

Stock #: 253741



Technical Specification

and

Scope of Supply

**mtu 16V2000 DS1000
DG16V2000B1N**

Customer: INDEL Power Group LLC



I. System Description

Product type	DG16V2000B1N mtu 16V2000 DS1000
Application Group	3D - Emergency Standby power, IFN

Power as per MTU Sales Program

Power per genset (ISO 8528)	1.000	kWeI
Engine speed	1.800	rpm
Intake air temperature	25	°C
Coolant temperature	45	°C
Altitude	100	m

On-site Power

Power per genset (ISO 8528)	1.000	kWeI
Engine speed	1.800	rpm
Intake air temperature	25	°C
Coolant temperature	45	°C
Altitude	100	m

Requirements

Frequency	60 Hz
Generator voltage	480 V
EngineType	16V2000G86S

II. Selection Criteria for the Scope of Supply

Criteria	Selection	for Product No.
Application	Emergency Standby (3D)	1,
Frequency	60 Hz	1,
Generator Voltage	480 V	1,
Phase	3 Phase	1,
Unit Specification	UL2200	1,
IBC Seismic Certification	With IBC 50974-01C 2015 2018 2021	1,
HCAI Certification	Without HCAI	1,
Engine Model	16V2000G86S (24volts)	1,
Exhaust Emissions (EPA)	EPA Stationary EMERG T2 (40CFR60)	1,
Radiator Design Temperature	50°C	1,
Temp Rise	105°	1,
Power Output	1000 kW	1,
Full Load Amps	1504	1,
Generator Frame and Wire Qty	LSA 50.2 M6 (6 Wire)	1,
Generator Wire Configuration	Wye	1,
OPU/HSD	Level 3 - Maximum Sound Attenuation	1,



Fuel Tank	Without Fuel Tank	1,
Control panel	With Control Panel	1,
Circuit Breaker Options	Single Circuit Breaker	1,
Breaker Wire Color Scheme	Standard Breaker Wire Color Scheme	1,
Paralleling	Parallelling with MTU Components	1,
Acceptance testing	Factory acceptance	1,
Publications	Standard Publications (English)	1,
Country of Operation	USA / Canada	1,
Emission cert. authority	18 US EPA Agency	1,



III. Scope of Supply

valid for
engine No.

- 1

SYSTEM CONFIGURATION

1,
- 1.2

Cooling Package

1,
- MGC Program: 1340062

5/22/2024

Ces

1,
- 50 Deg C Cooling System

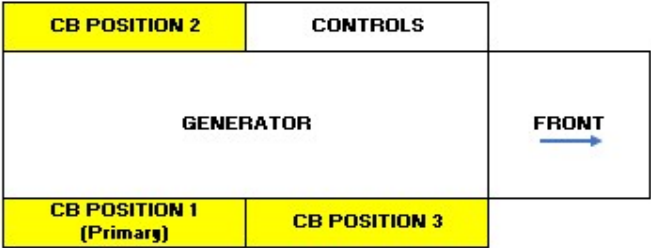
1,
- Closed loop, liquid cooled, with radiator factory mounted on engine-generator set mounting frame and integral engine-driven coolant pump

Denomination	
GUARD	FOR V-BELT-BELT GUARDS - 16V2000TB BETA
COOLANT SYSTEM	FOR GENSET-SYSTEM COOLANT 16V2000TB BETA
DUCT	W/FLANGE-DUCT FLANGE 16V2000TB BETA HSD
BRACE	FOR GENSET-KNEE BRACE PKG HSD IBC 16V2000

- 1.3

Circuit Breaker

1,
- 1,

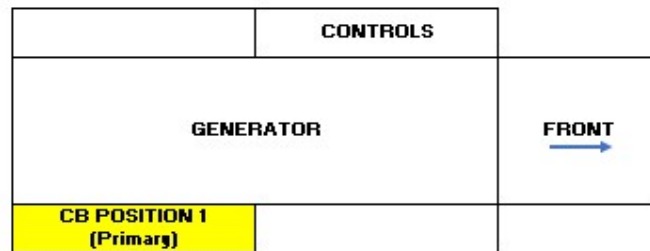


Top View Right Side CB Position 1/CB Position 3
Left Side Controls/CB Position 2

* For technical data refer to the circuit breaker enclosure data sheets located on the Business Portal

Service Entrance Rated

1,



Top View Right Side CB Position 1
Left Side Controls

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Circuit Breaker Position 1: 1,

Circuit Breaker Motor Operator 1,

Circuit Breaker Position 1: 1,

1600 Amp 600 Volt 3 Pole 100% LSI MO Square-D WL1EEX33A9SCBBXXA 1,

Circuit Breaker #1 Accessories: 1,

Standard on NW Frame CB: 1,

- CB Closing Device (XF)
- Spring Charging Motor (MCH)
- CB Opening Device (MX1) wired to Control Panel

Auxillary Contact (OF1) 1,

Under Voltage Trip (MN) (Paralleling) 1,

Overcurrent Fault Switch (SDE) 1,

Circuit Breaker Position 1: 1,

LSI Breaker Trip: 1,

- LSI breakers provide protection from long time overload, short time overload and instantaneous short circuit events. Specific overload current values and time delays vary with breaker type and trip unit.

Standard Breaker Wire Scheme: 1,

- Phase 1 (A) is Black label "L1"
- Phase 2 (B) is Red label "L2"
- Phase 3 (C) is Blue label "L3"
- Neutral is White label "NEU"



1.4 Starting Aids	1,
Starting Batteries (8D) with Battery Rack	1,
8D Battery filled with Acid - Battery Rack mounted and installed - Qty 4 of each	
Battery Charger SENS MicroGenius 2 10A	1,
- Manufacturer: SENS - Power: 300W - Output Voltage: 12/24V - Output Current: 10A @ 12V;120A @ 24V - Options: Base Model + LCD Display + 2 each Form C Alarm Relays - Model #: M3-22-1210-E	
Battery Charger Mounted & DC Wired	1,
Battery Charger mounted on the same side of unit as the control panel or No Control Panel box.	1,
Note - This option will be factory-wired to the distribution panel (if selected)	1,
Coolant Preheater	1,
-20 Deg F Coolant Preheater (208V 1PH - 9000W) - Model: CSM10908-000 - Qty 1	
** To wire accessory options to distribution panel from factory you will need to select one of the following:	1,
- For use with 1 Phase Distribution Panel: 1 Phase 208V accessory option** 1 Phase 240V accessory option** - For use with 3 Phase Distribution Panel: 3 Phase 208V accessory option** 1 Phase 208V accessory option**	
Coolant Preheater Mounted	1,
With Coolant Preheating System Isolation Valves	1,



1.5 Genset Enclosure 1,
Genset Enclosure S2000 1,

Weather-protective enclosure constructed of heavy gauge steel or aluminum with fixed stormproof panels designed for either 130 mph or 190 mph wind load rating.

Enclosure consists of:

- Bolted and welded construction
- Unit-mounted internal silencer included
- Hinged, lockable double-doors with door restraints provide access on both sides of enclosure

Aluminum Enclosure Type 1,

Denomination
WORK SCHEDULE-OPERATIONS BAU #2 LUNDIN HSD

130mph Wind Rated Aluminum 1,

Level 3 Enclosure 130mph 1,

Weather-protective enclosure constructed of heavy gauge steel or aluminum with fixed stormproof panels designed for 130 mph wind load rating with additional air intake baffles and exhaust scoop redirecting noise and air flow upward.

Enclosure consists of:

- Bolted and welded construction
- Additional air intake baffles
- Exhaust scoop
- UL94 HF-1 compliant , 1.5" thick sound attenuated foam insulation installed inside enclosure walls.
- Unit-mounted internal silencer included
- Hinged, lockable double-doors access with door restraints located on both sides of enclosure

Denomination
ACOUSTIC ENCLOSURE-ENCL L3 130MPH ALUM

Sound Attenuation Kit 1,

Denomination
ACOUSTIC ENCLOSURE-SOUND ATTN-L3-INTK/MAIN-130MPH
PANEL-SOUND PANELS L3 - 16V2000G06

Interior Enclosure Lighting: 1,

- Interior enclosure lighting is designed to automatically use either AC or DC power. The lights will use the DC supply (genset batteries) if no AC supply is available. The lights may be powered via AC supply if connected by the customer.

Note - This option will be factory-wired to the distribution panel (if selected) 1,



Denomination
LED-LED LIGHTING
LIGHTING SYSTEM-LED LIGHTS - DIN MTD COMPONENT
LIGHT SOURCE-LED LIGHT 16V2000G06 TB BETA

Enclosure Heater: 120V 1PH 1500W with Thermostat 1,

Note - This option will be factory-wired to the distribution panel (if selected) 1,

Denomination
HEATER-SPACE HEATER
HEATER-SPACE HEATER ENCL SERIES 2000

Motorized Intake Louver (Aluminum) 1,

— *Note* - This option will be factory-wired to the distribution panel (if selected)

Denomination
AIR INLET LOUVER-LOUVER INTAKE MOTORIZED ALUM
ACOUSTIC ENCLOSURE-MOTORIZED INTAKE LOUVER ALUMIN
BRACING-18V2000G06TD HSD IBC
RELAY FOR AIR LOUVER-HARNESS/RELAY LOUVER
MOTOR S16
ACOUSTIC ENCLOSURE-SOUND ATT L3 EXHST MOD 130MPH

Gravity Exhaust Louver (Aluminum) 1,

Denomination
LOUVER-LOUVER EXHAUST GRAVITY
LOUVER-GRAVITY EXH LOUVER 16V2000G06

1.6 Vibration Isolation 1,

X54599100330 Pad Isolators 1,

- 1/4-inch thick elastomeric pad in rectangular shape placed under the base frame at each of the pre-drilled isolator mounting holes.

2 ENGINE CONFIGURATION 1,

2.1 Engine System 1,

Oil Drain 1,

Note Emission Compliance: 1,

The engines and/or systems, may only be certified to comply with the required country or region specific emission regulations. Where applicable, the engines and/or systems are only

certified to those specific emission regulations/standards which are clearly stated in the respective RRPS/MTU defined technical specifications. It is the customer's sole responsibility to ensure that the export/import, installation and use of the engine and/or system complies with the applicable emissions regulations in the country or region where the engine and/or system will be used.

2.2	Exhaust System	1,
	Internal Silencer 14"	1,
	- Silencer Model Number: OHS-14X-90042966 - Qty 1	
2.3	FUEL SYSTEM	1,
	Fuel Water Separator - Standard (Dual)	1,
2.4	Air Intake System	1,
	Air Filter (Standard)	1,
	MTU Air Filter	1,
	- SUA90069 - Qty 2	
3	GENERATOR CONFIGURATION	1,
3.1	Generator Specification	1,
	Includes D550 Digital Automatic Voltage Regulator (AVR)	1,
	With PMG	1,
	Generator Strip Heater	1,
	Strip heater mounted permanently in the generator winding to prevent condensation in the generator.	
	Note - This option will be factory-wired to the distribution panel (if selected)	1,
	IP23 Ingress Protection	1,
	IP23 provides Ingress Protection against objects larger than 12 mm and Protection against dripping water $\pm 60^\circ$ angle.	
	LSA 50.2M6	1,
4	CONTROL PANEL CONFIGURATION	1,
4.1	Control panel	1,
	Circuit Breaker Position 1:	1,
	Without Ground Fault	1,

Modbus RTU

1,

- ModBus RTU connects the MGC to Programmable Logic Controllers by means of communication transmission over serial lines (RS485).

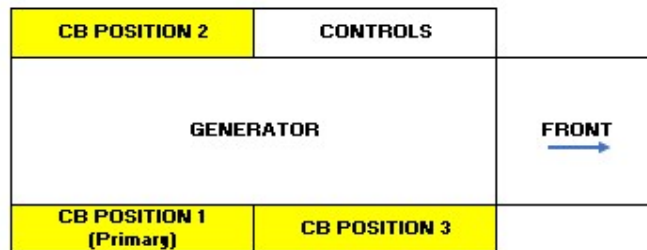
Modem RS-232

1,

- The MGC controller includes an external modem interface permitting an external modem to be connected to the controller via RS-232. A dial-out modem enables remote control, monitoring, and setting of the controller. When an alarm or pre-alarm condition occurs, the controller can dial up to four telephone numbers in sequence until an answer is received and the condition is annunciated.
 - Note: Only an external modem interface is provided. The external modem must be supplied by a third party

Control Panel Mounting

1,

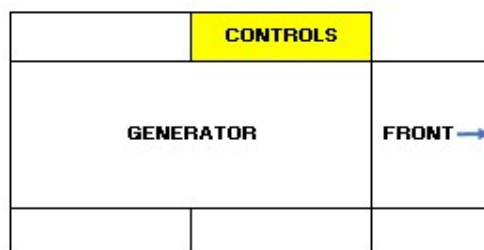


Top View Right Side CB Position 1/CB Position 3
Left Side Controls/CB Position 2

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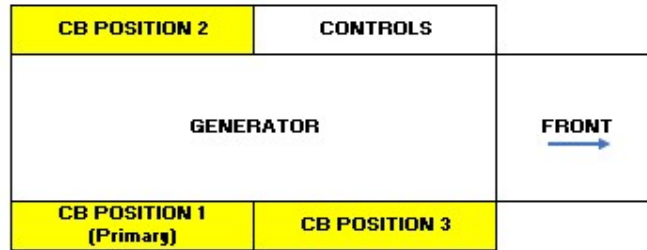
Control Panel Mounted LH Side

1,



Top View Right Side
Left Side Controls

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Top View **Right Side** CB Position 1/CB Position 3
Left Side Controls/CB Position 2

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Contact Expansion Module (CEM)

- The CEM is a remote device that provides additional MGC contact inputs and outputs giving the user flexibility to use the same model MGC generator set controller for simple or more complicated applications that require contact functionality or duplication of contacts for remote annunciation.

RDP-110 Annunciator Panel

- The RDP-110 is a remote annunciation device used in conjunction with the MGC family of digital generator set controllers to provide remote annunciation of the emergency standby generator system. This panel allows for two programmable alarms, two programmable pre-alarms, and is compatible with NFPA 110. The MGC detects an alarm or pre-alarm condition and communicates via RS-485 to the RDP-110.
- Unit can be flush or surface mounted.

1 Remote Annunciator

MGC-3000 Series

- Rolls Royce Power Systems Generator Set Controllers (MGC Series) are rugged, reliable, all-in-one digital generator set control and load share systems. The MGC-3000 Series is designed to be a high end controller that is well suited for mains fail, paralleled units, and systems with multiple buses. The MGC-3000 Series has all of the necessary items for complete generator set control, protection, and metering with a massive, but easy-to-use, programmable logic system.

Parallel with Rolls Royce Power Systems Components

- Motor-operated generator circuit breaker**
 - With Auxiliary Switch (Breaker Position)
 - With Bell Alarm
 - With Under Voltage Trip Switch
 - With Motorized Spring Charger
- Paralleling Kit**
 - With Transformer (If 600VAC and Below)



-With Fuses (If Greater Than 600 VAC)

Mains Breaker, control hardware and sensing are NOT included and to be provided by others.

5	SERVICES AND AFTER SALES SUPPLY	1,
5.1	Warranty	1,
	General Terms and Conditions of Sale, Warranty and After Sales Supply	1,
	Our offer is based on the attached General Terms and Conditions of Sale for Rolls Royce Power Systems Products (Rev. V-601-1803 MUS & MOE) and the Warranty will be the attached Standard Two (2) Year / 3,000 Hour Basic Standby (3D), Prime (3B), and Data Center Continuous Power (DCCP) (3F) Limited Warranty (SYS-M-GEN-S-026).	
6	MISCELLANEOUS	1,
6.1	Painting	1,
	Paint Color: RAL 7001 Grey	1,
6.2	Documentation	1,
	Application 60Hz Standby	1,
	<u>English</u>	1,
	1 Flash Drive	1,
	<u>English</u>	1,
	No Hard Copy	1,
	No Flash Drive	1,
	<u>French</u>	1,
	No Hard Copy	1,
	No Flash Drive	1,
	<u>Spanish</u>	1,
	No Hard Copy	1,
	No Flash Drive	1,
6.3	Additional Options	1,
	200 Amp Distribution Panel (UL)	1,
	200A 120/240VAC 1PH UL Listed 20-Position with Main Breaker - Distribution Panel Mounted same side as Control Panel	



Unit Includes One (1) Convenience Receptacle	1,
Convenience Receptacle is mounted on the same side of the outlet box as the Control Panel/No Control Panel options.	1,
Note - This option will be factory-wired to the distribution panel (if selected)	1,
Mechanical Drawing: Genset Dimensional IBC HSD • XZ54500100025	1,
Mechanical Drawing: Genset Dimensional HSD • XZ54500100026	1,
Electrical Drawing: Engine Starter Single • XZ54530900048	1,
Electrical Drawing: Engine ECU • XZ54530900063	1,
Electrical Drawing: Generator • XZ54530900060	1,
Electrical Drawing: Circuit Breakers • XZ54530900065	1,
Electrical Drawing: Control Panel MGC 3000 Series • XZ54530900101	1,
Electrical Drawing: Options Sheet • XZ54530900064	1,
8 FUNCTIONAL TESTING	1,
8.1 Acceptance Testing	1,
Standard Commercial Test	1,
9 SHIPPING CONDITIONS	1,
9.1 Freight	1,
Ship unit with fluids installed	1,

1*

* only once per order