

MODEL

# HNI-650 T6U



60Hz STANDBY POWER RATINGS

650kW/60Hz//1800RPM



VOLTAGE VAC	120/240V		120/208V		139/240V		277/480V		347/600V**	
RATING	NG	LP	NG	LP	NG	LP	NG	LP	NG	LP
PHASE	1	1	3	3	3	3	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
HZ	60	60	60	60	60	60	60	60	60	60
KW	N/A	N/A	650	426	650	426	650	428	650	429
KVA	N/A	N/A	812.5	532	812.5	532	812.5	536	812.5	536
AMPS	N/A	N/A	2255	1478	1954	1281	977	644	782	516

## 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:** Spark Ignited 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.

16600 South Theden Street, Olathe, KS 66062

Tel: 913 495 5557 | Fax: 913 495 5575 [www.hipowersystems.com](http://www.hipowersystems.com)

Codes and Standards Compliances used where applicable



## APPLICATION DATA

ENGINE SPECIFICATION		LUBRICATION SYSTEM	
Manufacturer	PSI Heavy Duty	Oil pan capacity - qts (L)	90 (95)
Model	32L	Oil pan capacity with filter - qts (L)	129 (122)
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)	47 (324)
Aspiration	Charged Cooled Forced Induction	ENGINE ELECTRICAL SYSTEM	
Number of Cylinders	12	Starting motor voltage	24 volt
Cylinder arrangement	V-Type	Cold Cranking Amps - minimum	N/A
Displacement CID (liters)	1941 (31.8)	Battery charging Alternator	55 Amp
Bore and Stroke ins (mm)	5.906x5.906 (150x150)	Battery capacity	1400CCA 1720CA 430RC GROUP SIZE 8D
Nominal power	966 hp		
Cooling	Liquid		
Governor	Electronic		
Governor Regulation Class	ISO 8528 Part 1 Class G1		
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	S6L1D-C4		
Model 277/480V Three phase	HCI534F		
Model 347/600V Three phase	HCI534F		
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		

## 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	<b>Generator set</b>
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	<b>Alternator Systems</b>	Separation of Circuits – High / Low Voltage
Textured Polyester Powder Coat	12 Leads (3-Phase, Non 600V)	Internal Genset Vibration Isolation
<b>Cooling System</b>	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	
<b>Electrical Systems</b>	Protective Thermal Switch	
Battery Cables and Battery Tray	Permanent Magnet Excitation	
Batteries	Skewed Stator	
	PMG with MX341	

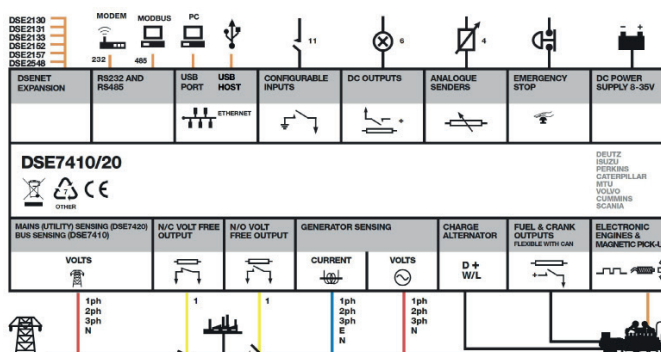
## CONTROL SYSTEM



### 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, kVAh, kVAh, kVAh)
- 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 functions to meet specific application requirements
- License-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)
<b>ALTERNATOR SYSTEM</b>	Auto LP Liquid Withdrawal Fuel System with Vaporizer	Remote ESTOP with N3R break glass
Tropical coating	<b>CIRCUIT BREAKER OPTIONS</b>	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 Led Remote Annunciator on Surface mounted Box
MX321 AVR	LSIG Electronic trip 80% and 100% rated	16 Led Remote Annunciator on Surface mounted Box
	Shunt trip	24 Led Remote Annunciator on Surface mounted Box
	Auxiliary Contacts for Main and Secondary Breaker	DSE8610 with motorized breaker
	Second Main Line Circuit Breaker	<b>GENERATOR SET</b>
	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
<b>CIRCUIT BREAKER OPTIONS</b>	<b>CONTROL SYSTEM</b>	<b>GENERATOR SET</b>
	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, LP Vapor withdrawal, LP			
NG and LPV Fuel supply line - inlet	2" NPTF			
LP Fuel supply line - inlet	TBD			
Natural gas and LPV fuel supply pressure	10 PSI			
LP fuel supply pressure	312 PSI (Max)*			
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		207	7,309	7,513,689
75% load		161	5,692	5,850,996
50% load		116	4,095	4,209,350
25% load		71	2,518	2,588,750
FUEL CONSUMPTION - LPG (Measured at genset fuel inlet, downstream of any dry fuel or filter accessories)		m3/h	ft3/h	BTU/h
100% load		66	2,333	5,868,771
75% load		49	1,728	4,342,890
50% load		34	1,191	2,993,073
25% load		24	833	2,093,195
COOLING SYSTEM				
Engine cooling air flow	cfm (m³/min)	41,200 (1,167)		
Alternator cooling flow	cfm (m³/min)	3,730 (106)		
Combustion air flow	cfm (m³/min)	1,184 (34)		
Total cooling air flow (engine+alternator+combustion)	cfm (m³/min)	46,114 (1307)		
Total cooling capacity	US gallons (liters)	45 (172)		
Max. Operating Temperature	° F (° C)	122 (50)		

## Starting Capabilities (sKVA)

	480V					208/240V					600V				
	10%	15%	20%	25%	30%	10%	15%	20%	25%	30%	10%	15%	20%	25%	30%
Standard	550	950	1350	1800	2300	500	800	1150	1500	1800	560	880	1250	1680	2140
Upsized	600	950	1350	1850	2350	600	950	1350	1800	2300	550	850	1250	1650	2100

## Circuit Breaker

	277/480V					120/208V					120/240V					347/600V				
Make and model	ABB T7SB1DB000000XX					ABB T8VBE3HC00000XX					ABB T8VBD3GC00000XX					ABB T6N800TW				
Amps	1000 A					2500 A					2000 A					800 A				

\*Pressure listed is the max working pressure of vaporizer. No minimum pressure listed but must be high enough to keep propane liquified

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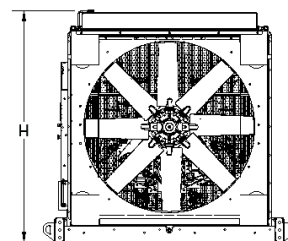
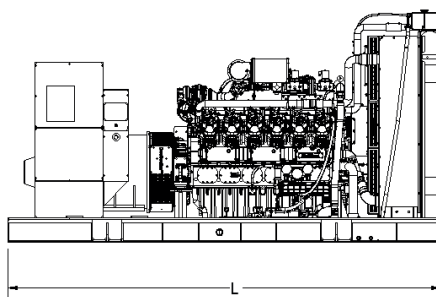
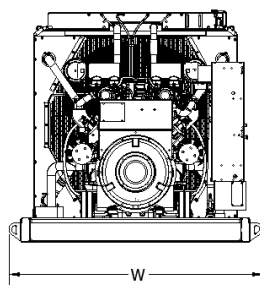
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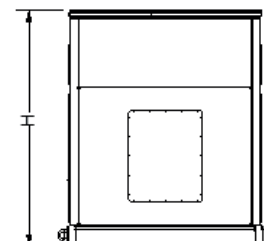
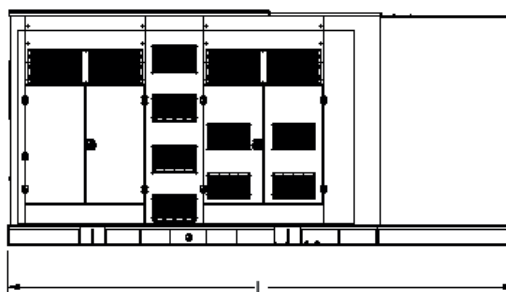
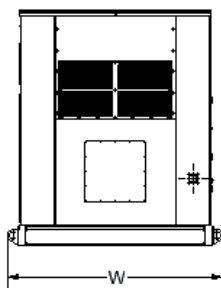
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## DIMENSIONS, WEIGHTS & SOUND LEVELS



CONFIGURATION	RUN TIME (HOURS)	USABLE CAPACITY (Gal.)	L = Length	W = Width	H = Height	Weight lbs	dBA
OPEN SET	N/A	N/A	175"	102"	113.5"	16,000	97



CONFIGURATION	RUN TIME (HOURS)	USABLE CAPACITY (Gal.)	L = Length	W = Width	H = Height	Weight lbs	dBA
LEVEL 1 ENCLOSURE	N/A	N/A	240"	102"	112"	19,000	82.7

\* 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

**REV06**
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