3-phase modular UPS

RD5000 THOR II TB20 10-60 kVA

Integrated Battery Modules

With the THOR II TB20, **ReDeal** offers a compact, modular online double-conversion converter with 3-phase input and output in 3-level inverter technology.

Integrated, space-saving, modular battery expansion modules to increase the backup time, even retroactively.

The control elements, interfaces, battery packs and power modules are accessible from the front for easy commissioning, operation and maintenance.

Detail views

2U power module (top) | IO/Parallel - control panel (below)

THOR II TB20 (system cabinet with partial extension of battery modules)

Options for extended communication and highest availability:

- SNMP/web for monitoring in network environments
- Additional batteries to increase backup time to several hours
- External manual bypass

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Convenient service concept

Modular and easy to maintain

- Easily exchangeable power modules
- Fan change from the front
- Filter change from the front
- User-friendly multilingual LCD control panel
- Firmware upgrade directly on LCD via USB stick or SD card
- Superior MTBF & MTTR
- Remote monitoring and connectivity options

Up to 5 slots are available for battery packs, which can be easily replaced or added

Up to three power modules can be easily exchanged or expanded from the front of the UPS cabinet

Safety first

Redundant power modules 10 or 20 kVA

The THOR II TB20 can be equipped with 10 or 20 kVA modules. The N+1 redundancy ensures the simplest service and extensive fail-safety. If one of the modules is out of service, but the remaining modules are within the total capacity of the load, the UPS continues to operate without interruption.

In addition to the power supply, the fans are also redundant so that, for example, if one fan fails, the system does not come to a standstill but can still supply up to 50 % of the load.

Power Walk In / Inter Power Walk In

Power Walk In:
This function ensures a progressive rectifier start when the power supply is restored. This means that the power modules are switched on again one after the other, which prevents switch-on peaks in your power grid.

Inter Power Walk In:
This is a similar function, but several UPSs connected in parallel are restarted sequentially when the power returns.

Low initial and operating costs:

- Scalable performance and autonomy time = Less initial investment; investment as you grow.
- High and constant efficiency of up to 95.5 % and over 99 % in Eco mode.
- Intelligent sleep mode saves energy: modules in sleep mode remain in inverter mode but with output switched off and are activated when needed without switching time.
- Modules are hot-swappable and fans can be replaced from the front.
- Complete front access for serviceability and maintenance

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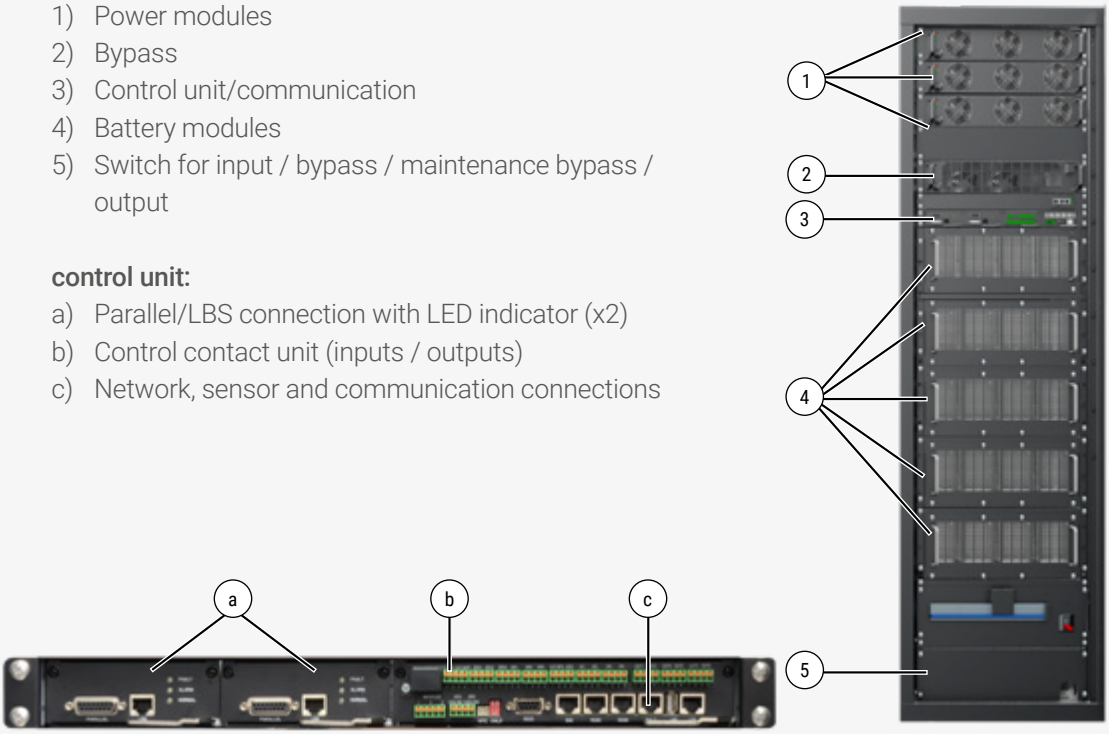
Clear connections

1) Power modules
2) Bypass
3) Control unit/communication
4) Battery modules
5) Switch for input / bypass / maintenance bypass / output

control unit:

a) Parallel/LBS connection with LED indicator (x2)
b) Control contact unit (inputs / outputs)
c) Network, sensor and communication connections



THOR II TB20 (Example 100 kVA system cabinet equipped with 3 power modules)

Redundant and scalable

The THOR II TB20 can be equipped with 10 or 20 kVA modules and expanded if necessary. The N + 1 redundancy guarantees the simplest service, the highest availability and extensive reliability.

The same applies to the battery slots. A maximum of 5 racks can be equipped with 40 batteries á 12 V / 9.5 AH each and serviced / exchanged during operation.

THOR II TB20 Cabinet-module constellations**			
power range*	Maximum power @ N+1 Redundancy	Possible module size (s)	Maximum number of modules*
10-30 kVA/W	20 kVA/W	10 kVA/W	3
20-60 kVA/W	40 kVA/W	20 kVA/W	3

* For N + 1 redundancy, an additional module is required in addition to the desired total output.

** We will be happy to calculate batteries and the matching cabinets according to your requirements on request.

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Characteristics

- UPS classification VFI-SS-111 according to IEC 62040-3
- VFI sine wave output can be switched to ECO High Efficiency mode
- UPS software for all common OS
- Incl. RS232 / USB and expansion slot
- Integrated Emergency Power Off (EPO)
- 24 months warranty

Special features

- Excellent power factor of 1.0
- Intelligent battery management with configurable charging mode
- N + X parallel redundant operation of up to 6 systems
- Redundant parallel control unit
- Power supply modules and fans redundant
- Outstanding efficiency of over 95.5% in normal operation, over 99% in eco mode
- Large 7 "multi-language touchscreen LCD panel

Specifications

RD5000 THOR II T20		10-30 kVA/kW	20-60 kVA/kW
Power	Nominal power in kVA/kW	10-30 kVA/kW	20-60 kVA/kW
	Power per module	10 kVA/kW	20 kVA/kW
	Number of modules max.	3	
Backup time		On request / depending on the battery configuration	
Technology		n + x technology scalable / VFI-SS-111 according to IEC 62040-3	
Phases	Input / Output	3-phase / 3-phase	
Input	Configurable nominal voltage	380 / 400 / 415 VAC	
	Input voltage range	138~485 VAC	
	Input frequency range	40Hz - 70Hz	
Mains feedbacks	THDI	≤3 % (100 % nonlinear load)	
Output	Output voltage	380 / 400 / 415 VAC	
	Voltage regulation	±1 %	
	Frequency range Normal mode	±1 % / ±2 % / ±4 % / ±5 % / ±10 % of the nominal frequency (optional)	
	Frequency range Battery mode	50/60 Hz ± 0.2 %	
	Transfer time	None	
	Overload	For mains operation: 105 % < load ≤ 110 %: Switching to bypass after 60 min. 110 % < load ≤ 125 %: Switchover to bypass after 10 min 125 % < load ≤ 150 %: Switchover to bypass after 1 min 125 % < load ≤ 150 %: Switchover to bypass after 1 min	
	THD	> 150 %: immediate switch-off	
	Voltage form	Sine wave	
Efficiency	Normal-Mode	max. 95.5 %	
Batteries	Type	Maintenance free lead-acid battery	
	Service life expectancy	5 / 10 years	
	DC nominal voltage	±240 VDC	
	Batteries used	Max. 5 battery slots with max. 40 x 12 V, 9.5 AH batteries per battery slot	
	Maximum charging current	18 A power module (charging current is set according to the battery bank equipment)	
	per UPS cabinet	54 A per UPS cabinet	
	Time to recharge	depending on battery capacity	
Communication	Interfaces	CAN, RS232, RS485, LBS, parallel, relay card, SNMP card (optional)	
	Display	multilingual LC display	
Dimensions / weight	UPS dimensions (H x W x D in mm)	2000 x 600 x 1000	
	UPS modules (H x W x D in mm)	86 (2U) x 440 x 620	
	Weight UPS in kg (without batt.)	approx. 363 kg	
	UPS modules	19 kg / 21 kg	
	Weight battery bank (with batt.)	approx. 120 kg	
	Protection class	IP20	
Connections	Input | Output	fixed connection on terminals | fixed connection on terminals	
Environmental conditions	Temperature	[0 – 40 °C], Recommended: + 15 °C…+ 25 °C	
	Humidity	0~95 % (non-condensing)	
	Operating noise	< 61dB	
Protection / standards	Safety | EMC | Service	EN 62040-1 | EN 62040-2 | EN 62040-3	
	Certification	CE	

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