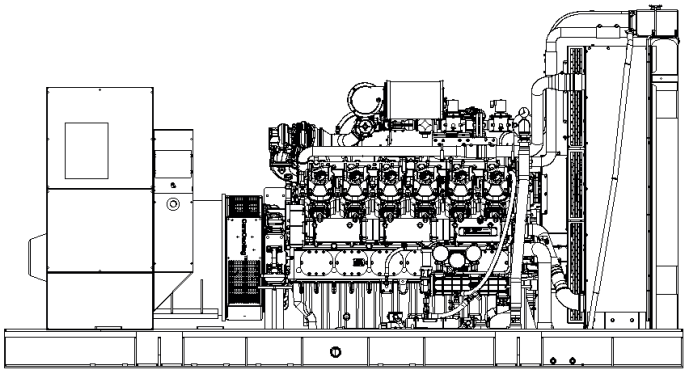
HIPOWER®
A YANMAR COMPANY

HD Industrial SPARK-IGNITED GENERATOR

MODEL
HNI-1000 T6U

60Hz STANDBY POWER RATINGS

1000kW/60Hz//1800RPM



VOLTAGE VAC	120/240V	120/208V	139/240V	277/480V	347/600V**
RATING	Standby	Standby	Standby	Standby	Standby
PHASE	1	3	3	3	3
PF	1.0	0.8	0.8	0.8	0.8
HZ	60	60	60	60	60
KW	N/A	N/A	N/A	1000	1000
KVA	N/A	N/A	N/A	1250	1250
AMPS	N/A	N/A	N/A	1503	1202

Description

HIPOWER® Heavy Duty Industrial generators are an efficient, reliable and versatile source of back-up electrical power that have been designed to operate in the most extreme working conditions. All HIPOWER® Heavy Duty Industrial generators combine an innovative design and the use of high quality materials that provide the user with the most dependable power that can be relied on for non-stop power with easy to operate controls.

Powered by a radiator-cooled, industrial PSI Spark Ignited engine that meets current Environmental Protection Agency (EPA) exhaust emission regulations, driving a single bearing, four-pole, three-phase alternator, with IP23 protection. The Emergency Power kVA rating is given with a 125 degree °C alternator winding temperature rise.

HIPOWER® Features and Benefits

PSI-HD Engine: Diesel Engine: Long-life, heavy-duty, 4-cycle, direct injection engine for economy of operation and maximum reliability and durability. Capable of full rated load acceptance in one step.

Cooling: Radiator with belt driven pusher fan.

Air Filter: Heavy-duty replaceable element air-cleaner.

Alternator: Single bearing, rotating field, self-excited, self-ventilated, 12-wire re-connectable, 60Hz brushless alternator with Class H insulation. Automatic voltage regulator (AVR) providing close voltage regulation and skVA starting capability for electric motor loads.

HIPOWER® Features and Benefits

Enclosure: Fully sound attenuated enclosure, manufactured using 7-gauge steel and thicker for the base; 12-gauge and 14-gauge for the enclosure, Interpon A4700 primer, in combination with Interpon 600 series coatings, are designed for exterior exposure and offers excellent light and weather resistance exceeding 1400-hr salt spray test. A 1" thick layer of durable sound insulating, oil and fire resistant foam material is installed all around the inside of the enclosure to allow high-pressure water cleaning. Vertical air discharge for quiet operation. Wide steel lockable access doors with rubber seals, easy access for maintenance and service activities, lift off Die Cast Zinc hinges textured black powder coat and corrosion resistant hardware and fasteners.

Exhaust: Effective low noise, steel catalytic converter with rain cap.

Controls: Digital control panel with manual and automatic start and stop features. Many programmable automatic functions for local and remote controls with LED lights, tamper proof engine hour recorder.

Certification: Generator set is UL 2200 Listed and CSA certified and meets ISO 8528-5.

HIMOINSA POWER SYSTEMS, INC.
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Codes and Standards Compliances used where applicable

APPLICATION DATA

ENGINE SPECIFICATION		LUBRICATION SYSTEM	
Manufacturer	PSI Heavy Duty	Oil pan capacity - qts (L)	120.5 (114)
Model	53L	Oil pan capacity with filter - qts (L)	181 (171)
EPA certified	Yes	Oil cooler	Liquid
Crankshaft speed	1,800 rpm	Recommended lubricating oil grade	SAE 15W-40 Low Ash Gas engine oil (.25-.5% by wt), API CD/CF or higher
Type	LPG/NG fueled, 4-stroke	Oil consumption at full load	n/a
Ignition	Spark Plug	Oil pressure – psi (kPA)	82 (565)
Aspiration	Charged Cooled Forced Induction	**ENGINE ELECTRICAL SYSTEM**	
Number of Cylinders	16	Starting motor voltage	24 volt
Cylinder arrangement	V-Type	Cold Cranking Amps - minimum	N/A
Displacement CID (liters)	3192 (52.3)	Battery charging Alternantor	55 Amp
Bore and Stroke ins (mm)	5.906x7.283 (150x185)	Battery capacity	1400CCA 1720CA 430RC GROUP SIZE 8D
Nominal power	1589 hp		
Cooling	Liquid		
Governor	Electronic		
Governor Regulation Class	ISO 8528 Part 1 Class GK3-5		
Frequency Regulation	Isochronous		
Starting motor & alternator	24 Volt		
Compression ratio	10.5:1		
Air cleaner type	Dry, replaceable cartridge		
ALTERNATOR SPECIFICATION			
Manufacturer	STAMFORD		
Model 120/208V Three phase	N/A		
Model 277/480V Three phase	S6L1D-E4		
Model 347/600V Three phase	S6L1D-E4		
Alternator Type	Four pole, rotating field		
Excitation System	Brushless. PMG-excited		
Power factor	0.8		
Number of leads	12 leads, reconnectable		
Stator Pitch	2/3		
Insulation	Class H		
Windings – Temperature Rise	Class H (125/40° C)		
Enclosure (IEC-34-S)	IP23		
Bearing	Single, sealed		
Coupling	Flexible disc		
Amortisseur windings	Full		
Voltage regulation – no load to full load with MX341 AVR	± 1%		
TIF	<50		
Radio Frequency Emissions compliance	Meets requirements of most industrial and commercial applications		
Line harmonics	5% maximum		

HNI-1000 T6U - 1000 KW
Heavy Duty Industrial

HIPOWER® A YANMAR COMPANY

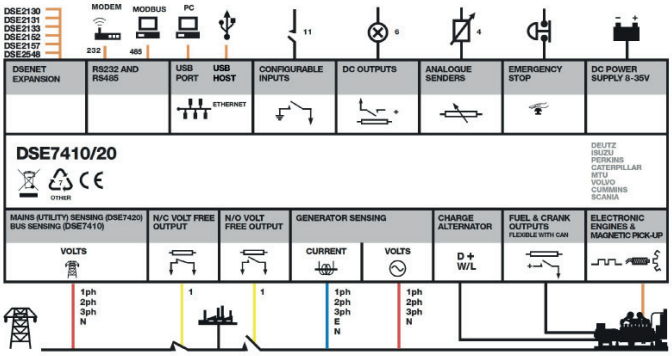
STANDARD FEATURES

Enclosure (If selected)	Engine System	Fuel System
Rust-Proof Fastener with Nylon Washers Protect Finish	Oil Drain Extension	10 PSI (inlet) pressure regulator installed inside the enclosure
High Performance Sound-Absorbing Material (L1)	Air Cleaner	
Gasketed Doors	Fan Guard	**Generator set**
Air Discharge Hoods for Radiators-Upwards Pointing	Factory Filled Oil	2 Year/2000 hours Limited Warranty
Lift Off Door Hinges	Battery Charging Alternator	Separation of Circuits – Multiple Breakers (load center)
Stainless Steel Lockable Handles	**Alternator Systems**	Separation of Circuits – High / Low Voltage
Textured Polyester Powder Coat	12 Leads (3-Phase, Non 600V)	Internal Genset Vibration Isolation
Cooling System	Class H Insulation Material	Wrapped Exhaust Piping
Factory-Installed Radiator	Vented Rotor	Standard Factory Testing
Radiator Drain Extension	2/3 Pitch	Emergency Stop
50/50 Ethylene Glycol Antifreeze	Full Load Capacity Alternator	
Electrical Systems	Protective Thermal Switch	
Battery Cables and Battery Tray	Permanent Magnet Excitation	
Batteries	Skewed Stator	
	PMG with MX341	

CONTROL SYSTEM

DSE7410 MKII

- Charge alternator failure alarm
- 4-Line back-lit LCD text display
- Front panel editing with PIN protection
- Customisable status screens
- Power save mode
- 11 configurable inputs
- 8 configurable outputs
- Flexible sensor inputs
- Configurable timers and alarms
- 3 configurable maintenance alarms
- Multiple date and time scheduler
- Configurable event log (250)
- "Protections disabled" feature
- kW protection
- Reverse power (kW) protection
- LED and LCD alarm indication
- Power monitoring (kWh, kVAr, kVAh, kVArh)
- Load switching (load shedding and dummy load outputs)
- Independent Earth Fault trip
- Fuel usage monitor and low fuel alarms
- Configurable display languages
- User selectable simultaneous RS232, RS485 & Ethernet communications
- MODBUS RTU & TCP support
- Configurable MODBUS pages
- Fully configurable via DSE Configuration Suite PC software
- Data logging to assist with fault finding
- PLC editor allows user configurable funcions to meet specific application requirements
- Licence-free PC software
- Multiple date and time scheduler
- DSENet® expansion compatible



CONFIGURABLE OPTIONS

ENCLOSURE	ENGINE SYSTEM	ELECTRICAL SYSTEM
Open Skid	Oil heater	Battery Warmer
Weather Enclosure	240V-1ph Water Jacket Heater (with Isolation Valves)	10A Battery Charger
Level 1 Sound attenuated	208V-3ph Water Jacket Heater (with Isolation Valves)	5A Battery Charger
	Oil Level Makeup	10 Positions Load Center (100Amps)
ALTERNATOR SYSTEM	Auto LP Liquid Withdrawal Fuel System with vaporizer	Remote ESTOP with N3R break glass
Tropical coating	**CIRCUIT BREAKER OPTIONS**	120V GFCI receptacle
Anti-condensation heater	Thermal-Magnetic trip 80% and 100% rated	10A Relay common alarm
Alternator upsizing	LS/I Electronic trip 80% and 100% rated	10A Run Relay
Rheostat	LSI Electronic trip 80% and 100% rated	8 Leds Remote Anounciator on Surface mounted Box
MX321 AVR	LSIG Electronic trip 80% and 100% rated	16 Led Remote Anounciator on Surface mounted Box
	Shunt trip	24 Led Remote Anounciator on Surface mounted Box
	Auxiliary Contacts for Main and Secondary	DSE8610 with motorized breaker
	Second Main Line Circuit Breaker	**GENERATOR SET**
	Mechanical Lugs	Extended Factory Load Testing
		Extended Warranty

ENGINEERED OPTIONS

ENCLOSURE	ENGINE SYSTEM	ELECTRICAL SYSTEM
		AC/DC Enclosure Lighting Kit with Timer
		Enclosure Heater
		240V Twist lock receptacle
CIRCUIT BREAKER OPTIONS	**CONTROL SYSTEM**	**GENERATOR SET**
	Spare inputs (x4) / output (x4)	Special Testing
	DSE2130 - DSENet Input Expansion Module	
	DSE2157 - DSENet Output Expansion Module	
	DSE855 - DSENet USB to Ethernet ModBus TCP/IP Communication Module	
	DSE892 - DSENet USB to Ethernet ModBus TCP/IP - SNMP Comm. Module	
	DSE2520 - Remote Display Module	

OPERATING DATA

FUEL SYSTEM	
Fuel type	Natural Gas, vapor withdrawal
Fuel supply line - inlet	2" NPTF
Natural gas and LPG fuel supply pressure	NG (10PSI) - LPG 7" to 11"column H2O - (1.7 - 2.7 kPa)

FUEL CONSUMPTION - NATURAL GAS (Measured at genset fuel inlet, downstream of any dry fuel or filter accessories)	m3/h	ft3/h	BTU/h
100% load	358	12,626	12,979,528
75% load	275	9,721	9,993,188
50% load	197	6,949	7,143,572
25% load	122	4,312	4,432,736
FUEL CONSUMPTION - LPG (Measured at genset fuel inlet, downstream of any dry fuel or filter accessories)	**lb/h**	**gal/h**	**BTU/h**
100% load	496	118	
75% load	371	88	
50% load	261	62	
25% load	166	40	

COOLING SYSTEM		
Engine cooling air flow	cfm (m³/min)	67,300 (1,906)
Alternator cooling flow	cfm (m³/min)	3,581 (102)
Combustion air flow	cfm (m³/min)	2,205 (62)
Total cooling air flow (engine+alternator+combustion)	cfm (m³/min)	73,066 (2070)
Total cooling capacity	US gallons (liters)	65.4 (248)
Max. Ambient Operating Temperature	°F (°C)	122 (50)

EXHAUST		
Exhaust gas flow	cfm (m³/min)	6855 (194)
Max. Exhaust temp at full load degrees	°F (°C)	1212 (655)
Max. permissible back pressure	in H2O (kPA)	51.6 (13)

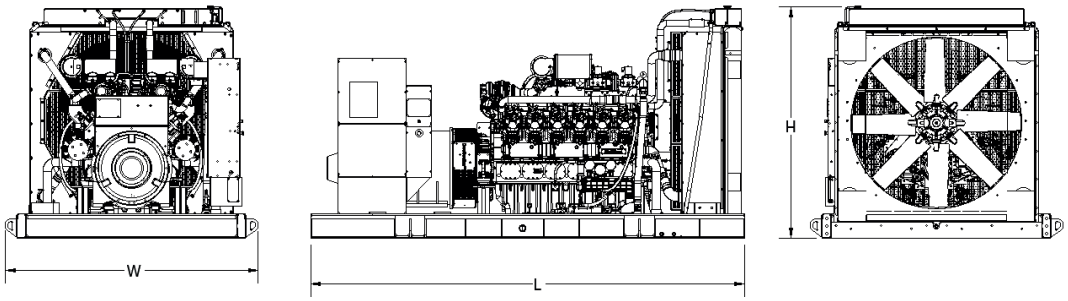
Starting Capabilities (sKVA)

	480V					208/240V					600V				
	10%	15%	20%	25%	30%	10%	15%	20%	25%	30%	10%	15%	20%	25%	30%
Standard	720	1150	1650	2200	2600	N/A	N/A	N/A	N/A	N/A	920	1420	2000	2700	3500
Upsized	920	1450	2080	2750	3500	N/A	N/A	N/A	N/A	N/A	1000	1550	2200	2900	3750

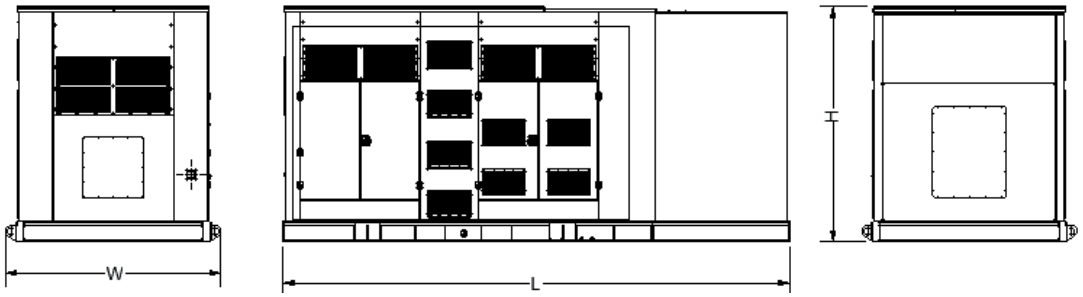
Circuit Breaker

	277/480V	120/208V	120/240V	347/600V
Make and model	ABB T8VBCFC0000000X	N/A	N/A	ABB T7VBCFC0000000X
Amps	1600 A	N/A	N/A	1600 A

DIMENSIONS, WEIGHTS & SOUND LEVELS



CONFIGURATION	RUN TIME (HOURS)	USABLE CAPACITY (Gal.)	L = Length	W = Width	H = Height	Weight lbs	dBA
OPEN SET	N/A	N/A	295″	94″	97″	25,000	TBA



CONFIGURATION	RUN TIME (HOURS)	USABLE CAPACITY (Gal.)	L = Length	W = Width	H = Height	Weight lbs	dBA
LEVEL 1 ENCLOSURE	N/A	N/A	295″	94″	115″	31,200	TBA

* All measurements are approximate and for estimation purposes only. Weights are without fuel tank. Sound levels measured at 23ft (7m) and does not account for ambient site conditions.

Intertek

Conforms to UL STD 2200
Certified to CSA STD C22.2#100
Certified to CSA STD C22.2#14