

3-phase modular UPS

THOR II T20 10-200 kVA

With the THOR II T20, EFFEKTA® offers a modular double conversion UPS with 3-phase input & output in 3-level inverter technology.

Nearly all operating elements, interfaces and power modules are accessible from the front for easy commissioning, operation and maintenance. Intelligent battery management with configurable charging mode ensures long battery life. Furthermore, battery tests are individually configurable. The current consumption is almost ideally sinusoidal. Furthermore, the THOR II offers a power factor of 1.0. With an efficiency of over 95.5% in normal operation, it is one of the most effective and economical UPS systems on the market and thus ideally suited for saving money.



■ Details views



2U power module (above) | IO/parallel control panel (bottom)



THOR II T20 (Example 100 kVA system cabinet)

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 for scheduled UPS maintenance or UPS replacement without shutdown
- Special designs available for industrial applications (connections / special enclosures, etc.)

■ 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



The display of the THOR II clearly shows all information about the UPS and its status on 7".



The power modules can be easily exchanged or extended from the front of the UPS cabinet.

■ Safety first

Redundant power modules 10 or 20 kVA

The THOR II T20 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

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.
- Front access for serviceability and maintenance

Clear connections

1

Free slots for power modules

2

Power modules

3

Bypass

4

Control unit / communication

5

Switch for input / bypass / maintenance bypass / output / SLOT for optional SNMP card

6

Connections/cable clamps (Large connection panel for easy installation)

Control unit:

a

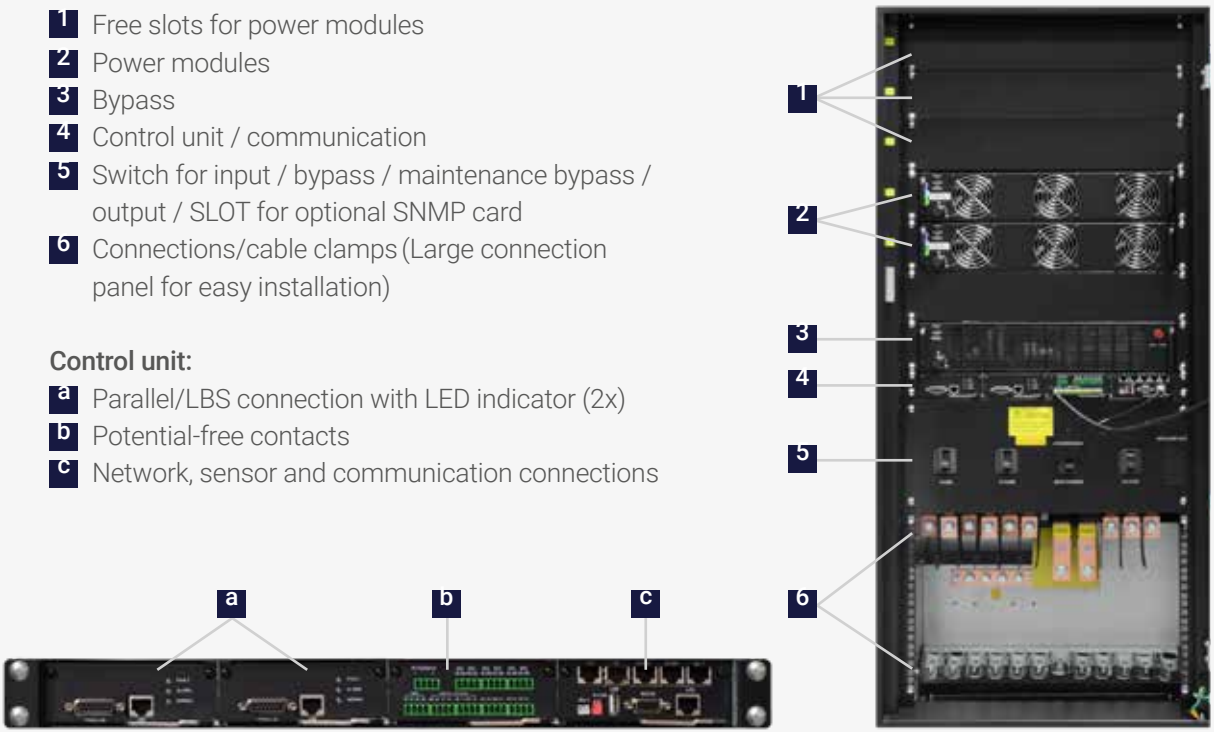
Parallel/LBS connection with LED indicator (2x)

b

Potential-free contacts

c

Network, sensor and communication connections



THOR II T20 (Example 100 kVA system cabinet equipped with two power modules)

Redundant and scalable



The THOR II T20 can be equipped with 10 or 20 kVA modules and expanded if necessary. The N+1 redundancy guarantees the simplest service, highest availability and extensive failure safety.

As a result, the UPS grows in performance according to your requirements.

THOR II Cabinet-module constellations*				
power range*	Maximum power @ N+1 redundancy	Possible module sizes	Maximum number of modules*	UPS cabinet size H x W x D in mm
10-30 kVA/kW	20 kVA/kW	10 kVA/kW	3	1200 x 600 x 850
10-50 kVA/kW	40 kVA/kW	10 kVA/kW	5	1400 x 600 x 850
20-60 kVA/kW	40 kVA/kW	20 kVA/kW	3	1200 x 600 x 850
20-100 kVA/kW	80 kVA/kW	20 kVA/kW	5	1400 x 600 x 850
10-200 kVA/kW	90/180 kVA/kW	10/20 kVA/kW	10	2000 x 600 x 850

* 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.

Characteristics

- Excellent power factor of 1.0
- 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)
- Dry-In/Dry-Out interface as standard

Specification

THOR II T20		T20-60	T20-100	T20-200
Power	Nominal power in kVA/kW	10-60	10-100	10-200
	Power per module	10 or 20 kVA/kW		
	Number of modules max.	3	5	10
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	40 Hz - 70 Hz		
Mains feedbacks	THDI	≤3 % (100% nonlinear load)		
Output	Output voltage	380/400/415 VAC		
	Voltage regulation	±1 %		
	Frequency range normal operation	±1 % / ±2 % / ±4 % / ±5 % / ±10 % of the nominal frequency (optional)		
	Frequency range battery operated	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 > 150 %: immediate switch-off		
	Voltage form	Sine wave		
Efficiency	Normal-Mode / ECO-Mode	95,5 in line mode / 99 % in ECO mode		
	Type	Maintenance free lead-acid battery		
	Service life expectancy	5 / 10 years		
Batteries	DC nominal voltage	±180 V/192 V/±204 V/±216 V/±228 V/±240/±252/±264/±276/±288/±300 VDC (30/32/34/36/38/40/42/44/46/48/50 blocks adjustable)		
	Maximum charging current	18 A per module (charging current is set according to the battery bank capacity)		
	Time to recharge	from 5 hours, depending on battery capacity		
Communication	Interfaces	CAN, RS232, RS485, LBS, parallel, relay card, SNMP card (optional)		
	Display	multilingual LC display		
Dimensions / weight	UPS (HxWxD in mm)	1200 x 600 x 850	1400 x 600 x 850	2000 x 600 x 850
	UPS w/o power modules in kg	app. 139	app. 187	app. 221
	Battery cabinet (HxWxD in mm)	1200 x 600 x 780 or 2000 x 600 x 850 (depending on configuration)		
	Battery cabinet (empty weight)	125 / 217 kg		
	UPS modules (H x W x D in mm)	86 (2U) x 440 x 620		
	Weight UPS modules	21 kg		
Connections	Protection class	IP20		
	Input Output	fixed connection on terminals fixed connection on terminals		
	Temperature	[0 - 40 °C], Recommended: + 15 °C...+ 25°C		
Environmental conditions	Humidity	0~~ 95 % (non-condensing)		
	Operating noise	< 58 dB	< 61 dB	< 68 dB
Protection/standards	Safety EMC Service	EN 62040-1 EN 62040-2 EN 62040-3		
	Approvals	CE		