ELECTRONIL POWER SOLUTIONS

ELECTRONIL PARALLELING SWITCHGEARS

Power Generators
Soundproofing Solutions
Power Transfer Switches
Paralleling Systems
Switchgears
Controls

Generator Maintenance
Services Agreements
Control System Upgrade
Battery Chargers
Spareparts
Consumables

ELECTRONIL POWER SOLUTIONS

SINCE 1

POWER IS W

WHY ELECTRONIL !

We are a group of fearless thinkers, driven to empower people all over the nation – with reliable, revolutionary generators, power systems and power solutions.

We are nearly 30 years in the Egyptian markets, and only getting better. For the last two decades, we have engineered and shaped the future, redefining what power means to people's lives, careers and lifestyles.

We exist for one reason: to move you forward.

WHAT WE DO

لم تختار منتجات إلكترونيل !

نحن مجموعة من المفكرين لا يخافون الإبتكار، مدفوعون بشغف تمكين عملائنا في جميع أنحاء البلاد - بمحطات توليد طاقة إعتمادية وموثوقة، بالإضافة إلى أنظمة وحلول متكاملة للطاقة.

لدينا ما يقرب من ٣٠ عاماً من الخبرة في الأسواق المصرية، ونعمل في تقدم دائم. على مدار العقدين الزمنيين الماضيين، قمنا بتصميم وصياغة المستقبل، وإعادة صياغة المعنى الحقيقي للطاقة الكهربية لحياة عملائنا وأعمالهم وأنماط حياتهم.

نعمل بجهد لسبب واحد: للحفاظ على تقدمكم.

WE ARE ELECTRONIL.

Our Capabilities

Power Generation Systems Design and Supply

Complex Standby Systems, Synchronization and Load Sharing Including Multiple Utility Grid

Parallel with Utility Grid Operation

Power Stations

Mains, Feeder and Load Shedding Control Systems

BMS, SCADA and Remote Monitoring Systems

Low-Voltage Panel Building

Engine Driven Compressors and Pumps

Marine Certified Systems

Water Pump and Dredging Control Systems

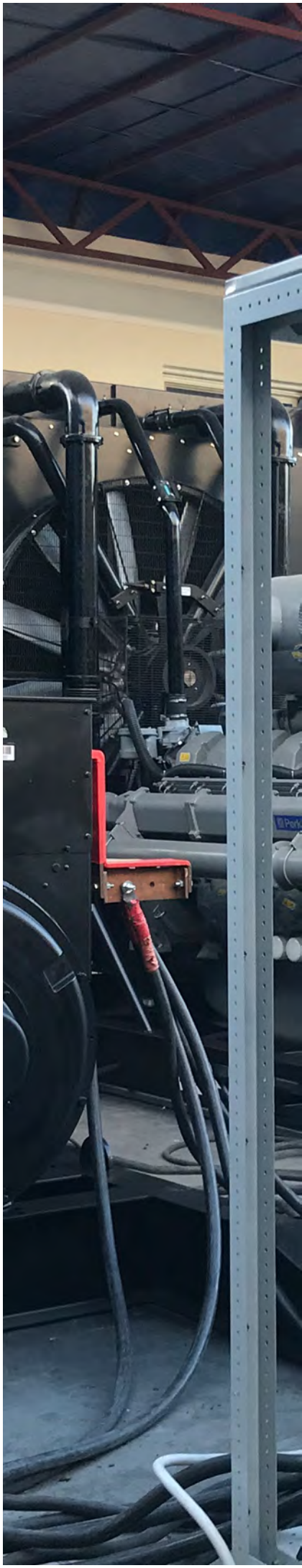
Design, Supply, Install, Commissioning, Startup and Service

Standard, Sophisticated and Bespoke Control Systems

Design

Engineering

Training and Technical Support




ELECTRONIC POWER SOLUTIONS

OUR STORY

A Magnificent force in power solutions since 1995, **ELECTRONIL POWER SOLUTIONS** is committed to reliable, intelligent products, advanced engineering and responsive after-sale support.

Over the years, we have amplified our well-known reputation to be a leader known for its premium range of generator-sets and control systems. Together, with building on the legacy of a leading brand, to create one of the largest generator-set and control systems providers in Egypt - and continued an unwavering focus on reliable power systems and innovation.

We deliver integrated industrial power systems for emergency, prime and continuous applications throughout whole Egypt—from data centers and hospitals to water treatment and hospitality facilities. With a deep understanding of your industry, we excel in designing customized power systems that simplify your most complex challenges.

من نحن

تُعد شركة **إلكترونيل لحلول الطاقة** قوة رائدة في مجالات حلول الطاقة الكهربية منذ عام ١٩٩٥، ومنذ ذلك الحين ونحن نلتزم بإمداد عملائنا بمنتجات موثوقة وذكية ومتطورة هندسياً بالإضافة إلى دعم سريع الاستجابة لخدمة ما بعد البيع والصيانة.

على مر الأعوام، ضاعفنا من سمعتنا المعروفة لكوننا من أكبر الكيانات الرائدة والمعروفة بمنتجاتها المتميزة من وحدات توليد الطاقة الكهربية وأنظمة التحكم والحماية والتشغيل. بالإضافة إلى، واستنادًا إلى إرث علامة تجارية رائدة، قمنا بإنشاء واحد من أكبر مزودي الأسواق المصرية بأنظمة الطاقة المتكاملة وأنظمة تحكم وتشغيل وحماية إعتمادية وموثوقة على مستوى جمهورية مصر العربية - واستمر التركيز المستمر على إبتكار أنظمة طاقة متكاملة وموثوقة ومتطورة.

نقوم بتقديم أنظمة توليد طاقة صناعية متكاملة لتطبيقات الطوارئ والمحطات الرئيسية والطاقة المستمرة في جميع أنحاء جمهورية مصر العربية - من مراكز المعلومات والمستشفيات إلى محطات معالجة مياه الشرب والصرف الصحي والفنادق. بدراسة وفهم عميق لمجال عملك، نتميز في تصميم أنظمة طاقة متكاملة ومتخصصة والتي تعمل على تبسيط التحديات الأكثر تعقيدًا التي يمكن أن تقابلك.

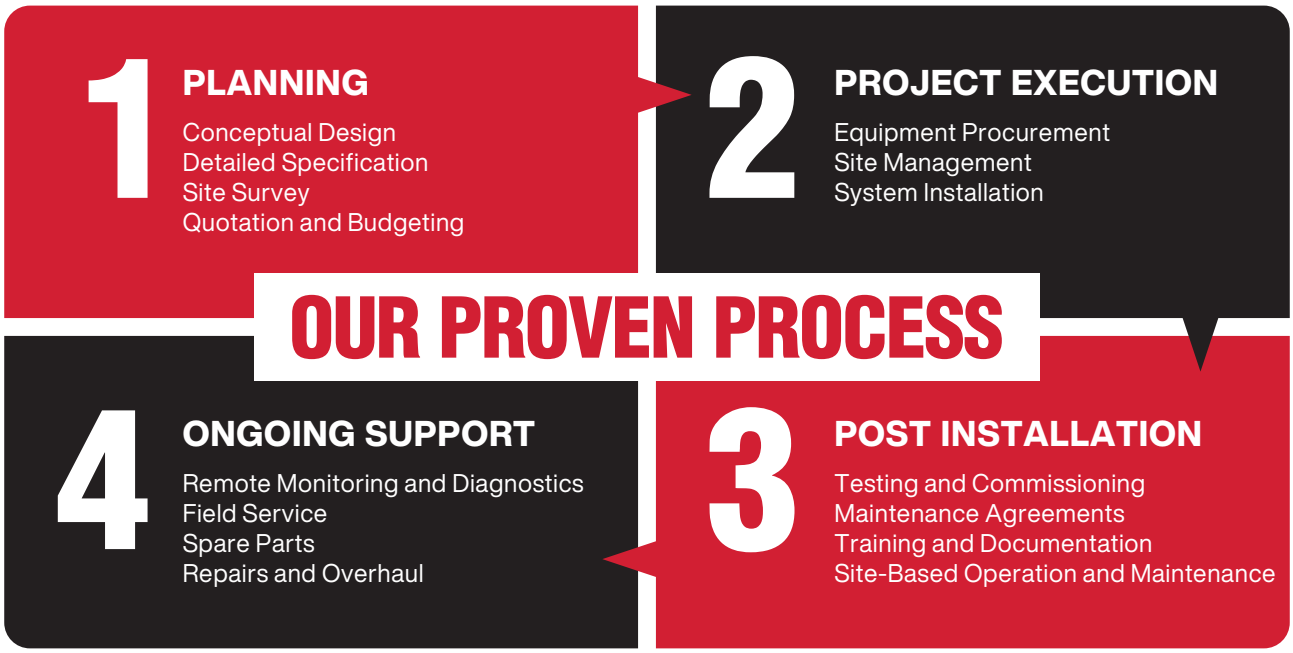
TOTAL SYSTEM INTEGRATION

Everything works together, Just as it should.

A Power System is only as good as the parts that define it. That's why we engineer every detail down to the last bolt. From generators and power transfer switches to paralleling systems and switchgear and controllers, everything works together seamlessly. Because we design, engineer and test it that way.

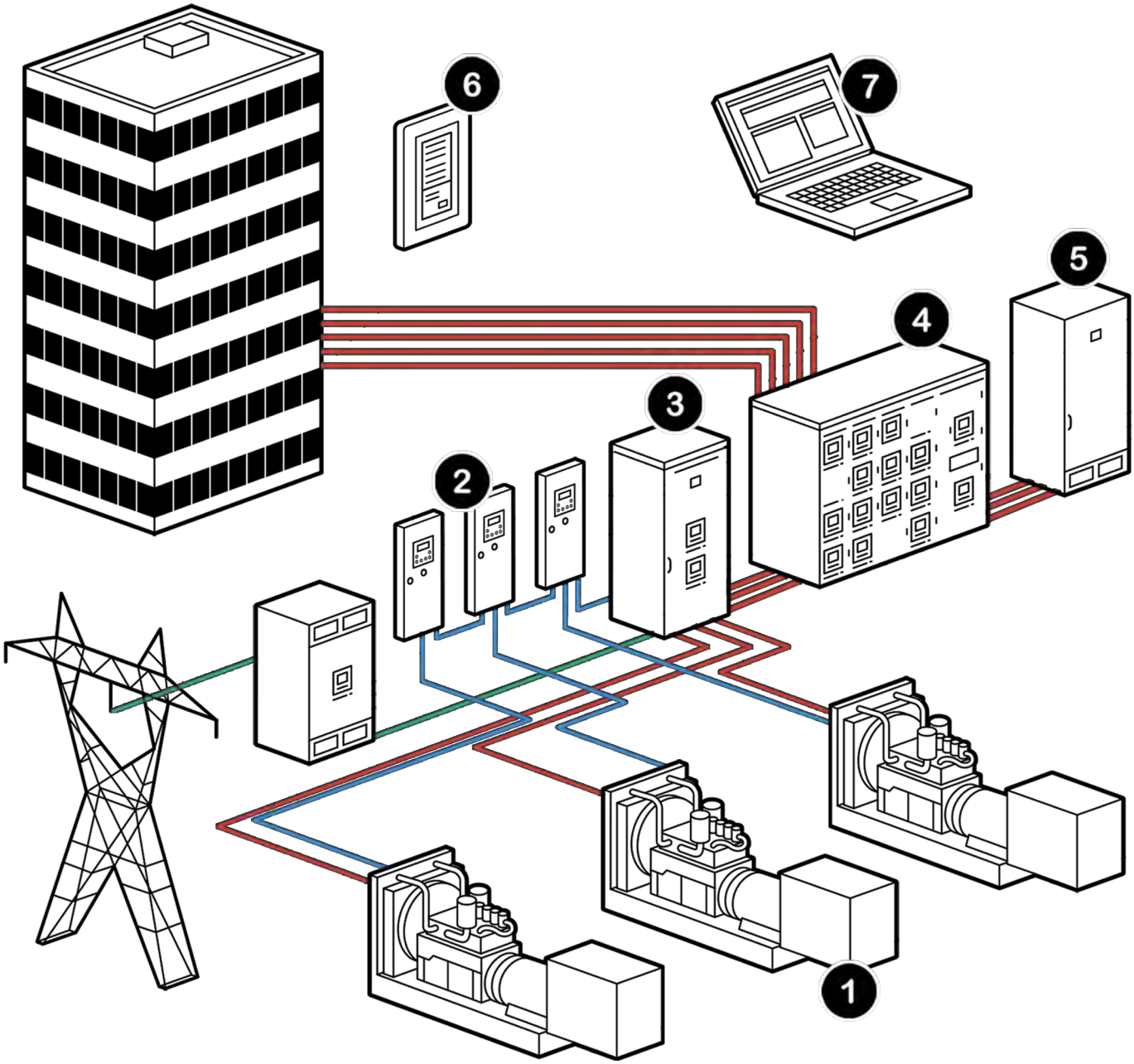
And that's the ELECTRONIL Difference.

Good news: There is more, behind that power system, there is a team of dedicated engineers that focuses on every element-generators, power transfer switches, switchgears and control systems — to be sure that the system you get is the system you need. You will know that your project is supported by an expert team, customized to your exact needs, brought in on budget and on time.



From spec to start-up to service, WE DO IT ALL.

Discover more at electronil.com/total_system_integration



TOTAL SYSTEM INTEGRATION

1. **ED SERIES DIESEL GENERATORS**
   Powered by Perkins, Volvo-Penta, or Cummins Diesel Engines, 9 - 3000 kVA

2. **ENCP 9.1 GENSETS PARALLELING SYSTEM**
   2-32 Generator set paralleling system with automatic power management and automatic engine run-hour balancing.

3. **ENCP 9.3/ENCP 6.x TRANSFER SWITCH**
   40-4000 A Power transfer switches, available in standard, bypass-isolation and service entrance switch configurations.

4. **ELECTRONIL POWER DISTRIBUTION PANEL**
   MCB, MCCB and ACB, Up to 6000 Amps.

5. **ELECTRONIL POWER FACTOR CORRECTION SYSTEMS**
   Up to 15 steps.

6. **REMOTE ANNUNCIATOR**
   Optional remote system monitoring.

7. **THE SUPERVISOR MONITORING SOFTWARE**
   Monitors generators and control systems from a PC and Smart Phones (Optional) Modbus or Ethernet.

ELECTRONIL PARALLELED POWER SYSTEMS

TOTAL INTEGRATION,
From Top To Bottom.

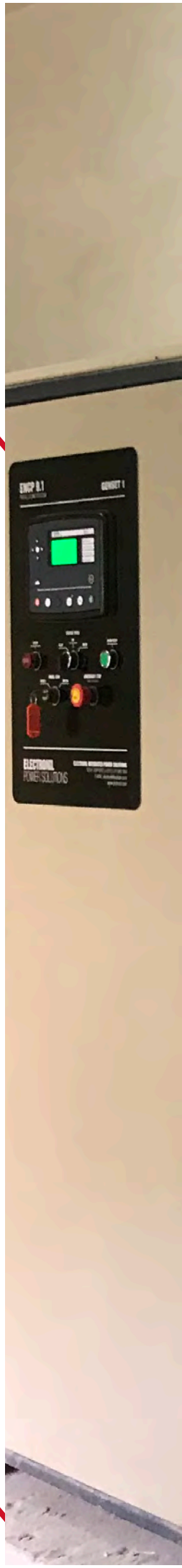
When it comes to paralleling systems, we offer 100% integration.

Our **ELECTRONIL PARALLELED POWER SYSTEMS** Designed, Engineered and Factory-Tested as a complete system, rather than built from parts from multiple manufacturers like some competitive products.

Comprised of our **ED SERIES GENERATORS**, **ENCP 9 SERIES PARALLELING SYSTEMS**, and **EBC SERIES BATTERY CHARGERS.** The **ELECTRONIL PARALLELED POWER SYSTEMS** delivers dependable power across multiple applications. Combine that with our extensive network of sales and service technicians, and you've got what everyone wants:

peace of mind.

Discover more at
electronil.com/paralleled_power_systems




ENCP 9.1
GENSET 2
ELECTRONIL
POWER SOLUTIONS
4
ENCP X
HUMAN MACHINE INTERFACE
MASTER CONTROLS
ELECTRONIL
POWER SOLUTIONS
5
ENCP 9.1
PARALLELING SYSTEM
GENSET 3
CHARGE MODE
PANEL LOCK
EMERGENCY STOP
ELECTRONIL
POWER SOLUTIONS
ELECTRONIL INTEGRATED POWER SOLUTIONS

THE BENEFITS OF PARALLELING GENE

Maximize Your System's Flexibility.

While it may be common for a facility to install a single large generator to meet its power needs, paralleling two or more generators offers a number of practical benefits and advantages over a single-generator system.

REDUNDANCY

The redundancy provided by the paralleling of two or more generators delivers greater reliability and flexibility than a single generator can provide. In critical applications, having more than one generator connected to the bus at all times ensures continuous generator power in the unlikely event that a generator fails.

Discover more at
electronil.com/paralleled_power_systems

EFFICIENCY

Instead of one large generator that might operate at an inefficiently low kW, several small generators can be paralleled together and turned on and off as necessary to efficiently support the varying demands of the load.

In situations where your load needs require one genset, you'll run more efficiently. And that kind of efficiency can result in big savings. Because our **ENCP 9 Series** control systems automatically turns off any generators in your system when needs are low, you'll benefit from immediate fuel savings and reduce running time for greater generator longevity.

ERATORS.

ENCP SYNC

COST-EFFECTIVE

In many cases, paralleling two or more gensets to produce the same output as a larger single unit results in significant cost savings.

For example: you can **save up to 20%** when **paralleling three 500 kW units** compared to one 1500 kW unit.

SPACE CONSTRAINTS

By using gensets with smaller footprints instead of one larger unit, the Paralleled Generators System provides greater location flexibility. The multiple units can be placed where a single genset won't fit, so space is used more efficiently. And because the weight of multiple units can be distributed, rooftop installation is even possible - something you simply can't do with many large single-generator sets.

POWER REQUIREMENTS

If the largest available generator is too small to meet your power requirements, two or more generators can be paralleled to provide the necessary power.

FUTURE GROWTH

A Paralleled Generators System can be designed to add additional generators as your facility's load requirements expand.

Purchase the Paralleled Generators System that fits your budget today. And, in the future, it can easily expand as your needs and budget allow. That way, you'll never have to worry about replacing a system you've outgrown.

THE ELECTRONIL DIFFERENCE.
OUR PROVEN PROCESS.

We carefully consider your requirements and develops a solution that meets your needs. Every design starts with our proven, time-tested process that builds your system to your exact requirements.

Our experienced engineering team helps you every step of the way, determining and specifying your requirements, designing the system and providing easy-to-read drawings and documentation. ELECTRONIL's rigorous testing and careful commissioning ensure that your paralleling switchgear is always ready to supply generator power when needed.

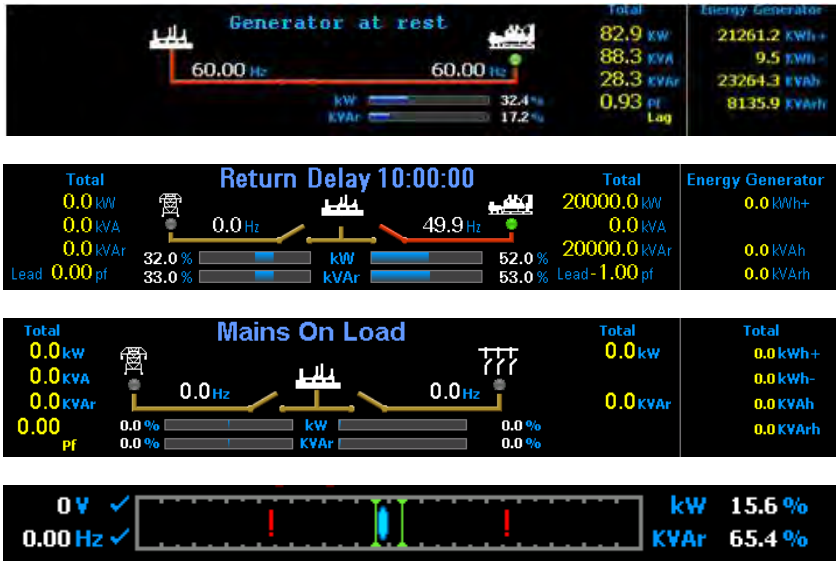
NO GUESSWORK

Our ENCP Paralleling System's sequence of operation eliminates the guesswork by detailing each step of every sequence.

It clearly describes how the system works, what happens if there is a failure to simplify the actions an operator can take to maintain power.

INTUITIVE USER INTERFACE

It is as simple as pressing the start button. Watch the screen as the system moves step-by-step through the sequence.



FAULT-TOLERANT PROGRAMMING

If a breaker fails to open or close and the system is unable to complete the operating sequence, the system will respond to the fault and seek a source of power to the load. This programming also allows for a transition from manual mode to automatic mode regardless of the state the system is in.

SEAMLESS SYSTEM INTEGRATION

With ELECTRONIL's Total System Integration, every component-from generator and power transfer switches to paralleling switchgear and controllers - designed, built and tested to work together seamlessly.

TYPICAL PARALLELING APPLICATIONS.

MATCH THE SYSTEM TO YOUR POWER NEEDS.

ELECTRONIL Provides the system and operating modes that meet the needs of your facility, whether you require simple standby power or multiple-utility paralleling and emergency power, prime power or peak shaving.

EMERGENCY / STANDBY

The generators provide power in the event of a loss of utility service. Power transfer can take place at the transfer switch or by using the breakers in the switchgear.

Figure 1 shows a typical ATS-based emergency/standby power system. The generator power is combined onto the paralleling bus.

Power flows through the feeder breakers in the paralleling switchgear to the emergency connection of the ATS.

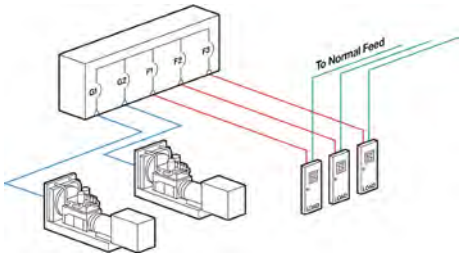


Figure 1

SINGLE-UTILITY SYSTEM

Figure 2 shows a typical single-utility system in which the entire facility is placed on generator power. During a power outage, the utility main breaker opens; after a user-selected number of generators are online, the generator main breaker closes. The return to utility power can be open, closed or soft. Because the generator main breaker separates the load bus from the generator bus, the generators can be paralleled in test mode without affecting the load.

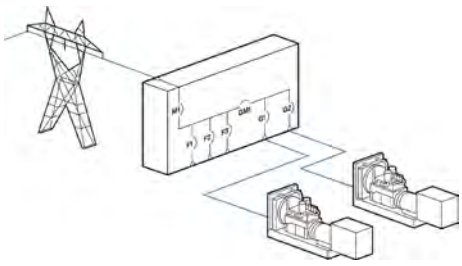


Figure 2

DUAL-UTILITY SYSTEM (LINEAR)

Figure 3 shows a typical dual-utility system. This can be one lineup or a separate “N and “B” lineup connected by tiebreakers. If there is a loss of only one of the utility feeds, the system can be programmed to place that side on generator power, transfer all the loads to the remaining good utility or transfer the entire system to generator power. When the utility returns, the transfer back to utility can be open, closed or soft. If the system is on generator power because both utilities fail and only one utility returns, the system can be programmed to return that side to utility power, return all loads to the one good utility or wait until both utilities return before automatically returning to utility power.

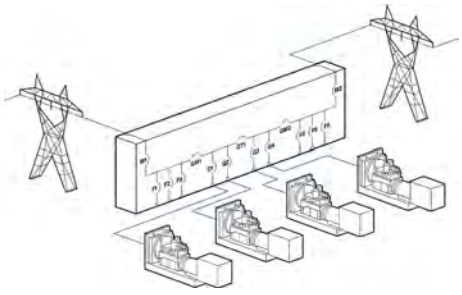


Figure 3

DUAL-UTILITY SYSTEM (RING)

Figure 4 shows a typical dual-utility system in which the utility bus and generator bus are separate lineups. The available sequence of operations is similar to the linear dual-utility system.

The advantage of the ring dual-utility configuration over the linear configuration are:

- The ability to feed the entire system with one utility feed without energizing the generator paralleling bus.
- The ability to automatically respond to the generator's main breakers failing to close and provide an alternate path to feed generator power to the load.

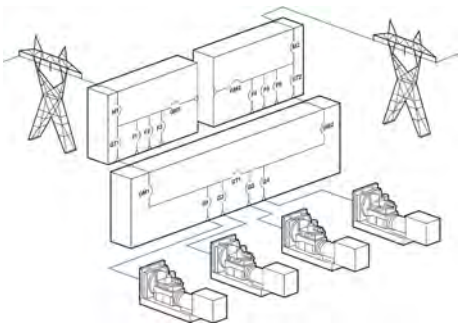


Figure 4

PEAK SHAVE

Peak shaving reduces your facility's electrical power consumption during periods of high demand on the power utility. A peak shave system can remain paralleled to the utility or remove your facility's loads from the utility and place them on generator power.

BASE LOAD MODE

The generators remain paralleled to the utility, producing power at a preset base load level. If the facility's load is less than the base load set point, the extra power is exported to the utility. As shown in Figure 5, the shaded area is generator power exported to utility.

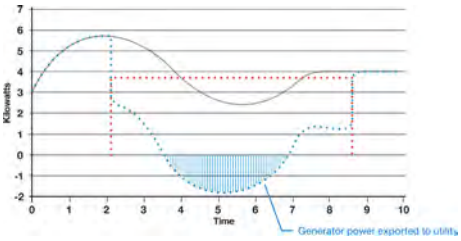


Figure 5

IMPORT MODE

The generators remain paralleled to the utility, producing power and maintaining a preset kW level flowing in from the utility. Generator output varies to support the load and maintain the fixed amount of power from the utility.

If the load is high, the maximum generator output is limited to the base load kW set point. Figure 6 shows the generator output ranging with load to maintain constant power from the utility.

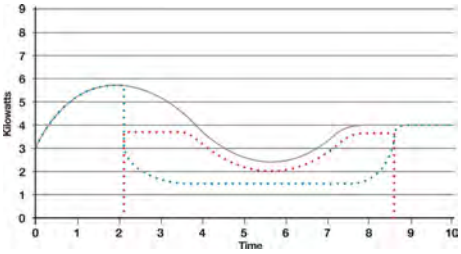


Figure 6

INTERRUPTIBLE MODE

The generators are paralleled to the utility, the facility load is transferred from the utility to the generators, and the main breaker opens, separating the facility from the utility.

HOW PARALLELING WORKS.

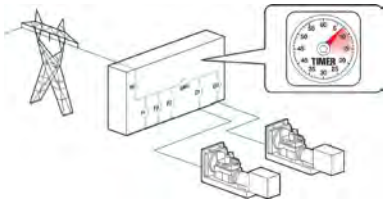
IT'S ALL ABOUT THE CONTROLS.

Let's look at a typical response to loss of utility power.

When a loss of utility power occurs, almost every system responds with the basic sequence shown here.

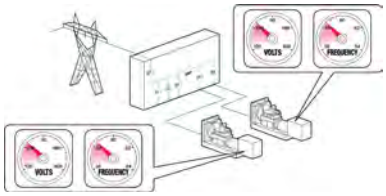
1 | ENGINE START DELAY

A timer starts when there is a loss of utility. If utility returns before the timer expires, the system does not start. If the utility outage is long enough for the timer to expire, the system will commit to transferring to generator power.



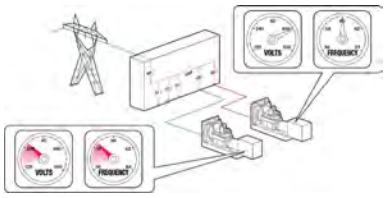
2 | START-UP / LOAD SHED

All available generators start. If the system is designed to supply power to loads as soon as one generator is online (typical for systems serving critical and life-safety loads), low-priority loads are shed or are inhibited from transferring. This prevents the first-on generator from being overloaded.



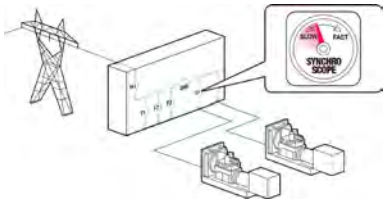
3 | FIRST GENERATOR BREAKER CLOSES

The first generator to reach the rated voltage and frequency closes to the bus. First-on logic prevents multiple generators from simultaneously closing to the bus. The bus is now energized, and power is available to the load. Low-priority loads remain shed with F2 and F3 still open.



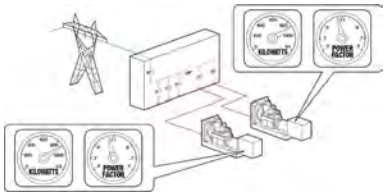
4 | SYNCHRONIZATION

The incoming generator's voltage, frequency and phase are matched to the running bus. When matched, the generator-paralleling breaker closes.



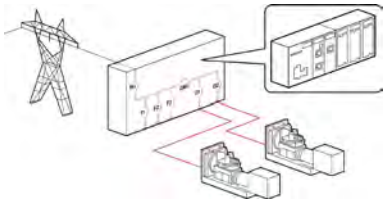
5 | SECOND GENERATOR BREAKER CLOSES / LOAD SHARING

Additional generator power is available to the load. The system's load-sharing controls actively control the kW and kVAr output of each generator in order to proportionally share the load (according to the power ratio of each generator) and maintain rated frequency and voltage.



6 | LOAD MANAGEMENT

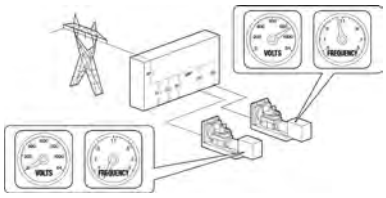
As additional generators close to the bus, more power is available for the load. The load management of the system actively adds loads based on bus capacity available.



7 | POWER MANAGEMENT

Power management optimizes the number of online generators based on the load's kW demand, starting and stopping generators as required. Generators are sequenced on in order of operator-assigned priority (or based on runtime) and taken off in reverse priority.

Operator-defined set points determine the percent load level and time delay at which the genset will be brought on or taken offline.



HOW PARALLELING WORKS.

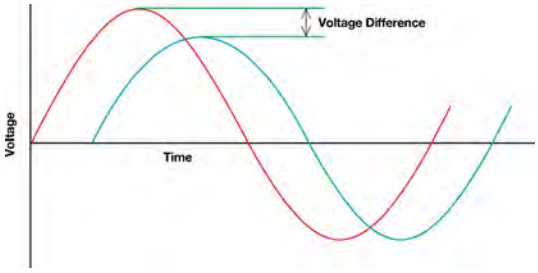
SYNCHRONIZATION AND LOAD MANAGEMENT.

SYNCHRONIZATION

Let's take a detailed look at the synchronization process. Our ENCP 9 Series Generators Paralleling System's and the ENCP X Generators Paralleling Switchgears, matches the incoming generator's output (waveform) to the running bus. When the voltage, frequency and phase are all matched, the automatic synchronizer will close the incoming generator's circuit breaker.

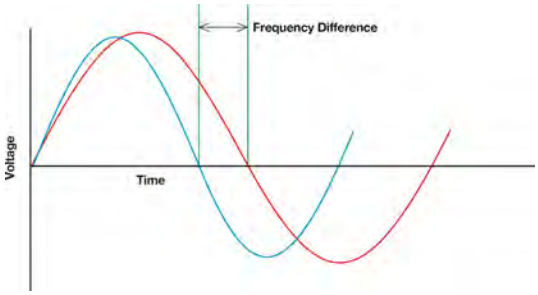
VOLTAGE MATCH

The synchronizer adjusts the incoming generator's voltage to match the running bus.



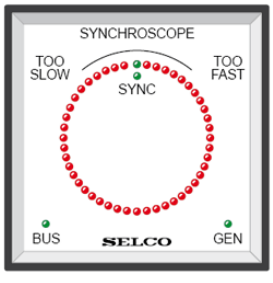
FREQUENCY MATCH

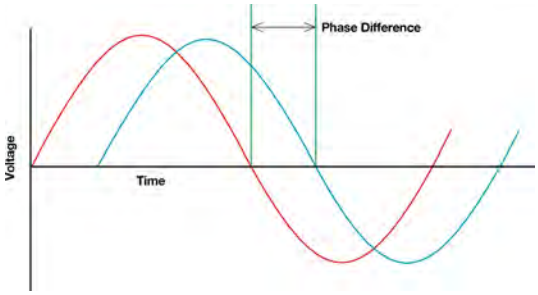
The synchronizer adjusts the incoming generator's speed to match the frequency of the running bus.



PHASE MATCH

The synchronizer adjusts the incoming generator's speed to match the phase of the running bus. When matched, the two sine waves will be the same.





LOAD MANAGEMENT (Optional Feature)

Each load is assigned to a priority level. Load management determines when priority levels are signaled to disconnect (shed) and reconnect (add). When multiple generators are online, load management matches the load to the generator capacity.

The system can control feeder breakers or transfer switches. Dry contacts or communications can be provided (upon request) to interface with your building management system (BMS).

In a paralleled generator system, it is imperative to plan for the unlikely event of a generator failure. Removing or shedding load prevents the remaining online generators from overloading and tripping offline.

LOAD ADD

Loads can be added based on several considerations including:

- **Generator bus capacity:**

  Loads are added based on the kW capacity of the bus and an assumed kW demand of the load.

- **Number of generators on line:**

  Loads are added based on how many generators are connected to the bus; this is most effective in systems with same-size generators.

LOAD SHED

A load-shed event can be triggered by multiple parameters including:

- **Generator failure:**

  Loads are shed based on the number of failed gensets.

- **kW overload:**

  When the generators reach their overload set points, low-priority loads sequentially shed until the load falls below the overload set point.

- **Under frequency:**

  Under frequency is often an indication that the generators are fully loaded and cannot supply additional power to the load. When the bus frequency reaches its under frequency set point, preset loads are shed.

TRANSITION TYPES.

Customized to Your Needs.

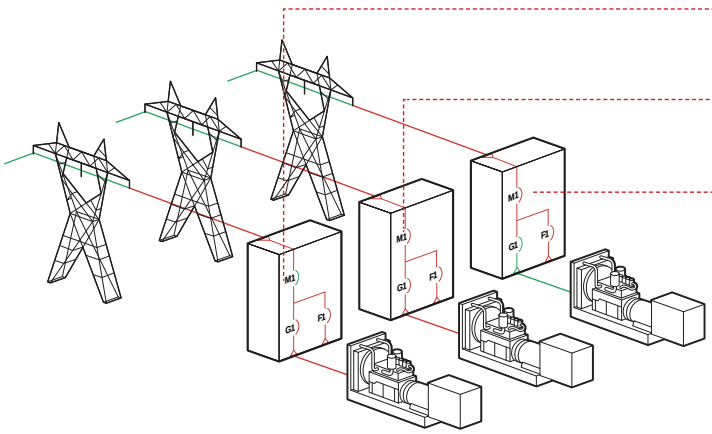
ELECTRONIL Paralleling Switchgears can be configured with the transition type you need. From a basic open to a soft (ramp) transfer, ELECTRONIL Will customize your system to meet your requirements.

CLOSED TRANSFER

In a closed transfer, the source from which the load is being transferred and the source to which the load will be transferred are connected together momentarily. After both sources are closed, the source from which power is being transferred is opened. If the system is configured for fast transfer, the source from which the power is being transferred will open within 100ms. if the system is configured for soft (ramp) transfer, the load will be transferred at a user-adjustable kW/sec rate until the source from which the power is being transferred reaches the low-load set point. The load remains energized during the transfer from one source to the other.

Example

Closed transfer from generator power to utility power after a power outage.



STEP 1

Utility power return timer expires. (M1 Open / G1 Closed)

STEP 2

After the generator is in synch with the utility, M1 closes. (M1 Closed / G1 Closed)

STEP 3

FAST TRANSFER: G1 opens within 100ms

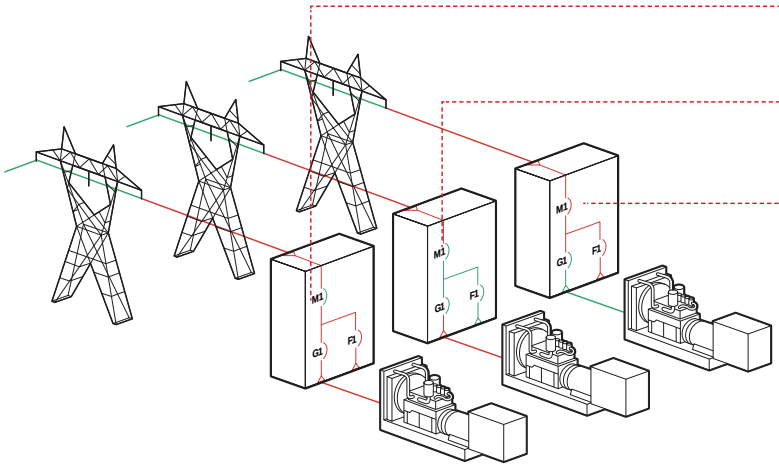
SOFT TRANSFER: G1 opens after the generator ramps down to its unloaded setpoint. (M1 Closed / G1 Open)

OPEN TRANSFER

The load is disconnected from one source before being connected to the other source. The load is without power for the duration of the open-transfer time delay.

Example

Open transfer from generator power to utility power after a power outage.



STEP 1

Utility power return timer expires. (M1 Open / G1 Closed)

STEP 2

G1 opens and the open transfer timer starts. (M1 Open / G1 Open)

STEP 3

Open transfer timer expires, M1 closes. (M1 Closed / G1 Open)

SEQUENCE OF OPERATION.

System Response Step-By-Step.

ELECTRONIL's Unique approach to our sequence of operation differs from the typical narrative-based sequence.

Ours is a fixed flowchart that eliminates the guesswork and ambiguity from knowing how your system will respond to normal operation (ie, mains abnormal).

- Easy to understand.
- Clearly shows system response, and timing of response.
- Provides an LED for each power source and each circuit breaker status.

SYSTEM RESPONSE

This lists the steps the system takes from initial state to final state:

- The initial state shows the status of each breaker in the transfer sequence and the status of each power source in the system.
- The first step is the triggering event that starts the sequence. This could be the receipt of a remote start signal, a utility grid failure or an operator pushing a start button.
- Next is a description of each step required to get to the final desired state, along with the corresponding system response.
- Finally, the final state for each circuit breaker is described, along with the power status of each bus in the system.

Generally, for each response that involves a circuit breaker opening or closing or a timer starting, the system will issue an alarm message describing if a circuit breaker fails to open, a circuit breaker fails to close, no power source to load or something happens to prevent a timer from timing out. Other responses as if a generator fails to start, a generator fails while running or a generator becomes overloaded is described as well.

THE OPERATOR INTERFACES.

System Control at Your Fingertips.

The operator interface monitors and controls the system and is customized to your project.

It is specifically designed and chosen to be user-friendly and eliminate guesswork, letting the operator focus on the task at hand instead of wondering how to navigate through the screens.

Whether the user is advanced or a first-time operator of the system, the ELECTRONIL ENCP 9 Series Generator Paralleling Systems, and ENCP X Generator Paralleling Switchgears interface provides the information in a simple but comprehensive way.

INTUITIVE OPERATION

With basic knowledge of paralleling switchgears, the operator can navigate the system simply and intuitively without reading a manual. The intuitive interface eliminates fear of operational errors by clearly showing each step in the sequence before initiated.

THE RIGHT INFORMATION AT THE RIGHT TIME

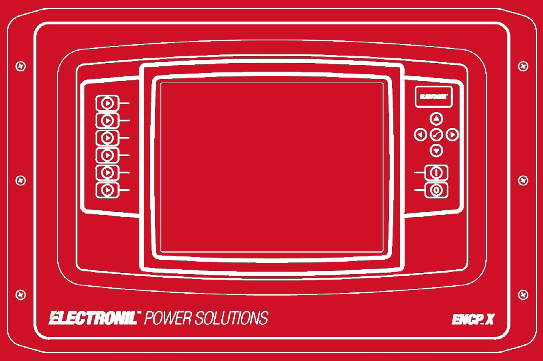
By providing pertinent information on each screen, the operator always knows the status of each power source and each circuit breaker in the system.

THE OPERATOR INTERFACES.

Examples of Controls.

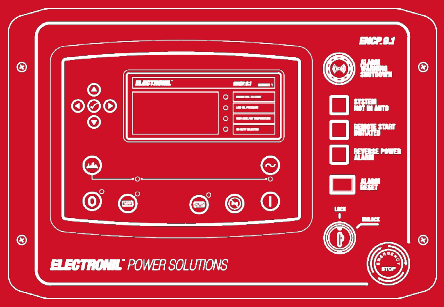
HUMAN MACHINE INTERFACE (ENCP X)

- Offers comprehensive large screen graphs, charts metering, trend analysis, power display and engine status information in a clear image and text format.
- User selectable display (widgets) allow customization of the lower part of the 10” screen.
- RS232, RS485 and Ethernet communications.
- Configurable display options, with protected front panel configuration.
- Data communication link allows remote system management.



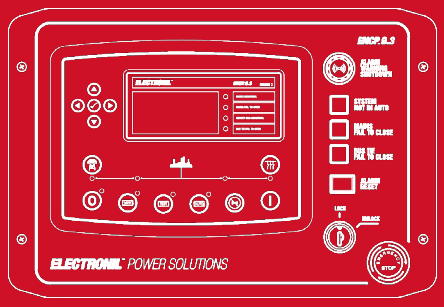
GENERATOR SCREEN (ENCP 9.1)

- Used to monitor and manually control the generator set.
- Contains typical controls such as 5-buttos navigation keypad, generator set modes of operation (OFF/MANUAL/AUTO/START) buttons, ALARM MUTE button, and Circuit Breaker manual control buttons.
- Shows generator set status and metering information.



UTILITY GRID SCREEN (ENCP 9.3)

- Used to monitor and control the transfer from generators power to utility-grid power.
- Contains typical controls such as 5-buttos navigation keypad, system modes of operation (OFF/MANUAL/TEST/AUTO/START) buttons, ALARM MUTE button, and Source-Changeover manual control buttons.
- Shows utility-grid and generators parallel bus status and metering information.



ENCP SYNC

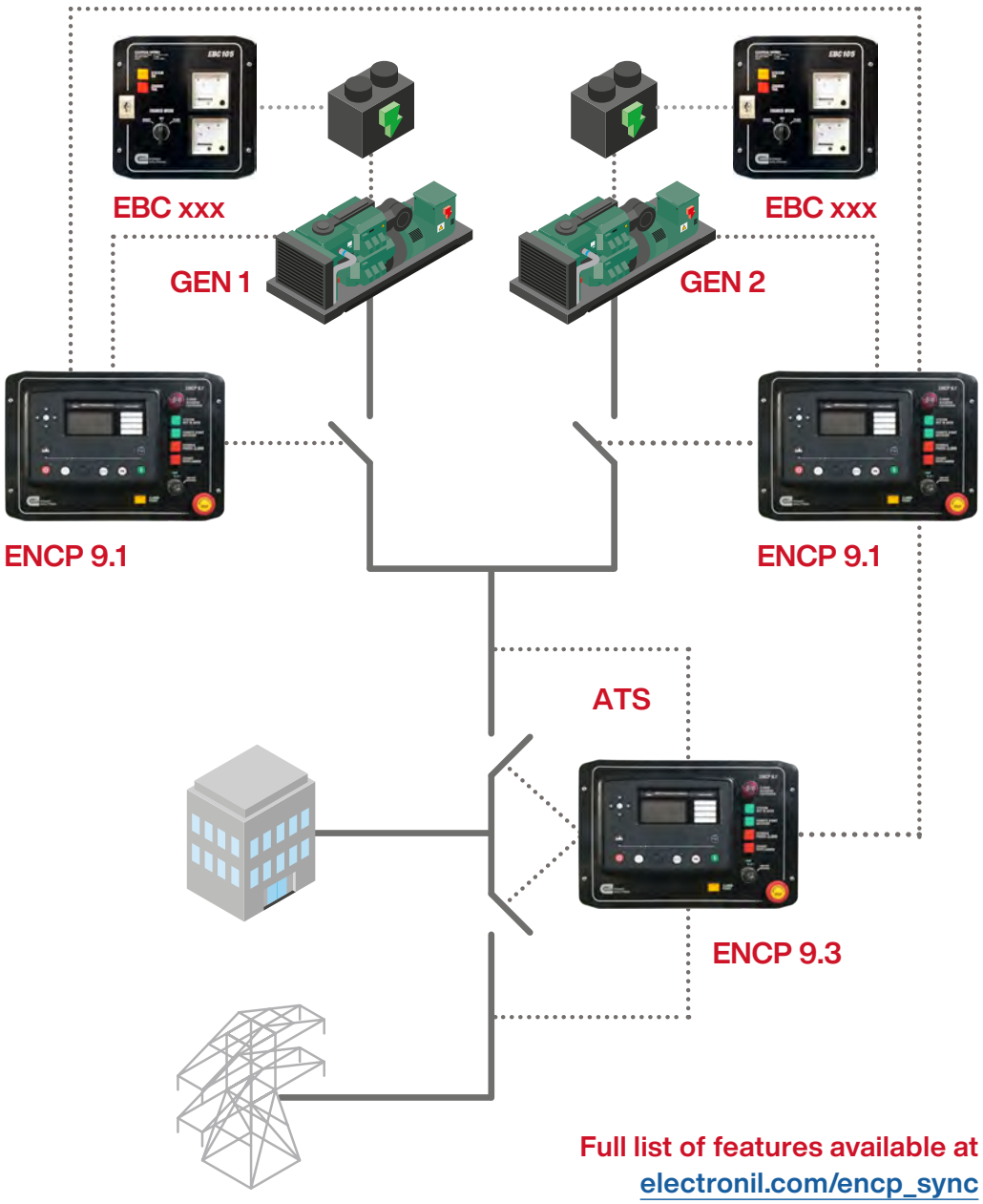
GENERATOR PARALLELING CONTROLLERS.

The ENCP 9 Series is an easy to use Synchronizing Auto Start Control System suitable for use in a multi-generator load share system, designed to synchronize up to 32 generators including electronic and non-electronic engines.

The ENCP 9 Series Monitors the generator and indicates operational status and fault conditions, automatically starting or stopping the engine on load demand or fault condition.

With all communication ports capable of being active at the same time, the ENCP 9 Series is ideal for a wide variety of demanding load share applications, from a single module to the paralleling and load sharing of multiple units. The systems can be further customized to meet your needs through programming and expansion modules.

The ENCP 9 Series features a graphical display with an adjustable backlight as well as an advanced engine monitoring system. These features add to the sense of value and dependability that comes with your purchase of ELECTRONIL Products.

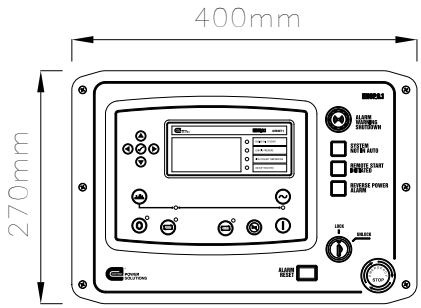


Full list of features available at
electronil.com/encp_sync

ENCP 9.1

GENSET / GENSET PARALLELING CONTROLLER.

Image for illustration purposes only,
Depending on your application the actual product may vary.



Overall Size: 400x270mm

PRODUCT HIGHLIGHTS

- Independent fuel and crank outputs
- 5 stage dummy load and load shedding outputs
- Independent RS485, RS232, CAN, USB and Ethernet
- MODBUS RTU / TCP IP
- SNMP
- SCADA software
- Conventional engine support (MPU & Hz)
- CAN engine support (Tier 4F / Stage 5)
- Generator load demand with sequential set start
- 0-10 V & 4-20 mA oil pressure sensor support
- Power monitoring
- RoCoF and vector shift monitoring
- Automatic hours run balancing
- Sophisticated fuel monitoring and alarms
- 3-phase generator voltage and current sensing
- Sophisticated bus sensing (3-phase)
- Direct governor and AVR control
- Advanced SMS messaging
- Advanced PLC editor
- Support for worldwide languages
- Extensive data logging & trending
- Start & stop via SMS messaging

ADVANCED FEATURES

INPUTS/OUTPUTS

- (12) Configurable digital inputs.
- (4) Configurable analog/digital inputs.
- (8) Configurable DC outputs.
- (2) Configurable flexible sender inputs.
- (2) Configurable Volt-free outputs.

COMMUNICATIONS

- Independent ports for RS485, RS232,
- CAN, USB and Ethernet
- MODBUS RTU
- USB for PC configuration
- SCADA software

ENGINE COMPATIBILITY

- Conventional engine support (Hz)
- CAN engine support (Tier 4F / Stage 5)

CONFIGURATION

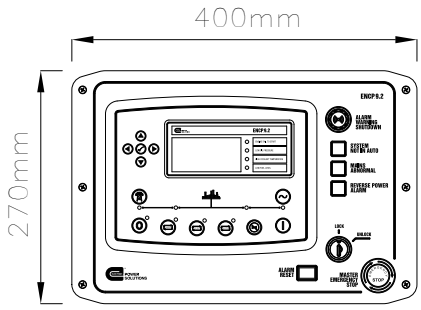
- Configuration Suite PC software
- Front panel (PIN protected)

Full list of features available at
electronil.com/encp_9.1

ENCP 9.2

SINGLE GENSET / MAINS PARALLELING CONTROLLER.

Image for illustration purposes only,
Depending on your application the actual product may vary.



Overall Size: 400x270mm

PRODUCT HIGHLIGHTS

- Independent fuel and crank outputs
- 5 stage dummy load and load shedding outputs
- Independent RS485, RS232, CAN, USB and Ethernet
- MODBUS RTU / TCP IP
- SNMP
- SCADA software
- Conventional engine support (MPU & Hz)
- CAN engine support (Tier 4F / Stage 5)
- 3-phase mains & genset voltage and current sensing
- 0-10 V & 4-20 mA oil pressure sensor support
- Peak lopping and peak shaving functionality
- kW & kV Ar load sharing
- RoCoF and vector shift protection
- Automatic mains (utility) decoupling with no-break return
- Positive & negative kVAr export control
- Volts and frequency matching
- Sophisticated fuel monitoring and alarms
- Direct governor and AVR control
- Advanced SMS messaging
- Advanced PLC editor
- Support for worldwide languages
- Extensive data logging & trending
- Start & stop capability via SMS messaging

Full list of features available at
electronil.com/encp_9.2

ADVANCED FEATURES

INPUTS/OUTPUTS

- (12) Configurable digital inputs.
- (4) Configurable analog/digital inputs.
- (8) Configurable DC outputs.
- (2) Configurable flexible sender inputs.
- (2) Configurable Volt-free outputs.

COMMUNICATIONS

- Independent ports for RS485, RS232,
- CAN, USB and Ethernet
- MODBUS RTU
- USB for PC configuration
- SCADA software

ENGINE COMPATIBILITY

- Conventional engine support (Hz)
- CAN engine support (Tier 4F / Stage 5)

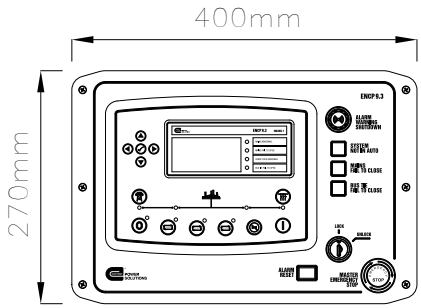
CONFIGURATION

- Configuration Suite PC software
- Front panel (PIN protected)

ENCP 9.3

MULTI-GENSET / MAINS PARALLELING CONTROLLER.

Image for illustration purposes only,
Depending on your application the actual product may vary.



Overall Size: 400x270mm

PRODUCT HIGHLIGHTS

- Independent RS485, RS232, CAN, USB and Ethernet
- MODBUS RTU / TCP IP
- SCADA software
- 3-phase mains (utility) voltage and current sensing
- Peak lopping and peak shaving functionality
- kW & kVAr load sharing
- RoCoF and vector shift protection
- Mains (utility) kW export protection
- Automatic mains (utility) decoupling with no-break return
- Generator load demand
- Advanced SMS messaging
- Advanced PLC editor
- Support for worldwide languages
- Data logging & trending
- Multiple event scheduler
- Native no bus breaker support for signal ATS applications
- Separate ramp up and ramp down rates configurable via PLC

ADVANCED FEATURES

INPUTS/OUTPUTS

- (11) Configurable digital inputs.
- (2) Configurable Volt-free outputs.
- (6) Configurable DC outputs.

COMMUNICATIONS

- Independent ports for RS485, RS232, CAN, USB and Ethernet
- MODBUS RTU / TCP IP
- SCADA software
- USB for PC configuration

CONFIGURATION

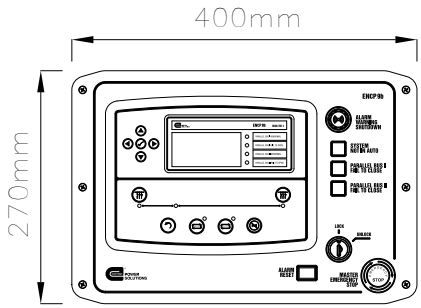
- Configuration Suite PC software
- Front panel (PIN protected)

Full list of features available at
electronil.com/encp_9.3

ENCP 9b

PARALLEL BUS / BUS PARALLELING CONTROLLER.

Image for illustration purposes only,
Depending on your application the actual product may vary.



Overall Size: 400x270mm

PRODUCT HIGHLIGHTS

- Enhanced bus sensing of 2 buses for improved synchronizing functionality
- Multiple controller's can be used within one synchronizing system
- Advanced PLC editor
- Instrumentation shows the status and measurements of both buses
- Advanced SMS control and fault messaging
- Supports multiple global languages
- Easy access diagnostic pages including modem diagnostic pages
- Advanced data logging and trending
- Eliminates the need for costly PLC systems

ADVANCED FEATURES

INPUTS/OUTPUTS

- (11) Configurable digital inputs.
- (2) Configurable Volt-free outputs.
- (6) Configurable DC outputs.

COMMUNICATIONS

- Independent ports for RS485, RS232, USB and Ethernet
- MODBUS RTU / TCP IP
- USB for PC configuration

CONFIGURATION

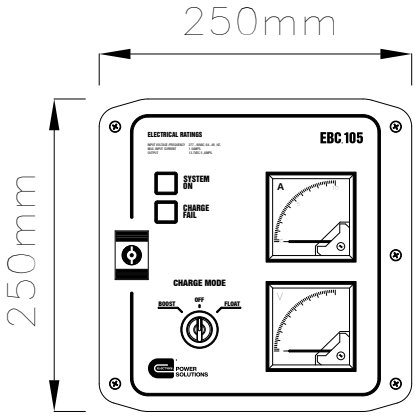
- Configuration Suite PC software
- Front panel (PIN protected)

Full list of features available at
electronil.com/encp_9b

EBC Series

AUTOMATIC ENCLOSED BATTERY CHARGERS.

Image for illustration purposes only,
Depending on your application the actual product may vary.



Overall Size: 250x250mm

PRODUCT HIGHLIGHTS

FEATURES

- Constant current / constant voltage.
- Automatic float mode return.
- Low output ripple.
- Reverse polarity, short-circuit and current limiting protection.
- Auto recovery on fault condition removal.
- Cell charge boost and equalizing.
- Power save mode.
- No moving parts – convection cooled.
- Charge fail indicator.
- 80% operating efficiency
- Manual Boost/Float Selection.
- Compatible with all common battery types.

Full list of features available at
electronil.com/ebc_series

ELECTROCARE
Maintenance Support Plan.

ELECTRONIL POWER SOLUTIONS Provide Comprehensive Support on All type of Generators, Switchgears, Switchboards and Control Panels Across Egypt.

Ensure your power is always there when you need it with the **ELECTROCARE Maintenance Support Plan**. Our service experts continually monitor and maintain your equipment through a comprehensive maintenance schedule which keeps your generator in peak working condition. We are always available to provide the level of service support you need.

Choose from one of four **ELECTROCARE Maintenance Support Plan** options to give your equipment the highest possible service care and maintenance cover, giving you ***total peace of mind***.

Critical Functions Monitored by ELECTROCARE

Much like a human body, today's engines have critical systems that need monitoring to maintain their health. These include the lubrication, coolant, fuel, air and management control systems.

ELECTROCARE Measures the trends and vital signs of these systems, frequently monitoring for faults or other areas requiring additional attention.

The **ELECTROCARE** Report highlights any component changes we recommend and gives guidance on the optimum time to action possible faults and maximize uptime.

The ELECTROCARE Maintenance Support Plan is focused on providing onsite maintenance with an effective, high quality condition monitoring and scheduled maintenance service.

We offer a fixed menu of service giving our customer the opportunity of not only ensuring that their generator set is working to its potential, but also that faults are identified and corrected before they develop into component failures, which are costly and time consuming to repair. This is achieved by the inclusion in all our products of **ELECTROCARE Maintenance Support Plan** critical function monitoring.

ELECTROCARE Benefits

- Total support - when you need it, giving you ***total peace of mind***.
- Confidence that your generator will start when you need it.
- Highest standards of maintenance and quality assurance.
- Scheduled servicing provides validation of warranty coverage.
- Cost-effective solution.
- ELECTRONIL Highly Trained engineers and technicians providing specialist expertise.
- Maximize uptime and save costs.
- Total added value package.

THE BEST WAY TO PROTECT YOUR POWER.

And Protect Your Team.

Our genuine parts are easily accessible, which can reduce customer downtime, improve your responsiveness and provide a competitive advantage.

Structured to help you deliver top-tier service and capture profits, our Parts and Service team provides the parts, people and performance you can count on.

PARTS

Designed to perform under the toughest environmental conditions, Our Genuine Parts are chosen specifically for your generator—and will be available when you need them. They undergo extensive lab and field testing as part of the overall power-system to ensure everything works as expected.

PEOPLE

Our experienced Service and Support team is available to answer your questions. Choosing genuine parts provides you with comprehensive support, training and technical assistance straight from the factory.

- Factory training
- On-site technical support
- One point of contact for all your parts and service needs
- Dedicated after-sales channel support

PERFORMANCE

We continuously invest in better processes that make your job easier, and we're here to support you in decisions that affect your business.

- Inventory management
- Warranty management
- Lead-time strategy

ELECTRONIL POWER SOLUTIONS

Your Reliable source for advanced and integrated power solutions.

ELECTRONIL POWER SOLUTIONS

ENGINEERING THE FUTURE Since 1995.

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