Compagnia Tecnica Motori S.p.A.

Since 1958

Critical Power Solutions
UPS Systems

Green Energy at Work

RELIABLE

ECONOMICALLY GREEN

EFFICIENT

Battery Free UPS

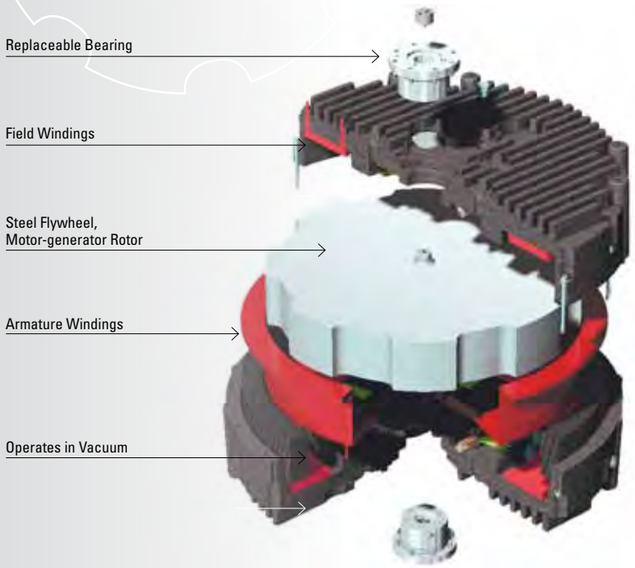
Highly efficient UPS architecture

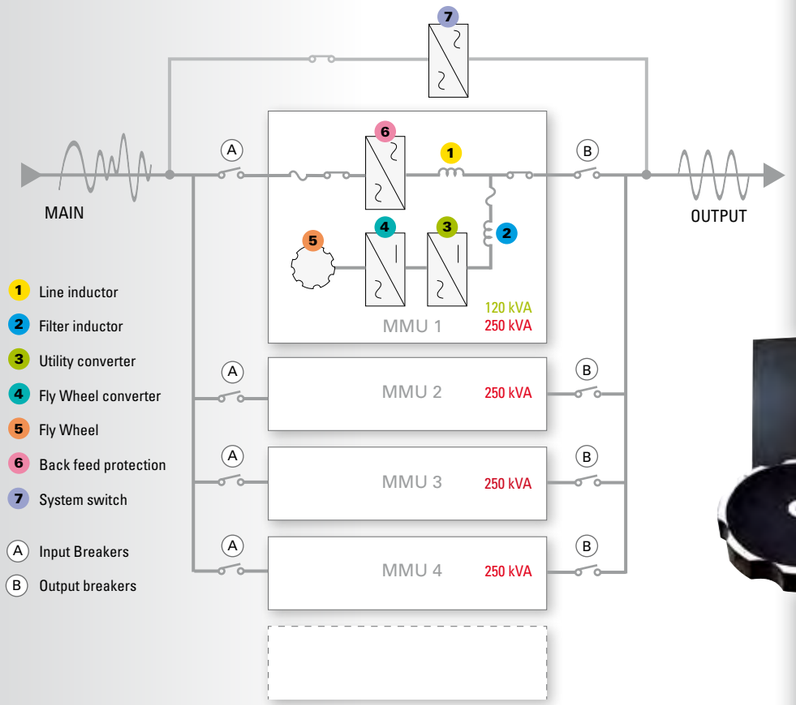
Modular, scalable and redundant architecture

Smallest available footprint

Simple and cost-effective installation

FLYWHEEL TECHNOLOGY





SYSTEM FEATURES

- Rugged, on-line & fault-tolerant UPS
- Highly efficient UPS architecture
- Handles multi-load characteristics
- Cost-effective lifecycle cost
- Modular, scalable and redundant architecture
- Predictable flywheel energy storage
- 20-year design life
- Low service and maintenance
- Smallest available footprint
- Rapid recharge time
- Predictive failure analysis
- Wide operating temperature range
- Remote and local monitoring
- Fault compartmentalization
- Simple and cost-effective installation
- Field-proven reliability
- No hazardous waste material

MEETING BUSINESS DEMANDS

- Highest operational efficiency
- Unobtrusive preventative maintenance
- 24/7 on-line performance monitoring
- Operational reporting system
- Fully expandable
- Smallest system footprint
- Paralleling and synchronizing ability as standard
- Fast acting bypass
- Unity input power factor
- Sinusoidal input current

CLEAN SOURCE UPS

ACTIVE POWER

POWER CENTRE SYSTEMS

CTM's integrated continuous power systems are specifically designed to handle the demands of high tech facilities requiring the highest power quality available.
Diesel UPS Systems provide an ideal solution for maximising up time, useable floor space and operational efficiency.

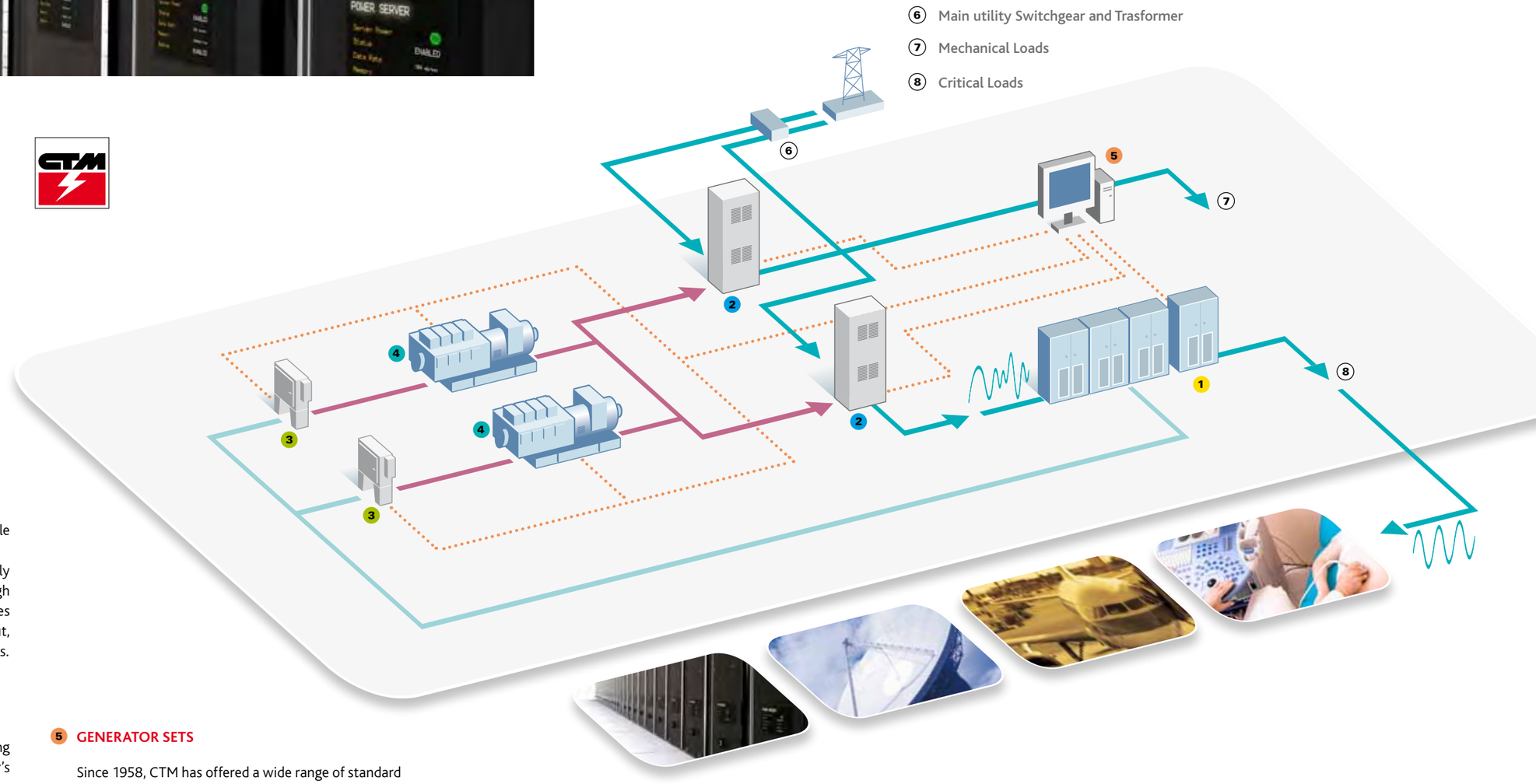
Designed to offer a highly flexible architecture to your constantly changing environment, CTM's Diesel UPS Systems are available in a series of standard formats and are constructed to be fully modular, enabling you to expand your infrastructure on demand.
Space saving, unobtrusive and unmatched in efficiency; ready and waiting to respond to the unexpected.

Our Diesel UPS Systems use Active Power's flywheel based kinetic energy storage and is fully
digitally integrated with high performance diesel engines to offer class leading performance.
Our systems are highly flexible and can power your facilities from 225kW to multi-Mega Watt, expanding in affordable and easily managed steps. This modular product provides the ability to scale for power and redundancy independent of engine configuration so you can choose redundancy levels to suit your requirements.

Engine power can be utilised to tailor fit load requirements. The solution offers a high degree
of permutations for engine configuration to suit modular expansion, mains synchronization, peak lopping and exporting of power to the utility.

Every CTM Diesel UPS System incorporates a redundant engine starting system to complement the engine starter batteries. The device named "GenSTART" guarantees maximum starting power with 1725 cold cranking amps and is directly supplied from the Clean Source UPS.
"GenSTART" is completely maintenance free and can start the system even if the starter batteries are disconnected or damaged, a further demonstration of the attention to detail that has gone into the design of this highly reliable continuous power system.

DIESEL UPS by CTM



1 UNINTERRUPTIBLE POWER SUPPLY (UPS)

The greenest solution on the market: Flywheel UPS.
Thanks to the FlyWheel UPS you can expect reliable backup power that you depend on.
The FlyWheel UPS continuously conditions the supply source voltage and power, and provides ride-through power to bring the generator set online. It provides precision voltage regulation, fault tolerant output, user-friendly interface and reduced installation costs.

2 AUTOMATIC TRANSFER SWITCH (ATS)

CTM offers a broad range of ATS solutions using the best products engineered to satisfy customer's requirements.
The ATS is fully integrated within the system and has digital microprocessor controls to suit any application.

3 GENERATOR STARTER

Our Generating Sets are equipped with a special device to increase the reliability of the generator set starting system, to ensure a successful cranking cycle of each engine.
The Starting Module is installed in parallel with batteries or replaces batteries completely.
This ensures the generator engine cranks and starts successfully each time it is required to start.
The starting Module adds reliability to your backup power systems that you can depend on.

5 GENERATOR SETS

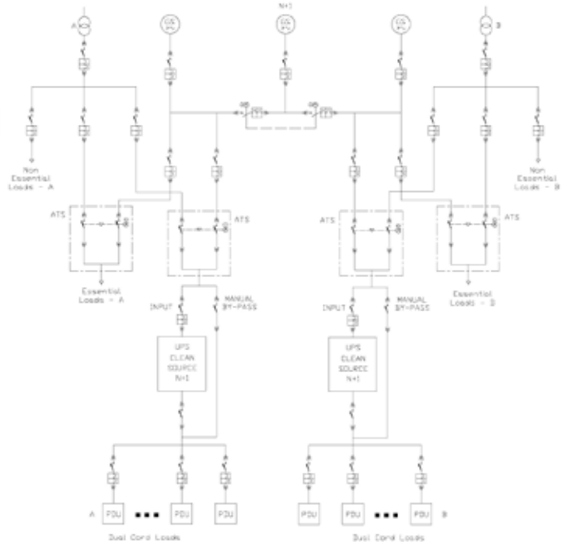
Since 1958, CTM has offered a wide range of standard and special generating sets relying on the most important international partners' co-operation.
This has allowed CTM to offer our customers the opportunity to define bespoke solutions to meet their system requirements.

4 POWER MANAGEMENT OPTIONS

Enables constant review of your critical power infrastructure via a unique, user-friendly software tool from virtually anywhere.
Provides real-time telemetry in a variety of intuitive formats via continuous monitoring and evaluation of your systems.
Accessible on site or remotely by internet access, mobile phone, PDA, Email notification.

powered by Cummins MITSUBISHI Perkins mtu VOLVO PENTA

DATA CENTER DESIGN
TIER 3+ with **Higest PUE**



CONTAINERISED SYSTEMS

Short on space? Want to maximise revenue generating floor-space within your facility? Need a fully operational system fast?
CTM can build you the most compact, complete power system available. Your pre-fabricated plant room will be fully designed and customised to your specifications and filled-out with your choice of engine, switchgear and architectural finishes.
Off site manufacturing and testing ensures minimal disruption to your site with rapid on site installation and commissioning.
These measures ensure a seamless power transfer for powering up. The component options are endless and the containerised system can be positioned in any number of areas around your site e.g. the roof, redundant loading bays, secure compounds, even parking areas.
Need to relocate? This system can be disconnected, transported to a new site, and be fully operational in a matter of hours.

POWER BOX

SIMPLE, STREAMLINED AND COST EFFECTIVE POWER DELIVERY

With Diesel UPS System your standards are ours. It is the first solution that includes your complete, individual requirements for switchgear incorporated into a streamlined, space saving package. We assess your needs and design an integrated system that includes but is not limited to: fixed pattern or withdrawable circuit breakers, PLC control, distribution, pan assemblies and power distribution units. Switchgear is connected to the UPS system via busbar arrangement giving and attractive, clean-line, space saving solution.

TECHNICAL DATA CLEAN SOURCE UPS

	Single module System		Multi Module System						
Model	**CS 120i**	**CS 250i**	**CS 250iz**	**CS 500iz**	**CS 750 iz**	**CS 1000iz**	**CS 1000ic**	**CS 1250ic**	**CS 1500ic**
Rated power	120 kVA 120kW	250 kVA 225 kW	250 kVA 225 kW	500 kVA 450 kW	750 kVA 675 kW	1000 kVA 900 kW	1000 kVA 900 kW	1250 kVA 1125 kW	1500 kVA 1350 kW
Redundancy N+1 [1]	N	N	Y	Y	Y	N	Y	Y	Y
Paralellability	N	N	Y	Y	Y	Y	N	N	N
Number of Fly Wheels	1	1	1	2	3	4	4	5	6
Input									
Rated Voltage	380/400/415 Vac 3 Ph +N								
Voltage Range	+ 10% / -15% (programmable) ± 10% @ 380 Vac								
Frequency 2	50 Hz ± 10% massimo (programmable) ±3% (default)								
Power factor	0,99 @ rated load and nominal voltage								
Harmonic Current Distortion (THD)									
Linear Load	< 3% @ 100% load								
Non-Linear Load 3	< 8% @ 100% load								
Current @ 400 Vac	182 A	337 A	337 A	674 A	1.011 A	1.348 A	1.357 A	1.685 A	2022 A
Current Max continuous	230 A	400 A	400 A	800 A	1.200 A	1.600 A	1.600 A	2.000 A	2.400 A
Current Max. non continuous	290 A	420 A	420 A	840 A	1.260 A	1.680 A	1.680 A	2.100 A	2.520 A
Surge Withstand	Meets IEEE 587/ANSI C62.41								
Walk-in	1 to 15 seconds (programmable)								
Output									
Rated Voltage	380/4007415 Vac 3 Ph + N								
Voltage Accurancy									
Steady State	± 1% per ±10% input								
Flywheel mode	± 1%								
Transient	± 1% within 50 ms for 100% load step								
Voltage Distortion	< 3% Linear Load < 5% @ 100% non linear Load								
Frequency	50 Hz (Mains Synhronized Normal Operation) ± 0,2 % (Free Running)								
Slew rate	Adjustable from 0,2 to 3,0 Hz/s								
Current – Nominal @ 400 Vac	173 A	361 A	361 A	723 A	1.084 A	1.445 A	1.445 A	1.806 A	2.168 A
Overload capability (Mains Operation)			Continuous <105%	Min. 125%	2 Min. 150%	30 s 200%	10 m >200%		
Efficiency [4]	97%	98%	97%	98%	98%	98%	98%	98%	98%
Backup Time									
@ 100% Load	27 s	15 s	14 s						
@ 75% Load	36 s	20 s	19 s						
@ 50% Load	52 s	30 s	28 s						
@ 25% Load	87 s	56 s	52 s						
Environmental									
Audible Noise	<70 dBA @ 1m		<72 dBA @ 1m		<75 dBA @ 1m				
Operating Temperature	0 °C to 40 °C								
Storage Temperature	– 25 °C to +70 °C								
Humidity	5% to 95% (non condensing)								
Emissions and Immunity	EN 50091-2								
Maximum Heat Rejection	4,96 kW	5,84 kW	5,8 kW	11,7 kW	17,5 kW	23,4 kW	24,5 kW	30,0 kW	35,0 kW
Air Flow m3/h	1.200 m3/h	2.400 m3/h	1.800 m3/h	3.000 m3/h	4.200 m3/h	5.400 m3/h	5.400 m3/h	6.000 m3/h	7.200 m3/h
Cable Entry	Top / Bottom								
Safety	EN 62040-1-1								
Physical data (control switchboard cabinet excluded)									
Height (w/o wireway kit)	1.981 mm								
Width	1.641 mm	1.641 mm	3.225 mm	4.318 mm	5.410 mm	6.502 mm	5.940 mm	7.425 mm	8.910 mm
Depth	865 mm								
Weight	2.200 kg	2.500 kg	3.365 kg	5.435 kg	7.475 kg	9.520 kg	8.536 kg	10.670 kg	12.804 kg

[1] Adding one more fly wheel module
[2] 60 Hz Available
[3] EN59001-3
[4] DC Energy storage off-line

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