

# NORTHSTAR

## Power Systems

### **NSPS 100**

<b>PRIME RATING:</b>	110 KW
<b>STANDBY RATING:</b>	100 KW
<b>ENGINE TYPE:</b>	PERKINS
<b>ALTERNATOR TYPE:</b>	NEWAGE
<b>OPERATING SPEED:</b>	1800 RPM
<b>VOLTAGE:</b>	460 V
<b>PHASE:</b>	60 HZ



#### **KEY FEATURE**

- Easy to operate and maintain.
- Designed for long term, reliable operation.
- Rubber mounted engine and generator. Minimizes vibration and extends the life of the batteries and housing.
- Camlock connections for easy connect and disconnect.
- Welded steel skid with built in fuel tank.
- Includes industrial muffler, batteries, and block heater.
- Full load tested prior to shipment.
- 1- Year Limited Warranty.

#### **ENGINE**

- Perkins
- State of the art design, reliable engine.
- Low emissions. EPA Tier III and EU Stage II standards.
- Excellent fuel economy.
- Low operating costs.
- Global support network.

#### **GENERATOR**

- Standby rated.
- Brushless rotating field.
- Class H winding insulation for maximum protection.
- Meets or exceeds BS EN 600034, BS 5000, VDE 0530; NEMA MG1-32, ICE 34, CSA C22.2, AS 1359.

#### **CONTROLS**

- JCAN Controls, by Controls Inc.
- Full display for engine and generator.
- Manual & Auto Start.
- Fault Code Reader.
- Large and easy to read display.
- Simple to operate.
- NFPA Compliant

# NORTHSTAR

## Power Systems

### GENERAL SPECIFICATIONS

#### ENGINE

MANUFACTURER:	PERKINS	ROTATION:	ANTI-CLOCKWISE
MODEL:	1106C-E66TAG2	COOLING SYSTEM:	WATER
TYPE:	DIESEL	AIR INLET:	MOUNTED AIR FILTER AND TURBOCHARGER
NO. CYLINDERS:	6 IN-LINE	LUBRICATION SYSTEM:	FLAT-BOTTOMED ISOLATED ALUMINUM SUMP
BORE AND STROKE:	105MM X 127 MM	COOLING SYSTEM:	RADIATOR AND WATER PUMP
DISPLACEMENT:	6.6 LITERS	ELECTRICAL EQUIPMENT:	12 V STARTER, ALTERNATOR, GLOW PLUGS, GOVERNOR
ASPIRATION:	TURBOCHARGED AIR- AIR CHARGE COOLED	FLYWHEEL AND HOUSING:	SAE3 FLYWHEEL HOUSING
CYCLE:	4 STROKE		
COMBUSTION SYSTEM:	DIRECT INJECTION		
COMP. RATIO:	16.2:1		

#### ALTERNATOR

MANUFACTURER:	NEWAGE	SPEED:	1800 RPM
MODEL:	UC1274F	NO. OF LEADS:	12
OUTPUT RATING:	150KW STAND BY	AVR:	SX460
VOLTAGE:	480 V	EXCITATION:	BRUSHLESS
PHASE:	60 HZ	INSULATION:	CLASS H
POWER FACTOR:	0.8	TEMP. RISE:	105 C

#### GENERATOR CONTROLLER

MANUFACTURER:	CONTROLS INC.	<b>INPUTS</b>	
POWER CONSUMPTION:	7.5 VDC – 36 VDC	VOLTAGE INPUT:	(3) 0 – 600VAC
OPS. TEMPERATURE:	-20C TO 70C	TRANSFORMER INPUT:	(3) 5A
STORAGE TEMP:	-30C TO 80C	FREQUENCY INPUT:	50HZ – 6-HZ
HUMIDITY:	95% NON-CONDENSING	EMERGENCY STOP:	YES
POLARITY PROTECTION:	REVERSE PROTECTION	<b>OUTPUTS</b>	
TRAN. VOLTAGE PROT:	YES	RUN OUTPUT:	10A RELAY
DISPLAY:	LCD, 1" H X 4" W	CRANK OUTPUT:	10A RELAY
ENCLOSURE:	COATED STEEL	PRE ALARM OUTPUT:	10A RELAY
OVERLAY/INTERFACE:	AUTOTEX POLYESTER	ALARM OUTPUT:	10A RELAY
PANEL FUSE:	10A		

#### OPTIONS AND ACCESSORIES

- 220 GAL – 700 GAL UL FUEL TANKS.
- DOT FUEL TANK BAFFLES AND CAPS.
- DOT TRAILERS
- AUTOMATIC TRANSFER SWITCH.
- STEEL, OR ALUMINUM ENCLOSURES.
- SOUND ATTENUATION ENCLOSURES.



# 1100 Series

## 1104D-E44TAG2

### Diesel Engine - ElectropaK

111 kW @ 1800 rev/min



#### Power to Meet your Needs

Hitting the key power nodes required by the market, the 1104D-E44TAG2 ElectropaK has been developed to provide a clean and cost effective power solution.

#### State of the Art Design

The 1104D utilises the latest common-rail fuel system technologies with a closely optimised air-management system, which is overseen by the latest generation of electronic engine control. This allows the 1104D range to deliver high power density and excellent fuel economy with low exhaust emissions and minimum heat rejection.

#### Worldwide Power Solution

The 1104D has been designed to be worldwide fuel tolerant, and 5% biofuel (RME) options are available to meet local market needs.

#### World-class Product Support

At Perkins we are constantly researching, developing and investing in our products and services. Total worldwide support is provided through a network of distributors and service outlets, providing access to over 50,000 parts and exchange units 24 hours a day, 365 days a year. This support is enhanced by TIPSS (The Integrated Parts and Service System). TIPSS enables customers to electronically specify and order parts as well as service 1104D engines with online guides and service tools.

#### Lower Operating Costs

The 1104D maintains Tier 2 fuel economy. This will allow many customers to keep existing fuel tanks, avoiding the need for costly redesign. Service intervals are set at 500 hours as standard and Perkins provides comprehensive warranty cover for two years, with three years on major engine components. A low usage warranty package is also available.

#### Long-term Power Solution

The 1104D-E44TAG ElectropaK range has been designed to fully comply with stringent EPA Tier 3 emissions regulations, providing an emissions compliant power solution for the future.

Certified against the requirements of Tier 3 legislation for non-road mobile machinery, powered by constant speed engines (EPA 40 CFR Part 89 Tier 3).

The 1104D-E44TAG ElectropaKs are the latest addition to Perkins 1100 Series Electric Power line-up. Offering improved power density from a compact package, these ElectropaK's build on Perkins 1100 Series reputation within the Power Generation Industry.

These ultra clean engines are assembled on a new high technology production line. Frequent computerised checks during the production process ensure high build quality is maintained throughout.

Hitting the key power nodes required by the market, the 1104D ElectropaK product line-up consists of three models offering a power solution for both Prime and Standby applications, in 60 Hz territories.

Engine speed (rev/min)	Type of Operation	Typical generator output (net)		Engine power			
		kVA	kWe	Gross		Net	
				kWm	bhp	kWm	bhp
1800	Prime	113.0	90.0	106.0	142.1	100.0	134.1
	Standby (maximum)	125.0	100.0	117.0	156.8	111.0	148.8

The above ratings represent the engine performance capabilities to conditions specified in ISO 8528/5. Derating may be required for conditions outside the test conditions; consult Perkins Engines Company Limited. Generator powers are typical and are based on typical alternator efficiencies and a power factor. Fuel specification: Consult Perkins Engines Company Limited (various fuel specifications are available). Lubricating oil: multi-grade oil conforming to API-CH4/C14 must be used.

Rating Definitions  
Prime Power: Power available at variable load in lieu of a main power network. Overload of 10% is permitted for 1 hour in every 12 hours' operation.  
Standby (maximum): Power available at variable load in the event of a main power network failure. No overload is permitted.

# 1100 Series

## 1104D-E44TAG2

### Standard ElectropaK Specification

#### Air inlet

- Mounted air filter and turbocharger

#### Cooling system

- 22" belt-driven pusher fan and guards
- Radiator (incorporating air-to-air charge cooler)
- Water pump

#### Electric system

- 12 volt starter motor
- 12 volt, 65 amp alternator with DC output

#### Flywheel and housing

- High inertia flywheel to SAE J620 Size 10/11½
- SAE3 flywheel housing

#### Fuel system

- Electronic governing (conforms to Class G3 ISO 8528-5)
- Fuel filter

#### Literature

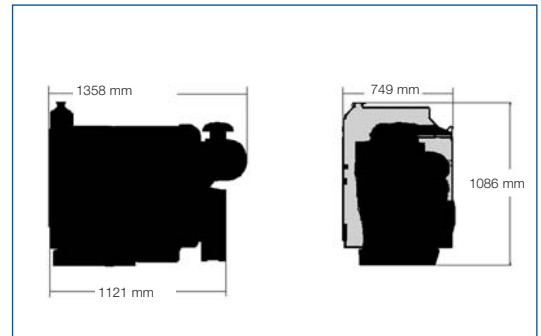
- Users Handbook

#### Lubrication system

- Wet cast iron sump with filler and dipstick
- Oil filter

#### Start aids

- Glow plugs



Fuel Consumption		
Power Rating %	1800 rev/min	
	g/kWh	l/hr
110	214.7	30.0
100	216.3	27.7
75	231.5	22.0
50	253.1	16.0

### General Data

Number of cylinders	4 in-line
Bore and stroke	105 mm x 127 mm
Displacement	4.41 litres
Aspiration	Turbocharged air-to-air chargecooled
Cycle	4 stroke
Combustion system	Direct injection
Compression ratio	16.2:1
Rotation	Anti-clockwise viewed on flywheel
Cooling system	Water-cooled
Total lubrication system capacity	8 litres
Total coolant capacity	17 litres
Dimensions	Length 1358 mm Width 749 mm Height 1086 mm
Dry weight	465 kg
Wet weight	474 kg

Final weight and dimensions will depend on completed specification.



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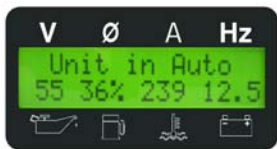
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## DESCRIPTION

The JCAN™ series is a microprocessor-based digital generator controller providing complete monitoring, control, and protection for SAE J1939 electronic engines. The large, backlit display provides complete, easy-to-read engine and generator information on a full-time basis. The flexible product platform allows for customer specific features and functions. For 12 and 24VDC applications. Manual & auto start.

## DISPLAY

Large 1"H x 4"W backlit display with ½" characters.



## SPECIFICATIONS

### GENERAL

OPERATING VOLTAGE.....	7.5VDC to 36 VDC
MAXIMUM POWER CONSUMPTION.....	200mA
OPERATING TEMPERATURE.....	-20°C to +70°C
STORAGE TEMPERATURE.....	-30°C to +80°C
HUMIDITY.....	95% Non-condensing
REVERSE POLARITY PROTECTION.....	Yes
TRANSIENT VOLTAGE SUPPRESSION.....	Yes
DISPLAY.....	LCD, 1"H x 4"W, 2 lines x 16 characters/line
ENCLOSURE.....	Powder Coated Steel
OVERLAY/INTERFACE.....	Autotex Polyester
PANEL FUSE.....	10A
APPROX. WEIGHT.....	14.5 lbs
APPROX. DIMENSIONS.....	10"H x 14"W x 10"D

### ELECTRONIC ENGINE INPUTS

ENGINE COM PORT.....	CANBus J1939 Protocol
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### GENERATOR INPUTS

VOLTAGE INPUTS.....	(3) 0-600VAC
CURRENT TRANSFORMER INPUTS.....	(3) 5A
FREQUENCY INPUT.....	.50Hz or 60Hz

### DIGITAL INPUTS

EMERGENCY STOP (Normally Open).....	1
DIGITAL INPUTS (Normally Open).....	3
<i>(Low Water Level, Low Oil Level, Low Fuel Level – Modified per customer request)</i>	

### OUTPUTS

RUN OUTPUT.....	10A Relay
CRANK OUTPUT.....	10A Relay
PRE ALARM OUTPUT.....	10A Relay
ALARM OUTPUT.....	10A Relay
REMOTE ANNUNCIATION COM PORT.....	Serial RS485

### Extreme Cold Weather Option

OPERATING TEMPERATURE.....	-45°C to +85°C
STORAGE TEMPERATURE.....	-55°C to +95°C

## ALARMS & SHUTDOWNS

Engine and generator protection provided with easy-to-read display messages and indication lamps (red and yellow) for alarm and shutdown conditions. The controller serves as a trouble code reader displaying both active and stored pre alarm and fault codes.



## ENCLOSURE

The standard enclosure is a 10"H x 14"W x 10" D powder coated steel enclosure. Other enclosure options are available.

## SWITCHES

Three toggle switches are standard for Auto/Off/Run, Scroll Lock/Running Time and Speed Select (Run/Idle). Four membrane switch buttons are provided for accessing information and unit configuration. Additional options are available such as emergency stop or other customer specific buttons.

## ACCESSORIES

For a complete installation, engine harnesses, extension harnesses and other accessories such as water temperature senders, oil pressure senders, magnetic pickups and current transformers are available. In addition, components such as relays, fuses, connectors and communication modules can be installed at the factory per customer request.

## OPTIONS

- Remote annunciator with duplicate display and start/stop
- Digital or analog inputs configured per customer request
- Interconnectivity to external communication systems & modules
- Extreme cold weather option