Voltage	1500V DC									
Operating Temperature	-40 ~ +85°C									
Fire Safety Class	C									
Maximum Series Fuse Rating	20A									

MECHANICAL SPECIFICATIONS

Cell Dimensions (mm)	166x83
Cells per Module (pcs)	144 (24x6)
Weight (kg)	24.5
Panel Dimensions (mm)	2095x1039x40
Max. Wind/Snow Load (Pa)	2400/5400
Junction Box	IP68
Junction Box Cable Length (mm)	350-1200

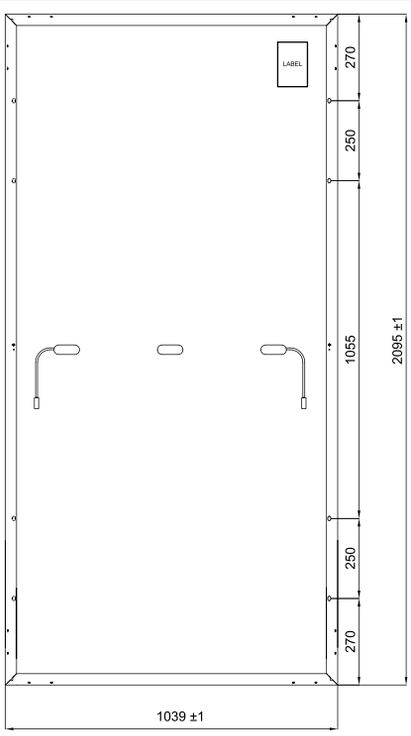
TEMPERATURE CHARACTERISTICS

Temp. Coeff. of (I_{sc})	0.050%/°C
Temp. Coeff. of (V_{oc})	-0.304%/°C
Temp. Coeff. of (P_{max})	-0.360%/°C

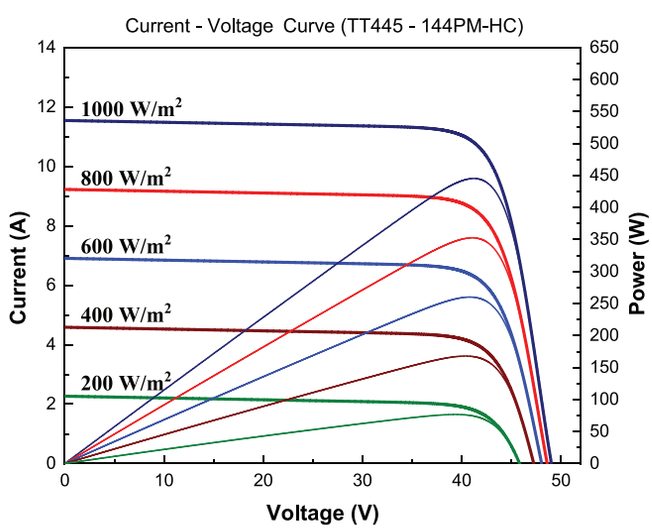
PACKING CONFIGURATION

Container	20' GP	40' GP
Pieces per Pallet	27	27
Pieces per Container	270	594
Pallets per Container	10	22

PHYSICAL CHARACTERISTICS



ELECTRICAL CHARACTERISTICS



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FLEXIBLE SOLAR PANELS

TOMMATECH GmbH
GERMAN-based company

- **TT-FLEX-170 170Wp**
- **TT-FLEX-110 110Wp**
- **TT-FLEX-55 55Wp**

TommaTech's new generation flexible panel model is produced with quality ETFE polymer and high efficiency back contact cells. In this way, TommaTech flexible panels are ultralight, thin and above all flexible compared to standard solar panels. With up to 30 degrees of stretch and light weight, it adapts perfectly to any surface. Available in 55 Wp, 110Wp and 170Wp options, TommaTech flexible panel series has an extremely wide range of applications by being used on boats, caravans and roofs.

Prism Surface
Maximum light absorption through prism surface

Excellent Light Transmit with ETFE
Higher light transmittance, corrosion resistance, operating temperature range

IBC Cell Technology
Flexible, durable and high efficient cell with back contact connection

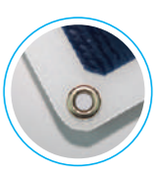
Flexible Design
Flexibility up to 30 degrees max

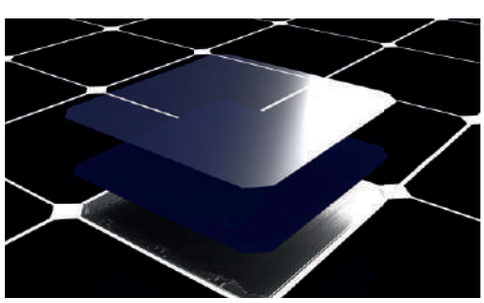
Ultra Lightweight
2mm thick ultrathin and durable design

IP68 Protection Class
Provides water resistance with IP68 Junction Box


IP68
Junction Box


Prism
Surface Design


Stainless
Eyelet



The Integrated Back Contact Solar Cells are the cells which are built on a solid copper foundation. Flexible panels made with those solar cells are resistant to power loss via cracking and corrosion, unlike conventional cells which are much more likely to lose power when bent or subjected to a moist environment. In this way, TommaTech Flexible Panels are one of the most important energy solutions for customers with high power and cell durability.

TommaTech GmbH - München / GERMANY
www.tommatech.de
mail@tommatech.de

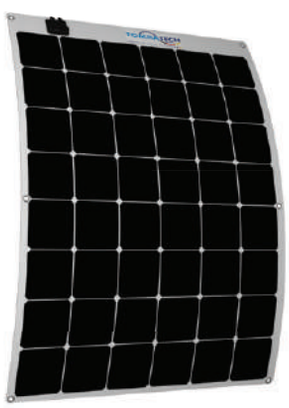
FLEXIBLE SOLAR PANELS

TOMMATECH GmbH
GERMAN-based company

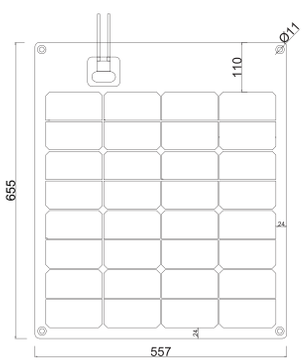
Model Type	TT-FLEX-55 55Wp	TT-FLEX-110 110Wp	TT-FLEX-170 170Wp
Peak Power (P_{max})	55 Wp	110 Wp	170 Wp
Power Tolerance		0~+5W	
Maximum Power Voltage (V_{mp})	18.97	18.84	28.82
Maximum Power Current (I_{mp})	2.90	5.84	5.90
Open Circuit Voltage (V_{oc})	22.02	22.80	34.60
Short Circuit Current (I_{sc})	3.05	6.15	6.30
Temp. Coeff. of (P_{max})		-0.29%/°C	
Temp. Coeff. of (V_{oc})	-55.68mV/°C	-55.68mV/°C	-83.70mV/°C
Temp. Coeff. of (I_{sc})		2.9mA/°C	
Dimensions (mm)	655x557	1154x555	1154x811
Weight (kg)	1.32	2.10	3.05
Maximum System Voltage		1000V DC	
Maximum Series Fuse Rating		15A	
Protection Class		IP68	

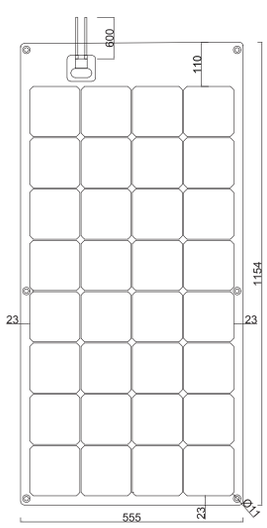
TT-55Wp Flexible

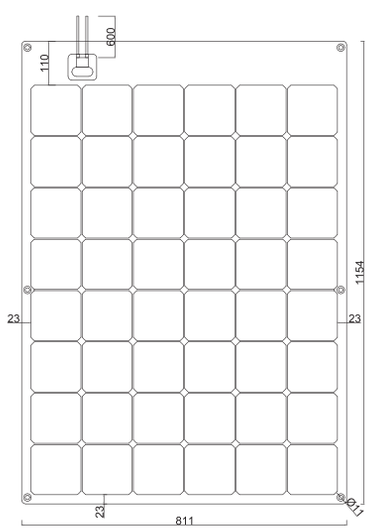
TT-110Wp Flexible



TT-170Wp Flexible







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MOBILE SOLAR CHARGE PANELS

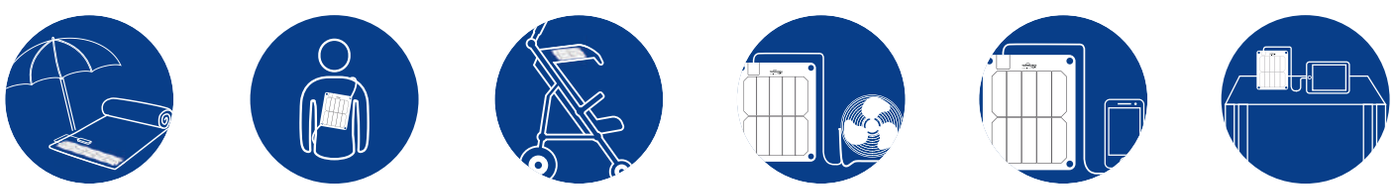
TOMMATECH GmbH
GERMAN-based company

◆ TT-FSC-12 12Wp ◆ TT-FSC-10 10Wp ◆ TT-FSC-8 8Wp

TommaTech Mobile Solar Charge panels provide power to portable chargers such as powerbanks, smart phones, tablets or other USB devices directly from the sun, offering a wide range of applications.

TommaTech Mobile Solar Charge Panels increase the usage area of clean and endless solar energy by combining aesthetics and functionality in the best way based on their design with pre-drilled eyelets on the panel for easy mounting and increased charging mobility.

- Lightweight & Flexible Design
- High Efficient IBC Cell Technology
- USB Output 5V
- 3 Model Options
- Stainless Chrome Eyelet



Charging Devices While Sunbathing | **Charging Powerbanks While Walking** | **On the Stroller** | **For USB Fan Charging** | **For Mobile Phone Charging** | **For Ipad Charging**

Solar Towel (TT-FLEX-10 10Wp)

TommaTech Solar Towels, designed by combining solar panels and beach towels, supply the energy for charging whereever it is required. Thanks to the removable stainless chrome buttons design, the solar panel and the beach towel can be easily and quickly separated and reassembled. In this way, you will feel the comfort of charging your electronic devices while relaxing on the beach.

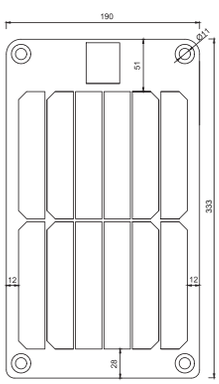
MOBILE SOLAR CHARGE PANELS

TOMMATECH GmbH
GERMAN-based company

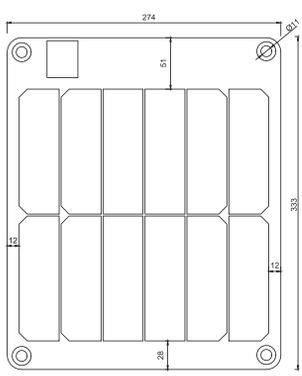
Model Type	TT-FCS-8 8Wp	TT-FCS-10 10Wp	TT-FCS-12 12Wp
Peak Power (P_{max})	8 Wp	10 Wp	12 Wp
Maximum Power Voltage (V_{mp})	7.28	6.06	7.28
Maximum Power Current (I_{mp})	1.10	1.65	1.65
Open Circuit Voltage (V_{oc})	8.45	7.04	8.45
Short Circuit Current (I_{sc})	1.15	1.74	1.74
Temp. Coeff. of (P_{max})	-0.29%/°C		
Temp. Coeff. of (V_{oc})	-20.88mV/°C		
Temp. Coeff. of (I_{sc})	2.90mA/°C		
Panel Dimensions (mm)	190x333x3	126x713x3	270x333x3
Panel Weight (kg)	0.260	0.379	0.325
USB Output Voltage (V)	5		
Maximum Charge Current (A)	~1	~2	

PHYSICAL CHARACTERISTICS

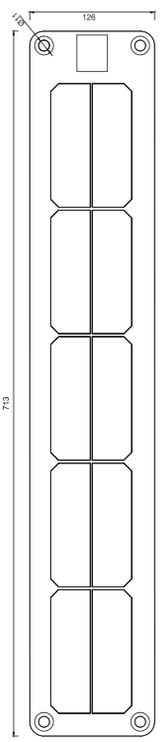
TT-FLEX-8 8Wp



TT-FLEX-12 12Wp



TT-FLEX-10 10Wp



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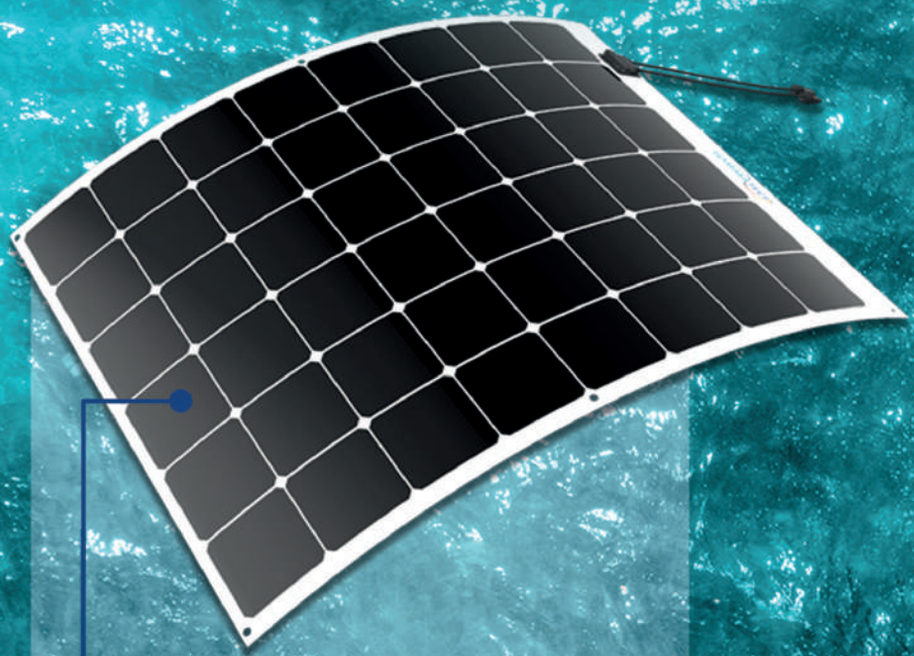
Explore the World With Solar Energy



TT-FLEX-55
Flexible Solar Panel

TT-FLEX-110
Flexible Solar Panel

TT-FLEX-170
Flexible Solar Panel

TOMMATECH GmbH
GERMAN-based company

tommatech.de

INVERTERS

TommaTech
Uno Hybrid Inverter
3.0/3.7/4.6/5.0kW

TommaTech
M Plus Series Inverter
3.6-7.2-11kW

TommaTech
Plus Series Inverter
5.6kW

TommaTech MX Series
Pure Sine Wave Inverter
0.7/1.0/2.0/3.0kW

TommaTech UT-UPS Series
Pure Sine Wave Inverter
0.6/1.0/1.5/2.0kW

SOLAR CHARGE CONTROLLERS

TommaTech N Series
MPPT Charge Controller
10/20/30/40A

TommaTech S Series
MPPT Charge Controller
3kW/60A

UNO - HYBRID SINGLE PHASE INVERTER

TOMMATECH GmbH
GERMAN-based company

Single Phase Hybrid Inverter

Uno - Hybrid
3.0/ 3.7/ 4.6/ 5.0

Simple. Reliable. Efficient.

6000W Charger/ Discharger Rate | High Efficiency | Remote Monitoring | IP65 Rated | Hybrid Solution

3kW 3.7kW 4.6kW

Uno-Hybrid-3.0/ Uno-Hybrid-3.7/ Uno-Hybrid-4.6/ Uno-Hybrid-5.0

TommaTech®'s Uno-Hybrid single phase inverters with a maximum efficiency of 97.8%, advanced PV array power and maximum PV string voltage of 600V are compatible with the leading lithium-ion battery solutions available on the market today. It offers plug and play installation and optimizes self-consumption through export control and 6000W charge/discharge rate.

UNO - HYBRID (SINGLE PHASE)

TOMMATECH GmbH
GERMAN-based company

	Uno-Hy-3.0	Uno-Hy-3.7	Uno-Hy-4.6	Uno-Hy-5.0
INPUT (DC)				
Max. PV array power [Wp]	4500	5550	6900	7500
Max. DC voltage [V]	600			
Nominal DC operating voltage [V]	360			
Max. input current (input A/input B) [A]	12/12			
Max. short circuit current (input A/input B) [A]	14/14			
MPPT voltage range [V]	125-550			
Start operating voltage [V]	150			
No. of MPPTs	2			
Strings per MPPT	1/1			
INPUT AC				
Max. apparent AC power [VA]	3000	3680	4600	4999
Max. AC current [A]	14.4	16.0	21.0	21.7
Nominal grid voltage (AC voltage range) [V]	220/230/240(180-270)			
Nominal grid Frequency [Hz]	50/60 ±5			
OUTPUT AC				
Nominal AC power [VA]	3000	3680	4600	4999
Max. apparent AC power [VA]	3300	4048	5060	5500
Nominal grid voltage(AC voltage range) [V]	220/230/240(180-270)			
Nominal grid frequency/range [Hz]	50/60 ±5			
Nominal AC current [A]	13	16	20	21.7
Max. AC current [A]	14.3	17.6	21	23.9
Displacement power factor	0.8 Leading ~ 0.8 Lacking			
THDi, rated power [%]	<2			
OUTPUT DC (BATTERY)				
Battery voltage range [V]	85-400			
Recommended battery voltage [V]	300			
Max.continuous charge/discharge current [A]	20			
Communication interfaces	CAN/RS485			
Reverse connect protection	Yes			
EPS OUTPUT (WITH BATTERY)				
EPS MAX. continuous apparent power [VA]	4000	4000	5000	5000
EPS rated voltage [V],Frequency [Hz]	230,50/60			
EPS MAX.continuous current [A]	21.7	21.7	26.0	26.0
EPS peak apparent power [VA] Duration [s]	6000 10	6000 10	8000 10	8000 10
Changeover time [ms]	<500			
THDv, linear Load [%]	<2			
EFFICIENCY				
MPPT efficiency [%]	99.9			
Euro efficiency [%]	97.0			
Max. efficiency [%]	97.8			
Battery charge/discharge efficiency [%]	98.5 (PV-BAT) 97.0 (BAT-AC)			
POWER CONSUMPTION				
Standby consumption [W]	<15 for hot standby , <3 for cold standby			
STANDARD				
Safety	IEC62109-1/-2			
EMC	EN61000-6-1/EN61000-6-2/EN61000-6-3			
ENVIRONMENT LIMIT				
Degree of protection(according to IEC60529)	IP65			
Operating temperature range [°C]	-20~+60 (derating at 45)			
Max. operation altitude [m]	<2000			
Humidity [%]	0~100 (condensing)			
Storage temperature [°C]	-20~+60			
Typical noise emission [dB]	40			
DIMENSION AND WEIGHT				
Dimensions (WxHxD) [mm]	476x464x180			
Weight [kg]	24			
Cooling concept	Natural			
Communication interfaces	Ethernet / Meter / DRM/USB / ISO Alarm / CT / Optional: Mobile Wi-Fi / Mobile LAN / Remote Wi-Fi			
LCD display	Backlight 20x4 Character			
Standard warranty [years]	5 (Extendable)			

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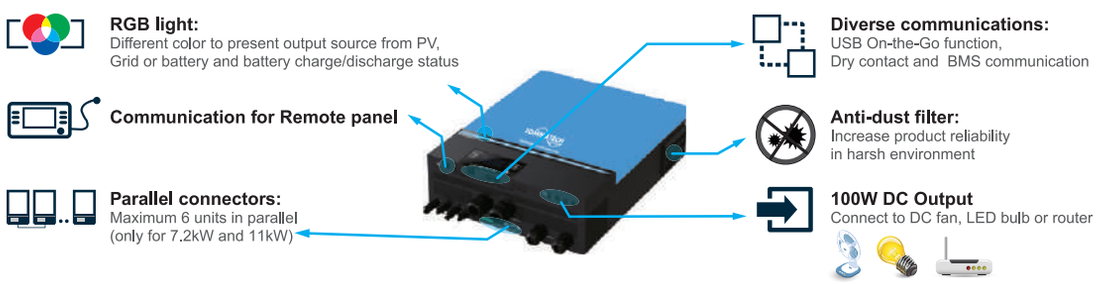
TOMMATECH M PLUS SERIES SMART INVERTERS

TOMMATECH GmbH
GERMAN-based company

- › Customizable status LED bar with RGB lights
- › Built-in wifi for mobile monitoring via WatchPower App
- › Supports USB On-the-Go function
- › Reserved communication port for BMS (RS485, CAN-BUS or RS232)
- › Replaceable fan design for effortless of maintenance
- › Battery independent design
- › Configurable AC/PV output usage timer and prioritization
- › Selectable high power charging current
- › Selectable input voltage range for home appliances and personal computers
- › Compatible to Utility Mains or generator input
- › Built-in anti-dust kit
- › Optional 100W DC Output
- › Parallel operation up to 6 units available for 7.2kVA and 11kVa

2 YEARS Product Warranty



MODEL	TT-MPLUS 3.6KW-24V	TT-MPLUS 7.2KW-48V	TT-MPLUS 11KW-48V
Rated Power [VA/W]	3600/3600	7200/7200	11000/11000
Parallel Capability	No	Yes, 6 Units	
INPUT			
Voltage [V AC]	230		
Selectable Voltage Range [V AC]	170-280 (For Personal Computers) 90-280 (For Home Appliances)		
Frequency Range [Hz]	50 /60 (Auto Sensing)		
AC OUTPUT			
AC Voltage [V AC]	230 ± 5%		
Surge Power [VA]	7500	15000	22000
Maximum Efficiency [%]	93		
Transfer Time [ms]	10 (For Personal Computers) 20 (For Home Appliances)		
Waveform	Pure Sine Wave		
No Load Power Consumption [W]	< 45	< 70	
Dual Outputs	Yes		
BATTERY			
Battery Voltage [V DC]	24	48	
Floating Charge Voltage [V DC]	27	54	
Overcharge Protection [V DC]	33	66	
SOLAR & AC CHARGER			
Solar Charger Type	MPPT		
Max. PV Array Power [W]	4000	8000 (4000 x 2)	11000
MPPT Operating Voltage Range [V DC]	120 ~ 450	90 ~ 450	
Max. PV Array Open Circuit Voltage [V DC]	500		
Max. Solar Charge Current [A]	80		150
Max. AC Charge Current [A]	80		150
Max. Charge Current [A]	80		150
PHYSICAL FEATURES			
Dimension, D x W x H [mm]	147.4 x 432.5 x 553.6		
Net Weight [kg]	14.1	18.4	
Communication Interface	USB/RS232/RS485/Wi-Fi/Dry-Contact		
ENVIRONMENT			
Humidity [%]	5 ~ 95 RH (Non-Condensing)		
Operating Temperature [°C]	-10 ~ 50		
Storage Temperature [°C]	-15 ~ 60		
STANDARD			
Compliance Safety	CE		

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TOMMATECH PLUS SERIES INVERTER

TOMMATECH GmbH
GERMAN-based company

- › Pure sine wave output
- › Touchable button with 4.3" colored LCD
- › Self-consumption and Feed-in to the grid
- › Programmable supply priority for PV, Battery or Grid
- › User-adjustable charging current and voltage
- › Programmable multiple operation modes
- › Built-in Wi-Fi for mobile monitoring
- › Reserved communication port for BMS
- › Parallel operation up to 9 units

2 YEARS Product Warranty

MODEL	TT-PLUS 5.6KW-48V
PHASE	1-Phase In / 1-Phase Out
Maximum PV Input Power [W]	6000
Rated Output Power [W]	5600
Maximum Charging Power [W]	6000
PV INPUT (DC)	
Nominal DC Voltage / Maximum DC Voltage [V DC]	360 / 450
Start-up Voltage / Initial Feeding Voltage [V DC]	110/ 120
MPPT Voltage Range [V DC]	120 ~ 430
Number of MPP Trackers / Maximum Input Current [A]	1 / 27
GRID OUTPUT (AC)	
Nominal Output Voltage [V AC]	220/230/240
Output Voltage Range [V AC]	184 - 264.5 or 195.5 - 253 (Selectable)
Nominal Output Current [A]	24.3
Power Factor	>0.9
EFFICIENCY	
PV Conversion Efficiency (DC/AC)	%96
AC INPUT	
AC Start-up Voltage / Auto Restart Voltage [V AC]	120 - 140 / 180
Acceptable Input Voltage Range [V AC]	90 - 280 or 170 - 280
Frequency Range [Hz]	50 /60 (Auto Sensing)
Maximum AC Input Current [A]	40
BATTERY MODE OUTPUT (AC)	
Nominal Output Voltage [V AC]	220 / 230 / 240
Output Waveform	Pure Sine Wave
Battery Conversion Efficiency (DC to AC)	%93
BATTERY & CHARGER	
Nominal DC Voltage [V DC]	48
Maximum Solar Charging Current [A]	120
Maximum AC Charging Current [A]	120
Maximum Charging Current [A]	120
PHYSICAL SPECIFICATIONS	
Dimension, (D x W x H) [mm]	140 x 295 x 468
Weight [kg]	12
INTERFACE	
Parallel Function	Yes, 9 Units
Communication Port	USB / RS232 / RS485 / Wi-Fi / Dry-Contact
ENVIRONMENT	
Humidity [%]	0 ~ 90 RH (No Condensing)
Operating Temperature [°C]	-10 ~ 50

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TOMMATECH MX SERIES PURE SINE WAVE INVERTER

TOMMATECH GmbH
GERMAN-based company

- Pure sine wave output (THD<2%)
- Power ON-OFF remote control
- Input & Output fully isolation
- Load control cooling fan
- Advanced microprocessor
- Output frequency 50/60Hz switch selectable
- Input polarity reverse/Under voltage/Over voltage protections
- Output short circuit/Overload/Over temperature protections
- Tri-Color indicators display output load level & failure status.
- CE, ROHS, E-mark approved

2 YEARS Product Warranty

MODEL	TT-MX700-12V	TT-MX700-24V
OUTPUT		
AC Voltage [VAC]	220/230/240	
Rated Power [W]	700	
Surge Power [W]	2100 (For Few Seconds)	
Waveform	Pure Sine Wave (THD<2%)	
Frequency [Hz]	50/60 ±0.5 Selectable By DIP Switch	
AC Regulation [%]	±5	
Standart Receptacles	A, B, C, D, E, F, G, H, I, GFCI (Optional Above)	
USB Output Port [V/A]	5 / 2.1	
Led In	A: Output Load Level: <20%-Off, Betwen 20% and 50%-Green, <90%-Orange, >90%-Red: B: Power On-Green, Protection/Failure-Red	
Digital Display	Output Voltage / Output Power	
Sleeping Mode Setting (DIP Switch)	S4-Frequency 50/60Hz, S3-15% Output Load, S2-10% Output Load, S1-5% Load Setting	
INPUT		
No Load Current Draw [A]	<0.6	<0.5
DC Voltage [V]	12	24
Voltage Range [V DC]	10.5~15.0	21.0~30.0
Efficiency (Typ.) [%]	≥89.0	≥90.0
Fuse	30Ax3	15Ax3
Remote Control	RC60 (Optional)	
PROTECTION		
Battery Low Alarm [V DC]	11 .0±0.25	22.0±0.5
Battery Low Shutdown [V DC]	10.5 ±0.25	21.0±0.5
Overload	Shutdown	
Over Voltage [V DC]	15.5±0.5	31.0± 1.0
Over Temperature	Shut-Off Output Voltage, Recover Automatically After Temperature Goes Down	
Short Circuit	Shut-Off Output Voltage, Restart to Recover	
Battery Reverse Polarity	By Fuse Open	
Earth Leakage	Yes	
ENVIRONMENT		
Reset Voltage After LVS [V DC]	11.8~12.8	23.6~25.6
Working Temperature [°C]	0~40	
Humidity [%]	20-90 RH Non-Condensing	
SAFETY&EMC		
Storage Temperature [°C] & Humidity	-30~70 & % 10~95	
Safety Standarts	UL458 (Only For GFCI Receptacle)	
Isolation Resistance	I/P-O/P: 1000Ohms/500V DC	
EMC	Compliance to EN61000-6-3 :2007+A 1 :2011, EN 6100-6-1 :2007	
LVD	Compliance to EN60950-1: 2006+A11 :2009 +A1:2010+A 12:2011	
E-MARK	E8 10R-03 1272	
PHYSICAL FEATURES		
Dimensions (WxHxD) [mm]	255x186x90	
Net Weight [kg]	2.2	
Cooling Fan	Control By Load	
Application	Home and Office Appliances, Power Tools And Portable Equipments, Vehicle and Solar Power Systems ..... Etc.	

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TOMMATECH MX SERIES PURE SINE WAVE INVERTER

TOMMATECH GmbH
GERMAN-based company

- Pure sine wave output (THD<2%)
- Power ON-OFF remote control
- Input & Output fully isolation
- Load control cooling fan
- Advanced microprocessor
- Output frequency 50/60Hz switch selectable
- Input polarity reverse/Under voltage/Over voltage protections
- Output short circuit/Overload/Over temperature protections
- Tri-Color indicators display output load level & failure status.
- CE, ROHS, E-mark approved

2 YEARS Product Warranty

MODEL	TT-MX1000-12V	TT-MX1000-24V	TT-MX1000-48V
OUTPUT			
AC Voltage [VAC]	220/230/240		
Rated Power [W]	1000		
Surge Power [W]	3000 (For Few Seconds)		
Waveform	Pure Sine Wave (THD<2%)		
Frequency [Hz]	50/60 ±0.5 Selectable By DIP Switch		
AC Regulation [%]	±5		
Standart Receptacles	A, B, C, D, E, F, G, H, I, GFCI (Optional Above)		
USB Output Port [V/A]	5 / 2.1		
Led In	A: Output Load Level: <20%-Off, Betwen 20% and 50%-Green, <90%-Orange, >90%-Red: B: Power On-Green, Protection/Failure-Red		
Digital Display	Output Voltage / Output Power		
Sleeping Mode Setting (DIP Switch)	S4-Frequency 50/60Hz, S3-15% Output Load, S2-10% Output Load, S1-5% Load Setting		
INPUT			
No Load Current Draw [A]	<0.6	<0.5	<0.25
DC Voltage [V]	12	24	48
Voltage Range [V DC]	10.5~15.0	21.0~30.0	42.0~60.0
Efficiency (Typ.) [%]	≥89.0	≥90.0	≥90.0
Fuse	30Ax4	15Ax4	7.5Ax4
Remote Control	RC60 (Optional)		
PROTECTION			
Battery Low Alarm [V DC]	11 .0±0.25	22.0±0.5	44.0±1.0
Battery Low Shutdown [V DC]	10.5 ±0.25	21.0 ±0.5	42.0±1.0
Overload	Shutdown		
Over Voltage [V DC]	15.5±0.5	31.0±1.0	62.0± 2.0
Over Temperature	Shut-Off Output Voltage, Recover Automatically After Temperature Goes Down		
Short Circuit	Shut-Off Output Voltage, Restart to Recover		
Battery Reverse Polarity	By Fuse Open		
Earth Leakage	Yes		
ENVIRONMENT			
Reset Voltage After LVS [V DC]	11.8~12.8	23.6~25.6	47.2~51.2
Working Temperature [°C]	0~40		
Working Humidity [%]	20-90 RH Non-Condensing		
SAFETY&EMC			
Storage Temperature [°C] & Humidity	-30~70 & % 10~95		
Safety Standarts	UL458 (Only For GFCI Receptacle)		
Isolation Resistance	I/P-O/P: 1000Ohms/500V DC		
EMC	Compliance to EN61000-6-3 :2007+A 1 :2011, EN 6100-6-1 :2007		
LVD	Compliance to EN60950-1: 2006+A11 :2009 +A1:2010+A 12:2011		
E-MARK	E8 10R-03 1272		
PHYSICAL FEATURES			
Dimensions (WxHxD) [mm]	317x186x90		
Net Weight [kg]	2.9		
Cooling Fan	Control By Load		
Application	Home and Office Appliances, Power Tools And Portable Equipments, Vehicle and Solar Power Systems ..... Etc.		

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TOMMATECH MX SERIES PURE SINE WAVE INVERTER

TOMMATECH GmbH
GERMAN-based company

- Pure sine wave output (THD<2%)
- Power ON-OFF remote control
- Input & Output fully isolation
- Load control cooling fan
- Advanced microprocessor
- Output frequency 50/60Hz switch selectable
- Input polarity reverse/Under voltage/Over voltage protections
- Output short circuit/Overload/Over temperature protections
- Tri-Color indicators display output load level & failure status.
- CE, ROHS, E-mark approved

2 YEARS Product Warranty

MODEL	TT-MX2000-12V	TT-MX2000-24V	TT-MX2000-48V
OUTPUT			
AC Voltage [VAC]	220/230/240		
Rated Power [W]	2000		
Surge Power [W]	6000 (For Few Seconds)		
Waveform	Pure Sine Wave (THD<2%)		
Frequency [Hz]	50/60 ±0.5 Selectable By DIP Switch		
AC Regulation [%]	±5		
Standart Receptacles	A, B, C, D, E, F, G, H, I, GFCI (Optional Above)		
USB Output Port [V/A]	5 / 2.1		
Led In	A: Output Load Level: <20%-Off, Betwen 20% and 50%-Green, <90%-Orange, >90%-Red: B: Power On-Green, Protection/Failure-Red		
Digital Display	Output Voltage / Output Power		
Sleeping Rnode Setting (DIP Switch)	S4-Frequency 50/60Hz, S3-15% Output Load, S2-10% Output Load, S1-5% Load Setting		
INPUT			
No Load Current Draw [A]	<0.8	<0.5	<0.3
DC Voltage [V]	12	24	48
Voltage Range [V DC]	10.5~15.0	21.0~30.0	42.0~60.0
Efficiency (Typ.) [%]	≥89.0	≥90.0	≥90.0
Fuse	30Ax12	15Ax12	7.5Ax12
Remote Control	RC60 (Optional)		
PROTECTION			
Battery Low Alarm [V DC]	11 .0±0.25	22.0±0.5	44.0±1.0
Battery Low Shutdown [V DC]	10.5 ±0.25	21.0 ±0.5	42.0±1.0
Overload	Shutdown		
Over Voltage [V DC]	15.5±0.5	31.0±1	62.0± 2.0
Over Temperature	Shut-Off Output Voltage, Recover Automatically After Temperature Goes Down		
Short Circuit	Shut-Off Output Voltage, Restart to Recover		
Battery Reverse Polarity	By Fuse Open		
Earth Leakage	Yes		
ENVIRONMENT			
Reset Voltage After LVS [V DC]	11.8~12.8	23.6~25.6	47.2~51.2
Working Temperature [°C]	0~40		
Working Humidity [%]	20-90RH Non-Condensing		
SAFETY&EMC			
Storage Temperature [°C] & Humidity	-30~70 & % 10~95		
Safety Standarts	UL458 (Only For GFCI Receptacle)		
Isolation Resistance	I/P-O/P: 1000Ohms/500V DC		
EMC	Compliance to EN61000-6-3 :2007+A 1 :2011, EN 6100-6-1 :2007		
LVD	Compliance to EN60950-1: 2006+A11 :2009 +A1:2010+A 12:2011		
E-MARK	E8 10R-03 1272		
PHYSICAL FEATURES			
Dimensions (WxHxD) [mm]	320x252x105		
Net Weight [kg]	4.6		
Cooling Fan	Control By Load		
Application	Home and Office Appliances, Power Tools And Portable Equipments, Vehicle and Solar Power Systems ..... Etc.		

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TOMMATECH MX SERIES PURE SINE WAVE INVERTER

TOMMATECH GmbH
GERMAN-based company

- Pure sine wave output (THD<2%)
- Power ON-OFF remote control
- Input & Output fully isolation
- Load control cooling fan
- Advanced microprocessor
- Output frequency 50/60Hz switch selectable
- Input polarity reverse/Under voltage/Over voltage protections
- Output short circuit/Overload/Over temperature protections
- Tri-Color indicators display output load level & failure status.
- CE, ROHS, E-mark approved

2 YEARS Product Warranty

MODEL	TT-MX3000-12V	TT-MX3000-24V	TT-MX3000-48V
OUTPUT			
AC Voltage [VAC]	220/230/240		
Rated Power [W]	3000		
Surge Power [W]	9000 (For Few Seconds)		
Waveform	Pure Sine Wave (THD<2%)		
Frequency [Hz]	50/60 ±0.5 Selectable By DIP Switch		
AC Regulation [%]	±5		
Standart Receptacles	A, B, C, D, E, F, G, H, I, GFCI (Optional Above)		
USB Output Port [V/A]	5 / 2.1		
Led In	A: Output Load Level: <20%-Off, Betwen 20% and 50%-Green, <90%-Orange, >90%-Red: B: Power On-Green, Protection/Failure-Red		
Digital Display	Output Voltage / Output Power		
Sleeping Mode Setting (DIP Switch)	S4-Frequency 50/60Hz, S3-15% Output Load, S2-10% Output Load, S1-5% Load Setting		
INPUT			
No Load Current Draw [A]	<1.2	<0.7	<0.4
DC Voltage [V]	12	24	48
Voltage Range [V DC]	10.5~15.0	21.0~30.0	42.0~60.0
Efficiency [%]	≥89.0	≥90.0	≥90.0
Fuse	30Ax12	15Ax12	7.5Ax12
Remote Control	RC60 (Optional)		
PROTECTION			
Battery Low Alarm [V DC]	11 .0±0.25	22.0±0.5	44.0±1.0
Battery Low Shutdown [V DC]	10.5 ±0.25	21.0 ±0.5	42.0±1.0
Overload	Shutdown		
Over Voltage [V DC]	15.5±0.5	31.0±1	62.0± 2.0
Over Temperature	Shut-Off Output Voltage, Recover Automatically After Temperature Goes Down		
Short Circuit	Shut-Off Output Voltage, Restart to Recover		
Battery Reverse Polarity	By Fuse Open		
Earth Leakage	Yes		
ENVIRONMENT			
Reset Voltage After LVS [V DC]	11.8~12.8	23.6~25.6	47.2~51.2
Working Temperature [°C]	0~40		
Working Humidity [%]	20-90 RH Non-Condensing		
SAFETY&EMC			
Storage Temperature [°C] & Humidity	-30~70 & % 10~95		
Safety Standarts	UL458 (Only For GFCI Receptacle)		
Isolation Resistance	I/P-O/P: 1000Ohms/500V DC		
EMC	Compliance to EN61000-6-3 :2007+A 1 :2011, EN 6100-6-1 :2007		
LVD	Compliance to EN60950-1: 2006+A11 :2009 +A1:2010+A 12:2011		
E-MARK	E8 10R-03 1272		
PHYSICAL FEATURES			
Dimensions (WxHxD) [mm]	426x252x105		
Net Weight [kg]	7.5		
Cooling Fan	Control By Load		
Application	Home and Office Appliances, Power Tools And Portable Equipments, Vehicle and Solar Power Systems ..... Etc.		

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TOMMATECH UT-UPS SERIES PURE SINE WAVE INVERTER

TOMMATECH GmbH
GERMAN-based company

- Ultra-Fast Transfer Relay: Reduce transfer time between bypass mode and inverter mode, Reduce possibility of voltage drop.
- Universal Protection Curcuit : Overload, Load life for battery, Earth Fault, Short Curcuit, Over-temperature, Soft-start
- Turbo Cooling : Keep the inverter surface cool and higher effiency
- Decide your own AC backup time by choosing different batteries.

2 YEARS Product Warranty

MODEL	TT-UT-UPS-600-12V	TT-UT-UPS-600-24V	TT-UT-UPS-1000-12V	TT-UT-UPS-1000-24V
INVERTER PART				
AC Voltage[V AC]	230			
Rated Power [W]	600		1000	
Surge Power [W]	1200		2000	
Waveform	Pure Sine Wave			
Frequency [Hz]	50+3			
AC Regulation [%]	±10			
Standart Receptacles	A, B, C, D, E, F, G Optional, Plug Same As Socket (Optional)			
Led indicator	Charger,Inverter,Fault			
DC Voltage [V]	12	24	12	24
Voltage Range [V DC]	10-15	20-30	10-15	20-30
No Load Current Draw [A]	≤ 0.35		≤ 0.45	
AC Public Power Voltage [V]	230			
Efficiency [%]	>90			
DC Fuse (Built-In) [A ca]	40x2	20x2	30x4	15x4
Public Power AC Fuse (Built-In) [A ca]	7.5x1			
CHARGER PART				
Max Charging Currrent [A]	10	5	10	5
Charging Way	3 Stage (Constant Current, Constant Voltage, Float Charge)			
AC Input Voltage Range [V]	190~265			
AC Fuse [A ca]	3x1			
Suitable Battery	Gel & AGM (We Can Offer Different Charge Way According To Different Batteries)			
BY PASS MODE				
By Pass Switching Time [ms]	≤ 8			
AVS FUNCTION				
AC Input Low Voltage Protection	Yes, Shutdown			
AC Input High Voltage Protection	Yes, Shutdown			
Time Delay	17 Seconds			
PROTECTION				
Bat.Low Alarm [V DC]	10.5 ± 0.5	21 ± 1	10.5 ± 0.5	21 ± 1
Bat.Low Shut Down [V DC]	9.5 ± 0.5	19 ± 1	9.5 ± 0.5	19 ± 1
Over Voltage [V DC]	15.5 ± 0.5	31 ± 1	15.5 ± 0.5	31 ± 1
Bat.Low Voltage Recover [V DC]	11.5 - 12	23-24	11.5 - 12	23-24
Overload [W]	700-800		1100-1200	
Earth Leakage Protection	Shut Down, Auto.Reset			
Thermal Methods	Dual Cooling Fans,Temp.Control Or 30% Load Auto.on			
Start-Up Mode	Soft Start Up			
Reverse Polarity	By Fuse Open			
PHYSICAL FEATURES				
Dimension (LxWxH) [mm]	270x230x100		330x230x100	
N.W/Unit [kg]	2.8		3.6	
QTY/Ctn [pcs/kgs/cm]	4 /14.3/61x32.5x38.5		2/9.6/40x31.5x38	

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TOMMATECH UT-UPS SERIES PURE SINE WAVE INVERTER

TOMMATECH GmbH
GERMAN-based company

- Ultra-Fast Transfer Relay: Reduce transfer time between bypass mode and inverter mode, Reduce possibility of voltage drop.
- Universal Protection Curcuit : Overload, Load life for battery, Earth Fault, Short Curcuit, Over-temperature, Soft-start
- Turbo Cooling : Keep the inverter surface cool and higher effiency
- Decide your own AC backup time by choosing different batteries.

2 YEARS Product Warranty

MODEL	TT-UT-UPS-1500-12V	TT-UT-UPS-1500-24V	TT-UT-UPS-2000-12V	TT-UT-UPS-2000-24V
INVERTER PART				
AC Voltage[V AC]	230			
Rated Power [W]	1500		2000	
Surge Power [W]	3000		4000	
Waveform	Pure Sine Wave			
Frequency [Hz]	50+3			
AC Regulation [%]	±10			
Standart Receptacles	A, B, C, D, E, F, G Optional, Plug Same As Socket (Optional)			
Led indicator	Charger,Inverter,Fault			
DC Voltage [V]	12	24	12	24
Voltage Range [V DC]	10-15	20-30	10-15	20-30
No Load Current Draw [A]	≤ 0.75			
AC Public Power Voltage [V]	230			
Efficiency (Typ.) [%]	>90			
DC Fuse (Built-In) [A ca]	30x6	15x6	30x8	15x8
Public Power AC Fuse (Built-In) [A ca]	10x1			
CHARGER PART				
Max Charging Currrent [A]	15	8	15	8
Charging Way	3 Stage (Constant Current, Constant Voltage, Float Charge)			
AC Input Voltage Range [V]	190~265			
AC Fuse [A ca]	3x1			
Suitable Battery	Gel & AGM (We Can Offer Different Charge Way According To Different Batteries)			
BYPASS MODE				
By Pass Switching Time [ms]	≤10			
AVS FUNCTION				
AC Input Low Voltage Protection	Yes, Shutdown			
AC Input High Voltage Protection	Yes, Shutdown			
Time Delay	17 Seconds			
PROTECTION				
Bat.Low Alarm [V DC]	10.5 ± 0.5	21 ± 1	10.5 ± 0.5	21 ± 1
Bat.Low Shut Down [V DC]	9.5 ± 0.5	19 ± 1	9.5 ± 0.5	19 ± 1
Over Voltage [V DC]	15.5 ± 0.5	31 ± 1	15.5 ± 0.5	31 ± 1
Bat.Low Voltage Recover [V DC]	11.5 - 12	23-24	11.5 - 12	23-24
Overload [W]	1600-1700		2100-2200	
Earth Leakage Protection	Shut Down, Auto.Reset			
Thermal Methods	Dual Cooling Fans,Temp.Control Or 30% Load Auto.on			
Start-Up Mode	Soft Start Up			
Reverse Polarity	By Fuse Open			
PHYSICAL FEATURES				
Dimension (LxWxH) [mm]	395x230x108			
N.W/Unit [kg]	5.3		5.7	
QTY/Ctn [pcs/kgs/cm]	2/13/45x30.5x37.5			

* TommaTech GmbH reserves the right to change the specification of products without prior notice.

TOMMATECH N SERIES MPPT SOLAR CHARGE CONTROLLER

TOMMATECH GmbH
GERMAN-based company

TommaTech N Series is a series of MPPT charge controllers developed for off-grid photovoltaic systems with optional LCD display units (XDB1 / XDS1 / XDS2). TommaTech N Series Charge Controllers apply intelligent algorithm to maximize the amount of energy generated from PV arrays and at the same time minimize power loss in a wide operating range, and thus operate at high efficiency. TommaTech N Series Controller has the option of automatic power reduction at high temperature as well as limit protection function in charging current and charging power. In this way, the stability of the system is taken to the next level.

2 YEARS Product Warranty

Product Features

› Advanced MPPT technology
› Wide MPPT operating voltage range
› Multiple load operating modes
› Comprehensive electronic protection
› Compatible with lead acid and lithium-ion batteries
› Over temperature protection
› Real-time energy statistics
› Monitor and set the parameters via APP or PC software
› IP32 Protection
› Isolated with standard Modbus protocol RS485 communication port
› Limit charging power & current over rated range

MODEL	TT 1206N	TT 2206N	TT 1210N	TT 2210N	TT 3210N	TT 4210N	TT 3215N	TT 4215N	TT 3415N	TT 4415N
ELECTRICAL										
System Nominal Voltage [V DC]	12/24 Oto								12/24/36/48 Oto	
Rated Charge Current [A]	10	20	10	20	30	40	30	40	30	40
Rated Discharge Current [A]	10	20	10	20	30	40	30	40	30	40
Battery Voltage Range [V]	8~32						8~68			
Max. PV Open Circuit Voltage [V]	60 (Minimum Working Temperature) 46 (25 °C)		100 (Minimum Working Temperature) 92 (25 °C)				150 (Minimum Working Temperature) 138 (25 °C)			
MPPT Voltage Range [V]	(Battery Voltage +2)~36		(Battery Voltage+2)~72				(Battery Voltage +2)~108			
Max. PV Input Power [W / V]	130/12 260/24	260/12 520/24	130/12 260/24	260/12 520/24	390/12 780/24	520/12 1040/24	390/12 780/24	520/12 1040/24	390/12 780/24 1170/36 1560/48	520/12 1040/24 1560/36 2080/48
Equalization Voltage [V]	Sealed: 14.6 / Flooded: 14.8 / User: 9 ~ 17									
Boost Voltage [V]	Gel: 14.2 / Sealed: 14.4 / Flooded: 14.6 / User: 9 ~ 17									
Float Voltage [V]	Gel / Sealed / Flooded: 13.8 / User: 9 ~ 17									
Low Voltage Reconnect Voltage [V]	Gel / Sealed / Flooded: 12.6 / User: 9 ~ 17									
Low Voltage Disconnect Voltage [V]	Gel / Sealed / Flooded: 11.1 / User: 9 ~ 17									
Self-Consumption	≤14mA(12V) / ≤15mA(24V)		≤30mA(12V) / ≤16mA(24V)				≤30mA(12V) / ≤16mA(24V) /≤13mA(36V)			
Discharge Circuit Voltage Drop [V]	≤0.23									
Temperature Compensate Coefficient [V]	-3mV / °C / 2V (Default)									
Grounding	Common Negative Grounding									
RS485 Interface	5VDC / 200mA (RJ45)									
LCD Backlight Time [s]	60 (Default)									
ENVIRONMENTAL										
Working Environment Temperature [°C]	-25 ~ +45 (LCD);-30 ~+45 (No LCD)									
Storage Temp. Range [°C]	-20 ~ +70									
Relative Humidity [%]	≤ 95 , N.C.									
Enclosure	IP33									
Pollution Degree	PD2									
CERTIFICATION										
Safety	EN/IEC62109-1									
EMC (Emission Immunity)	EN61000-6-3 / EN61000-6-1									
FCC	47 CFR Part 15, Subpart B									
Performance & Function	IEC62509									
ROHS	IEC62321-3-1									
Dimension (WxDxH) [mm]	175x143x48	217x158x56.5	175x143x48	217x158x56.5	230x165x63	255x185x67.8	255x185x67.8	255x187x75.7	255x187x75.7	255x189x83.2
Weight [kg]	0.57	0.96	0.57	0.59	1.31	1.70	1.70	2.07	2.07	2.47

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TOMMATECH S SERIES MPPT SOLAR CHARGE CONTROLLER

TOMMATECH GmbH
GERMAN-based company

Combined MPPT technology and DSP controller, SSC-S603K will convert best voltage to charge battery based on various temperature. Compared to traditional solar charge controllers, it allows your solar panels to operate at their optimum power output voltage, providing higher exciency up to 98% with lower power loss. Integrated SSC-S603K with inverter, solar panel, and external battery packs, it can become a standalone solar power system to generate green power for your home appliances. SSC-S603K will convert solar power to charge external batteries and then provide power to home appliances via inverter.

2 YEARS Product Warranty

Product Features

› Intelligent Maximum Power Point Tracking technology
› Built-in DSP controller with high performance
› Automatic battery voltage detection (Only for 600W and 3KW)
› Battery temperature sensor (BTS) automatically provides temperature compensation (Only for 3KW)
› Three-stage charging optimizes battery performance
› Automatic load-detection
› Multifunctional LCD displays detailed information
› Reverse polarity protection for solar panel and battery
› Overcharge and overload protection
› Suitable for different battery types

MODEL	SSC-S603K
INPUT	
MPPT Operating Voltage [V DC]	60 ~ 115
Maximum PV Array Open Circuit Voltage [V DC]	145
Maximum PV Array Power [W]	800 I 1600 I 3200
Maximum Current [A]	50
OUTPUT	
Nominal Battery Voltage [V DC]	12 I 24 I 48
Connected Battery Type	Sealed Lead Acid, AGM or Gel
Maximum Charging Current [A]	60
Maximum Efficiency [%]	98
Charging Method	Three Stages: Bulk, Absorption, and Floating
PROTECTION	
Overload Protection	> %110 : Audible Alarm
Overcharge Protection	Yes
Polarity Reversal Protection	Yes
INDICATORS	
LCD Panel	LCD Panel Indicating Solar Power, Load Level, Battery Voltage / Capacity, Charging Current and Fault Conditions
LED Display	Three Indicators For Solar, Charging and Load Status
PHYSICAL FEATURES	
Dimensions [DxWxH] (mm)	315 x 165 x 128
Net Weight (kg)	4.5
IP Protection	IP31
ENVIRONMENT	
Humidity [%]	5 ~ 95 RH (Non-Condensing)
Operating Temperature [°C]	0 ~ 55
Storage Temperature [°C]	-15V ~ 60
Maximum Working Altitude [m]	0 ~ 3000

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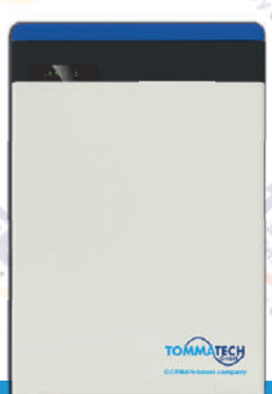
LITHIUM BATTERIES

TommaTech
Hightech Power & BMS
3.0kWh

TommaTech
Hightech Power
3.0kWh

TommaTech Moduler
Lithium Battery
48V/2.4-4.8kWh



TommaTech
General Pack
5.8kWh

TommaTech
Booster Pack
5.8kWh

TommaTech
LiFePO$_4$ Battery
12.8/25.6/51.2V

TOMMATECH LIFEPO$_4$ MODULAR LITHIUM BATTERY

- The modular lithium battery is equipped with intelligent BMS for each battery pack to manage modules effectively
- Compared with the traditional module, TommaTech Lithium Battery exceeds the capacity storage and greatly enhances the cycle life
- Safe lithium iron phosphate battery cell
- Compact size ultralight module
- Each module is equipped with an independent BMS system
- Practical pull ear design improves operation convenience
- Compact design for using in both Hybrid and Off-Grid solar power systems
- The modular battery is widely used in energy storage and electrical products. Household energy storage systems, centralized power station energy storage system

MODEL	TT-MDL-48V-50Ah	TT-MDL-48V-100Ah
Battery Technology	LiFePO$_4$	
Nominal Battery Energy [kWh]	2.4	4.8
Nominal Capacity [Ah]	50	100
Nominal Voltage [V]	48	
Charging Cut-Off Voltage [V]	54	
Discharging End-Off Voltage [V]	42	
Recommend C Rate [C]	0.5	
Recommended Charge/Discharge Current [A]	25	50
Max.Power Charge/Discharge Current [A]	50	75
Peak Power Charge/Discharge Current [A]	100 (15s)	
Net Weight [kg]	22	45
Dimension [WxDxH] [mm]	480x405x90	504x597x155
Charging Temp. Range [°C]	0 ~ 50	
Discharging Temp. Range [°C]	-20 ~ 50	
Communication	CAN / RS485 / RS232	
Certification & Safety Standard	TUV / CE / EN62619 / IEC62040 / UN38.3 / CEC Accredited / LIL 1973 / C E 1-021	
Warranty	10 Years	5 Years
Compatible Inverters	TommaTech / Goodwe / Victron / Imeon / Solis / Luxpower / Growatt / GMDE Solar / Voltronic / Deye	
OTA Function-Remote Upgrade	Yes	
Life Span	6000 Cycles	3500 Cycles
Protection Level	IP20	

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TOMMATECH GmbH
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Hightech Power

3.0kWh Lithium Battery
3.0/ 6.0/ 9.0/ 12.0

Simple. Reliable. Efficient

- 3 Phase / 1 Phase
- High Efficiency
- Remote Monitoring
- IP67 Rated
- $LiFePO_4$ Technology

Lithium Battery 3.0/ Lithium Battery 6.0/ Lithium Battery 9.0/ Lithium Battery 12.0

Maximize your solar benefits with our durable and scalable battery solutions. The safest $LiFePO_4$ technology ensures long term and high-performing operation with more than 6000 life cycles at 90% DoD with marginal self-consumption. Up to 4 of our TT-3.0kWh batteries can be equipped effortlessly with a BMS for maximal customization.

www.tommatech.de
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3.0kWh Lithium Battery

TOMMATECH GmbH
GERMAN-based company

MODEL	3.0 kWh	6.0 kWh	9.0 kWh	12.0 kWh
Uno-Hybrid **3.0T / 3.7T / 4.6T / 5.0T**	**Storage Manager + TT 3.0 kWh**	**Storage Manager + 2 x TT 3.0 kWh**	**Storage Manager + 3 x TT 3.0 kWh**	**Not Suitable**
Trio-Hybrid **5.0T / 6.0T / 8.0T / 10.0T**	**Not Suitable**	**Storage Manager + 2 x TT 3.0 kWh**	**Storage Manager + 3 x TT 3.0 kWh**	**Storage Manager + 4 x TT 3.0 kWh**
Battery	30Ah Lithium(LFP)	30Ah Lithium(LFP)	30Ah Lithium(LFP)	30Ah Lithium(LFP)
Nominal Voltage [V]	102.4	204.8	307.2	409.6
Operating Voltage Range [V]	90-116	180-232	270-348	360-464
Battery Module	Modulex1	Modulex2	Modulex3	Modulex4
Rated Capacity [Ah]	30			
Total Energy [kWh]	3.1	6.1	9.2	12.3
Usable Energy [kWh]	3.1	6.1	9.2	12.3
Faradic Charge Efficiency	%99			
Battery Roundtrip Efficiency [%]	%95			
Standard Power [kW]	2.55	5.1	7.65	10.2
Recommend Charge / Discharge Current [A]	25			
Max Charge / Discharge Current [A]	30			
Cycle Life [%90 DOD]	6000 Cycles			
Warranty	10 Year			
Available Charge / Discharge Temperature [°C]	-30°C ~ 55°C			
Storage Temperature [°C]	0°C ~ 40°C (1 Year) -20°C ~ 55°C (3 Months)			
Humidity [%]	0 ~ %100			
Altitude [m]	Below 4000m			
Protection	IP67			
System to Inverter	RS485/CAN2.0			
Battery to Battery / BMS	CAN2.0			
Master Control LED Indicator Working	1 LED			
Master Control Capacity Indicator	4LED (25%, 50%, 75%, 100%)			
Battery Module LED	1 LED	2 LED	3 LED	4 LED
Switch On / Off	Buton x 1 + Breaker x 1			
Safety Certificate	CE, TUV (IEC62619), MSDS			
Un Number	UN3840			
Hazardous Materials Classifcation	Class 9			
Transport Testing Requirement	UN38.3			
Physical Characteristics				
Dimensions (WxLxH) [mm]	Storage Manager: 482x174x148 TT 3,0 kWh: 482x472x148	Storage Manager: 482x174x148 +2 x TT 3,0 kWh: 482x472x148	Storage Manager: 482x174x148 +3 x TT 3,0 kWh: 482x472x148	Storage Manager: 482x174x148 +4 x TT 3,0 kWh: 482x472x148
Weight [kg]	Storage Manager: 7.5kg + TT 3,0 kWh: 33kg	Storage Manager: 7.5kg +2 x (TT 3.0 kWh: 33kg) = 66kg	Storage Manager: 7.5kg +3 x (TT 3.0 kWh: 33kg) = 99kg	Storage Manager: 7.5kg +4 x (TT 3.0 kWh: 33kg) = 132kg

*The data and technical specifications specified in this document are for preliminary information and may vary depending on the usage method of the products, system design and ambient conditions.

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mail@tommatech.de

TOMMATECH GmbH
GERMAN-based company

Hightech Power

5.8 kWh Lityum Batarya
5.8/ 11.5/ 17.3/ 23.0

Simple. Reliable. Efficient

- 3 Phase / 1 Phase
- High Efficiency
- Remote Monitoring
- IP55 Rated
- $LiFePO_4$ Technology

Lithium Battery 5.8/ Lithium Battery 11.5/ Lithium Battery 17.3/ Lithium Battery 23.0

Maximize your solar benefits with our durable and scalable battery solutions. The safest $LiFePO_4$ technology ensures long term and high-performing operation with more than 6000 life cycles at 90% DoD with marginal self-consumption. Our GeneralPacks with inbuilt BMS can effortlessly be upgraded with up to 3 BoosterPacks to increase backup times and savings.

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TOMMATECH 5.8KWH LITHIUM BATTERY

TOMMATECH GmbH
GERMAN-based company

MODEL	5.8 kWh	11.5 kWh	17.3 kWh	23.0 kWh
Uno-Hybrid **3.0T / 3.7T / 4.6T / 5.0T**	General Pack	General Pack + Booster Pack	General Pack + 2 x Booster Pack	Not Suitable
Trio-Hybrid **5.0T / 6.0T / 8.0T / 10.0T**	Not Suitable	General Pack + Booster Pack	General Pack + 2 x Booster Pack	General Pack + 3 x Booster Pack
Nominal Voltage [V]	115.2	230.4	345.6	460.8
Operating Voltage [V]	100-131	200-262	300-393	400-524
Battery Type	Li-Ion (LFP)	Li-Ion (LFP)	Li-Ion (LFP)	Li-Ion (LFP)
Total Capacity [kWh]	5.8	11.5	17.3	23.0
Usable Capacity [kWh]	5.2	10.4	15.6	20.7
Faradic Charge Efficiency [%]	99	99	99	99
Battery Roundtrip Efficiency [%]	95	95	95	95
Standard Power [kW]	2.9	5.8	8.7	11.6
Max Power [kW]	3.5	7	10.5	14
Recommended Charge / Discharge Current [A]	25	25	25	25
Max Charge / Discharge Current [A]	35	35	35	35
Short Circuit Current [A]	1440	1440	1440	1440
Cycle Life	>6000 Cycles	>6000 Cycles	>6000 Cycles	>6000 Cycles
Warranty [Year]	10	10	10	10
Available Operating Temperature Range [°C]	0 ~ 55			
Full-Load Operating Temperature Range [°C]	5 ~ 48			
Humidity [%]	4 ~ 100 (Condensing)			
Altitude [m]	2000			
Protection	IP55			
System to Inverter	CAN2.0			
Battery to Battery/BMS	RS485			
Data Collect on Port /FW UPDATE	CAN2.0			
Master Control Working Mode Indicator	1 LED			
Master Control Capacity Indicator	4LED (25%, 50%, 75%, 100%)			
Battery Module LED	2 LED			
Reset	Buton			
Physical Characteristics				
Dimensions (WxLxH) [mm]	474x193x708	(474x193x708)+(474x193x647)	(474x193x708)+2x(474x193x647)	(474x193x708)+3x(474x193x647)
Weight [kg]	72.2	72.2 + 68.5	72.2 + 2x68.5	72.2 + 3x68.5

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TOMMATECH GmbH
GERMAN-based company

- **51.2V-100Ah**
- **25.6V-200Ah / 100Ah**
- **12.8V-200Ah / 100Ah / 60Ah**

2 YEARS Product Warranty

Designed with the latest generation quality components, TommaTech LiFePO$_4$ Lithium Batteries are available in a variety of capacities at three voltage options as 12.8V, 25.6V, 51.2V.
Combining aesthetic appearance with great performance, TommaTech LiFePO$_4$ Lithium Batteries offer all the capacities they have unlike conventional batteries and also have considerably higher cycle number and usage time with the contained technology.

High Performance
Great performance with new generation LiFePO4 technology

Smart Battery Management System
Safe to use structure with advanced internal BMS technology

Long Lifespan
Long lifespan up to 5000 cycles

Durable Metal Case
Aesthetic, compact and durable metal cabinet design

Bluetooth Monitoring & Controlling
Manage lithium battery via mobile app or web browser

Expandable Capacity
Increase capacity safely and without loss with Parallel Combiner Box

IP67 Protection Class
IP67 compatible metal cabinet and connector components

TommaTech LiFePO$_4$ Smart Lithium Batteries provide detailed performance analysis via mobile app or web browser.
Moreover, thanks to the built-in smart BMS system with many safety functions, the parameters of the LiFePO$_4$ lithium battery can be arranged and remotely controlled easily.

Smart Digital Display

High Quality Components

Compact Design

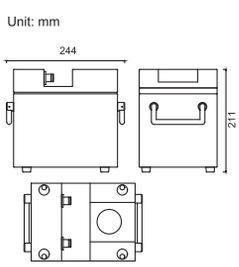
Parallel Combiner Box
Via lithium battery parallel combiner box, that can be fully compatible with TommaTech LiFePO$_4$ Lithium batteries, if more energy is required, 2 or 4 lithium batteries can be connected in parallel safely and without losing performance.

TECHNICIAL SPECIFICATIONS

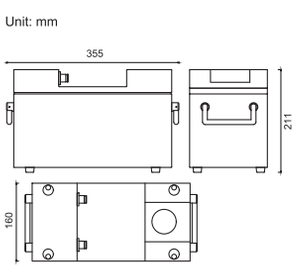
	12.8V-60Ah	12.8V-100Ah	12.8V-200Ah	25.6V-100Ah	25.6V-200Ah	51.2V-100Ah
VOLTAGE - CAPACITY						
Nominal Voltage [V]	12.8	12.8	12.8	25.6	25.6	51.2
Nominal Capacity [Ah]	60	100	200	100	200	100
Maximum Charge Current [A]	30	30	30	50	50	50
Maximum Decharge Current [A]	60	60	60	100	100	100
Nominal Energy [Wh]	768	1280	2560	2560	5120	5120
Charge Voltage Limit [V]	14.4±0.2	14.4±0.2	14.4±0.2	28.8±0.2	28.8±0.2	57.6±0.2
Over Voltage Disconnect Voltage [V]	15.6±0.2	15.6±0.2	15.6±0.2	31.2±0.2	31.2±0.2	62.4±0.2
Decharge Voltage Limit [V]	10.6±0.2	10.6±0.2	10.6±0.2	21.2±0.2	21.2±0.2	42.4±0.2
Under Voltage Disconnect Limit [V]	11.1±0.2	11.1±0.2	11.1±0.2	22.2±0.2	22.2±0.2	44.4±0.2
CYCLE CAPACITY (25 °C)						
%100 D.O.D	2600 Cycles					
%50 D.O.D	3400 Cycles					
%30 D.O.D	4800 Cycles					
STANDARD						
Over Charge Protection	Yes					
Over Discharge Protection	Yes					
Over Current Protection	Yes					
Short-Circuit Protection	Yes					
Temperature Protection	Yes					
Safety	IEC 61960 / 62133-2					
WORKING CONDITIONS						
Working Temperature [°C]	-20 ~ +70					
Storage Temperature [°C]	-45 ~ +70					
Humidity [Non-Condensing] [%]	Maksimum %95					
Ingress Protection	IP 67					
Calender Life [Year]	>10					
Warranty [Year]	2					
OTHER						
Dimensions (WxDxH) [mm]	244x160x211	355x160x211	355x180x322	355x180x322	614x315x211	614x315x211
Weight [kg]	11.0±0.5	15.5±0.5	28.5±0.5	28.5±0.5	53.0±0.5	53.0±0.5
Battery Connection	Plus (+) and Minus (-) Connector Head with IP 67 Protection Class					
Connection Type	Parallel (It is not recommended to use batteries in series)					

PHYSICAL CHARACTERISTICS

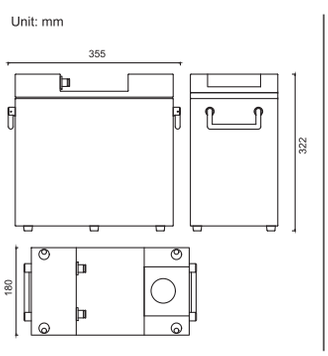
»» 12.8V - 60Ah



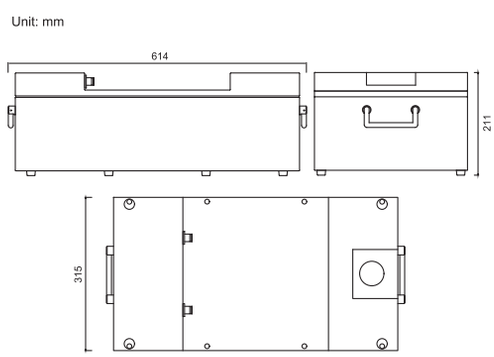
»» 12.8V - 100Ah



»» 12.8V - 200Ah
»» 25.6V - 100Ah



»» 25.6V - 200Ah
»» 51.2V - 100Ah



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TOMMATECH GmbH

GERMAN-based company

mail@tommatech.de

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