

INNOVA Unity IOT Tower 1-20KVA

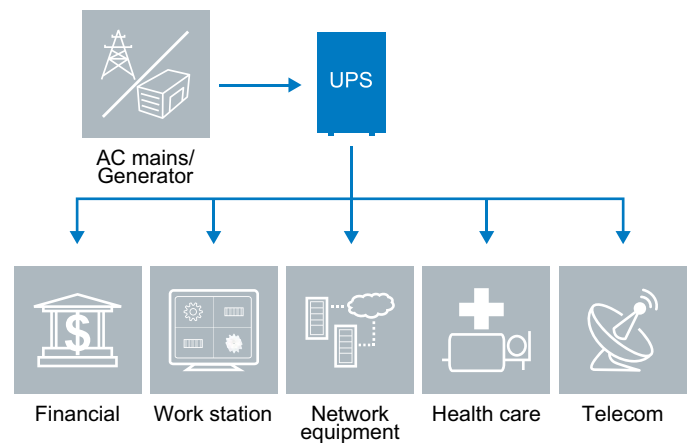


- Built-in OVCD protection, fan lock detection, over temperature detection, overload warning to enhance the product reliability
- Automatic detect additional EBM quantity will simplify EBM installation for IT users
- Low audible noise at typical load
- Dot matrix LCD support up to 10 languages for easy installation and service. 10-20K 3-3 model support colorful touchable LCD display with gravity sensor
- Embedded Ethernet port solution provide safe network connection to Cloud which will meet the increasing IoT trend
- WLAN module for IoT connection
- Mobile APP for monitoring, configuration. Support Android/iOS
- USB HID enable monitoring on UPS without software installation
- Dry contactor for industrial condition
- Upgraded network card compliance with IEC standard cybersecurity

Key features

- True double-conversion design with high adaptability to harsh mains conditions
- Real PF 1 can provide more power in same space
- High efficiency results in energy saving
- Adjustable charging current and flexible battery configuration
- Optimized charging method to expand battery life time
- 10-20K 3-3 model can be configure as 3-1 or 1-1 model to meet utility and load wiring
- 10-20K 3-3 model can be configure as single source input or dual source input for utility and bypass

Typical application



New full range double conversion UPS

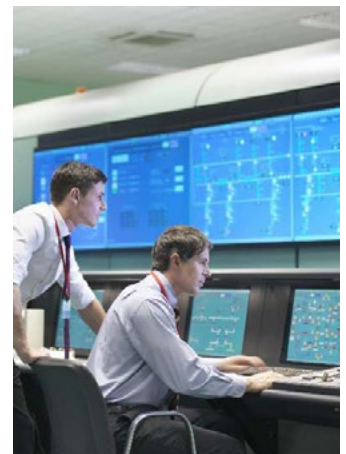
High density, true double conversion on-line power protection for IT (Information technology) and OT (operation technology) applications. Capable of supporting loads from 1 to 20kVA in a compact tower form.

These latest range of UPS comes with future-proof connectivity design having the capability to connect to cloud seamlessly to allow the monitoring of the UPS online through any internet connected device. To ensure users information is safe and protected, these connectivity is compliant with IEC standard cybersecurity.

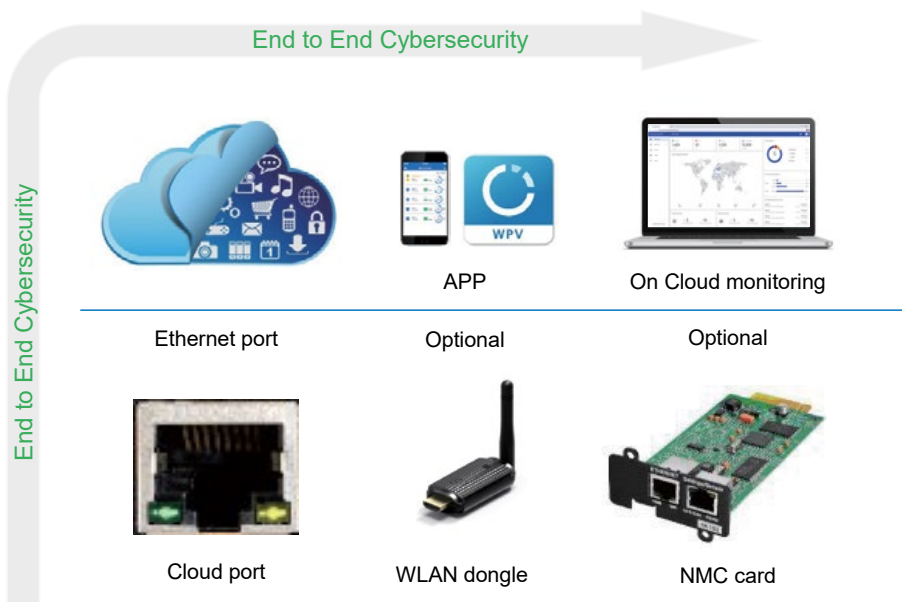


Network connected and data to cloud

- Easy to setup the Safe connection to Cloud
- Connect to Cloud through MQTT protocol (the most widely used IoT protocol)
- Real time health monitoring on the equipment to enable business continuity and failure prevention
- Remote monitoring, scheduled maintenance and UPS firmware upgrade *
- Improve the data visibility to the service people and end user
- Reduce the responsive time on product failure as Cloud push the exact information to end user and service people at the same time
- Create value added service opportunities based on digitalization transformation



* Will be launched soon



Product rear panel



1K/1KS/1.5K/1.5KS IEC



2K/2KS IEC



3K IEC



3KS IEC



1K/1.5K EBM



2K/3K EBM

1-3K IEC rear panel

1-3K EBM rear panel



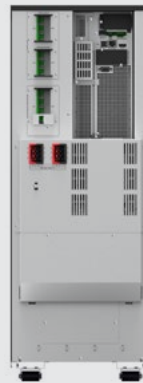
1K/1KS/1.5K/1.5KS SCHUKO



2K/2KS/3K SCHUKO



3KS SCHUKO



Tower UPS 10-20K(S) 3:3



Tower EBM 10-20K(S) 3:3

1-3K SCHUKO rear panel

10-20K rear panel



6KS (1:1)



10KS (1:1)



6K (1:1)



8K/10K (1:1)



10K/10KS (3:1)



EBM

6-10k rear panel

Product specification

Model name		Tower 1K	Tower 1KS	Tower 1.5K	Tower 1.5KS
Power rating	VA/Watt	1000VA/1000W	1000VA/1000W	1500VA/1500W	1500VA/1500W
Efficiency	Double conversion mode	89%	89%	89%	89%
	ECO mode	96%	96%	97%	97%
Input performance	Voltage range	160-300V 100% load, 110-160V derating to 50% load linearly	160-300V 100% load, 110-160V derating to 50% load linearly	160-300V 100% load, 110-160V derating to 50% load linearly	160-300V 100% load, 110-160V derating to 50% load linearly
	Rated frequency	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz
	Frequency range	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60%)	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60%)	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60%)	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60%)
	PF	>0.99	>0.99	>0.99	>0.99
	THDI	<5%	<5%	<5%	<5%
Input connection		IEC C14	IEC C14	IEC C14	IEC C14
Output performance	Rated voltage	200/208/220/230/240 VAC(derating 10% at 208V, derating 20% at 200V)	200/208/220/230/240 VAC(derating 10% at 208V, derating 20% at 200V)	200/208/220/230/240 VAC(derating 10% at 208V, derating 20% at 200V)	200/208/220/230/240 VAC(derating 10% at 208V, derating 20% at 200V)
	Rated frequency	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz
	Maximum PF	1	1	1	1
	Voltage accuracy	±1%	±1%	±1%	±1%
	THDv	<1% linear load <5% non linear load	<1% linear load <5% non linear load	<1% linear load <5% non linear load	<1% linear load <5% non linear load
	Transfer time	0ms(4ms @ line <-> bypass;10ms @ ECO <->Inverter)	0ms(4ms @ line <-> bypass;10ms @ ECO <->Inverter)	0ms(4ms @ line <-> bypass;10ms @ ECO <->Inverter)	0ms(4ms @ line <-> bypass;10ms @ ECO <->Inverter)
	Crest Ratio	max 3:1	max 3:1	max 3:1	max 3:1
	Overload	100%<load≤105% continuous. 105%< load ≤125% for 3 minutes 125%<load≤150% for 30 seconds. >150% for 500ms.	100%<load≤105% continuous. 105%< load ≤125% for 3 minutes 125%<load≤150% for 30 seconds. >150% for 500ms.	100%<load≤105% continuous. 105%< load ≤125% for 3 minutes 125%<load≤150% for 30 seconds. >150% for 500ms.	100%<load≤105% continuous. 105%< load ≤125% for 3 minutes 125%<load≤150% for 30 seconds. >150% for 500ms.
Output connection	Wiring/socket	4 x IEC C13	4 x IEC C13	4 x IEC C13	4 x IEC C13
Battery	Voltage	36VDC	36VDC	36VDC	36VDC
	Capacity(AH)	3 x 12V/7Ah	NA	3 x 12V/9Ah	NA
	Backup time Typical value by default battery capacity, PF=1	"3.0min 100% load 12.2min 50% load"	NA	"2.4min 100% load 8.7min 50% load"	NA
Maximum connect external battery module quantity		4	4	4	4
Charger	Charging current	1.5A	8A	1.5A	8A
	Recharging time	3h to 90%	NA	3h to 90%	NA
Other working mode	CVCF	Yes (derating to 60% load)	Yes (derating to 60% load)	Yes (derating to 60% load)	Yes (derating to 60% load)
	Parallel	no	no	no	no

Product specification

Model name		Tower 1K	Tower 1KS	Tower 1.5K	Tower 1.5KS
HMI(human-machine interface)	Display	Dot matrix LCD, (optional segment LCD)	Dot matrix LCD, (optional segment LCD)	Dot matrix LCD, (optional segment LCD)	Dot matrix LCD, (optional segment LCD)
	Language	10 Languages	10 Languages	10 Languages	10 Languages
	USB	USB 2.0 with HID	USB 2.0 with HID	USB 2.0 with HID	USB 2.0 with HID
	RS232	Yes(DB9)	Yes(DB9)	Yes(DB9)	Yes(DB9)
	Dry in/out	1 programble dry in; 1 programble dry out	1 programble dry in; 1 programble dry out	1 programble dry in; 1 programble dry out	1 programble dry in; 1 programble dry out
	EPO	yes	yes	yes	yes
	Intelignet slot	yes(for long card)	yes(for long card)	yes(for long card)	yes(for long card)
	Network card	Optional, NMC long card	Optional, NMC long card	Optional, NMC long card	Optional, NMC long card
	Modbus card	Optional,CMC/Modbus Long Card	Optional,CMC/Modbus Long Card	Optional,CMC/Modbus Long Card	Optional,CMC/Modbus Long Card
	Dry contactor card	Optional,AS400 Long Card	Optional,AS400 Long Card	Optional,AS400 Long Card	Optional,AS400 Long Card
	WLAN module	Optional,HDMI type	Optional,HDMI type	Optional,HDMI type	Optional,HDMI type
	Ethernet port for IOT	RJ45	RJ45	RJ45	RJ45
	Monitor software	Winpower	Winpower	Winpower	Winpower
Physical performance	Dimension(W*D*H)MM	145*397*220	145*397*220	145*397*220	145*397*220
	IP protection level	IP20	IP20	IP20	IP20
Environment	Operating temperature	0-45°C(power derating to 80% @40-45°C)	0-45°C(power derating to 80% @40-45°C)	0-45°C(power derating to 80% @40-45°C)	0-45°C(power derating to 80% @40-45°C)
	Relative Humidity	0-95%	0-95%	0-95%	0-95%
	Operating Altitude	0-3000m(the load derating 1 % every up 100m @1000-3000m)	0-3000m(the load derating 1 % every up 100m @1000-3000m)	0-3000m(the load derating 1 % every up 100m @1000-3000m)	0-3000m(the load derating 1 % every up 100m @1000-3000m)
	Acoustic Noise	<45dB @ typical load with battery fully charged	<45dB @ typical load with battery fully charged	<45dB @ typical load with battery fully charged	<45dB @ typical load with battery fully charged
Certification		CE,IEC/EN 62040	CE,IEC/EN 62040	CE,IEC/EN 62040	CE,IEC/EN 62040
EMI	Conduction/Radiation	C2	C2	C2	C2
EMS	ESD	IEC/EN 61000-4-2	IEC/EN 61000-4-2	IEC/EN 61000-4-2	IEC/EN 61000-4-2
	RS	IEC/EN 61000-4-3	IEC/EN 61000-4-3	IEC/EN 61000-4-3	IEC/EN 61000-4-3
	EFT	IEC/EN 61000-4-4	IEC/EN 61000-4-4	IEC/EN 61000-4-4	IEC/EN 61000-4-4
	Surge	IEC/EN 61000-4-5	IEC/EN 61000-4-5	IEC/EN 61000-4-5	IEC/EN 61000-4-5
Accessory	Maintenance bypass switch	NA	NA	NA	NA
	Input power cable	yes	yes	yes	yes
	Output power cable	yes,1*10A	yes,1*10A	yes,1*10A	yes,1*10A
	EBM cable	yes(in EBM)	yes(in EBM)	yes(in EBM)	yes(in EBM)
	USB cable	yes	yes	yes	yes
	RS232 cable	Optional	Optional	Optional	Optional
	Manual	Yes	Yes	Yes	Yes

Product specification

Model name		Tower 2K	Tower 2KS	Tower 3K	Tower 3KS
Power rating	VA/Watt	2000VA/2000W	2000VA/2000W	3000VA/3000W	3000VA/3000W
Efficiency	Double conversion mode	93%	93%	93%	93%
	ECO mode	97%	97%	97%	97%
Input performance	Voltage range	160-300V 100% load, 110-160V derating to 50% load linearly	160-300V 100% load, 110-160V derating to 50% load linearly	160-300V 100% load, 110-160V derating to 50% load linearly	160-300V 100% load, 110-160V derating to 50% load linearly
	Rated frequency	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz
	Frequency range	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60%)	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60%)	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60%)	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60%)
	PF	>0.99	>0.99	>0.99	>0.99
	THDI	<5%	<5%	<5%	<5%
Input connection		IEC C20	IEC C20	IEC C20	L/N/PE hardware terminal connection
Output performance	Rated voltage	200/208/220/230/240 VAC(derating 10% at 208V, derating 20% at 200V)	200/208/220/230/240 VAC(derating 10% at 208V, derating 20% at 200V)	200/208/220/230/240 VAC(derating 10% at 208V, derating 20% at 200V)	200/208/220/230/240 VAC(derating 10% at 208V, derating 20% at 200V)
	Rated frequency	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz
	Maximum PF	1	1	1	1
	Voltage accuracy	±1%	±1%	±1%	±1%
	THDv	<1% linear load <5% non linear load	<1% linear load <5% non linear load	<1% linear load <5% non linear load	<1% linear load <5% non linear load
	Transfer time	0ms(4ms @ line <-> bypass;10ms @ ECO <->Inverter)	0ms(4ms @ line <-> bypass;10ms @ ECO <->Inverter)	0ms(4ms @ line <-> bypass;10ms @ ECO <->Inverter)	0ms(4ms @ line <-> bypass;10ms @ ECO <->Inverter)
	Crest Ratio	max 3:1	max 3:1	max 3:1	max 3:1
	Overload	100%<load≤105% continuous. 105%< load ≤125% for 3 minutes 125%<load≤150% for 30 seconds. >150% for 500ms.	100%<load≤105% continuous. 105%< load ≤125% for 3 minutes 125%<load≤150% for 30 seconds. >150% for 500ms.	100%<load≤105% continuous. 105%< load ≤125% for 3 minutes 125%<load≤150% for 30 seconds. >150% for 500ms.	100%<load≤105% continuous. 105%< load ≤125% for 3 minutes 125%<load≤150% for 30 seconds. >150% for 500ms.
Output connection	Wiring/socket	8 x IEC C13	8 x IEC C13	8 x IEC C13 + hardware terminal	8 x IEC C13 + hardware terminal
Battery	Voltage	72VDC	72VDC	72VDC	72VDC
	Capacity(AH)	6 x 12V/7Ah	NA	6 x 12V/9Ah	NA
	Backup time Typical value by default battery capacity, PF=1	"3.3min 100% load 12.9min 50% load"	NA	"2.5min 100% load 9.3min 50% load"	NA
Maximum connect external battery module quantity		4	4	4	4
Charger	Charging current	1.5A	8A	1.5A	8A
	Recharging time	3h to 90%	NA	3h to 90%	NA
Other working mode	CVCF	Yes (derating to 60% load)	Yes (derating to 60% load)	Yes (derating to 60% load)	Yes (derating to 60% load)
	Parallel	no	no	no	no

Product specification

Model name		Tower 2K	Tower 2KS	Tower 3K	Tower 3KS
HMI(human-machine interface)	Display	Dot matrix LCD, (optional segment LCD)	Dot matrix LCD, (optional segment LCD)	Dot matrix LCD, (optional segment LCD)	Dot matrix LCD, (optional segment LCD)
	Language	10 Languages	10 Languages	10 Languages	10 Languages
	USB	USB 2.0 with HID	USB 2.0 with HID	USB 2.0 with HID	USB 2.0 with HID
	RS232	Yes(DB9)	Yes(DB9)	Yes(DB9)	Yes(DB9)
	Dry in/out	1 programble dry in; 1 programble dry out	1 programble dry in; 1 programble dry out	1 programble dry in; 1 programble dry out	1 programble dry in; 1 programble dry out
	EPO	yes	yes	yes	yes
	Intelignet slot	yes(for long card)	yes(for long card)	yes(for long card)	yes(for long card)
	Network card	Optional, NMC long card	Optional, NMC long card	Optional, NMC long card	Optional, NMC long card
	Modbus card	Optional,CMC/Modbus Long Card	Optional,CMC/Modbus Long Card	Optional,CMC/Modbus Long Card	Optional,CMC/Modbus Long Card
	Dry contactor card	Optional,AS400 Long Card	Optional,AS400 Long Card	Optional,AS400 Long Card	Optional,AS400 Long Card
	WLAN module	Optional,HDMI type	Optional,HDMI type	Optional,HDMI type	Optional,HDMI type
	Ethernet port for IOT	RJ45	RJ45	RJ45	RJ45
	Monitor software	Winpower	Winpower	Winpower	Winpower
Physical performance	Dimension(W*D*H)MM	195*421*318	195*421*318	195*421*318	195*421*318
	IP protection level	IP20	IP20	IP20	IP20
Environment	Operating temperature	0-45°C(power derating to 80% @40-45°C)	0-45°C(power derating to 80% @40-45°C)	0-45°C(power derating to 80% @40-45°C)	0-45°C(power derating to 80% @40-45°C)
	Relative Humidity	0-95%	0-95%	0-95%	0-95%
	Operating Altitude	0-3000m(the load derating 1 % every up 100m @1000-3000m)	0-3000m(the load derating 1 % every up 100m @1000-3000m)	0-3000m(the load derating 1 % every up 100m @1000-3000m)	0-3000m(the load derating 1 % every up 100m @1000-3000m)
	Acoustic Noise	<50dB @ typical load with battery fully charged	<50dB @ typical load with battery fully charged	<50dB @ typical load with battery fully charged	<50dB @ typical load with battery fully charged
Certification		CE,IEC/EN 62040	CE,IEC/EN 62040	CE,IEC/EN 62040	CE,IEC/EN 62040
EMI	Conduction/Radiation	C2	C2	C2	C2
EMS	ESD	IEC/EN 61000-4-2	IEC/EN 61000-4-2	IEC/EN 61000-4-2	IEC/EN 61000-4-2
	RS	IEC/EN 61000-4-3	IEC/EN 61000-4-3	IEC/EN 61000-4-3	IEC/EN 61000-4-3
	EFT	IEC/EN 61000-4-4	IEC/EN 61000-4-4	IEC/EN 61000-4-4	IEC/EN 61000-4-4
	Surge	IEC/EN 61000-4-5	IEC/EN 61000-4-5	IEC/EN 61000-4-5	IEC/EN 61000-4-5
Accessory	Maintenance bypass switch	NA	NA	NA	NA
	Input power cable	yes	yes	yes	No
	Output power cable	yes,1*10A	yes,1*10A	yes,1*10A	yes,1*10A
	EBM cable	yes(in EBM)	yes(in EBM)	yes(in EBM)	yes(in EBM)
	USB cable	yes	yes	yes	yes
	RS232 cable	Optional	Optional	Optional	Optional
	Manual	Yes	Yes	Yes	Yes

Product specification

Model name		Tower 6K	Tower 6KS	Tower 10K	Tower 10KS
Power rating	VA/Watt	6000VA/6000W	6000VA/6000W	10000VA/10000W	10000VA/10000W
Efficiency	Double conversion mode	95%	95%	95%	95%
	ECO mode	98%	98%	98%	98%
Input performance	Voltage range	160-275V 100% load, 110-160V derating to 50% load linearly	160-275V 100% load, 110-160V derating to 50% load linearly	160-275V 100% load, 110-160V derating to 50% load linearly	160-275V 100% load, 110-160V derating to 50% load linearly
	Rated frequency	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz
	Frequency range	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60%)	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60%)	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60%)	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60%)
	PF	>0.995	>0.995	>0.995	>0.995
	THDI	<3% linear load <5% non linear load	<3% linear load <5% non linear load	<3% linear load <5% non linear load	<3% linear load <5% non linear load
Input connection		L/N/PE hardware terminal connection	L/N/PE hardware terminal connection	L/N/PE hardware terminal connection	L/N/PE hardware terminal connection
Output performance	Rated voltage	220/230/240V	220/230/240V	220/230/240V	220/230/240V
	Rated frequency	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz
	Maximum PF	1	1	1	1
	Voltage accuracy	±1%	±1%	±1%	±1%
	THDv	<1% linear load <5% non linear load	<1% linear load <5% non linear load	<1% linear load <5% non linear load	<1% linear load <5% non linear load
	Transfer time	0ms(10ms @ ECO->Inverter)	0ms(10ms @ ECO->Inverter)	0ms(10ms @ ECO->Inverter)	0ms(10ms @ ECO->Inverter)
	Crest Ratio	max 3:1	max 3:1	max 3:1	max 3:1
	Overload	100%<load≤105% continuous. 105%< load ≤125% for 10 minutes 125<load≤150% for 30 seconds. >150% for 500ms.	100%<load≤105% continuous. 105%< load ≤125% for 10 minutes 125<load≤150% for 30 seconds. >150% for 500ms.	100%<load≤105% continuous. 105%< load ≤125% for 10 minutes 125<load≤150% for 30 seconds. >150% for 500ms.	100%<load≤105% continuous. 105%< load ≤125% for 10 minutes 125<load≤150% for 30 seconds. >150% for 500ms.
Output connection	Wiring/socket	L/N/PE hardware terminal connection	L/N/PE hardware terminal connection	L/N/PE hardware terminal connection	L/N/PE hardware terminal connection
Battery	Voltage	192VDC(192-240VDC adjustable)	192VDC(192-240VDC adjustable)	192VDC(192-240VDC adjustable)	192VDC(192-240VDC adjustable)
	Capacity(AH)	16*12V/7Ah, 16-20pcs adjustable	NA	16*12V/9Ah, 16-20pcs adjustable	NA
	Backup time Typical value by default battery capacity, PF=1	"3.6min 100% load 9.6min 50% load"	NA	"2.1min 100% load 8min 50% load"	NA
Maximum connect external battery module quantity		6	6	6	6
Charger	Charging current	1.4A(0-4A adjustable)	4A(0-12A adjustable)	2A(0-4A adjustable)	4A(0-12A adjustable)
	Recharging time	3h to 90%	NA	3h to 90%	NA
Other working mode	CVCF	Yes (derating to 60% load)	Yes (derating to 60% load)	Yes (derating to 60% load)	Yes (derating to 60% load)
	Parallel	Optional (up to 3)	Optional (up to 3)	Optional (up to 3)	Optional (up to 3)

Product specification

Model name		Tower 6K	Tower 6KS	Tower 10K	Tower 10KS
HMI(human-machine interface)	Display	Dot matrix LCD	Dot matrix LCD	Dot matrix LCD	Dot matrix LCD
	Language	10 Languages	10 Languages	10 Languages	10 Languages
	USB	USB 2.0 with HID	USB 2.0 with HID	USB 2.0 with HID	USB 2.0 with HID
	RS232	Yes(DB9)	Yes(DB9)	Yes(DB9)	Yes(DB9)
	Dry in/out	1 programble dry in; 1 programble dry out	1 programble dry in; 1 programble dry out	1 programble dry in; 1 programble dry out	1 programble dry in; 1 programble dry out
	EPO	yes	yes	yes	yes
	Intelignet slot	yes(for long card)	yes(for long card)	yes(for long card)	yes(for long card)
	Network card	Optional, NMC long card	Optional, NMC long card	Optional, NMC long card	Optional, NMC long card
	Modbus card	Optional,CMC/Modbus Long Card	Optional,CMC/Modbus Long Card	Optional,CMC/Modbus Long Card	Optional,CMC/Modbus Long Card
	Dry contactor card	Optional,AS400 Long Card	Optional,AS400 Long Card	Optional,AS400 Long Card	Optional,AS400 Long Card
	WLAN module	Optional,HDMI type	Optional,HDMI type	Optional,HDMI type	Optional,HDMI type
	Ethernet port for IOT	RJ45	RJ45	RJ45	RJ45
	Monitor software	Winpower	Winpower	Winpower	Winpower
Physical performance	Dimension(W*D*H)MM	220*492*589	220*492*348	220*492*589	220*492*348
	IP protection level	IP20	IP20	IP20	IP20
Environment	Operating temperature	0-50°C (power derating to 50% @40-50°C)	0-50°C (power derating to 50% @40-50°C)	0-50°C (power derating to 50% @40-50°C)	0-50°C (power derating to 50% @40-50°C)
	Relative Humidity	0-95%	0-95%	0-95%	0-95%
	Operating Altitude	0-3000m (the load derating 1 % every up 100m @1000-3000m)	0-3000m (the load derating 1 % every up 100m @1000-3000m)	0-3000m (the load derating 1 % every up 100m @1000-3000m)	0-3000m (the load derating 1 % every up 100m @1000-3000m)
	Acoustic Noise	<50dB @ typical load with battery fully charged	<50dB @ typical load with battery fully charged	<55dB @ typical load with battery fully charged	<55dB @ typical load with battery fully charged
Certification		CE,IEC/EN 62040	CE,IEC/EN 62040	CE,IEC/EN 62040	CE,IEC/EN 62040
EMI	Conduction/Radiation	C3	C3	C3	C3
EMS	ESD	IEC/EN 61000-4-2	IEC/EN 61000-4-2	IEC/EN 61000-4-2	IEC/EN 61000-4-2
	RS	IEC/EN 61000-4-3	IEC/EN 61000-4-3	IEC/EN 61000-4-3	IEC/EN 61000-4-3
	EFT	IEC/EN 61000-4-4	IEC/EN 61000-4-4	IEC/EN 61000-4-4	IEC/EN 61000-4-4
	Surge	IEC/EN 61000-4-5	IEC/EN 61000-4-5	IEC/EN 61000-4-5	IEC/EN 61000-4-5
Accessory	Maintenance bypass switch	Standard offer	Standard offer	Standard offer	Standard offer
	Input power cable	NA	NA	NA	NA
	Output power cable	NA	NA	NA	NA
	EBM cable	yes(in EBM)	yes(in EBM)	yes(in EBM)	yes(in EBM)
	USB cable	Yes	Yes	Yes	Yes
	RS232 cable	Optional	Optional	Optional	Optional
	Manual	Yes	Yes	Yes	Yes

Product specification

Model name		Tower 10K 3-1	Tower 10KS 3-1	Tower 10K 3-3	Tower 10KS 3-3
Power rating	VA/Watt	10000VA/10000W	10000VA/10000W	10000VA/10000W	10000VA/10000W
Efficiency	Double conversion mode	95%	95%	95%	95%
	ECO mode	98%	98%	98%	98%
Input performance	Voltage range	160-275V 100% load, 110-160V derating to 50% load linearly	160-275V 100% load, 110-160V derating to 50% load linearly	160-300V (273-520) 100% load, 100-160V (173-273) derating to 50% load linearly	160-300V (273-520) 100% load, 100-160V (173-273) derating to 50% load linearly
	Rated frequency	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz
	Frequency range	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60% and 1 phase in 1 phase out)	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60% and 1 phase in 1 phase out)	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60% and 1 phase in 1 phase out)	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60% and 1 phase in 1 phase out)
	PF	>0.95 at 3 phase input >0.99 at 1 phase input	>0.95 at 3 phase input >0.99 at 1 phase input	>0.995	>0.995
	THDI	<30% at 3 phase input <5% at 1 phase inut	<30% at 3 phase input <5% at 1 phase inut	<3% linear load <5% non linear load	<3% linear load <5% non linear load
Input connection		L1/L2/L3/N/PE or L/N/PE hardware terminal connection	L1/L2/L3/N/PE or L/N/PE hardware terminal connection	L1/L2/L3/N/PE or L/N/PE hardware terminal connection Dual input for line and bypass	L1/L2/L3/N/PE or L/N/PE hardware terminal connection Dual input for line and bypass
Output performance	Rated voltage	220/230/240V	220/230/240V	220/230/240V or 380/400/415V	220/230/240V or 380/400/415V
	Rated frequency	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz
	Maximum PF	1	1	1	1
	Voltage accuracy	±1%	±1%	±1%	±1%
	THDv	<1% linear load <5% non linear load	<1% linear load <5% non linear load	<1% linear load <5% non linear load	<1% linear load <5% non linear load
	Transfer time	0ms(10ms @ ECO->Inverter)	0ms(10ms @ ECO->Inverter)	0ms(2ms @ ECO+ ->Inverter)	0ms(2ms @ ECO+ ->Inverter)
	Crest Ratio	max 3:1	max 3:1	max 3:1	max 3:1
Overload	100%<load≤105% continuous. 105%< load ≤125% for 10 minutes 125<load≤150% for 30 seconds. >150% for 500ms.	100%<load≤105% continuous. 105%< load ≤125% for 10 minutes 125<load≤150% for 30 seconds. >150% for 500ms.	100%<load≤105% continuous. 105%< load ≤125% for 10 minutes 125<load≤150% for 1 minutes >150% for 500ms.	100%<load≤105% continuous. 105%< load ≤125% for 10 minutes 125<load≤150% for 1 minutes >150% for 500ms.	
Output connection	Wiring/socket	L/N/PE hardware terminal connection	L/N/PE hardware terminal connection	L1/L2/L3/N/PE or L/N/PE hardware terminal connection	L1/L2/L3/N/PE or L/N/PE hardware terminal connection
Battery	Voltage	192VDC(192~240VDC adjustable)	192VDC(192~240VDC adjustable)	192VDC(192~240VDC adjustable)	192VDC(192~240VDC adjustable)
	Capacity(AH)	16*12V/9Ah, 16~20pcs adjustable	NA	2*8*12V/9Ah, 16~20pcs adjustable	NA
	Backup time Typical value by default battery capacity, PF=1	"2.1min 100% load 8min 50% load"	NA	"1.8min 100% load 4.5min 50% load"	NA
Maximum connect external battery module quantity		6	6	6	6
Charger	Charging current	2A(0-12A adjustalbe)	4A(0-12A adjustalbe)	2A(0-13A adjustalbe)	2A(0-13A adjustalbe)
	Recharging time	3h to 90%	NA	3h to 90%	NA

Product specification

Model name		Tower 10K 3-1	Tower 10KS 3-1	Tower 10K 3-3	Tower 10KS 3-3
Other working mode	CVCF	Yes (derating to 60% load @ 1 phase in and 1 phase out mode)	Yes (derating to 60% load @ 1 phase in and 1 phase out mode)	Yes (derating to 60% load @ 1 phase in and 1 phase out mode)	Yes (derating to 60% load @ 1 phase in and 1 phase out mode)
	Parallel	Optional (up to 3)	Optional (up to 3)	Optional (up to 3)	Optional (up to 3)
HMI(human-machine interface)	Display	Dot matrix LCD	Dot matrix LCD	colour touch LCD (optional Dot matrix LCD)	colour touch LCD (optional Dot matrix LCD)
	Language	10 Languages	10 Languages	10 Languages	10 Languages
	USB	USB 2.0 with HID	USB 2.0 with HID	USB 2.0 with HID	USB 2.0 with HID
	RS232	Yes(DB9)	Yes(DB9)	Yes(DB9)	Yes(DB9)
	Dry in/out	1 programble dry in; 1 programble dry out	1 programble dry in; 1 programble dry out	1 programble dry in; 1 programble dry out	1 programble dry in; 1 programble dry out
	EPO	yes	yes	yes	yes
	Intelignet slot	yes(for long card)	yes(for long card)	yes(for long card)	yes(for long card)
	Network card	Optional, NMC long card	Optional, NMC long card	Optional, NMC long card	Optional, NMC long card
	Modbus card	Optional,CMC/Modbus Long Card	Optional,CMC/Modbus Long Card	Optional,CMC/Modbus Long Card	Optional,CMC/Modbus Long Card
	Dry contactor card	Optional,AS400 Long Card	Optional,AS400 Long Card	Optional,AS400 Long Card	Optional,AS400 Long Card
	WLAN module	Optional,HDMI type	Optional,HDMI type	Optional,HDMI type	Optional,HDMI type
	Ethernet port for IOT	RJ45	RJ45	RJ45	RJ45
	Monitor software	Winpower	Winpower	Winpower	Winpower
Physical performance	Dimension(W*D*H)MM	220*492*589	220*492*589	350*650*890	350*650*890
	IP protection level	IP20	IP20	IP20	IP20
Environment	Operating temperature	0-50°C(power derating to 50% @40-50°C)	0-50°C(power derating to 50% @40-50°C)	0-50°C(power derating to 50% @40-50°C)	0-50°C(power derating to 50% @40-50°C)
	Relative Humidity	0-95%	0-95%	0-95%	0-95%
	Operating Altitude	0-3000m (the load derating 1 % every up 100m @1000-3000m)	0-3000m (the load derating 1 % every up 100m @1000-3000m)	0-4000m (the load derating 1 % every up 100m @1000-4000m)	0-4000m (the load derating 1 % every up 100m @1000-4000m)
	Acoustic Noise	<55dB @ typical load with battery fully charged	<55dB @ typical load with battery fully charged	<55dB @ typical load with battery fully charged	<55dB @ typical load with battery fully charged
Certification		CE,IEC/EN 62040	CE,IEC/EN 62040	CE,IEC/EN 62040	CE,IEC/EN 62040
EMI	Conduction/Radiation	C3	C3	C3	C3
EMS	ESD	IEC/EN 61000-4-2	IEC/EN 61000-4-2	IEC/EN 61000-4-2	IEC/EN 61000-4-2
	RS	IEC/EN 61000-4-3	IEC/EN 61000-4-3	IEC/EN 61000-4-3	IEC/EN 61000-4-3
	EFT	IEC/EN 61000-4-4	IEC/EN 61000-4-4	IEC/EN 61000-4-4	IEC/EN 61000-4-4
	Surge	IEC/EN 61000-4-5	IEC/EN 61000-4-5	IEC/EN 61000-4-5	IEC/EN 61000-4-5
Accessory	Maintenance bypass switch	Standard offer	Standard offer	Standard offer	Standard offer
	Input power cable	NA	NA	NA	NA
	Output power cable	NA	NA	NA	NA
	EBM cable	yes(in EBM)	yes(in EBM)	yes(in EBM)	yes(in EBM)
	USB cable	Yes	Yes	Yes	Yes
	RS232 cable	Optional	Optional	Optional	Optional
	Manual	Yes	Yes	Yes	Yes

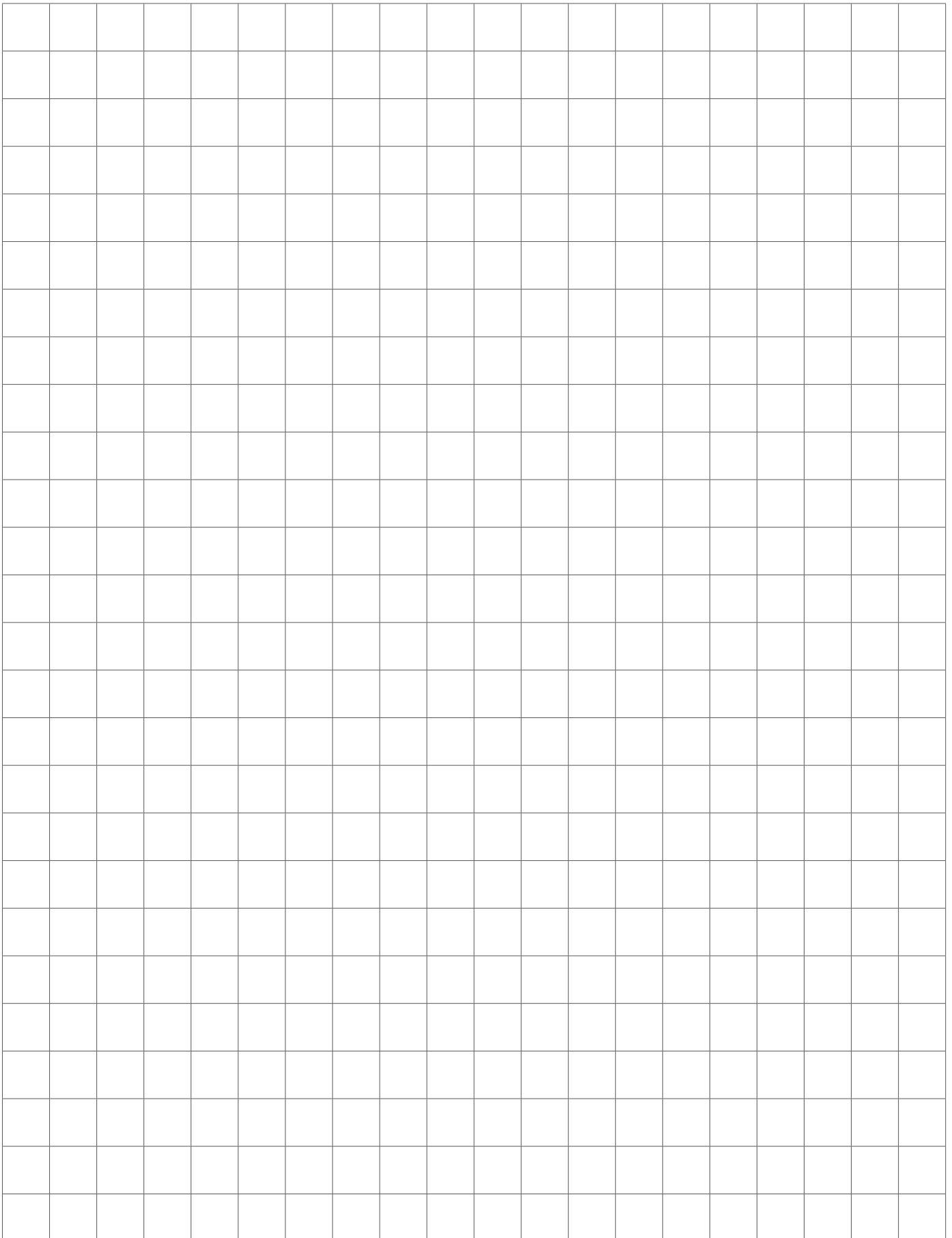
Product specification

Model name		Tower 15K 3-3	Tower 15KS 3-3	Tower 20K 3-3	Tower 20KS 3-3
Power rating	VA/Watt	15000VA/15000W	15000VA/15000W	20000VA/20000W	20000VA/20000W
Efficiency	Double conversion mode	96%	96%	96%	96%
	ECO mode	98.8%	98.8%	99%	99%
Input performance	Voltage range	160-300V (273-520) 100% load, 100-160V (173-273) derating to 50% load linearly	160-300V (273-520) 100% load, 100-160V (173-273) derating to 50% load linearly	160-300V (273-520) 100% load, 100-160V (173-273) derating to 50% load linearly	160-300V (273-520) 100% load, 100-160V (173-273) derating to 50% load linearly
	Rated frequency	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz
	Frequency range	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60% and 1 phase in 1 phase out)	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60% and 1 phase in 1 phase out)	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60% and 1 phase in 1 phase out)	40Hz-70Hz(45Hz-55Hz 54Hz-66Hz @ load>60% and 1 phase in 1 phase out)
	PF	>0.995	>0.995	>0.995	>0.995
	THDI	<3% linear load <5% non linear load	<3% linear load <5% non linear load	<3% linear load <5% non linear load	<3% linear load <5% non linear load
Input connection		L1/L2/L3/N/PE or L/N/PE hardware terminal connection Dual input for line and bypass	L1/L2/L3/N/PE or L/N/PE hardware terminal connection Dual input for line and bypass	L1/L2/L3/N/PE or L/N/PE hardware terminal connection Dual input for line and bypass	L1/L2/L3/N/PE or L/N/PE hardware terminal connection Dual input for line and bypass
Output performance	Rated voltage	220/230/240V or 380/400/415V	220/230/240V or 380/400/415V	220/230/240V or 380/400/415V	220/230/240V or 380/400/415V
	Rated frequency	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz
	Maximum PF	1	1	1	1
	Voltage accuracy	±1%	±1%	±1%	±1%
	THDv	<1% linear load <5% non linear load	<1% linear load <5% non linear load	<1% linear load <5% non linear load	<1% linear load <5% non linear load
	Transfer time	0ms(2ms @ ECO+ ->Inverter)	0ms(2ms @ ECO+ ->Inverter)	0ms(2ms @ ECO+ ->Inverter)	0ms(2ms @ ECO+ ->Inverter)
	Crest Ratio	max 3:1	max 3:1	max 3:1	max 3:1
Overload	100%<load≤105% continuous. 105%< load ≤125% for 10 minutes 125<load≤150% for 1 minutes >150% for 500ms.	100%<load≤105% continuous. 105%< load ≤125% for 10 minutes 125<load≤150% for 1 minutes >150% for 500ms.	100%<load≤105% continuous. 105%< load ≤125% for 10 minutes 125<load≤150% for 1 minutes >150% for 500ms.	100%<load≤105% continuous. 105%< load ≤125% for 10 minutes 125<load≤150% for 1 minutes >150% for 500ms.	
Output connection	Wiring/socket	L1/L2/L3/N/PE or L/N/PE hardware terminal connection	L1/L2/L3/N/PE or L/N/PE hardware terminal connection	L1/L2/L3/N/PE or L/N/PE hardware terminal connection	L1/L2/L3/N/PE or L/N/PE hardware terminal connection
Battery	Voltage	384VDC(384~480VDC adjustable)	384VDC(384~480VDC adjustable)	384VDC(384~480VDC adjustable)	384VDC(384~480VDC adjustable)
	Capacity(AH)	2*16*12V/7Ah, 32~40pcs adjustable	NA	2*16*12V/9Ah, 32~40pcs adjustable	NA
	Backup time Typical value by default battery capacity, PF=1	"2.0min 100% load 5.2min 50% load"	NA	"1.8min 100% load 4.7min 50% load"	NA
Maximum connect external battery module quantity		6	6	6	6
Charger	Charging current	1.5A(0-13A adjustalbe)	1.5A(0-13A adjustalbe)	2A(0-13A adjustalbe)	2A(0-13A adjustalbe)
	Recharging time	3h to 90%	NA	3h to 90%	NA

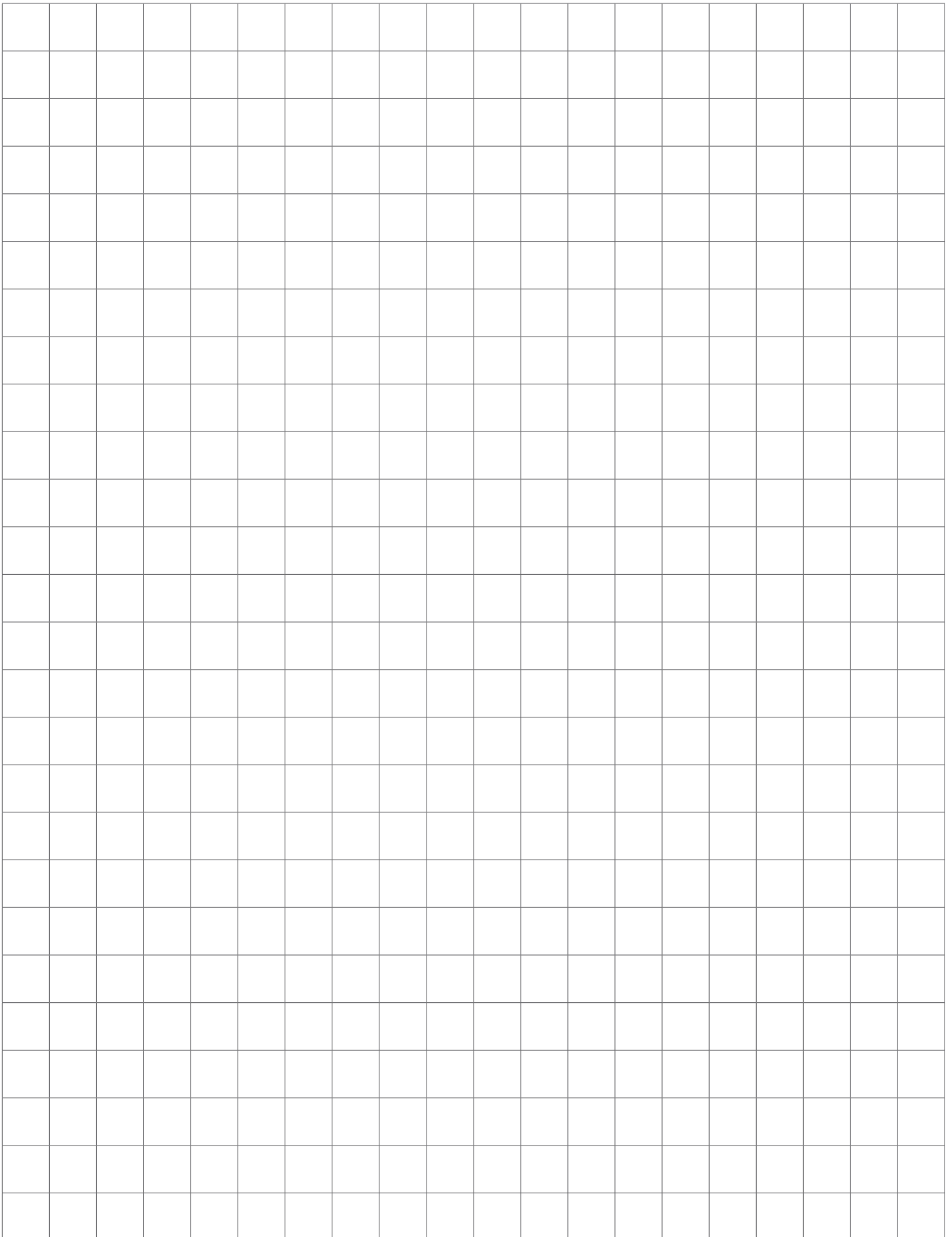
Product specification

Model name		Tower 15K 3-3	Tower 15KS 3-3	Tower 20K 3-3	Tower 20KS 3-3
Other working mode	CVCF	Yes (derating to 60% load @ 1 phase in and 1 phase out mode)	Yes (derating to 60% load @ 1 phase in and 1 phase out mode)	Yes (derating to 60% load @ 1 phase in and 1 phase out mode)	Yes (derating to 60% load @ 1 phase in and 1 phase out mode)
	Parallel	Optional (up to 3)	Optional (up to 3)	Optional (up to 3)	Optional (up to 3)
HMI(human-machine interface)	Display	colour touch LCD (optional Dot matrix LCD)	colour touch LCD (optional Dot matrix LCD)	colour touch LCD (optional Dot matrix LCD)	colour touch LCD (optional Dot matrix LCD)
	Language	10 Languages	10 Languages	10 Languages	10 Languages
	USB	USB 2.0 with HID	USB 2.0 with HID	USB 2.0 with HID	USB 2.0 with HID
	RS232	Yes(DB9)	Yes(DB9)	Yes(DB9)	Yes(DB9)
	Dry in/out	1 programble dry in; 1 programble dry out	1 programble dry in; 1 programble dry out	1 programble dry in; 1 programble dry out	1 programble dry in; 1 programble dry out
	EPO	yes	yes	yes	yes
	Intelignet slot	yes(for long card)	yes(for long card)	yes(for long card)	yes(for long card)
	Network card	Optional, NMC long card	Optional, NMC long card	Optional, NMC long card	Optional, NMC long card
	Modbus card	Optional,CMC/Modbus Long Card	Optional,CMC/Modbus Long Card	Optional,CMC/Modbus Long Card	Optional,CMC/Modbus Long Card
	Dry contactor card	Optional,AS400 Long Card	Optional,AS400 Long Card	Optional,AS400 Long Card	Optional,AS400 Long Card
	WLAN module	Optional,HDMI type	Optional,HDMI type	Optional,HDMI type	Optional,HDMI type
	Ethernet port for IOT	RJ45	RJ45	RJ45	RJ45
	Monitor software	Winpower	Winpower	Winpower	Winpower
Physical performance	Dimension(W*D*H)MM	350*650*890	350*650*890	350*650*890	350*650*890
	IP protection level	IP20	IP20	IP20	IP20
Environment	Operating temperature	0-50°C(power derating to 50% @40-50°C)	0-50°C(power derating to 50% @40-50°C)	0-50°C(power derating to 50% @40-50°C)	0-50°C(power derating to 50% @40-50°C)
	Relative Humidity	0-95%	0-95%	0-95%	0-95%
	Operating Altitude	0~4000m(the load derating 1 % every up 100m @1000~4000m)	0~4000m(the load derating 1 % every up 100m @1000~4000m)	0~4000m(the load derating 1 % every up 100m @1000~4000m)	0~4000m(the load derating 1 % every up 100m @1000~4000m)
	Acoustic Noise	<55dB @ typical load with battery fully charged	<55dB @ typical load with battery fully charged	<55dB @ typical load with battery fully charged	<55dB @ typical load with battery fully charged
Certification		CE,IEC/EN 62040	CE,IEC/EN 62040	CE,IEC/EN 62040	CE,IEC/EN 62040
EMI	Conduction/Radiation	C3	C3	C3	C3
EMS	ESD	IEC/EN 61000-4-2	IEC/EN 61000-4-2	IEC/EN 61000-4-2	IEC/EN 61000-4-2
	RS	IEC/EN 61000-4-3	IEC/EN 61000-4-3	IEC/EN 61000-4-3	IEC/EN 61000-4-3
	EFT	IEC/EN 61000-4-4	IEC/EN 61000-4-4	IEC/EN 61000-4-4	IEC/EN 61000-4-4
	Surge	IEC/EN 61000-4-5	IEC/EN 61000-4-5	IEC/EN 61000-4-5	IEC/EN 61000-4-5
Accessory	Maintenance bypass switch	Standard offer	Standard offer	Standard offer	Standard offer
	Input power cable	NA	NA	NA	NA
	Output power cable	NA	NA	NA	NA
	EBM cable	yes(in EBM)	yes(in EBM)	yes(in EBM)	yes(in EBM)
	USB cable	Yes	Yes	Yes	Yes
	RS232 cable	Optional	Optional	Optional	Optional
	Manual	Yes	Yes	Yes	Yes

Note



Note



PHOENIXTEC

ADDRESS: No. 114, Sec. 2, Xiwan Rd.,
Xizhi District, New Taipei City 22179, Taiwan

TEL: +886 2 6614 2000

FAX: +886 2 6614 2099

PHOENIXTEC