

Monacacy Valley Electric, Inc.

1925 Frederick Pike
Littlestown, PA 17340
(717) 359-9500
Fax (717) 359-4664

May 4, 2006

New Service Facility for Penn Township
Electrical Construction

Submittal No. 16622.12
Generator Submittal

Specification Section(s): 16622

Architect: LSC Design

Supplier(s): Winter Engine
715 Vogelsong Rd.
York, PA 17404

*There are no deviations from the contract.

Lead-time once approved is- 12 Weeks.

- APPROVED NOT APPROVED
- APPROVED AS NOTED
- REVISE AND RESUBMIT

APPROVAL IS ONLY FOR CONFORMANCE WITH THE DESIGN CONCEPT OF PROJECT AND COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY APPROVAL HEREIN INDICATED DOES NOT CONSTITUTE A WAIVER OF ANY OF THE REQUIREMENTS OF THE SPECIFICATIONS WITH REGARD TO GUARANTEES OF PERFORMANCE AND EFFICIENCY.

**MONACACY VALLEY ELECTRIC
LITTLESTOWN, PA**

Date 5/4/06
By Crystal Harris

Review is for general compliance of intent with contract documents. No responsibility is assumed for correctness of dimensions, quantities or details.

- Reviewed - No Exceptions Taken
- Reviewed - Make Corrections as Noted
- Make Corrections as Noted and Resubmit
- Rejected - See Remarks

By: CMB Date: 5/25/06

Paragon Engineering Services, Inc.

2005.0288.00 SD. 19



WINTER ENGINE - GENERATOR SERVICE, INC.

715 VOGELSONG ROAD • YORK, PA 17404

PHONE: (717) 848-3777

GENERATOR SYSTEM:

PENN TOWNSHIP

MUNICIPAL SERVICE FACILITY

HANOVER, PENNSYLVANIA 17331

PREPARED FOR:

MONACACY VALLEY ELECTRIC, INC.

1925 FREDERICK PIKE

LITTLESTOWN, PENNSYLVANIA 17340

DATE: APRIL 28, 2006

KOHLER

KOHLER

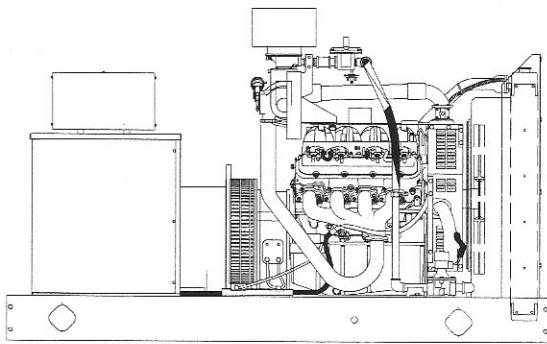
- BILL OF MATERIAL -

- 1 Kohler Model #125RZG Natural Gas Generator Set
Rated 130KW – 451 Amps @ 120/208 Volts – 3 Phase
UL2200 Listing
Sound Attenuated Weather Housing with
Interior Mounted Critical Silencer
Rodent Guards
Radiator Cooled
Block Heater (1800 Watt – 120 V.A.C.)
DEC 550 Controller with C.T.'s/Load Shed
A.C. Instrument Panel
Time Delay Engine Cooldown
Overvoltage Protection Shutdown
Electronic Isochronous Governor
4S13 Standard Alternator
400 Amp & 50 Amp Line Circuit Breakers
12 V.D.C. Shunt Trip on 400 Amp Breaker
Safeguard Breaker
Run Relay
Oil Drain Extension
Natural Gas Carburetion
Mounted Fuel Solenoid Valve & Flexible Line
Fuel Strainer
Battery Float Charger (12 V.D.C. – 10 Amp)
Battery, Rack & Cables
Engine Lube Oil & Antifreeze
(3) Sets Operators & Maintenance Manuals
Two Year Warranty Program
- 1 Kohler Model #KCT-ACTA-0400S Automatic Transfer Switch
Rated 400 Amps – 3 Pole – 208 Volts
MPAC-1000 Microprocessor Control
Pilot Lights
Time Delay Start – Transfer – Retransfer – Stop
Automatic Exerciser
Solid Neutral
NEMA I Enclosure
- 1 Kohler Model #KCT-ACTA-0070S Automatic Transfer Switch
Rated 70 Amps – 3 Pole – 208 Volts
MPAC-1000 Microprocessor Control
Pilot Lights
Time Delay Start – Transfer – Retransfer – Stop
Automatic Exerciser
Solid Neutral
NEMA I Enclosure



Ratings Range

		60 Hz	50 Hz
Standby:	kW	95-130	84-104
	kVA	95-163	84-130
Prime:	kW	90-115	77-96
	kVA	90-144	77-120



Standard Features

- Kohler Co. provides one-source responsibility for the generating system and accessories.
- 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.
- A one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended warranties are also available.
- Alternator features:
 - Kohler's Fast-Response™ III wound field (WF) design alternator provides excellent voltage response and short-circuit capability using an auxiliary power brushless exciter.
 - Kohler's unique Fast-Response™ II excitation system delivers excellent voltage response and short circuit capability using a permanent magnet (PM)-excited alternator.
 - The brushless, rotating-field alternator has broadrange reconnectability.
- Other features:
 - Controllers are available for all applications. See controller features inside.
 - The electronic, isochronous governor incorporates an integrated drive-by-wire throttle body actuator delivering precise frequency regulation.

Generator Set Ratings

Alternator	Voltage	Ph	Hz	Natural Gas				LP Gas			
				130°C Rise Standby Rating		105°C Rise Prime Rating		130°C Rise Standby Rating		105°C Rise Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps
4S11W/ 4S11	120/208	3	60	125/156	434	115/144	399	105/131	364	96/120	333
	127/220	3	60	125/156	410	115/144	377	105/131	344	96/120	315
	120/240	3	60	125/156	376	115/144	346	105/131	316	96/120	289
	120/240	1	60	95/95	396	90/90	375	95/95	396	86/86	358
	139/240	3	60	125/156	376	115/144	346	105/131	316	96/120	289
	220/380	3	60	120/150	228	110/138	209	105/131	199	96/120	182
	277/480	3	60	125/156	188	115/144	173	105/131	158	96/120	144
	347/600	3	60	125/156	150	115/144	138	105/131	126	96/120	115
	110/190	3	50	104/130	395	96/120	365	96/120	365	88/110	334
	115/200	3	50	104/130	375	96/120	346	96/120	346	88/110	318
	120/208	3	50	104/130	361	96/120	333	96/120	333	88/110	305
	110/220	3	50	104/130	341	96/120	315	96/120	315	88/110	289
	110/220	1	50	84/84	382	77/77	350	84/84	382	77/77	350
	220/380	3	50	104/130	198	96/120	182	96/120	182	88/110	167
	230/400	3	50	104/130	188	96/120	173	96/120	173	88/110	159
	240/416	3	50	104/130	180	96/120	167	96/120	167	88/110	153
4S13W/ 4S13	120/208	3	60	130/163	451	115/144	399	110/138	382	100/125	347
	127/220	3	60	130/163	426	115/144	377	110/138	361	100/125	328
	120/240	3	60	130/163	391	115/144	346	110/138	331	100/125	301
	120/240	1	60	100/100	417	91/91	379	100/100	417	91/91	379
	139/240	3	60	130/163	391	115/144	346	110/138	331	100/125	301
	220/380	3	60	125/156	237	115/144	218	110/138	209	100/125	190
	277/480	3	60	130/163	195	115/144	173	110/138	165	100/125	150
	347/600	3	60	130/163	156	115/144	138	110/138	132	100/125	120
	110/190	3	50	104/130	395	96/120	365	96/120	365	88/110	334
	115/200	3	50	104/130	375	96/120	346	96/120	346	88/110	318
	120/208	3	50	104/130	361	96/120	333	96/120	333	88/110	305
	110/220	3	50	104/130	341	96/120	315	96/120	315	88/110	289
	110/220	1	50	90/90	409	80/80	364	90/90	409	80/80	364
	220/380	3	50	104/130	198	96/120	182	96/120	182	88/110	167
	230/400	3	50	104/130	188	96/120	173	96/120	173	88/110	159
	240/416	3	50	104/130	180	96/120	167	96/120	167	88/110	153
4V11W/ 4V11	120/240	1	60	110/110	458	105/105	438	100/100	417	91/91	379
	110/220	1	50	96/96	436	87/87	395	88/88	400	80/80	364

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:** Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. **Prime Power Ratings:** Prime power ratings apply to installations where utility power is unavailable or unreliable. 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, overload power in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory. Obtain the technical information bulletin (TIB-101) on ratings guidelines for the complete ratings definitions. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. **GENERAL GUIDELINES FOR DERATION:** **Altitude:** Derate 0.5% per 100 m (328 ft.) elevation above 1500 m (4921 ft.) up to a maximum elevation of 3000 m (9842 ft.). **Temperature:** Derate 2.0% per 10°C (18°F) temperature above 25°C (77°F) up to 50°C (122°F).

Alternator Specifications

Specifications	Alternator
Manufacturer	Kohler
Type	4-Pole, Rotating-Field
Exciter type	
Wound field (WF)	Wound Exciter Field with Separate Excitation Power Winding
Permanent magnet (PM)	Brushless, Permanent-Magnet
Leads: quantity, type	
4S11W/4S11, 4S13W/4S13	12, Reconnectable
4V11W/4V11	4, 110-120/220-240
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H
Temperature rise	130°C, Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Voltage regulation, no-load to full-load	
Wound field (WF) alternator	±0.25% Average
Permanent magnet (PM) alternator ...	±2% Average
550 controller (with 0.5% drift due to temperature variation)	3-Phase Sensing, ±0.25%
Unbalanced load capability	100% of Rated Standby Current
One-step load acceptance	100% of Rating
Peak motor starting kVA:	(35% dip for voltages below)
480 V, 380 V 4S11W/4S11 (12 lead) ..	460 (60Hz), 350 (50Hz)
480 V, 380 V 4S13W/4S13 (12 lead) ..	515 (60Hz), 370 (50Hz)
240 V, 220 V 4V11W/4V11 (4 lead) ...	— (60Hz), — (50Hz)

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and dripproof construction.
- Vacuum-impregnated windings with fungus-resistant epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.
- Fast-Response™ III wound field (WF) brushless alternator with auxiliary power brushless exciter for excellent load response.
- Fast-Response™ II brushless alternator with brushless exciter for excellent load response.

Application Data

Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	General Motors	
Engine: model, type	Industrial Powertrain, Vortec 8.1 L, 4-Cycle, Turbocharged	
Cylinder arrangement	V-8	
Displacement, L (cu. in.)	8.1 (496)	
Bore and stroke, mm (in.)	108 x 111 (4.25 x 4.37)	
Compression ratio	9.1:1	
Piston speed, m/min. (ft./min.)	399 (1311)	332 (1092)
Main bearings: quantity, type	Alum. Lead Silicon Alloy	
Rated rpm	1800	1500
Max. power at rated rpm, kW (HP)	146 (195)	118 (158)
Cylinder head material	Cast Iron	
Piston type and material	Strutless Flat Top, Hypereutectic Cast Alum.	
Crankshaft material	Cast Nodular Undercut Rolled Fillet	
Valve (exhaust) material	Int.-A193 Exh. Inconel	
Governor type	Electronic	
Frequency regulation, no-load to full-load	Isochronous	
Frequency regulation, steady state	±0.5%	
Frequency	Field-Convertible	
Air cleaner type, all models	Dry	

Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust manifold type	Dry	
Exhaust flow at rated kW, m ³ /min. (cfm)	26.1 (920)	18.7 (660)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	649 (1200)	
Maximum allowable back pressure, kPa (in. Hg)	10.2 (3.0)	
Exhaust outlet size at engine hookup, mm (in.)	71 (2.8)	

Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Ignition system	Individual Coil Near Plug Ignition	
Battery charging alternator:		
Ground (negative/positive)	Negative	
Negative	12	
Ampere rating	70	
Starter motor rated voltage (DC)	12	
Battery, recommended cold cranking amps (CCA):		
Qty., rating for -18°C (0°F)	One, 630	
Battery voltage (DC)	12	

Application Data

Fuel

Fuel System	60 Hz	50 Hz
Fuel type	LP Gas or Natural Gas	
Fuel supply line inlet	1.5 NPTF	
Natural gas/LPG fuel supply pressure, measured at the generator set fuel inlet downstream of any fuel system equipment accessories, kPa (in. H ₂ O)	1.74-2.74 (7.0-11.0)	

Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, L (qt.)	8.0 (8.5)	
Oil pan capacity with filter, L (qt.)	8.5 (9.0)	
Oil filter: quantity, type	1, Cartridge	

Cooling

Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F) *	50 (122)	
Engine jacket water capacity, L (gal.)	10.0 (2.6)	
Radiator system capacity, including engine, L (gal.)	24.2 (6.4)	
Engine jacket water flow, Lpm (gpm)	125 (33)	102 (27)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	110 (6260)	72 (4100)
Heat rejected to engine oil at rated kW, kW (Btu/min.)	1.4 (81)	1.2 (68)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	599 (23.6)	
Fan, kWm (HP)	10.4 (14.0)	6.0 (8.1)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H ₂ O)	0.125 (0.5)	

* Weather housing with roof-mounted silencer and enclosure with enclosed silencer reduce ambient temperature capability by 10°C (18°F).

Remote Radiator System†	60 Hz	50 Hz
Exhaust manifold type	Dry	
Connection sizes:		
Water inlet, ID hose, mm (in.)	44.45 (1.75)	
Water outlet, ID hose, mm (in.)	38.10 (1.50)	
Static head allowable above engine, kPa (ft. H ₂ O)	4.32 (17.0)	

† Contact your local distributor for cooling system options and specifications based on your specific requirements.

Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m ³ /min. (scfm)‡	306 (10800)	232 (8200)
Cooling air required for generator set when equipped with city water cooling or remote radiator, based on 14°C (25°F) rise and ambient temperature of 29°C (85°F), m ³ /min. (cfm)	307 (10840)	193 (6820)
Combustion air, m ³ /min. (cfm)	8.8 (312)	6.2 (220)
Heat rejected to ambient air:		
Engine, kW (Btu/min.)	72.0 (4100)	44.1 (2510)
Alternator, kW (Btu/min.)	13.7 (780)	9.8 (560)

‡ Air density = 1.20 kg/m³ (0.075 lbm/ft³)

Fuel Consumption§	60 Hz	50 Hz
Natural Gas, m³/hr. (cfh) at % load	Standby Rating	
100%	46.8(1651)	39.6(1400)
75%	38.9(1372)	31.3(1105)
50%	27.9 (984)	22.8 (806)
25%	18.4 (650)	15.1 (535)
0%	10.4 (369)	8.8 (310)
Natural Gas, m³/hr. (cfh) at % load	Prime Rating	
100%	43.9(1549)	36.6(1293)
75%	35.8(1266)	29.0(1023)
50%	26.1 (923)	21.4 (757)
25%	17.7 (624)	14.6 (515)
0%	10.4 (369)	8.8 (310)
LP Gas, m³/hr. (cfh) at % load	Standby Rating	
100%	16.5 (582)	14.4 (509)
75%	13.3 (469)	11.8 (416)
50%	10.0 (354)	8.4 (298)
25%	6.4 (226)	5.8 (205)
0%	3.7 (130)	3.1 (108)
LP Gas, m³/hr. (cfh) at % load	Prime Rating	
100%	15.3 (541)	13.5 (475)
75%	12.4 (438)	10.9 (384)
50%	9.4 (331)	8.0 (281)
25%	6.1 (217)	5.6 (196)
0%	3.7 (130)	3.1 (108)

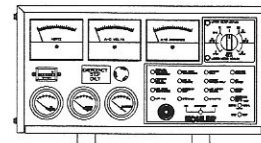
§ Fuel consumption is based on 1015 Btu/standard cu. ft. natural gas.

Controllers



Decision-Maker™ 550 Controller

Audiovisual annunciation with NFPA 110 Level 1 capability. Programmable microprocessor logic and digital display features. Alternator safeguard circuit protection. 12- or 24-volt engine electrical system capability. Remote start, remote annunciation, and remote communication options. Refer to G6-46 for additional controller features and accessories.



Decision-Maker™ 3+, 16-Light Controller

Audiovisual annunciation with NFPA 110 Level 1 capability. Microprocessor logic, AC meters, and engine gauge features. 12- or 24-volt engine electrical system capability. Remote start, prime power, and remote annunciation options. Refer to G6-30 for additional controller features and accessories.

Standard Features and Accessories

Additional Standard Features

- Alternator Protection (standard with 550 controller)
- Battery Rack and Cables
- Electronic, Isochronous Governor
- Gas Fuel System (includes fuel mixer, secondary gas regulator, gas solenoid valve, and flexible fuel line between the engine and the skid-mounted fuel system components)
- Integral Vibration Isolation
- Low Fuel Pressure Shutdown
- Oil Drain Extension
- Operation and Installation Literature

Accessories

Enclosed Unit

- Sound Enclosure (with enclosed critical silencer)
- Weather Enclosure (with enclosed critical silencer)
- Weather Housing (with roof-mounted silencer)

Open Unit

- Exhaust Silencer, Critical (kits: PA-324292, PA-324470)
- Flexible Exhaust Connector, Stainless Steel

Cooling System

- Block Heater
[recommended for ambient temperatures below 10°C (50°F)]
- City Water Cooling
- Radiator Duct Flange
- Remote Radiator Cooling

Fuel System

- Flexible Fuel Line
(required when the generator set skid is spring mounted)
- Gas Filter
- LP Gas Liquid Withdrawal
- Manual Valve
- Secondary Gas Solenoid Valve

Electrical System

- Battery
- Battery Charger, Equalize/Float Type
- Battery Heater

Engine and Alternator

- Alternator, Wound Field (WF)
- Alternator, Permanent Magnet (PM)
- Air Cleaner Restrictor Indicator
- Alternator Strip Heater
- CSA Certification
- Engine Fluids (oil and coolant) Added
- Line Circuit Breaker (NEMA1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA1 enclosure)
- Optional Alternators
- Rated Power Factor Testing
- Rodent Guards
- Safeguard Breaker (not available with 550 controller)
- Voltage Regulation, 1%
- Voltage Regulator Sensing, 3-Phase

Literature and Maintenance

- General Maintenance Literature Kit
- Maintenance Kit (includes standard air, oil, and fuel filters)
- NFPA 110 Literature
- Overhaul Literature Kit
- Production Literature Kit

Controller (550 and 16-Light)

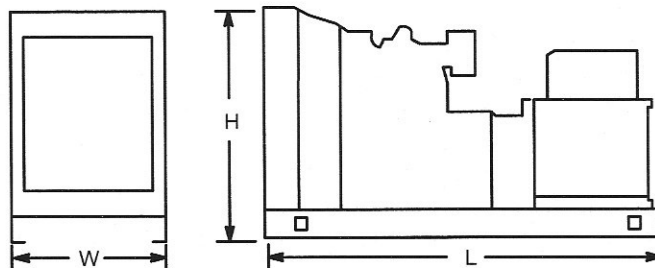
- Common Failure Relay Kit
- Communication Products and PC Software (550 controller only)
- Customer Connection Kit
- Dry Contact Kit (isolated alarm)
- Engine Prealarm Sender Kit
- Local Emergency Stop Kit
- Prime Power Switch (550 controller only)
- Remote Annunciator Panel
- Remote Audiovisual Alarm Panel
- Remote Emergency Stop Kit
- Remote Mounting Cable
- Run Relay Kit

Miscellaneous Accessories

-
-
-
-
-
-
-
-
-
-

Dimensions and Weights

Overall Size, L x W x H, mm (in.):
 Wide Skid 2400 x 1040 x 1484 (94.5 x 40.9 x 58.4)
 Narrow Skid 2400 x 865 x 1484 (94.5 x 34.1 x 58.4)
 Weight (radiator model), wet, kg (lb.): 1134 (2500)



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

DISTRIBUTED BY:

9001
KOHLER
POWER SYSTEMS
NATIONALLY REGISTERED

Kohler® Decision-Maker™ 550 Controller

Software (Code) Version 2.10 or higher

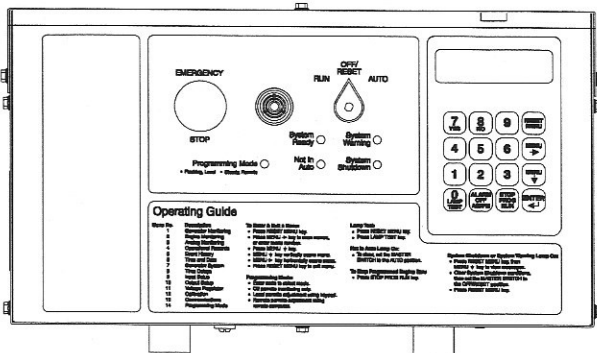
General Description and Function

The Decision-Maker™ 550 generator set controller provides advanced control, system monitoring, and system diagnostics for optimum performance.

The Decision-Maker™ 550 generator set controller provides complete compatibility with selected engine Electronic Control Module (ECM) and non-ECM equipped generator set engines.

The Decision-Maker™ 550 generator set controller interfaces between the generator set and Kohler switchgear for paralleling applications between generator sets and/or the utility.

ECM models only: The Decision-Maker™ 550 controller directly communicates with the ECM to monitor engine parameters and diagnose engine problems (see Controller Diagnostics for details).



Standard Features

- The controller meets the National Fire Protection Association requirements of NFPA 99 and NFPA 110, Level 1.
- The controller is listed under Underwriter's Laboratories UL 508.
- A digital display and keypad provide access to data. A two-line vacuum fluorescent display provides complete and understandable information in either English or metric units.
- The controller can communicate directly with a personal computer, via a network, or via a modem configuration. See spec sheets G6-76, Monitor III Software, and G6-50, Decision-Maker™ 550 Communications, for more information.
- The controller supports Modbus® RTU (Remote Terminal Unit)—an industry standard open communication protocol.

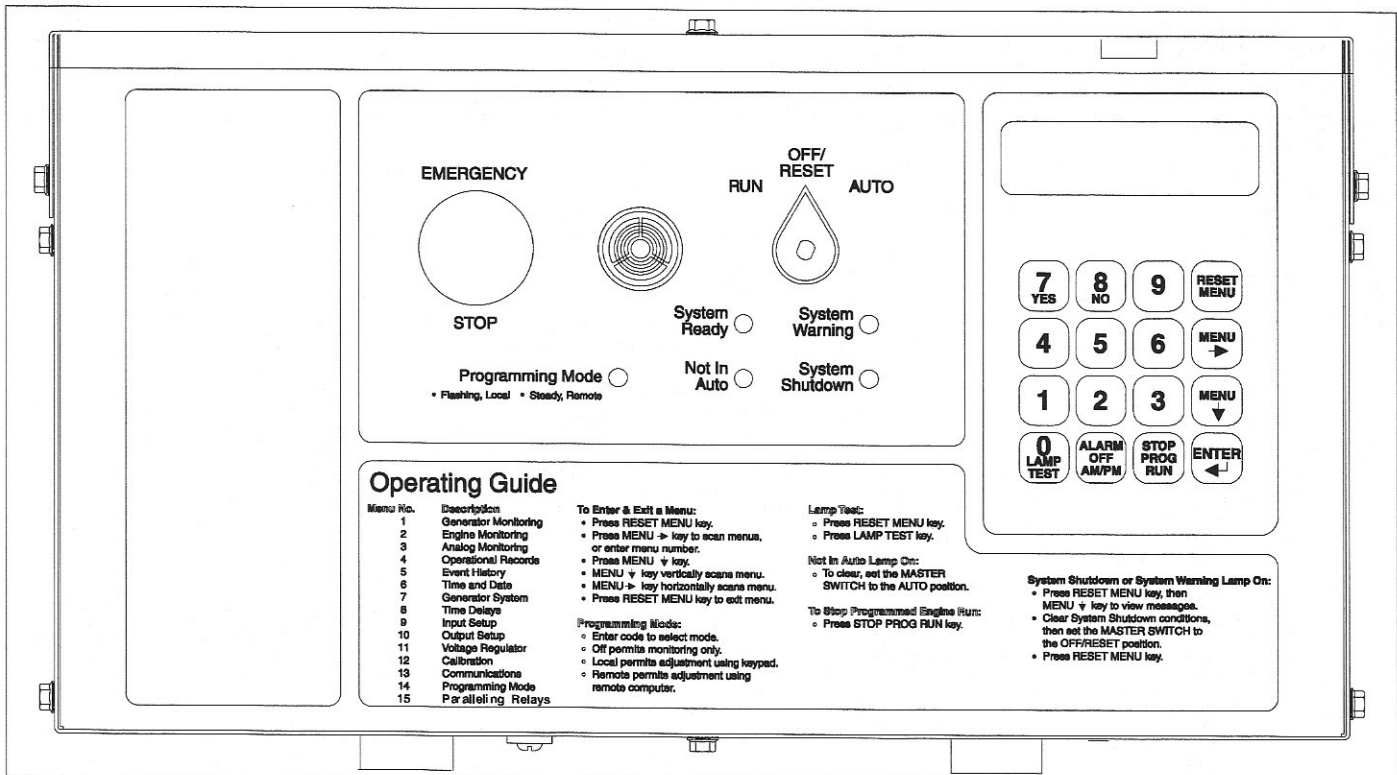
Optional Features

- Monitor III, an optional menu-driven Windows®-based PC software, monitors engine and alternator parameters and also provides control capability.
- An optional paralleling feature provides user-defined functions and time delays. Menu 15 (Paralleling Relays) is available when ordering Kohler PD-Series switchgear.

Modbus® is a registered trademark of Schneider Electric.

Windows® is a registered trademark of Microsoft Corporation.

Decision-Maker™ 550 Controller



Controller Features

Specifications

- Power source with circuit protection: 12- or 24-volt DC
- Power drain: 700 milliamps (or 400 milliamps without panel lamps)
- Humidity range: 5% to 95% noncondensing
- Operating temperature range: -40°C to +70°C (-40°F to +158°F)
- Storage temperature range: -40°C to +85°C (-40°F to +185°F)
- The 230-300REOZD generator set models with the Decision-Maker™ 550 controller comply with ISO 8528-5, Class G3, for transient response.
- Standards:
 - NFPA 99
 - NFPA 110, Level 1
 - UL 508

Hardware Features

- Vacuum fluorescent display
- Environmentally sealed 16-button membrane keypad
- Five LED status indicating lights
- Three-position (run, off/reset, auto) selector switch
- Latch-type emergency stop switch with International Electromechanical Commission (IEC) yellow ring identification
- Alarm horn
- Fuse-protected battery circuits
- Controller mounts locally or remotely up to a distance of 12 m (40 ft.) and viewed from one of four positions
- Dimensions—W x H x D,
460 x 275 x 291 mm (18.15 x 10.8 x 11.47 in.)

NFPA Requirements

In order to meet NFPA 110, Level 1 requirements the generator set controller must monitor specific engine/generator functions and faults.

NFPA 110 Common Alarm

- Engine functions:
 - Overcrank
 - Low coolant temperature warning
 - High coolant temperature warning
 - High coolant temperature shutdown
 - Low oil pressure shutdown
 - Low oil pressure warning
 - Overspeed
 - Low fuel (level or pressure) *
 - Low coolant level
 - EPS supplying load
 - High battery voltage *
 - Low battery voltage *
 - Air damper indicator
 - General functions:
 - Master switch not in auto
 - Battery charger fault *
 - Lamp test
 - Contacts for local and remote common alarm
 - Audible alarm silence switch
 - Remote emergency stop
- * Requires optional input sensors on some generator set models

Control Functions

The control functions apply to both the ECM and non-ECM equipped models unless noted otherwise.

- **AC Output Voltage Adjustment**

The voltage adjustment provides keypad adjustment in 0.1 volt increments of the average line-to-line AC output voltage with a maximum adjustment of $\pm 10\%$ of the system voltage.
- **Alternator Protection**

The controller firmware provides generator set overload and short circuit protection matched to each alternator for the particular voltage/phase configuration.
- **Automatic Restart**

The controller automatic restart feature initiates the start routine and re crank when the generator set slows to less than 390 rpm after a failed start attempt.
- **Battleswitch (Fault Shutdown Override Switch)**

The *battleswitch* input provides the ability to override the fault shutdowns except emergency stop and overspeed shutdown in emergency situations and during generator set troubleshooting.
- **Clock and Calendar**

Real-time clock and calendar functions time stamp shutdowns for local display and remote monitor. Also, use these functions to determine the generator start date and days of operation.
- **Cooldown Temperature Override**

This feature provides the ability to bypass (override) the cooldown temperature shutdown and force the generator set to run for the full engine cooldown time delay. Also see Time Delay Engine Cooldown (TDEC).
- **Cyclic Cranking**

The controller has programmable cyclic cranking. The customer selects the number of crank cycles (1-6) and the crank time from (10-30) seconds. The crank disconnect depends upon the speed sensor input information or the generator frequency information. The default cyclic crank setting is 15 seconds on, 15 seconds off for three cycles.
- **Digital Voltage Regulator**

The digital voltage regulator provides $\pm 0.25\%$ no-load to full-load regulation.
- **Display Power Shutdown**

To conserve battery power, the display turns off after 5 minutes of inactivity. Pressing any keypad button activates the display.
- **ECM Communication**

The controller monitors ECM communication links and provides fault detection for oil pressure signal loss, coolant temperature signal loss, and ECM communication loss. Each of these faults provides local display, alarm horn ON, and relay driver output (RDO) on ECM models only. See Controller Diagnostics following for additional information.
- **Idle Speed Function**

Idle speed function provides the ability to start and run the engine at idle speed for a selectable time period. The engine will go to normal speed should the temperature reach warm-up before the time delay is complete.
- **Lamp Test**

Keypad switch verifies functionality of the indicator LEDs, alarm horn, and digital display.
- **Load Shed**

The load shed function provides a load control output (RDO) with user selectable load shed level.
- **Master Switch Fault**

The generator set master switch has fault detection at four levels: 1) master switch to off, 2) master switch open, 3) master switch error, and 4) master switch not in auto. Each of these faults/warnings provides local display, alarm horn on, and activates a relay driver output (RDO). By placing the master switch to the OFF/RESET position all generator set faults can be reset.
- **Modbus® Interface**

The Modbus® interface provides industry standard open protocol for communication between the generator set controller and other devices or for network communications.
- **Number of Starts**

Total number of generator successful starts is recorded and displayed on the local display and remote PC monitor. This information is a resettable and total record.
- **Programming Access**

The setup access and programming information is password protected. When locally accessing programming information, the PM (programming mode) LED flashes. When remotely accessing programming information, the PM LED is steady.
- **Programmed Run**

The programmed run function provides user-selectable time for a one-time exercising of the generator set. The controller does not provide weekly scheduled exercise periods.
- **Remote Reset**

The remote reset function resets faults and allows restarting of the generator without going to the master switch off/reset position. The remote reset function is initiated via the remote reset digital input.
- **Running Time Hourmeter**

The running time hourmeter function is available on the local display and remote monitor. The information displayed uses real time loaded and unloaded run time as an actual and resettable record.
- **Self-Test**

The controller has memory protection and microprocessor self-test.
- **Starting Aid**

The starting aid feature provides control for an ether injection system. This setup has adjustable *on* time before engine crank from 0-10 seconds. This feature is also part of the remote communication option.
- **Time Delay Engine Cooldown (TDEC)**

The TDEC provides a user selectable time delay before the generator set shuts down.
If the engine is *above* the preset temperature and the unit is signalled to shut down, the unit will continue to run for the duration of the TDEC.
If the engine is *at or below* the preset temperature and the unit is signalled to shut down or the TDEC is running, the unit will shut down without waiting for the time delay to expire.
Also see Cooldown Temperature Override.
- **Time Delay Engine Start (TDES)**

The TDES provides a user selectable time delay before the generator set starts.

Modbus® is a registered trademark of Schneider Electric.

Controller Diagnostics

The controller features warnings and shutdowns as text messages on the vacuum fluorescent display. See the table below.

Warnings show yellow LED and signal an impending problem.

Shutdowns show red LED and stop the generator set.

User-Defined Common Fault and Status. The user customizes outputs through a menu of warnings, shutdowns, and status conditions. User defines up to 31 Relay Driver Outputs (**RDOs**) (relays not included).

Note: The available user inputs are dependent on factory reserved inputs for specific engine types, engine controls, and paralleling applications.

Note: Menu 15 features are available by purchasing the paralleling switchgear option.

Standard Controller (available on all models)				
	Warning Function	Shutdown Function	User-Defined	User RDOs
Engine Functions				
Air damper control, if equipped			X	X
Air damper indicator, if equipped		X	X	X
Coolant temp. signal loss		X	X	X
High battery voltage	X		X	X
High coolant temperature	X	X	X	X
High oil temp. shutdown		X	X	X
Low battery voltage	X		X	X
Low coolant level		X	X	X
Low coolant temperature	X		X	X
Low fuel (level or pressure)*	X		X	X
Low oil pressure	X	X	X	X
Oil pressure signal loss		X	X	X
Overcrank		X	X	X
Overspeed		X	X	X
Speed sensor fault	X		X	X
Starting aid			X	X
Weak battery	X		X	X
General Functions				
Auxiliary inputs 0-5 VDC—up to 7 analog	X	X	X	X
Auxiliary inputs—up to 21 digital	X	X	X	X
Battery charger fault*	X		X	X
Defined common fault†			X	X
EEPROM write failure		X	X	X
Emergency stop		X	X	X
Engine cooldown delay			X	X
Engine start delay			X	X
EPS supplying load	X		X	X
Internal fault		X	X	X
Load shed kW overload	X		X	X
Load shed underfrequency	X		X	X
Master switch error		X	X	X
Master switch not in auto	X		X	X
Master switch open		X	X	X
Master switch to off		X	X	X
NFPA 110 common alarm			X	X
SCRDO's 1-4 (software controlled RDOs)			X	X
System ready (status)			X	X
Generator Functions				
AC sensing loss	X	X	X	X
Alternator protection		X	X	X
Critical overvoltage		X	X	X
Generator running			X	X
Ground fault*	X		X	X
Locked rotor		X	X	X

Standard Controller				
	Warning Function	Shutdown Function	User-Defined	User RDOs
Overcurrent	X		X	X
Overfrequency		X	X	X
Overvoltage		X	X	X
Underfrequency		X	X	X
Undervoltage		X	X	X
Menu 15 Enabled Enhancements				
Breaker trip			‡	X
Common protective relay output			X	X
Loss of field		X	X	X
Overcurrent		X	X	X
Overpower		X	X	X
Reverse power		X	X	X
In synchronization			‡	X
Waukesha-Powered Engine Enhancements				
Air/fuel module shutdown		X	‡	X
Air/fuel module engine start delay			X	X
Air/fuel module remote start			X	X
Detonation fault	X	X	‡	
Fuel valve relay			X	X
High oil temp. warning	X		X	X
Intake air temperature	X	X	X	X
Knock fault		X	‡	X
No intake air temp. signal		X	X	X
No oil temp. signal		X	X	X
Prelube relay			X	X
DDC/MTU-Powered Engine and MDEC Enhancements				
Block heater control §			X	X
ECM communications loss		X	X	X
High oil temp. warning	X		X	X
Intake air temperature	X	X	X	X
Load shed overtemperature			X	X
Low coolant temperature	X	X	X	X
MDEC red alarm		X	X	X
MDEC yellow alarm	X		X	X
275-400REOZV Engine Enhancements				
ECM communications loss		X	X	X
125 kW with 8.1 L GM Engine Enhancements				
Low fuel pressure		X	‡	X

* Requires optional input sensors on some models.

† Factory default settings for the defined common fault are emergency stop, high coolant temperature shutdown, low oil pressure shutdown, overcrank, and overspeed.

‡ Factory set inputs that are fixed and not user changeable.

§ For future applications

Controller Monitoring Standard Equipment and Features

- Alarm horn
- Indicators:
 - Not in auto (yellow)
 - Program mode (yellow)
 - System ready (green)
 - System shutdown (red)
 - System warning (yellow)
- Switches and standard features:
 - Keypad, 16-button multi-function sealed membrane
 - Lamp test
 - Switch, auto, off/reset, run (engine start)
 - Switch, emergency stop (normally closed contacts)
- Vacuum fluorescent display with two lines of 20 characters

Displays

Some engine displays are dependent upon enhanced electronic engine control availability.

- Engine monitoring data (metric or English units):
 - Battery voltage
 - Coolant—level †
 - Coolant—pressure †
 - Coolant—temperature
 - Engine start countdown
 - Fuel—pressure and temperature
 - Fuel rate expressed as L/hr. (gal./hr.) †
 - Fuel—used last run expressed as L (gal.) is the accumulated fuel qty. used since last reset by the DDC engine DDEC reader †
 - Oil—level and crankcase pressure †
 - Oil—pressure
 - Oil—temperature †‡§
 - Rpm
 - Temperature—ambient †
 - Temperature—intake air †§
- Engine setpoints
 - Coolant—high temperature shutdown and warning setpoints
 - Oil—low pressure shutdown and warning setpoints
 - Temperature—engine cooled down setpoint
 - Temperature—engine warmed up setpoint
- Generator monitoring data:
 - Current (L1, L2, L3), ±0.25% accuracy
 - Frequency, ±0.5% accuracy
 - Kilowatts, total per phase (L1, L2, L3), ±0.5% accuracy
 - KVA, total per phase (L1, L2, L3), ±0.5% accuracy
 - KVAR, total absorbing/generating per phase (L1, L2, L3), ±0.5% accuracy
 - Percent alternator duty level (actual load kW/standby kW rating)
 - Power factor per phase, leading/lagging
 - Voltage (line-to-line, line-to-neutral for all phases), ±0.25% accuracy
- Operational records:
 - Event history (stores up to 100 system events)
 - Last start date
 - Number of starts
 - Number of starts since last maintenance
 - Operating days since last maintenance
 - Operating mode—standby or prime power
 - Run time (total, loaded and unloaded hours, and total kW hours)
 - Run time since maintenance (total, loaded, and unloaded hours and total kW hours)
 - System shutdowns
 - System warnings
 - Time, date, and day of week
- Time delays—general:
 - Crank cycles for on/pause
 - Crank cycles for overcrank shutdown
 - Engine cooldown
 - Engine start
 - Load shed
 - Voltage, over- and under-
 - Starting aid

- Time Delays—paralleling relays (PR) for optional switchgear applications:
 - Current—over (PR)
 - Current—over shutdown
 - Frequency—over- and under- (PR and shutdown)
 - Loss of field (PR and shutdown)
 - Loss of field shutdown (PR)
 - Power—over (PR)
 - Power—over shutdown
 - Reverse power (PR)
 - Reverse power shutdown
 - Synch matching—frequency, phase, voltage
 - Voltage—over- and under- (PR and shutdown)
- System parameters:
 - Alternator number
 - Current, rated (based on kW, voltage, connection settings)
 - ECM serial number †
 - Engine model number †
 - Engine serial number †
 - Frequency
 - Generator set model number
 - Generator set serial number
 - Generator set spec number
 - kW Rating
 - Phase, single and three (wye or delta)
 - Unit number ‡
 - Voltage, AC
 - Voltage configuration, wye or delta

Inputs

- Customer and remote inputs:
 - Analog inputs 0-5 VDC (up to 7 user-defined analog inputs with multiple shutdown and warning levels)
 - Digital contact inputs (up to 21 user-defined digital inputs with shutdown or warning levels)
 - Ground fault detector *
 - Remote emergency stop
 - Remote reset
 - Remote 2-wire start
- Digital inputs (standard):
 - Air damper fault, if equipped
 - Air/fuel module shutdown §
 - Battery charger fault *
 - Battleswitch
 - Detonation shutdown §
 - Detonation warning §
 - Emergency stop
 - Field overvoltage (350 kW and higher)
 - High oil temperature
 - Idle mode active (ECM models only)
 - Knock shutdown §
 - Low coolant level
 - Low coolant temperature
 - Low fuel warning *
 - Low fuel shutdown (standard on 125RZG) *
- Switchgear inputs in Menu 15 (to interface with switchgear system):
 - Circuit breaker closed
 - Enable synch
 - Lockout shutdown
 - Remote reset
 - Remote shutdown
 - VAR/PF mode selection
 - Voltage—raise/lower (or VAR/PF raise/lower in VAR/PF mode.)

Outputs

See the Fault Diagnostics section for a breakdown of the available shutdown and warning functions.

- Thirty-one user-defined relay driver outputs (relays not included)
 - Fifteen NFPA 110 faults
 - Defined common faults

Communication

- RS-485 connector for Modbus® RTU communication port
- RS-232 connector for a PC or modem (optional software required)
- SAE J1939 connector for the engine ECM (engine control module)

* Requires optional input sensors on some models

† Standard on some DDC engines with DDEC

‡ Standard on DDC/MTU engines with MDEC

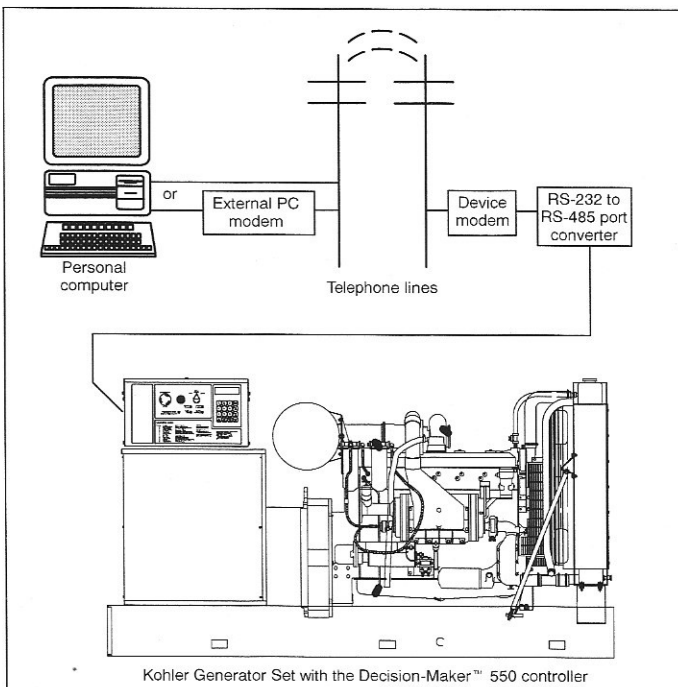
§ Standard on Waukesha engines

Decision-Maker™ 550 Accessories

Communication and PC Software Accessories

Refer to spec sheets G6-76, Monitor III Software, and G6-50, Decision-Maker™ 550 Communications, for additional communication and PC software information including Modbus® communication.

- Local Single Connection.** A PC is connected directly to the device communication module with an RS-232 cable for applications where the PC is within 15 m (50 ft.) of the device or RS-485 cable for applications where the PC is up to 1220 m (4000 ft.) from the device.
- Local Area Network (LAN).** A PC is connected directly to the device's local area network. A LAN is a system of connecting more than one device to a single PC.
- Remote Connection.** The PC and device are connected by modems. The PC communicates with the device via a telephone network and the PC can be located anywhere a telephone line can be accessed.
- Remote Network.** A PC is connected to a modem. The devices are connected as a LAN network. The PC communicates with the devices via a telephone network that interfaces to the LAN network. The PC can be located anywhere a telephone line can be accessed.
- Monitor III Software for Monitoring and Control (Windows®-based user interface)**
- Converter, Modbus®/Ethernet**
- RS-232 to RS-485 Port Converters**



Availability is subject to change without notice. Kohler Co. reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. Contact your local Kohler® generator set distributor for availability.

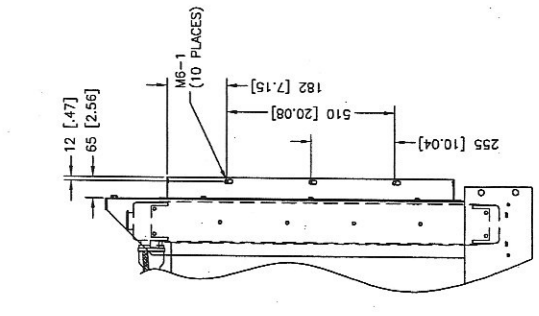
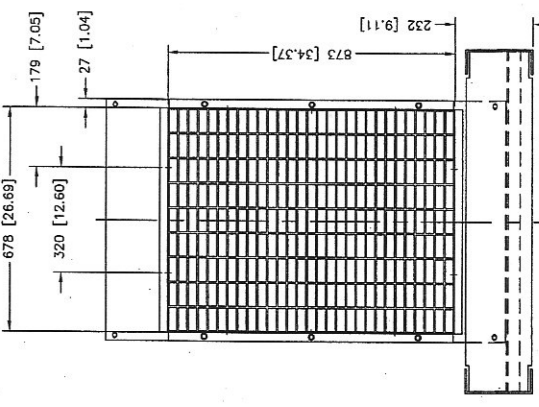
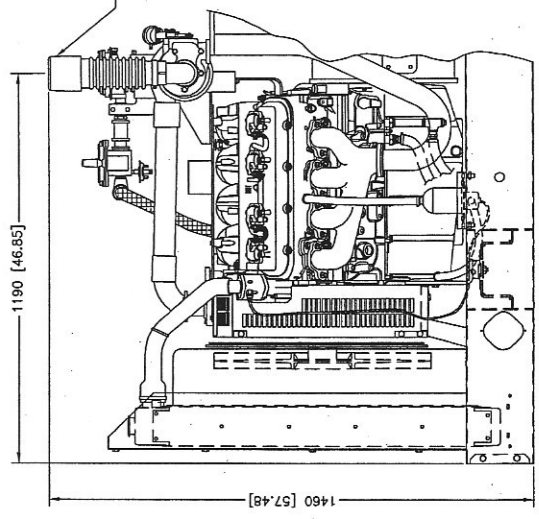
Other Accessories

- Common Failure Relay** remotely signals auxiliary fault, emergency stop, high engine temperature, low oil pressure, overcrank, and overspeed via one single-pole, double-throw relay with 10 amp contacts at 120 VAC or 28 VDC maximum.
- Controller Cable** enables remote mounting of the controller with distances of up to 12 m (40 ft.) from the generator set.
- Controller Connection Kit** provides a cable connecting the controller output terminals to a terminal strip in the junction box.
- Dry Contact Kit** interfaces between the controller signals and customer-supplied accessories providing contact closure to activate warning devices such as lamps or horns. Kits are available with either one or ten single-pole, double-throw relays with 10 amp contacts at 120 VAC or 28 VDC maximum.
- Float/Equalize Battery Charger with Alarm Feature** signals controller of battery charger fault.
- Key-Controlled, Master Switch** with three positions for run, off/reset, and auto functions.
- Paralleling Relay (Menu 15)** functions via Modbus® communications. Order with Kohler PD-Series switchgear equipment.
- Pre-Alarm Kit for NFPA 110 (Gas Fuel Models only)** warns the operator of low fuel pressure. Select the kit based on LP vapor or natural gas, combination dual fuel, or LP liquid withdrawal.
- Prime Power Switch** prevents battery drain during generator set non-operation periods and when the generator set battery cannot be maintained by an AC battery charger.
- Remote Serial Annunciator Panel** enables the operator to monitor the status of the generator from a remote location. May be required for NFPA 99 and NFPA 110 installations. Uses Modbus® RTU (Remote Terminal Unit), an industry standard open communication protocol.
- Remote Audio/Visual (A/V) Alarm Panel** warns the operator of fault shutdowns and warning conditions. Kit includes common fault lamp and horn with silence switch.
- Remote Emergency Stop Panel** immediately shuts the generator set down from a remote station.
- Run Relay** provides a three-pole, double-throw relay with 10 amp contacts at 120 VAC or 28 VDC maximum for indicating that the generator set is running.

Modbus® is a registered trademark of Schneider Electric.
 Windows® is a registered trademark of Microsoft Corporation.

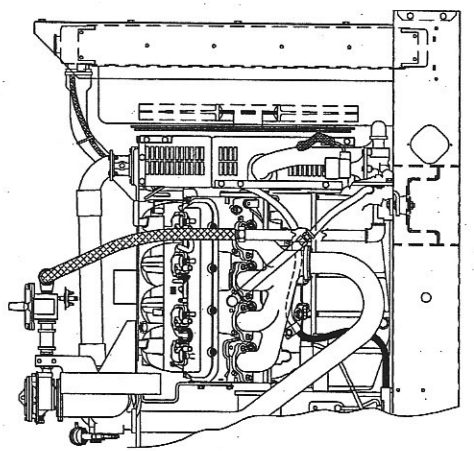
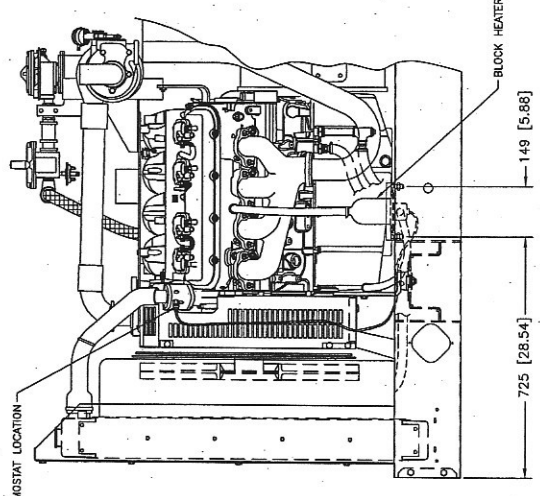
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REV	DATE	REVISION
C	10-7-03	[D-5] 873 WAS 881, 239 WAS 213 & 28 WAS 31, (C-3) 271
H	10-29-03	[H-6] 881 & 239 WAS 846, (D-6) 182 WAS 182, (8660)
F	2-2-04	(A-2) MODEL RECONNECTABLE IMPROVED (7029)
G	2-2-04	(A-2) W/THIN COILS, 12Z ZIG ZAG
J	5-19-05	[J-1] CHANGE OVER COMPATIBLY REVISED (2005) (27)
K	5-19-05	[K-1] CHANGE OVER COMPATIBLY REVISED (2005) (27)
L	5-19-05	[L-1] CHANGE OVER COMPATIBLY REVISED (2005) (27)
M	8-7-05	[M-0] DUCT FLANGE VIEW UPDATED (7012)
SAU		SAU



FLEXIBLE EXHAUST

RADIATOR DUCT FLANGE



METRIC CAD FILE

DIMENSIONS IN ARE ENGLISH STANDARD EQUIVALENTS

KOHLER CO. U.S.A. 125 MODEL IMPROVED MOTOR STARTING (MS) RECONNECTABLE, & 600 VOLT ALTERNATORS & 8.1 LITER GM DIMENSION PRINT 125 MODEL ADV-6655	
MODEL: 125 PART NO.: 125-01 DATE: 7-12-01 DRAWN BY: KDW CHECKED BY: KDW APPROVED BY: ADV-6655	FILE NO.: ADV-6655 REV: 1 DATE: 7-12-01

125 MODEL
 1PH/451/4513
 RECONNECTABLE
 IMPROVED MOTOR STARTING (MS) & 600 VOLT ALTERNATORS & 8.1 LITER GM

2 3 4 5 6 7 8

D C B A

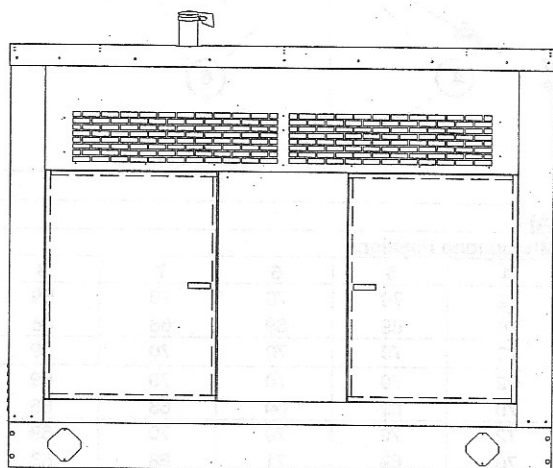
2 3 4 5 6 7 8

Industrial Generator Set Accessories

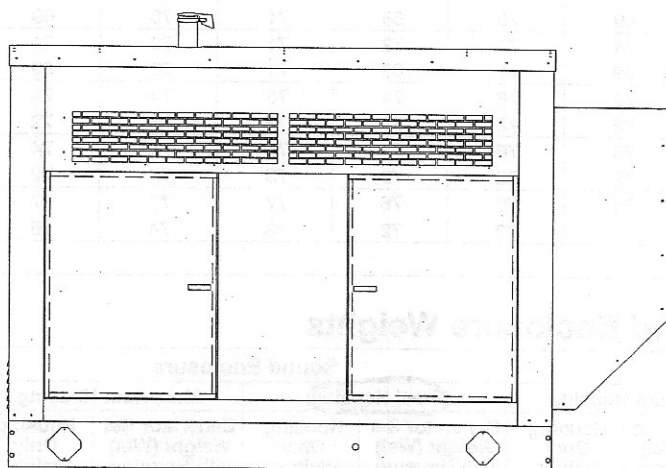
KOHLER POWER SYSTEMS

Weather and Sound Enclosures

ISO 9001
KOHLER
POWER SYSTEMS
NATIONALLY REGISTERED



Weather Enclosure



Sound Enclosure

Applicable to the following:

→ **30-125RZG**
30/50RZGB

Kohler enclosures protect stationary generator sets from the elements, animal intrusion, and unwanted entry. The enclosure design allows ample air ensuring optimum generator set performance.

Kohler Co. prototype-tests the generator set inside the enclosure for performance. See the generator set specification sheet for generator set ratings and temperature and altitude derates.

Weather Enclosure Standard Features

- Enclosed insulated critical silencer with tailpipe and rain cap.
- Skid-mounted, fully corrosion-resistant material construction with hinged and removable doors.
- Fade-, scratch-, and corrosion-resistant Kohler® cream beige and black powder-baked finish.
 - Available steel construction enclosure.
 - Available aluminum construction enclosure.
- Hinged and removable doors.
- Lockable, flush-mounted door latches.
- Automatic door holders.
- Air inlet louvers and baffles to minimize rain and snow entry.
- Pitched enclosure roof to minimize water accumulation.

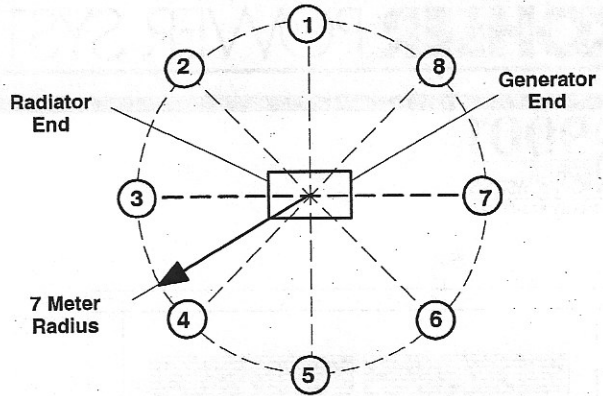
Sound Enclosure Standard Features

- Includes all of the weather enclosure features.
- Vertical outlet hoods with 90° angles to redirect air and reduce noise.
- Acoustic insulation meeting UL 94 HF1 flammability classification.

Sound Enclosure Data

Sound Data for Generator Sets Operating Inside a Sound Enclosure Measurement Positions and Distances for Data

Microphone Positions: (1-8) as shown
 Microphone Distance: 7 m (23 ft.)
 (from center of enclosure)
 Microphone Height: 1 m (3.28 ft.)
 Data Measured in: dB(A), sound pressure
 (Re: 20 μ Pa)



Note: Measurements taken with the generator set operating at full load.

Sound Data in dB(A)

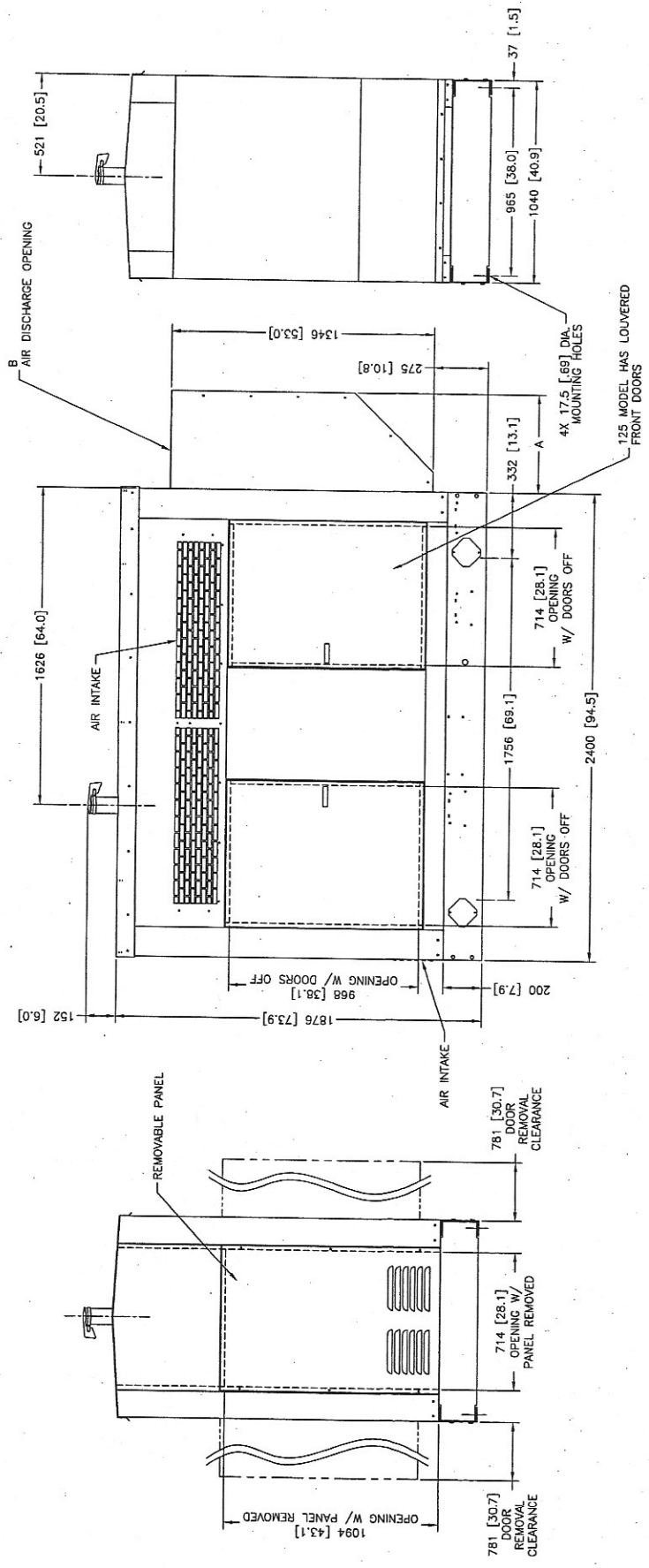
Models	Hz	Microphone Positions							
		1	2	3	4	5	6	7	8
30RZG	60*	70	71	72	72	70	70	70	69
	50*	68	69	68	70	69	69	68	68
30RZGB	60*	70	71	72	72	70	70	70	69
35RZG	60	70	71	73	72	70	70	70	69
	50	68	69	68	70	69	69	68	68
45RZG	60	71	71	73	72	70	70	70	69
	50	69	69	69	70	69	71	68	68
50RZG	60	71	71	74	72	71	71	70	70
	50	69	69	69	70	68	71	70	69
50RZGB	60*	71	71	74	72	71	71	70	70
	50*	69	69	69	70	68	71	70	69
60RZG	60	72	72	74	73	72	71	72	71
	50	70	69	69	71	69	71	70	69
80RZG	60	74	75	79	76	74	75	74	74
	50	72	72	72	72	71	73	71	72
100RZG	60	74	75	79	76	74	75	74	74
	50	72	72	72	72	72	73	72	72
125RZG	60	75	75	76	76	76	77	77	77
	50	74	73	73	73	72	73	74	75

* Estimated values

Weather and Sound Enclosure Weights

Model	Alternator	Weather Enclosure				Sound Enclosure					
		Steel Housing		Aluminum Housing		Steel Housing		Aluminum Housing			
		Generator Set Weight (Wet) with Housing, kg (lb.)	Housing Only Weight, kg (lb.)	Generator Set Weight (Wet) with Housing, kg (lb.)	Housing Only Weight, kg (lb.)	Generator Set Weight (Wet) with Housing, kg (lb.)	Housing Only Weight, kg (lb.)	Generator Set Weight (Wet) with Housing, kg (lb.)	Housing Only Weight, kg (lb.)		
30B	4P5W/4P5	816 (1795)	284 (625)	680 (1495)	147 (325)	875 (1925)	343 (755)	725 (1595)	193 (425)		
30B	4P7BW/4P7B	857 (1885)		720 (1585)		916 (2015)		766 (1685)			
30	all	841 (1850)		703 (1550)		900 (1980)		748 (1650)			
35	all	850 (1871)		714 (1571)		910 (2001)		758 (1671)			
45	4P7BW/4P7B	887 (1951)		749 (1651)		946 (2081)		794 (1751)			
45	4P8W/4P8/ 4Q10W/4Q10	903 (1986)		765 (1686)		962 (2116)		810 (1786)			
50B	all	998 (2195)		860 (1895)		1057 (2325)		905 (1995)			
60	4P10Q/ 4P10	1041 (2290)		903 (1990)		1100 (2420)		948 (2090)			
60	4S7W/4S7/ 4V7W/4V7	1099 (2418)		961 (2118)		1158 (2548)		1006 (2218)			
80	all	1407 (3095)		305 (670)		1259 (2775)		159 (350)		1466 (3225)	364 (800)
100	all	1441 (3170)	1293 (2850)		1500 (3300)		1349 (2975)				
125	all	1441 (3170)	1293 (2850)		1500 (3300)		1349 (2975)				

REV	DATE	REVISION
D	4-18-04	(D-2) B AIR EXCHANGE OPENING MOVED TO CHART. (A-B) DIM X
C	4-18-04	440 (38.2 X 17.3) WAS 427 X 815 (18.3 X 30.6) AND 870 X
B	4-18-04	600 (38.2 X 28.6) ADDED TO CHART. (714)7
H	6-15-04	(A-7) STEEL CASET W/ENCLOSURE & STEEL SOUND ENCLOSURE
FTN		ONLY VENTURE UPDATED (72518)



METRIC CAD FILE

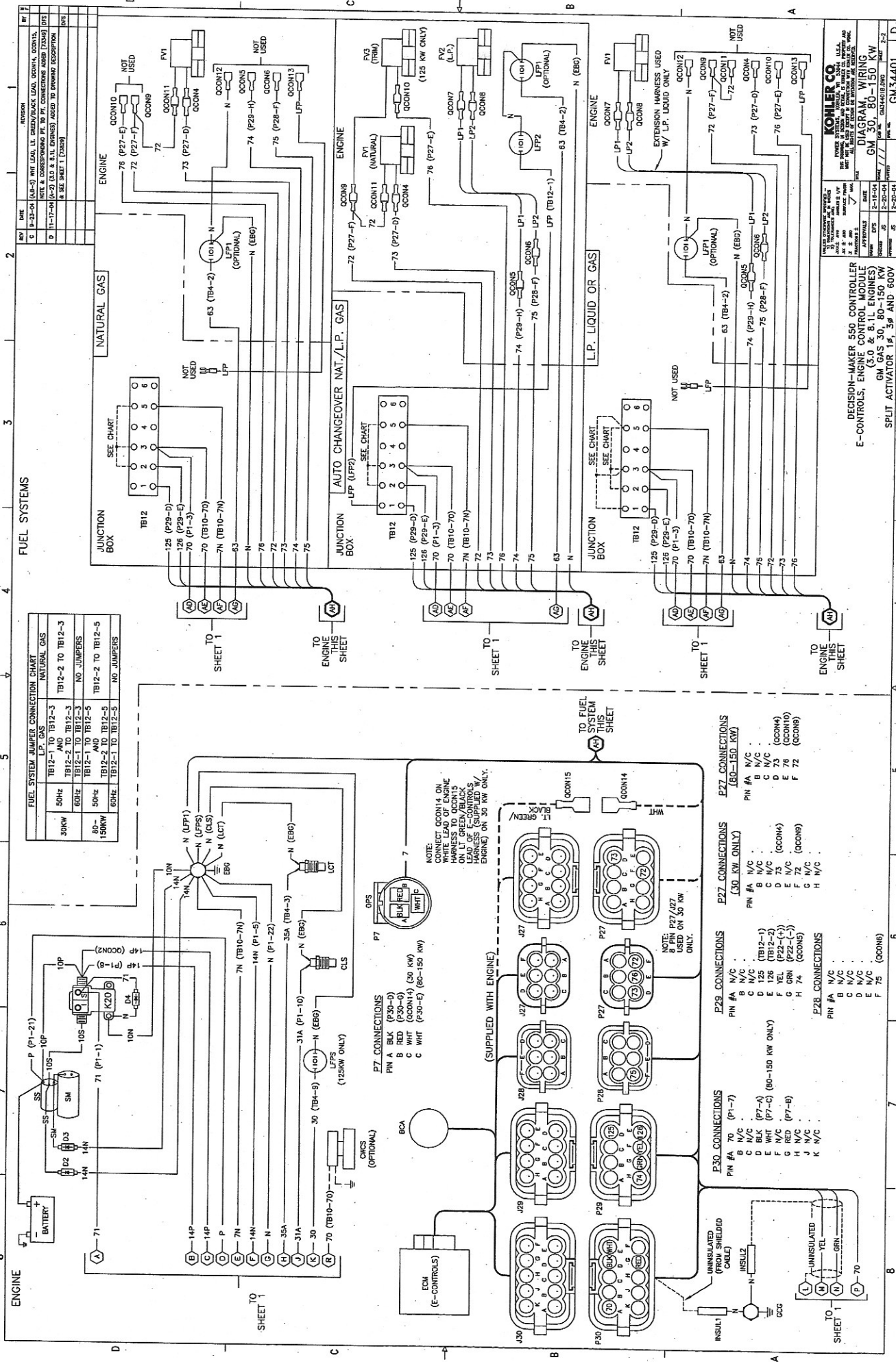
DIMENSIONS IN [] ARE INCH EQUIVALENT

KÖHLER CO 4000 S. STATE ST., MILWAUKEE, WI, U.S.A. PHONE: 414-224-1100 FAX: 414-224-1101 WWW.KOHLER.COM	
DIMENSION PRINT 80/125 ENCLOSURES	ADV-6655

GENSET WEIGHT MAX. (WET) W/ HOUSING: 1318 KG [2900 LBS.]
 HOUSING ONLY WEIGHT: 216 KG [475 LBS.]

SOUND ENCLOSURE W/ ENCLOSED CRITICAL SILENCER
 80-125 MODELS
 RECONNECTABLE & 600V ALTERNATORS
 8.1 LITER GM

MODEL	GENSET WEIGHT (WET) W/SOUND ENCLOSURE	SOUND ENCLOSURE ONLY	A	B
80,100 MODEL	ALUMINUM 1315 Kg [2900 LBS]	215 Kg [475 LBS]	508 [20.0]	970 X 440 [38.2 X 17.3]
	STEEL 1466 Kg [3225 LBS]	364 Kg [800 LBS]	737 [29.0]	970 X 660 [38.2 X 26.0]
125 MODEL	ALUMINUM 1349 Kg [2975 LBS]	215 Kg [475 LBS]		
	STEEL 1500 Kg [3300 LBS]	364 Kg [800 LBS]		



FUEL SYSTEM JUMPER CONNECTION CHART

	NATURAL GAS	L.P. GAS
30KW	72 (P27-E) TO 72 (P27-F)	72 (P27-E) TO 72 (P27-F)
50Hz	73 (P27-E) TO 73 (P27-F)	73 (P27-E) TO 73 (P27-F)
60Hz	74 (P28-F) TO 74 (P28-F)	74 (P28-F) TO 74 (P28-F)
80-150KW	75 (P28-F) TO 75 (P28-F)	75 (P28-F) TO 75 (P28-F)

FUEL SYSTEM JUMPER CONNECTION CHART

	NATURAL GAS	L.P. GAS
30KW	72 (P27-E) TO 72 (P27-F)	72 (P27-E) TO 72 (P27-F)
50Hz	73 (P27-E) TO 73 (P27-F)	73 (P27-E) TO 73 (P27-F)
60Hz	74 (P28-F) TO 74 (P28-F)	74 (P28-F) TO 74 (P28-F)
80-150KW	75 (P28-F) TO 75 (P28-F)	75 (P28-F) TO 75 (P28-F)

FUEL SYSTEM JUMPER CONNECTION CHART

	NATURAL GAS	L.P. GAS
30KW	72 (P27-E) TO 72 (P27-F)	72 (P27-E) TO 72 (P27-F)
50Hz	73 (P27-E) TO 73 (P27-F)	73 (P27-E) TO 73 (P27-F)
60Hz	74 (P28-F) TO 74 (P28-F)	74 (P28-F) TO 74 (P28-F)
80-150KW	75 (P28-F) TO 75 (P28-F)	75 (P28-F) TO 75 (P28-F)

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DECISION-MAKER 550 CONTROLLER
E-CONTROLS, ENGINE CONTROL MODULE
(5.0 & 8.1L ENGINES)
GM GAS 30, 80-150 KW
SPLIT ACTIVATOR 1P, 3P AND BODY

DATE: 7/94
 DRAWN: J.S.
 CHECKED: J.S.
 APPROVED: J.S.
 PART NO.: GM34401

P7 CONNECTIONS
 PIN A: BLK (P30-G)
 PIN B: RED (P30-G)
 PIN C: WHT (P30-G)
 PIN D: WHT (P30-E) (80-150 KW)

P27 CONNECTIONS
 PIN A: N/C
 PIN B: N/C
 PIN C: N/C
 PIN D: 125 (TB12-1)
 PIN E: 126 (TB12-2)
 PIN F: YEL (P22-(-))
 PIN G: RED (P22-(-))
 PIN H: GRN (P22-(-))
 PIN I: 74 (CC0N5)
 PIN J: N/C
 PIN K: N/C

P28 CONNECTIONS
 PIN A: N/C
 PIN B: N/C
 PIN C: N/C
 PIN D: 125 (TB12-1)
 PIN E: 126 (TB12-2)
 PIN F: YEL (P22-(-))
 PIN G: RED (P22-(-))
 PIN H: GRN (P22-(-))
 PIN I: 74 (CC0N5)
 PIN J: N/C
 PIN K: N/C

P29 CONNECTIONS
 PIN A: N/C
 PIN B: N/C
 PIN C: N/C
 PIN D: 125 (TB12-1)
 PIN E: 126 (TB12-2)
 PIN F: YEL (P22-(-))
 PIN G: RED (P22-(-))
 PIN H: GRN (P22-(-))
 PIN I: 74 (CC0N5)
 PIN J: N/C
 PIN K: N/C

P30 CONNECTIONS
 PIN A: 70
 PIN B: N/C
 PIN C: N/C
 PIN D: BLK (P1-A)
 PIN E: WHT (P1-C) (80-150 KW ONLY)
 PIN F: RED (P1-B)
 PIN G: N/C
 PIN H: N/C
 PIN I: N/C
 PIN J: N/C
 PIN K: N/C

P27 CONNECTIONS
 PIN A: BLK (P30-G)
 PIN B: RED (P30-G)
 PIN C: WHT (P30-G)
 PIN D: WHT (P30-E) (80-150 KW)

P27 CONNECTIONS
 PIN A: N/C
 PIN B: N/C
 PIN C: N/C
 PIN D: 125 (TB12-1)
 PIN E: 126 (TB12-2)
 PIN F: YEL (P22-(-))
 PIN G: RED (P22-(-))
 PIN H: GRN (P22-(-))
 PIN I: 74 (CC0N5)
 PIN J: N/C
 PIN K: N/C

P28 CONNECTIONS
 PIN A: N/C
 PIN B: N/C
 PIN C: N/C
 PIN D: 125 (TB12-1)
 PIN E: 126 (TB12-2)
 PIN F: YEL (P22-(-))
 PIN G: RED (P22-(-))
 PIN H: GRN (P22-(-))
 PIN I: 74 (CC0N5)
 PIN J: N/C
 PIN K: N/C

P29 CONNECTIONS
 PIN A: N/C
 PIN B: N/C
 PIN C: N/C
 PIN D: 125 (TB12-1)
 PIN E: 126 (TB12-2)
 PIN F: YEL (P22-(-))
 PIN G: RED (P22-(-))
 PIN H: GRN (P22-(-))
 PIN I: 74 (CC0N5)
 PIN J: N/C
 PIN K: N/C

P30 CONNECTIONS
 PIN A: 70
 PIN B: N/C
 PIN C: N/C
 PIN D: BLK (P1-A)
 PIN E: WHT (P1-C) (80-150 KW ONLY)
 PIN F: RED (P1-B)
 PIN G: N/C
 PIN H: N/C
 PIN I: N/C
 PIN J: N/C
 PIN K: N/C