

ASCO 336 Paralleling System



ASCO[®]


EMERSON[™]
Network Power

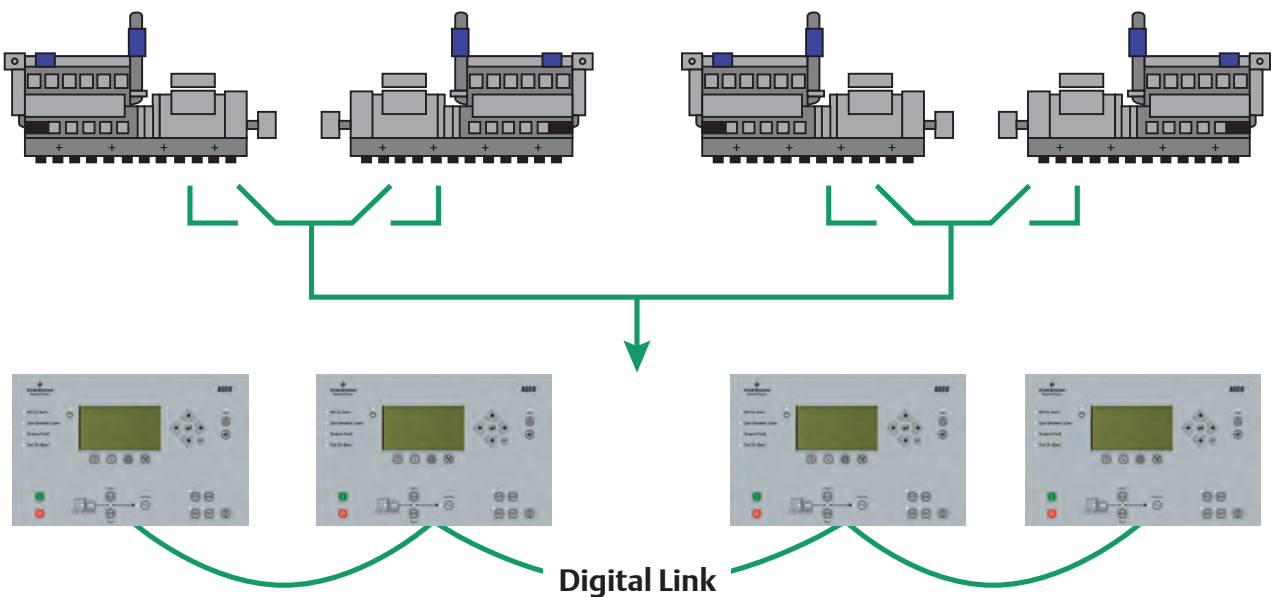
Power transfer at your fingertips.



Revolutionary Design

At the core of the 336 Paralleling System is a field proven closed transition transfer switch (CTTS). This is a highly reliable mechanism that studies have shown to have more endurance life than competitive products. Incorporating advanced components into the 336 Paralleling System help make it a superior alternative to conventional circuit breaker-based systems.

Using AC power from the generators to switch the CTTS with the latest control system technology, the 336 Paralleling System can detect and recover accordingly from common problems and automatically start the next generator in the system. This design technique eliminates the need for costly and maintenance-prone lead-acid batteries often found in conventional switchgear systems.



Distributed Control, No Master Control Required



Redefining Paralleling Systems.

Since introducing the first power transfer switch in 1920, ASCO has been committed to providing reliable technology, superior support and dedicated field service to satisfy power switching and controls requirements for critical operations. Throughout the more than 90 years of power transfer technology development, ASCO has introduced every significant product innovation in the industry.

That leadership and commitment to innovation continues with the 336 Paralleling System. Incorporating field-proven, reliable technology in a patented dual operator transfer switch mechanism, the 336 Paralleling System meets the needs of design build projects: cost effective, reliability, and quick delivery.

The 336 Paralleling System, available from 208 to 600 Volts, is the first transfer switch-based paralleling system on the market. It combines robust UL approved components in a standardized design that brings added flexibility, reliability, and cost savings to any project.

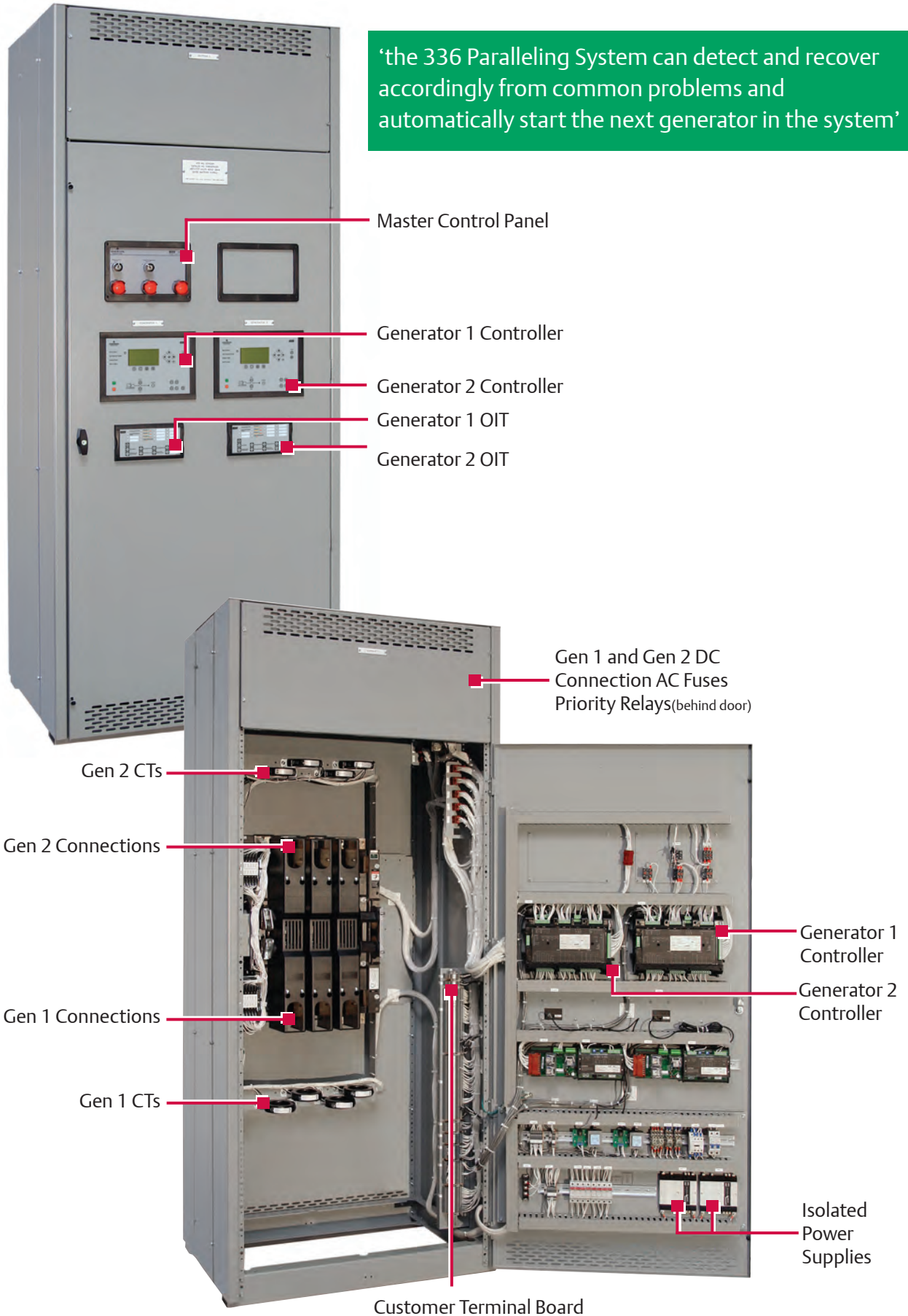


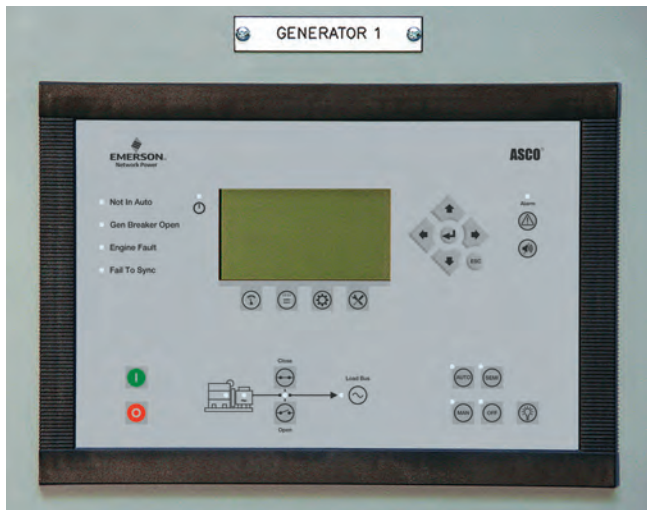
A Superior Choice

Feature	Benefit
Revolutionary CTTS-based design	High reliability and endurance
Utilizes generator power for switching	Eliminates costly and maintenance-prone, lead-acid batteries
Exclusive load management feature	Maximum protection of priority one loads
Handles all generator grounding configurations	Generators with different DC grounded schemes can be paralleled safely
Compact modular design	Minimal configuration eliminates job-specific engineering; easy to expand
Simple operation	Entire system starts with single contact or door control switch

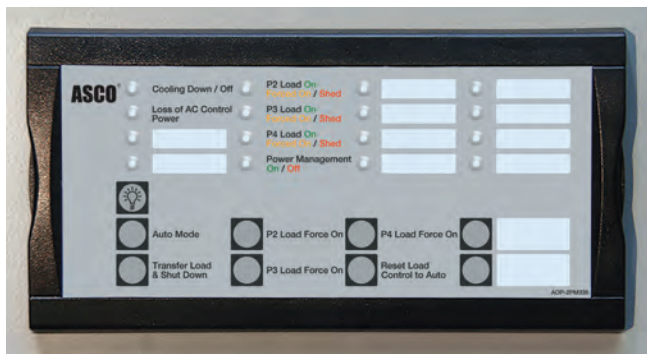
336 Product Components

'the 336 Paralleling System can detect and recover accordingly from common problems and automatically start the next generator in the system'





Generator Controls



Generator OIT



Master Control Panel with Optional Power Management

Powerful Management Tools

ASCO innovation has also led to the development of a Power Management option with a robust tool set that improves overall operation and efficiency.

Load Management – A unique feature that allows for up to four levels of load control. Priority one loads are given maximum protection by allowing lower priority loads (four, three, and then two) to shed first. Load shedding is accomplished by ASCO's time-proven algorithms based on the percentage of system load. The 336 Paralleling System adds load based on the actual KW entered during startup rather than the number of generator sets in operation. This unique approach works with any number of generators running.

Generator Management – The 336 Paralleling System's generator management feature will automatically start and stop generators as needed to maintain a preset spinning reserve or safety margin between the actual load consumed and the total power available from all running generators. This management tool saves generator maintenance costs and reduces fuel consumption for more efficient operation.

Start Next Generator on Alarm – The 336 Paralleling System automatically communicates with the genset control system to seamlessly maintain your critical loads. If a genset drops into a warning mode, an alarm sounds and the next priority generator is started and added to the bus, replacing the genset that caused the alarm.

Run Time Management – With this capability, generators can be set to automatically start and stop to control run time. Settings can be established to equalize running hours or intentionally offset running hours to stagger routine maintenance.

Parallel Dissimilar Generators

If you have different brands or various models of generators from the same manufacturer, the 336 Paralleling System is perfect for you. A dissimilar generator ground configuration option – another ASCO innovation – adds components to the 336 Paralleling System so it can be integrated with any generator, regardless of size or manufacturer. The option allows generators of different DC grounding schemes to be paralleled.

High Reliability

ASCO has incorporated a superior hub and spoke design into the 336 Paralleling System. This provides a added level of redundancy compared to daisy-chained systems, all of which means a single failure no longer results in the entire system shutting down.

Redundant electrical protection in the existing generator circuit breaker and the 336 Paralleling System provides a superior level of protection. A generator circuit breaker trip coil/wire break monitoring feature monitors the circuit breaker trip coil and may be programmed for trip or alarm of the genset.

Easily Expandable

The 336 Paralleling System brings an unprecedented level of modularity and expandability to a variety of applications. With front access options and a footprint as small as 28" D x 38" W, the 336 Paralleling System can be designed into compact power generation configurations. This design approach also requires minimal configuration in the base unit, eliminating the need for job-specific engineering.

Utilizing a modular approach, it is easy to expand a two-generator system to a four-unit configuration. The flexible design will also accommodate larger requirements with custom designs for customers. Additionally, UL891 distribution circuit breakers can easily be added with a standard bus interface.

Intuitive Operation

A simple control interface on the 336 Paralleling System allows the entire system to be started with a single contact or switch. Easy-to-operate fault tolerant controls, along with ANSI protective functions, ensure the CTTS will provide maximum protective functions for your power system with the added back-up of the generator circuit breaker for overcurrent faults.

An Operator Interface Terminal (OIT) features 16 programmable tri-color LEDs and 8 programmable push buttons. The OIT features functions for off/cool down, auto mode, priority load force on, and reset load management to auto.

Fits in Any Application

The reliability, size and cost benefits make the 336 Paralleling System perfect for a variety of environments.

Oil and Gas – The 336 Paralleling System can serve as a Parallel Power Island (PPI) or prime power system at fracking and drilling sites that require temporary primary power.

Healthcare – Hospitals and healthcare clinics can utilize the 336 Paralleling System as an affordable and reliable back up power system.

Grid Support – A perfect solution to meet demand in interruptible service or peak control programs to save you money. A multi-generator 336 Paralleling System may be a more cost-efficient and redundant solution than a single large generator.

System Solutions – The 336 Paralleling System can be combined with ASCO Series 300/4000/7000 Transfer Switches and PowerQuest® Critical Power Management Systems.

Oil and Gas



Healthcare



Grid Support



336 Ordering Information

G	0	0	3	3	6	A	3*	1200*	N*	0	0*	C*
Frame: G=G H=H	Future use	Future use	300 Series	Power Switching Device: 3=CTTS	Function: Gens: ¹ 6=1&2 7=3&4	A=Solid Neutral bus B=Switched Neutral	Poles: 3 (no 2)	Sum of Gen Amps=Amp Rating: ² 0600=600 0800=800 1000=1000 1200=1200 2000=2000 3000=3000 4000=4000	Voltage: C=208 D=220 E=230 F=240 H=380 J=400 L=440 M=460 N=480 R=600	Future use	Accessory: 0=No accessories or distribution. X=standard accessory Z=custom distribution panel(s) and/or accessories required. Add details in notes.	Enclosure type code C=Indoor, Type 1 M=Double Door / Secure: 3R D=Deep cabinet

*Note: These are all configured for 3 phase, so there is no voltage code for 120V or 277V.

1. Modularity/expandability: a 337 may be added later to a 336 system, provided the power distribution bus, if any, is done correctly. Be sure to match options! If 336 has 160PM or 160PS, be sure to order the same options for the 337.

2. Amp Rating is either the sum of generator rated currents rounded up to the next available rating size or equal to or less than the largest generator. Example: two 600A gensets will use a 1200 Amp Rating. Larger generators may be possible, please consult factory. Amp Rating automatically selects frame size in a cumulative configuration CT ratio.

336 Amp Ratings

amp rating choices	frame	CT ratio	Max recommended Per Gen KVA/KW @ .8PF & 480V	Max recommended Per Gen KVA/KW @ .8PF & 240V
600	J	300/5	250/200	120/100
800	H	400/5	330/260	170/140
1000	H	500/5	420/340	210/170
1200	H	600/5	500/400	250/200
2000	G3	1000/5	830/660	420/340
3000	G3	1500/5	1,250/1,000	620/500
4000	G4	2000/5	1,660/1,330	830/660

336 Dimensions

Sizes	Standard, no distribution				Optional Deep cabinet, no distribution				Standard, no distribution			
	Type 1			connections	Type 1			connections	Type 3R			connections
Frame	H	W	D		H	W	D		H	W	D	
1200	91	38	28	front	91	38	48	rear	96	41	28	front
3000	91	38	60	rear	91	38	72	rear	96	41	74	rear
4000	91	60	72	rear	91	60	96	rear	96	63	115	rear

Standard Accessories compatible with 336/337: Consult factory for details.

44A (space heaters), 73 (surge arrestor), 131 (ARRA compliance certification)

Accessories specific for 300 series products all start with 160:

160PM: Power Management includes: (On 4 gen systems, must be ordered on both 336 and 337 to work properly.)

- 4 levels of Load Management (Load Shed/Load Add), Priority 1 never sheds. Priority 2, 3, 4 loads are managed via ASCO option 30A in load ATS's.
- Bus Optimization (Gen Shed/Gen Add).
- Start Next Gen on Alarm.
- Run Time Management or Run Time Equalization.

160PS: Isolated power supplies are required for installations where the generators' DC systems have dissimilar grounding schemes and recommended for all installations. Consult product information for more details.

Must be ordered on both 336 and 337 products for proper operation.

160DS: Dissimilar Sized Gensets. Standard configuration is with 2 generators of the same size; order this option if the installation has 2 different sized generators. Sums of the currents must be below the Amp Rating. Specify gen sizes in notes.

160CD: Custom Drawings. Generic drawings are standard. For custom or "as installed" drawings, purchase this option.

161TD1: Color HMI. A 7" color touchscreen, the ASCO TDI. 1 HMI per 336. 1 HMI per 337. Preloaded with ASCO standard screens. Each HMI will display the data for the 2 gens in that section/on that CTTS. Includes a 72EE as an Ethernet switch. Consult product information for more details.

160LU: For special lugs

Cabling access:

1200A and below: Standard is front access for connections, optional rear access.

1201A and above is always rear access.

Optional Output Distribution breakers or Load Panel(s) requests are custom engineered and quoted for the specific project with UL891 switchgear with either UL489 or UL1066 style breakers. Contact 800-800-ASCO or E-mail customer@asco.com for technical questions, delivery times, and pricing.

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