



ENGINE GENERATOR INTEGRATED SWITCHGEAR

The Engine Generator Integrated Switchgear (EGIS) is designed for low voltage applications from 208V through 480V.

The basis of design for EGIS is a modular approach to a paralleling system, beginning with a Master Breaker Panel for the first two generator sets, and adding pre-engineered structures to accommodate a utility incomer, up to 8 additional generator sets (total of 10) and up to 24 monitored, sheddable loads.

The modular EGIS system utilizes EMCP3.S paralleling controllers to perform synchronization, power factor control, load sharing, and system monitoring. The user is able to monitor and control the system through an industrial touchscreen HMI. Simple configuration screens allow for easy setup, installation and startup by your local Cat® dealer.

MASTER BREAKER PANEL (MBP)

The Master Breaker Panel houses the electrically operated circuit breakers for the first two Cat engine generator sets. Load take-off lugs or cross-bus are available power flow options. This main structure also includes the generator controls for the first two generators, the system HMI interface and the redundant system level controls. I/O points within the control panel provide for plug-in expansion of controls as additional generators and utility structures are added.

- | | |
|--|--|
| <ul style="list-style-type: none"> • 12 Inch Graphical Color Touch Screen (HMI): <ul style="list-style-type: none"> • Intuitive Operation through Informative Overview and Detail Screens • Control and Monitoring of System Parameters • Control and Monitoring of Genset and Utility Parameters • Password Protection for Critical Settings • Alarm Logging and Annunciation • Circuit Breaker Control Switch with indication • Audible Alarm & Horn Silence Button • Emergency Stop Button for Each generator • Optional Sync Check Device | <ul style="list-style-type: none"> • EMCP3.S Control Technology • Redundant Master Functionality • High Speed Ethernet Supervisory Network • Automatic Start/Stop • Automatic Load and VAR Sharing • Automatic “Dead Bus” Coordination • Automatic Power Factor Control When in Parallel with Utility Power • Programmable Load Shed / Load Add Functions • Networked Engine Communications (requires Cat EMCP3.2, 3.3, 4.2) • Generator and Utility Protection • User-Programmable Logic & I/O |
|--|--|



GENERATOR BREAKER PANEL (GBP1 or GBP2)

The Generator Breaker Panel (GBP) provides for interconnection of (1) or (2) additional engine generators to the system. The GBP houses the electrically operated circuit breakers for one or two incremental engine generators, and can be combined with the MBP in modular arrangements for up to a total of ten engines in parallel. Load take-off lugs or cross-buss are available power flow options. These structures include the generator controls for their respective generators,

GENERATOR BREAKER PANEL (GBP1)

- Controls One Incremental Cat Generator Set and Breaker
- Additional Panels May be Added for Generators 3 - 10
- EMCP 3.S Generator Controller
- Engine-Generator Control Protective Functions
- Circuit Breaker Control Switch with indication
- Engine Communications (EMCP3.2, 3.3, 4.2)
- User Programmable Logic I/O

GENERATOR BREAKER PANEL (GBP2)

- Controls Two Incremental Cat Generator Set and Respective Breakers
- Additional Panels May be Added for Generators 3 - 10
- EMCP 3.S Generator Controller
- Engine-Generator Control Protective Functions
- Circuit Breaker Control Switch with indication
- Engine Communications (EMCP3.2, 3.3 & 4.2)
- User Programmable Logic I/O

UTILITY BREAKER PANEL

- Controls One Utility Main / Breaker per System
- EMCP 3.S Utility Controller
- Closed Transition Soft Transfer and Utility Control for One Low Voltage Circuit Breaker
- Utility Control and Protective Functions
- Circuit Breaker Control Switch
- Circuit Breaker Closed Indicator – Red LED
- Circuit Breaker Opened Indicator – Green LED
- Utility Close Lockout Switch
- Utility Grade Protective Relay





DISTRIBUTION BREAKER PANELS

EGIS feeder panels and load feeders are modular and expandable up to 24 controlled loads. Distribution control and load shed level prioritization are accomplished through the HMI control screen on the Master Breaker Panel.

DISTRIBUTION BREAKER PANEL MASTER

- EMCP3.S Master Controls up to 24 Load Feeder Circuit Breakers (3 provided in structure)

DISTRIBUTION BREAKER PANEL SLAVE

- Each Slave Panel Contains Three Distribution Breakers
- I/O Module for Control of up to 3 Circuit Breakers in each Slave Panel

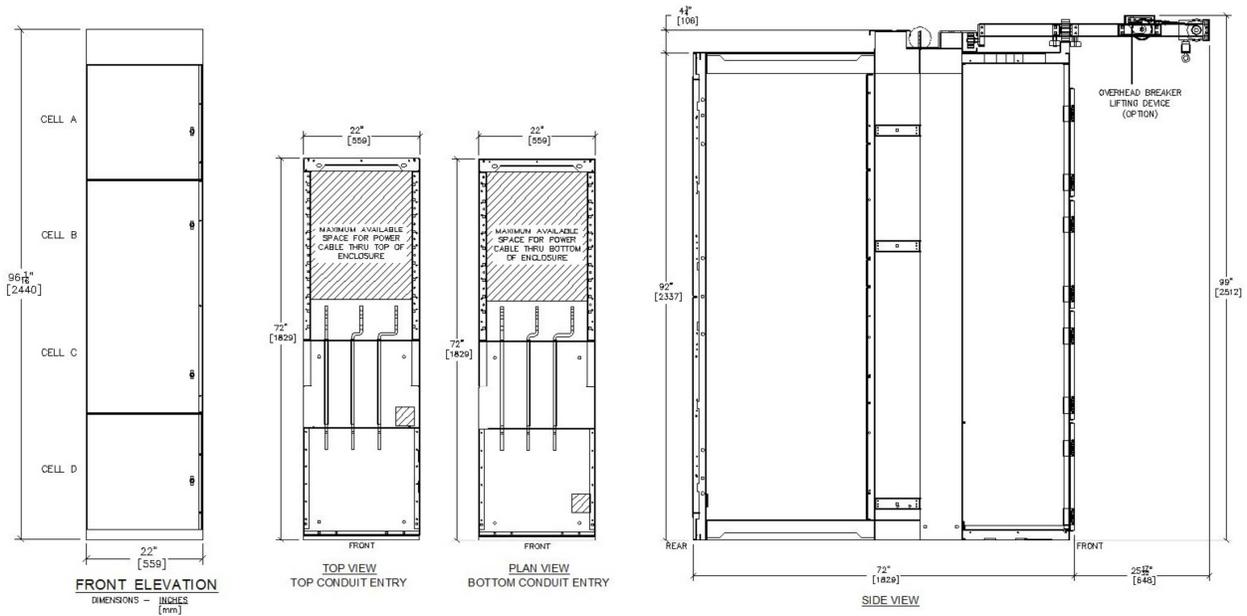


Functional Description

Specifications

Generator Set Compatibility	
Generator Set Range	C9-C32, 3300, 3400, & 3500
Quantity	2 - 10 Generator Sets
Voltage and Frequency	208V - 480V, 50/60Hz
System Control Voltage	
Circuit Breaker Control	40A @ 120 Vac, 3A @ 480 / 600 Vac, 50 / 60
Voltage (Current Rating)	10A @ 110 VDC, 4A @ 225 VDC resistive
EGIS Controls Nominal	24 VDC
EGIS Controls Range	18-40 VDC
Environmental Parameters	
Certifications	UL 891
Humidity	95% Non-Condensing
Operating Temperature	0°C to 55°C
Storage Temperature	-20°C to +60°C
Enclosure Rating	NEMA 1
Generator Protective Functions	
Relaying	(Industrial Grade) 15/25, 27/59, 81 O/U, 32, 40, 90
Metering	V, A, PF, kVAR, kW, Hz, kWhr, kVarH
Accuracy	Voltage, Current, Frequency, Hertz (0.5%) Power Measurements, kW, kVAR, Power Factor (1%)
Utility Protective Functions	
Relaying	(Utility Grade) SR-750 / SEL-351S, 25, 27/59, 81 O/U, 32, 47 (Industrial Grade) 15
Metering	Voltage, Current, Frequency, Hertz (0.5%) Power Measurements, kW, kVAR, Power Factor (1%)
Options	
Supplemental Hardware 25 Relay	Synchronization Protection for the Synchronizing Circuit Breakers
Data Table Interface (DTI)	Monitoring of all System Parameters via Modbus / Modbus TCP
Load Demand Functions	Generator Demand Priority
Engine Communications	Compatible with EMCP 3.2, 3.3, 4.2
Generator Breaker Panel	Provides Synchronization and Control for Additional Generator
Utility Breaker Panel	Provides Closed Transition and Utility Control for 1 Utility Circuit Breaker

Enclosure Dimensions in Inches (mm)	
Master Breaker Panel	96 H x 22 W x 72 D Inches, (2438 H x 559 W x 1829 D)
	Free Standing with Bottom or Top Conduit Access
Generator / Utility Breaker Panels, Distribution Panels	96 H x 22 W x 72 D Inches, (2438 H x 559 W x 1829 D)
	Bottom Conduit Access, Wall Mount



Typical Enclosure Dimensions Shown. (enclosure depth may vary based on specific project requirements)

Information contained in this publication may be considered confidential. Discretion is recommended when distributing.

Materials and specifications are subject to change without notice.

CAT, CATERPILLAR, their respective logos, "Caterpillar Yellow," the "Power Edge" trade dress as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

www.Cat-ElectricPower.com