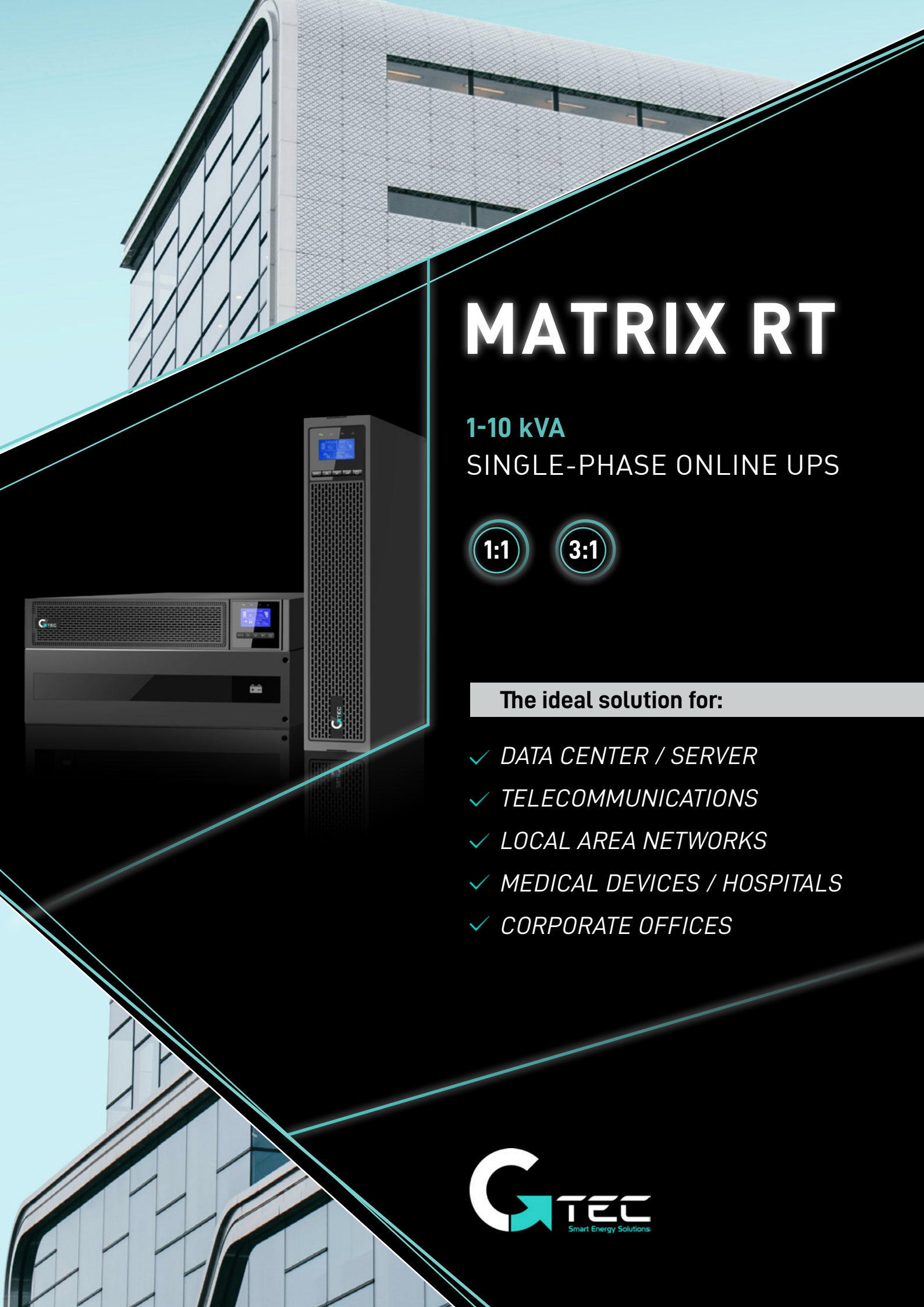


MATRIX RT

1-10 kVA

SINGLE-PHASE ONLINE UPS

1:1 3:1

The ideal solution for:

- ✓ *DATA CENTER / SERVER*
- ✓ *TELECOMMUNICATIONS*
- ✓ *LOCAL AREA NETWORKS*
- ✓ *MEDICAL DEVICES / HOSPITALS*
- ✓ *CORPORATE OFFICES*

GTEC
Smart Energy Solutions

OVERVIEW

MATRIX RT is the **top-of-the-range UPS rack/tower in the category of On-line single-phase systems**, characterized by a very compact and at the same time extremely high-performance state-of-the-art structure.

In fact, this UPS is able to achieve performance at the top of the market, guaranteeing a **Power Factor of 1** over the entire range and **efficiency up to 95%** in Normal Mode.

The MATRIX RT series consists of five models with a **1/1** configuration, from 1 to 10 kVA, and is also available in the version with three-phase input and single-phase output **(3/1) in the size of 10 kVA**.

ADVANTAGES

OPTIMISED BATTERY MANAGEMENT

MATRIX RT offers extremely fast charging times thanks to the fact that it has built-in **high power chargers** as standard. In sizes of 1 to 3 kVA, a 1.5 A battery charger is installed, while for sizes of 6 to 10 kVA the current can be digitally calibrated up to a maximum of 4 A.

For all models, the KS version is also available with a higher power battery charger (settable) which allows to connect higher capacity batteries, via external cabinets, thus ensuring extended autonomy to the entire system.

The UPS is then equipped with the **autosensing function** that allows you to recognize in real time the number of battery cabinets installed, thus being able to calculate automatically and with extreme precision the residual autonomy of the system.

HIGH PERFORMANCE

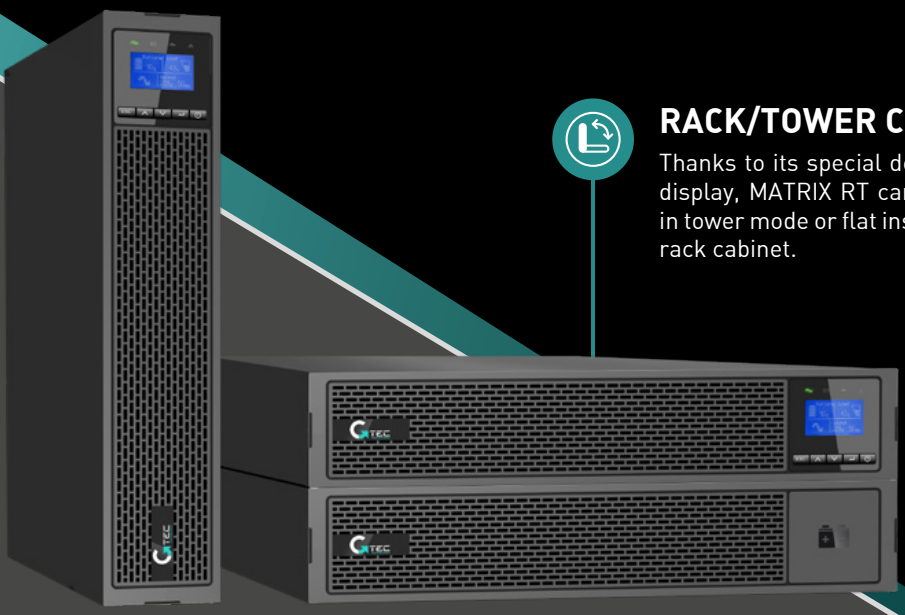
MATRIX RT has been designed to achieve superior performance compared to other commercially available single-phase models.

In fact, MATRIX RT guarantees a **Power Factor of 1** over the entire range, thus ensuring even in smaller sizes an active power that corresponds to the nominal one.

The system, equipped with **the best available technology**, can achieve an **efficiency of up to 95% in Normal Mode**, also offering the possibility of working in **parallel with up to 3 units** in the 6-10 kVA models.

MAXIMUM RELIABILITY

Built with state-of-the-art components, MATRIX RT can achieve a **Mean Time Between Failure (MTBF) 2 to 3 times higher** than the previous UPS generation.



RACK/TOWER CONVERTIBLE

Thanks to its special design and reversible display, MATRIX RT can be installed either in tower mode or flat inside any standard 19" rack cabinet.

TECHNOLOGY

- **IGBT inverter** with high efficiency PWM modulation
- **Digital Signal Processor (DSP) microprocessor**
- Built-in standard **Cold Start function**
- **Emergency Power Off (EPO) remote control**
- **Intelligent Slot** for AS400 interface, SNMP board, MODBUS board (optionals)
- Standard communication interfaces: **Smart RS232 and Smart USB**

HIGH EFFICIENCY

MATRIX RT boasts extremely high efficiency for its category, **up to 95% in Normal Mode**, ensuring an average 2% increase in efficiency compared to the previous generation. This level of performance, combined with the Power Factor 1 on the entire range, allows a significant saving of operating costs, and consequently offers the possibility of recovering the cost of the machine in very few years.

UPS Power	Efficiency		Losses		Annual savings*	
	Previous generation	MATRIX RT	Previous generation	MATRIX RT	100% load	50% load
1 kVA	87%	91% +4%	149,4 Wh	98,9 Wh -51 Wh	111 €	55 €
2 kVA	89%	94% +5%	247,2 Wh	127,7 Wh -120 Wh	262 €	131 €
3 kVA	92%	94% +2%	260,9 Wh	191,5 Wh -69 Wh	152 €	76 €
6 kVA	93%	95% +2%	451,6 Wh	315,8 Wh -136 Wh	297 €	149 €
10 kVA	94%	95% +1%	638,3 Wh	526,3 Wh -112 Wh	245 €	123 €

* Values referred to energy cost of 0.25€/KWh

ADVANCED COMMUNICATION

MATRIX RT is characterized by a **state-of-the-art communication system** that provides the user with a whole series of control functions, available not only through the LCD display and monitoring software, but also through the innovative mobile app with IoT (Internet of Things) connection.

LCD DISPLAY

The entire MATRIX RT range is equipped with an advanced **LCD display** that allows you to promptly view the main information on the status of the UPS, as well as to set the main system settings.

Through a simple and intuitive graphical interface it is possible to identify the operating status of the UPS, the input and output voltage, the battery status, the autonomy and the load level, all available in 8 different languages.

WINPOWER SOFTWARE

For an advanced control of the UPS it is possible to install the appropriate **WinPower management software**, compatible with all major operating systems.

The program is able to monitor, even remotely, the status of any UPS on the same LAN network, as well as to report any alarms and events. WinPower also allows you to set the automatic and safe shut-down of connected computer systems in the event of a sudden power failure.

GTEC EXPLORE APP

Thanks to the **innovative mobile app "GTEC Explore"**, based on the new IoT technology, users can monitor the status of their UPS at any time and wherever they are, directly from their smartphone.

The application, extremely intuitive and configurable from the display, allows you to view the main operational data such as: the operating status, the load percentage, the residual autonomy and the input and output voltage, for all the UPS of your network.

PRODUCT RANGE

MATRIX RT is available in the sizes **1, 2, 3, 6, 10 kVA** with **1/1 configuration** and in the size **10 kVA** with **3/1 configuration**. For each power size there is also a variant with an oversize battery charger (**KS version**).
In the sizes 6-10 K there is also an **optional PDU** with manual maintenance bypass that allows you to remove the UPS without turning off the loads.

Available across the entire MATRIX RT range

1. WLAN/WiFi connector*
2. Battery connector
3. Autosensing
4. RS232
5. USB port
6. Intelligent slots (SNMP-NMC / CMC / AS400N)
7. Dry contacts
8. Ethernet Port*
9. RPO

Available on sizes 1-3K

10. AC input
11. AC output

Available on sizes 6-10K

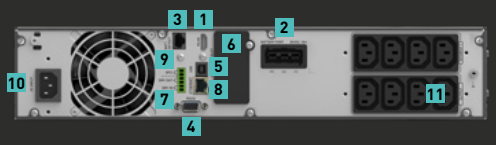
12. Optional parallel port
13. Terminal block
14. Battery cabinet**

* IoT/App only

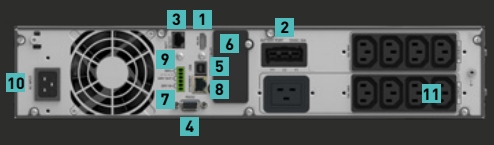
** The battery cabinet is standard in the MATRIX RT 6-10K and MATRIX RT 10K (3:1).

MATRIX RT 1-3K / MATRIX RT 1-3K-KS

MATRIX RT 1K-KS / MATRIX RT 2K-KS

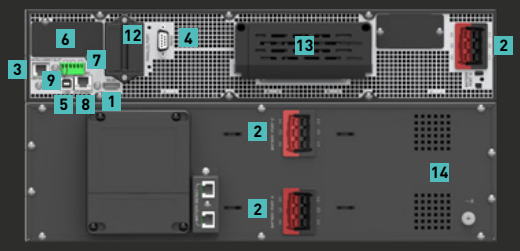


MATRIX RT 3K-KS

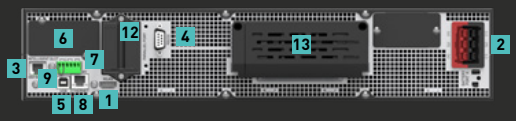


MATRIX RT 6-10K / MATRIX RT 6-10K-KS / MATRIX RT 10K (3:1) / MATRIX RT 10K-KS (3:1)

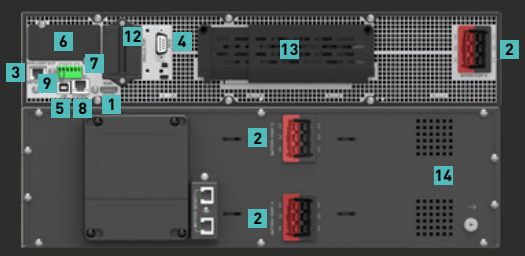
MATRIX RT 6-10K



MATRIX RT 6-10K-KS



MATRIX RT 10K (3:1)



MATRIX RT 10K-KS (3:1)

MODEL	MXR1K0MM	MXR1K0MM-KS	MXR2K0MM	MXR2K0MM-KS	MXR3K0MM	MXR3K0MM-KS
Power	1000 VA / 1000 W		2000 VA / 2000 W		3000 VA / 3000 W	
MAIN INPUT						
Grid system	1 PH + N + PE					
Rated voltage / Frequency	200/208/220/230/240 VAC (derating 10% at 208 V, derating 20% at 200 V), 50/60 Hz					
Voltage range	160-300 V 100% load, 110-160 V derating to 50% load linearly					
Frequency range	40 Hz - 70 Hz (45 Hz - 55 Hz, 54 Hz - 66 Hz @ load > 60%)					
Power factor	>0,99					
Current THDi	<5%					
OUTPUT						
Rated voltage / Frequency	200/208/220/230/240 VAC (derating 10% at 208 V, derating 20% at 200 V), 50/60 Hz					
Power Factor	1					
Wave form	Pure sine wave					
Voltage THDv	<1% (linear load); <5% (non-linear load)					
Voltage accuracy	±1%					
Transient recovery	Compliant to EN62040-3 VFI-SS-313 Standard					
Inverter Overload	100% < load ≤ 105%, continuous 105% < load ≤ 125%, 5 minute 125 < load ≤ 150%, 30 seconds > 150%, 500 ms					
Bypass Overload	100% < load ≤ 105%, continuous 105% < load ≤ 125%, 5 minute 125 < load ≤ 150%, 30 seconds > 150%, 500 ms					
Frequency regulation (Battery mode)	50/60 Hz ±0.1%					
Crest factor	3:1					
BATTERIES						
Battery type	Pb					
Battery capacity	12 V / 7 Ah	Selectable	12 V / 7 Ah	Selectable	12 V / 9 Ah	Selectable
Number of batteries in series	3		6		6	
Battery rate voltage	36 VDC		72 VDC		72 VDC	
Backup time*	7,5 min full load 10 min typical load	NA	8 min full load 10,5 min typical load	NA	6 min full load 9 min typical load	NA
BATTERY CHARGER						
Charging current	1.5 A	Adjustable 2 ~ 8 A	1.5 A	Adjustable 2 ~ 8 A	1.5 A	Adjustable 2 ~ 8 A
Charging time	3 h to recover 90% capacity	Depending on external batteries capacity	3 h to recover 90% capacity	Depending on external batteries capacity	3 h to recover 90% capacity	Depending on external batteries capacity
SYSTEM						
Efficiency	Normal operation: 91% Eco Mode operation: 96% Battery operation: 86.5%		Normal operation: 94% Eco Mode operation: 97% Battery operation: 89%		Normal operation: 94% Eco Mode operation: 97% Battery operation: 89%	
Display	LCD					
Protection degree	IP20					
Interface	Standard equipment: USB, RS232, RS485, RPO, Intelligent slot Optional: SNMP, dry contacts, parallel kit, Modbus					
ENVIRONMENT						
Operating temperature	0 ~ 40°C					
Storage temperature	0°C ~ 40°C (with battery, suggest to storage the battery below 25°C) -25°C ~ 55°C (without battery)					
Relative humidity	0 ~ 95% (no condensing)					
Noise (dBA at 1 meter far)	<45 dB		<50 dB			
Altitude	0 ~ 3000 m; load derated 1% per 100m, from 1000 ~ 3000m					
MECHANICAL DATA						
Dimensions W*D*H (mm)	438*445*85.5 (2U)		438*600*85.5 (2U)			
Weight (Kg)	14,3	8	23,3	10,6	26,2	11
Color	Black					

Note: technical specifications and data could be changed without notification

* For OnLine UPS typical load is 70% PF 0,8, full load is 70% PF 1

MODEL	MXR6K0MM+BP167	MXR6K0MM-KS	MXR010MM+BP209	MXR010MM-KS	MXR010TM+BP209*	MXR010TM-KS*
Power	6 KVA / 6 KW		10 KVA / 10 KW		10 KVA / 10 KW	
MAIN INPUT						
Grid system	1 PH + N + PE				3 PH + N + PE	
Rated voltage / Frequency	220/230/240 VAC, 50/60 Hz					
Voltage range	160-275 V 100% load, 110-160 V derating to 50% load linearly					
Rated current**	34 A	42 A	54 A	65 A	54 A (1-1) L1 48 A - L2/L3 18 A (3-1)	61 A (1-1) L1 51 A - L2/L3 21 A (3-1)
Frequency range	≤60% rated load: 40-70 Hz Rated load: 45-55 Hz (50 Hz system) / 54-66 Hz (60 Hz system)					
Power factor	>0,99				>0,95	
Current THDi	<3% Linear load <5% non linear load				<30% at 3 phase input <5% at 1 phase input	
OUTPUT						
Rated voltage / Frequency	220/230/240 VAC, 50/60 Hz					
Power Factor	1					
Wave form	Pure sine wave					
Voltage THDv	<1% (linear load); <5% (non-linear load)					
Voltage accuracy	±1%					
Transient recovery	Compliant to EN62040-3 VFI-SS-111 Standard					
Inverter overload	100% < load ≤ 105%, continuous 105% < load ≤ 125%, 10 minute 125 < load ≤ 150%, 30 seconds > 150%, 500 ms					
Bypass overload	100% < load ≤ 105%, continuous 105% < load ≤ 125%, 10 minute 125 < load ≤ 150%, 30 seconds > 150%, 500 ms					
Frequency regulation (Battery mode)	50/60 Hz ±0.1%					
Crest factor	3:1					
BATTERIES						
Battery type	Pb					
Battery capacity	12 V / 7 Ah	Selectable	12 V / 9 Ah	Selectable	12 V / 9 Ah	Selectable
Number of batteries in series	16***		20****			
Battery rate voltage	192 VDC		240 VDC		240 VDC	
Backup time (with standard number of batteries)*****	6 min full load 9 min typical load	Depending on external batteries capacity	7 min full load 9 min typical load	Depending on external batteries capacity	7 min full load 9 min typical load	Depending on external batteries capacity
BATTERY CHARGER						
Charging current	Range: 1~4 A Default: 1,4 A	Range: 2~12 A Default: 4 A	Range: 1~4 A Default: 2 A	Range: 2~12 A Default: 4 A	Range: 1~4 A Default: 2 A	Range: 2~12 A Default: 4 A
Charging time (2.1 A recharging current)	3 h to recover 90% capacity	Depending on external batteries capacity	3 h to recover 90% capacity	Depending on external batteries capacity	3 h to recover 90% capacity	Depending on external batteries capacity
SYSTEM						
Efficiency	Normal operation: 94.9% Eco Mode operation: 98.6% Battery operation: 92.9%		Normal operation: 94.6% Eco Mode operation: 98.7% Battery operation: 91.8%		Normal operation: 94.6% Eco Mode operation: 98.8% Battery operation: 91.8%	
Display	LCD					
Protection degree	IP20					
Interface	Standard equipment: USB, RS232, RS485, RPO, Intelligent slot Optional: SNMP, dry contacts, parallel kit, Modbus					
ENVIRONMENT						
Operating temperature	0°C ~ 50°C (Derating 50% above 40°C)					
Storage temperature	-15°C ~ 40°C (with battery, suggest to storage the battery below 25°C) -25°C ~ 55°C (without battery)					
Relative humidity	0 ~ 95% (no condensing)					
Noise (dBA at 1 meter far)	<50 dB		<55 dB			
Altitude	0 ~ 3000 m; load derated 1% per 100m, from 1000 ~ 3000m					
MECHANICAL DATA						
Dimensions W*D*H (mm)	438*559* 215(5U) UPS + Battery cabinet	438*540*86.3(2U)	438*559* 215(5U) UPS + Battery cabinet	438*540*86.3(2U)	438*559* 215(5U) UPS + Battery cabinet	438*540*86.3(2U)
Weight (Kg)	59,4 UPS + Battery cabinet	13.6	76,2 UPS + Battery cabinet	15.5	76,5 UPS + Battery cabinet	15.8
Color	Black					

Note: technical specifications and data could be changed without notification

* The Matrix RT 10k 3:1 model can also operate in 1:1 mode

** 200 VAC input voltage / with Nominal Power

*** It's also possible to set 20 batteries in series at the factory, but the standard GTEC cabinet is not available for this configuration

**** It's also possible to set 16 batteries in series at the factory, but the standard GTEC cabinet is not available for this configuration

***** For OnLine UPS typical load is 70% PF 0,8, full load is 70% PF 1

BATTERY EXTENSIONS

MODEL	VDC	VOLTAGE (V) and CAPACITY (Ah)	NUMBER OF BATTERIES	TOTAL TIME IN MINUTES		DIMENSIONS W*D*H (mm)	MASS (Kg)
				TYPICAL*	FULL LOAD*		
BATTERY CABINET FOR MATRIX RT 1K							
MXRBP1K	36	Empty	Empty	-	-	438*445*85,5	8,8
MXRBP1K-037	36	12 V / 7 Ah	3	27	20	438*445*85,5	15,4
MXRBP1K-039	36	12 V / 9 Ah	3	29	23	438*445*85,5	16,3
MXRBP1K-067	36	12 V / 7 Ah	6	49	36	438*445*85,5	22
MXRBP1K-069	36	12 V / 9 Ah	6	52	39	438*445*85,5	23,8
BATTERY CABINET FOR MATRIX RT 2K							
MXRBP2-3K	72	Empty	Empty	-	-	438*600*85,5	9,9
MXRBP2-3K-067	72	12 V / 7 Ah	6	28	20	438*600*85,5	23,1
MXRBP2-3K-069	72	12 V / 9 Ah	6	31	24	438*600*85,5	24,9
MXRBP2-3K-127	72	12 V / 7 Ah	12	51	38	438*600*85,5	36,3
MXRBP2-3K-129	72	12 V / 9 Ah	12	54	41	438*600*85,5	39,9
BATTERY CABINET FOR MATRIX RT 3K							
MXRBP2-3K	72	Empty	Empty	-	-	438*600*85,5	9,9
MXRBP2-3K-067	72	12 V / 7 Ah	6	19	14	438*600*85,5	23,1
MXRBP2-3K-069	72	12 V / 9 Ah	6	23	17	438*600*85,5	24,9
MXRBP2-3K-127	72	12 V / 7 Ah	12	32	26	438*600*85,5	36,3
MXRBP2-3K-129	72	12 V / 9 Ah	12	37	28	438*600*85,5	39,9
BATTERY CABINET FOR MATRIX RT 6K							
MXRBP6K	192	Empty	Empty	-	-	438*559*129	10,9
MXRBP6K-167	192	12 V / 7 Ah	16	24	17	438*559*129	46,1
MXRBP6K-169	192	12 V / 9 Ah	16	27	21	438*559*129	50,9
BATTERY CABINET FOR MATRIX RT 10K							
MXRBP10K	240	Empty	Empty	-	-	438*559*129	11
MXRBP10K-207	240	12 V / 7 Ah	20	20	15	438*559*129	55
MXRBP10K-209	240	12 V / 9 Ah	20	24	18	438*559*129	61

Note: technical specifications and data could be changed without notification

* For OnLine UPS typical load is 70% PF 0,8, full load is 70% PF 1



GTEC SERVICE

GTEC supports its customers throughout the whole product life cycle, providing technical assistance and after-sales service at the highest professional standards, so to produce the best partnership experience.

MAINTENANCE is an essential activity in order to guarantee a safe and stable load protection. GTEC shows maximum care about this topic, providing the best service in terms of experience, instrumentation and safety level.

The **TECHNICAL SUPPORT** service, delivered through the dedicated Help Desk platform, guarantees prompt answers to customers' requests and allows them to directly schedule maintenance activities.

The partnership between GTEC and its customers gets consolidated through the **TRAINING SESSIONS** proposal for technical staff, so that each user can operate on the UPSs with maximum consciousness and safety.

Also, in the GTEC Service offers, a **PROJECT CONSULTING** team is available, in order to provide the best solution according to the designer's needs.

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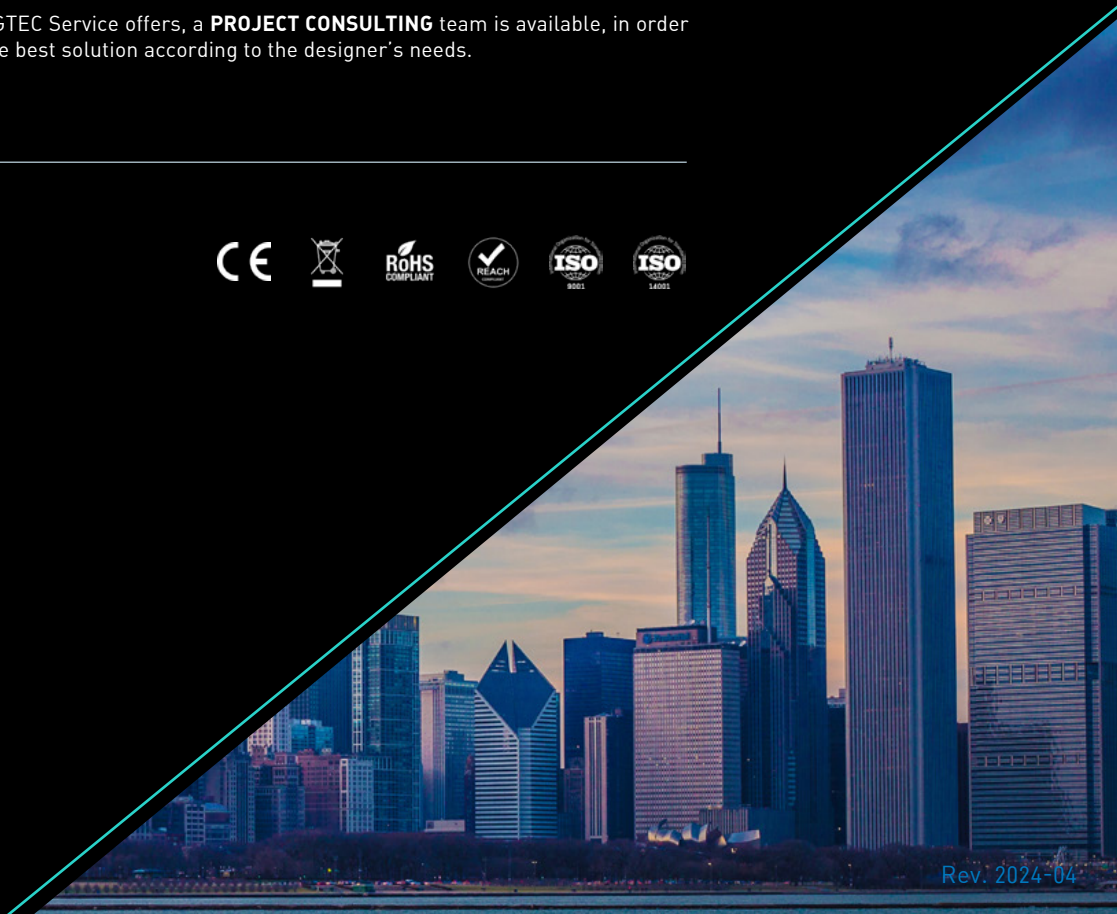

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