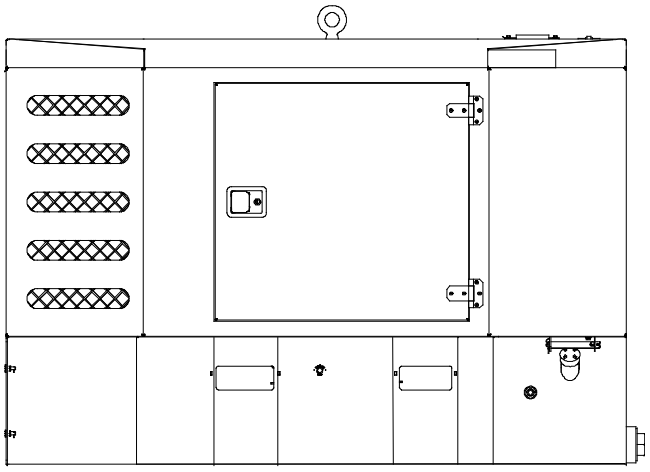
Industrial Generator Set - 30REOZK4
208-600 V Diesel

Tier 4 Final EPA-Certified for Stationary Emergency and Non-Emergency Applications

Ratings Range

		60 Hz
Standby:	**kW**	23-30
	kVA	23-37.5
Prime	**kW**	21-28
	kVA	21-35



Standard Features

- Rehlko provides one-source responsibility for the generating system and accessories.
- Approved for use with certified renewable Hydrotreated Vegetable Oil (HVO)/Renewable Diesel (RD) fuels compliant with EN15940/ASTM D975.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- The 60 Hz generator set offers a UL 2200 listing.
- The generator set accepts rated load in one step.
- The 60 Hz generator set meets NFPA 110, Level 1, when equipped with the necessary accessories and installed per NFPA standards.
- A one-year limited warranty covers all generator set systems and components. Two- and five-year extended limited warranties are also available.
- Alternator features:
  - Wound field excitation system with its unique PowerBoost design delivers great voltage response and short-circuit capability.
  - The brushless, rotating-field alternator has broadrange reconnectability.
- Engine features:
  - Uses cooled Exhaust Gas Regeneration (EGR) and Diesel Oxidation Catalyst (DOC) to meet Tier 4 Final without a Diesel Particulate Filter (DPF).
  - Heavy-duty air cleaner with air restrictor indicator.
  - Lockable battery disconnect switch.
- Other features:
  - Rehlko designed controller for one-source system integration and remote communication. See Controller on page 3.
  - The low coolant level shutdown prevents overheating.
  - Durable steel, sound-attenuating housing with quiet operation of 69 dB(A) log average @ 7 m (23 ft.) with full load at the prime rating.
  - Stainless steel hinges and lockable latches on doors.
  - 125% environmental containment basin for oil and coolant.
  - 110% secondary containment tank for fuel.
  - UL 142 listed subbase fuel tank for 24-hour run time with full load at the prime rating (minimum).
  - Customer connection panel with main circuit breaker, remote start connection, and emergency stop switch.

Generator Set Ratings

				130°C Rise Standby Rating		130°C Rise Prime Rating	
Alternator	**Voltage**	**Ph**	**Hz**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**
4D5.6	120/208	3	60	30/37.5	104	28/35	97
	120/240	3	60	30/37.5	90	28/35	84
	120/240	1	60	23/23	96	21/21	88
	277/480	3	60	30/37.5	45	28/35	42
	347/600	3	60	30/37.5	36	28/35	34

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor. *Standby Ratings:* The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. *Prime Power Ratings:* At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO-8528-1 and ISO-3046-1. For limited running time ratings, consult the factory. Obtain technical information bulletin (TIB-101) for ratings guidelines, complete ratings definitions, and site condition derates. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

Discovery Energy, LLC
200 Twin Oaks Road, Kohler, WI 53044 USA
For the nearest sales and service outlet in the US and Canada, phone 1-800-544-2444 - powersystems.rehlko.com

Alternator Specifications

Specifications		Alternator
Type		4-Pole, Rotating-Field
Exciter type		Brushless, Wound-Field
Leads: quantity, type		12, Reconnectable 6, 600 Volt
Voltage regulator		Solid State, Volts/Hz
Insulation:		NEMA MG1
Material		Class H
Temperature rise		150°C, Standby
Bearing: quantity, type		1, Sealed
Coupling		Flexible Disc
Amortisseur windings		Full
Voltage regulation, no-load to full-load		±0.5%
One-step load acceptance		100% of Rating
Unbalanced load capability		100% of Rated Standby Current
Peak motor starting kVA:		(35% dip for voltages below)
480 V	4D5.6 (12 lead)	76

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Capable of sustained line-to-neutral short-circuit current of up to 300% of the rated current for up to 2 seconds. (IEC 60092-301 short-circuit performance.)
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and dripproof construction.
- Windings are vacuum-impregnated with epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.

Application Data

Engine

Engine Specifications	
Engine: model, type	KDI 1903 TCR 1.9 L, 4-Cycle Turbocharged
Cylinder arrangement	3 Inline
Displacement, L (cu. in.)	1.9 (115.9)
Bore and stroke, mm (in.)	88 x 102 (3.46 x 4.01)
Compression ratio	17.0:1
Piston speed, m/min. (ft./min.)	275 (905)
Main bearings: quantity, type	4, Sleeve
Rated rpm	1800
Max. power at rated rpm, kWm (BHP)	37 (49)
Cylinder head material	Cast Iron
Crankshaft material	Cast Iron
Valve material:	
Intake	Stainless Steel
Exhaust	Stainless Steel
Governor: type, make/model	Electronic
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±0.28%
Frequency	Fixed
Air cleaner type, all models	Dry

Exhaust

Exhaust System	
Exhaust manifold type	Dry
Exhaust flow at rated kW, m^3/min. (cfm)	6.7 (238)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	382 (720)
Allowable back pressure, kPa (in. Hg)	7-12 (2.1-3.5)
Back pressure available after losses due to exhaust aftertreatment system, kPa (in.Hg)	6.7 (2.0)

Engine Electrical

Engine Electrical System	
Battery charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	12
Ampere rating	80
Starter motor rated voltage (DC)	12
Battery, recommended cold cranking amps (CCA):	
Quantity, CCA rating	One, 925
Battery voltage (DC)	12

Fuel

Fuel System	
Fuel supply line, min. ID, mm (in.)	8 (0.31)
Fuel return line, min. ID, mm (in.)	6.3 (0.25)
Max. lift, fuel pump: type, m (ft.)	Mechanical, 2.5 (8.2)
Max. fuel flow, Lph (gph)	35 (9.3)
Max. return line restriction, kPa (in. Hg)	20 (5.9)
Fuel prime pump	Manual
Fuel filter	
Primary	5 Microns @ 98% Efficiency
Water Separator	Yes
Recommended fuel	ASTM D975 or EN 590 Ultra Low Sulfur Diesel (ULSD) with sulfur content <15mg/kg (15 ppm)/RD/HVO

Lubrication

Lubricating System	
Type	Full Pressure
Oil pan capacity, L (qt.) §	8.4 (8.9)
Oil pan capacity with filter, L (qt.) §	8.7 (9.2)
Oil filter: quantity, type §	One, Cartridge
Oil cooler	Water-Cooled
Oil type §	API CJ-4 or ACEA E6-E9

§ Rehlko recommends the use of Rehlko Genuine oil and filters.

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Application Data

Cooling

Radiator System	
Ambient temperature at standby rating, °C (°F)	45 (113)
Ambient temperature at prime power ratings, °C (°F)	50 (122)
Engine jacket water capacity, L (gal.)	4.2 (1.1)
Radiator system capacity, including engine, L (gal.)	17.2 (4.5)
Engine jacket water flow, Lpm (gpm)	57 (15)
Heat rejected to cooling water at rated kW, dry exhaust, certified, kW (Btu/min.)	28 (1592)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	483 (19)
Fan, kWm (HP)	2.7 (3.6)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.125 (0.5)

Operation Requirements

Air Requirements	
Radiator-cooled cooling air, m^3/min. (scfm) *	96.3 (3400)
Combustion air, m^3/min. (cfm)	2.4 (86.3)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	28 (1592)
Alternator, kW (Btu/min.)	6.5 (369)

* Air density = 1.20 kg/m^3 (0.075 lbm/ft^3)

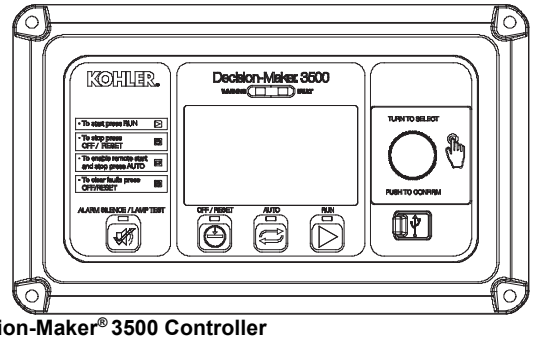
Fuel Consumption**	
Diesel, Lph (gph) at % load	**Standby Rating**
100%	10.5 (2.8)
75%	7.8 (2.1)
50%	5.4 (1.4)
25%	3.1 (0.8)
Diesel, Lph (gph) at % load	**Prime Rating**
100%	9.8 (2.6)
75%	7.3 (1.9)
50%	5.0 (1.3)
25%	2.9 (0.8)

** Volumetric Fuel consumption is up to 4% higher when using HVO/RD than #2 ULSD.

Sound Enclosure

- Durable steel, sound-attenuating housing with quiet operation of 67 dB(A) log average @ 7 m (23 ft.) with full load at the prime rating.
- Internal-mounted silencer and flexible exhaust connector.
- Fade-, scratch, and corrosion-resistant Power Armor™ automotive-grade textured finish.
- Stainless steel hinges and lockable latches on doors.
- Acoustic insulation that meets UL 94 HF1 flammability classification and repels moisture absorption.
- 110% environmental containment basin for fuel, oil, and coolant.

Controller

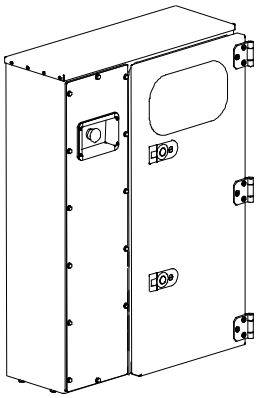


Decision-Maker® 3500 Controller
Provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility.

- Digital display with adjustable contrast and menu control provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or serial configuration
- Controller supports Modbus® protocol
- Integrated hybrid voltage regulator with ±0.5% regulation
- Potted circuitry for protection from vibration and debris
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability

Modbus® is a registered trademark of Schneider Electric.

Customer Connection Panels



- Viewable generator set controller with security cover
- Emergency stop switch
- Main line circuit breaker
  - Reconnectable models: Rating 150 amps, field adjustable based on voltage selected
  - 600 Volt models: Rating 60 amps, field adjustable
- Power connections for Available Options (battery charger and battery heater)
- Remote start connection

Fuel Tanks

- Subbase fuel tank for 24-hour run time with full load at prime rating (minimum).
- Fuel tank includes the fuel level gauge, fuel fill with lockable cap, and normal/emergency vents.
- Both the inner and outer tanks have emergency relief vents.
- The secondary containment tank's construction protects against fuel leaks or ruptures. The inner (primary) tank is sealed inside the outer (secondary) tank. The outer tank contains the fuel if the inner tank leaks or ruptures.

Fuel Tank Specifications	
Fuel tank capacity	293 L (77 gal.)

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Standard Features

- Alternator Protection
- Battery, Battery Rack, and Cables
- Integral Vibration Isolation
- Local Emergency Stop Switch
- Oil Drain Extension
- Operation and Installation Literature

Available Options

Approvals and Listings

- ❑ CSA Certified
- ❑ UL 2200 Listing (requires standard skid)

Controller

- ❑ 15-Relay Dry Contact
- ❑ Remote Annunciator Panel

Electrical System

- ❑ Battery Charger, Equalize/Float Type
- ❑ Battery Heater
- ❑ Block Heater; 600 W, 120 V, 1ph.
  Required for ambient temperature below 20° (68°F)

Fuel System

- ❑ Two-Way fuel Valve
  (for connection of a user-supplied external fuel tank)

Skid

- ❑ Fuel Tank
- ❑ Draggable Fuel Tank
  (heavy gauge steel skid with integrated drains and pull bars)
- ❑ Skid, no tank (fuel tank is not included with this option)

Miscellaneous

- ❑ Engine Fluids Added
- ❑ Spark Arrestor

Literature

- ❑ General Maintenance
- ❑ NFPA 110
- ❑ Overhaul
- ❑ Production

Warranty

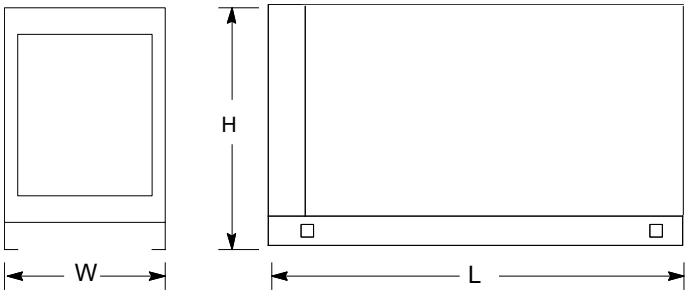
- ❑ 2-Year Basic Limited Warranty
- ❑ 2-Year Prime Limited Warranty
- ❑ 5-Year Basic Limited Warranty
- ❑ 5-Year Comprehensive Limited Warranty

Other Options

- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____

Dimensions and Weights

Overall Size, L x W x H, mm (in.):	2184 x 1016 x 1622
Fuel Tank	(86.0 x 40.0 x 63.9)
Weight, with engine fluids (no fuel), kg (lb.):	1397 (3080)
Overall Size, L x W x H, mm (in.):	2489 x 1016 x 1622)
Draggable Fuel Tank	(98.0 x 40.0 x 63.9)
Weight, with engine fluids (no fuel), kg (lb.):	1461 (3220)
Overall Size, L x W x H, mm (in.):	2184 x 1016 x 1418
Skid	(86.0 x 40.0 x 55.9)
Weight, with engine fluids (no fuel), kg (lb.):	998 (2200)



NOTE: This drawing is provided for reference only and should not be used for planning. Contact your local distributor for more detailed information.

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