

BLOCK 1170 LOT 14.02 QUALIFICATION CODE C0002 ADDRESS (SITE) 1640 RT 88 UNIT 102 PERMIT NO. 17-0534



CONSTRUCTION PERMIT APPLICATION

Applicant Completes: Sections I, II, III (optional), IV, VI, and VII

C17-000526

I. IDENTIFICATION

1. Proposed Work Site at: 1640 RT 88 BRICK NJ

2. Name of Owner in Fee: MERIDIAN HEALTH REALTY
Tel. (732) 206 8200 e-mail _____
Address 81 DAVIS AVE NEPTUNE NJ 07753
street municipality zip code

3. Ownership in Fee: Public ☐ Private ☐

4. Principal Contractor: MARATHON ELECTRIC Tel. (732) 583-7078
Address 32 DOWNSHIRE DR. CHIFFWOOD NJ 07735 e-mail 290-0466
License No. OR, if new home, Builder Reg. No. 7242 Exp. Date 3-18
Home Improvement Contractor Registration No. or Exemption Reason (if applicable): _____
Federal Emp. ID No. 223136996 FAX: (732) 583-7078

5. Architect or Engineer _____ Contact _____
Address _____ e-mail _____
Tel. (____) _____ FAX: (____) _____

6. Responsible Person in Charge once Work has Begun _____
Tel. (____) _____ FAX: (____) _____

V. FEE SUMMARY (for office use only)

	Update	Update
1. Building	\$ <u>150</u>	
2. Electrical	\$ <u>250</u>	
3. Plumbing		
4. Fire Protection	\$ <u>100</u>	
5. Elevator Devices		
6. Subtotal		
7. Less 20% for State Plan Review	\$ _____	
8. Subtotal	\$ _____	
9. State Permit Surcharge Fee	\$ <u>5-</u>	
10. Subtotal	\$ _____	
11. Cert. of Occupancy		
12. Other		
13. TOTAL	\$ _____	

VI. BUILDING/SITE CHARACTERISTICS

	(office use only)
1. Number of Stories	_____
2. Height of Structure	_____ ft.
3. Area — Largest Floor	_____ sq. ft.
4. New Building Area	_____ sq. ft.
5. Volume of New Structure	_____ cu. ft.
6. Max. Live Load	_____ psf.
7. Max. Occupancy Load	_____ psf.
8. If Industrialized Building: State Approved _____ HUD _____	
9. Total Land Area Disturbed	_____ sq. ft.
10. Flood Hazard Zone	_____
11. Base Flood Elevation	_____ ft.
12. Wetlands yes _____ no _____	

IIa. PROPOSED WORK

- ☐ Minor Work ☐ New Building ☐ Addition ☐ Demolition
- ☐ Repair ☐ Alteration ☐ Renovation ☐ Reconstruction
- ☐ Asbestos Abat. -Subch. 6 ☐ Lead Hazard Abatement ☐ Radon Remediation ☐ Annual Permit

IIb. SUBCODES
(Check all that apply)

- ☐ Building
- ☒ Electrical
- ☐ Plumbing
- ☐ Fire Protection
- ☐ Elevator

TOTAL COST

FOR OFFICE USE ONLY (Optional)							
Est. Cost	Plans Rec'd	Date Rec'd	Rejection Date	Approval Date	Re-viewer	Resubmission Dates Approval	Rejection
				02/14/17	KEL		
2500	2/1/17			2-10-17	MW		
				2/15/17	MS		

VII. DESCRIPTION OF BUILDING USE

A. RESIDENTIAL (primary use)

1. State Specific Use: _____
2. Use Group, Proposed: _____
3. Change In Use Group, Indicate Present: _____
4. No. of dwelling units: Total Units Income-restricted
- | | |
|----------------|-------|
| Gained, Sale | _____ |
| Gained, Rental | _____ |
| Lost, Sale | _____ |
| Lost, Rental | _____ |

B. NON-RESIDENTIAL (primary use)

1. State Specific Use: _____
2. Use Group, Proposed: _____
3. Change In Use Group, Indicate Present: _____

C. MIXED USE -List secondary use(s): _____

D. Construct. Classification: Present _____ Proposed _____

III. PLAN REVIEW (optional)

- DO YOU WANT:
1. ☐ Partial Releases
2. ☐ Prototype Processing

IV. DOES OR WILL YOUR BUILDING CONTAIN ANY OF THE FOLLOWING?

- | | | |
|--|---|---|
| 1. ☐ Elevators/Escalators/Lifts/ Dumbwaiters/Moving Walks | 4. ☐ Refrigeration Systems | 8. ☐ Smoke Control Systems in Open Wells |
| 2. ☐ High Pressure Boilers | 5. ☐ Cross-Connections/Backflow Preventers | 9. ☐ Underground Storage Tanks |
| 3. ☐ Pressure Vessels | 6. ☐ Hazardous Uses/Places of Assembly | 10. ☐ Swimming Pools, Spas and Hot Tubs |
| | 7. ☐ Sprinklers/Standpipes | 11. ☐ LPGas Tanks |

CERTIFICATION IN LIEU OF OATH

I. OWNER SECTION (to be completed if the applicant is the owner in fee)

I hereby certify that I am the owner in fee of the property listed on Page 1.

Mark the following applicable boxes:

- A. ☐ I further certify that a new home (private residence) will be constructed on this property for my own use and occupancy. This dwelling is to be occupied by myself and is not to be used for any purpose other than single family residential use. I attest that all construction, plumbing, or electrical work will be done, in whole or in part, by me or by subcontractors under my supervision, in accordance with all applicable laws; and, I further acknowledge that said new home is not covered under the New Home Warranty and Builders Registration Act (N.J.S.A. 46:3B-1 et seq.) and that such fact shall be disclosed to any person purchasing this property within ten years of the date of issuance of a certificate of occupancy.

I UNDERSTAND THAT IN MARKING BOX A, I ACKNOWLEDGE THAT I AM ASSUMING RESPONSIBILITY FOR THE WORK DONE ON SAID PROPERTY, THE CONDITION OF THE PROPERTY PRIOR TO, DURING, AND AFTER ANY WORK PERFORMED, AND FOR THE PERFORMANCE OF THE SUBCONTRACTORS I HIRE, EMPLOY, OR OTHERWISE CONTRACT OR WITH WHOM I MAKE AGREEMENTS TO PERFORM WORK. I AM VOLUNTARILY AND KNOWINGLY ASSUMING THIS RESPONSIBILITY.

- B. ☐ I further certify the following as required by the New Jersey Uniform Construction Code, N.J.A.C. 5:23-2.15(f)1.ix:

I personally prepared the plans submitted for: 1) the new home referred to in A.; or, 2) an addition, alteration, renovation, or repair to an existing single family residence owned and occupied by myself and located on the property listed on Page 1; or, 3) a new structure that will be physically separate from, but that will be deemed part of, an existing single family residence that is owned and occupied by myself and located on the property listed on Page 1.

- C. ☐ I further certify that I will perform or supervise the following work:

C.1. ☐ Building C.2. ☐ Fire Protection

I further certify that I will perform the following work:

C.3. ☐ Electrical C.4. ☐ Plumbing

- D. ☐ I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I understand that if any of the above statements are willfully false, I am subject to punishment.

Signature _____ Date _____

II. AGENT SECTION (to be completed if the applicant is not the owner in fee)

I hereby certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(d): the proposed work is authorized by the owner in fee; and I have been authorized by the owner in fee to make this application as his agent.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I understand that if any of the above statements are willfully false, I am subject to punishment.

☒ Check if contractor.

Agent Name STEVEN VECCHIO

Address 32 INDUSTRIAL DR.

CLIFFWOOD NJ - 07735

Telephone (732) 290-0466

Signature [Signature]

III. ☐ LEAD HAZARD ABATEMENT: Include Homeowner or Building Owner Affidavit as per N.J.A.C. 5:17.



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723

Date Issued 3/3/2017
Control Number C-17-000526
Permit Number 17-0534
Permit Issue Date 2/22/2017
Certificate Number 17-0534

Certificate

Construction Code Division
(Certificate of Approval)

Identification

Work Site Location: 1640 ROUTE 88 UNIT 102 Brick Township, NJ Block: 1170 Lot: 14.02 Qual: C0002
Owner in Fee: MERIDIAN HEALTH REALTY CORP
Owner Address: 81 DAVIS AVENUE NEPTUNE NJ 07753
Telephone: (732) 206-8200
Contractor: Marathon Electrical
Address: 32 INDUSTRIAL DR CLIFFWOOD NJ 07747
Telephone: (732) 290-0466 Fax: _____
License Number or Builders Registration Number: 7242 Federal Emp. Number: 22-3136996

Home Warranty Number: _____

Type of Warranty Plan: ☐ State ☐ Private

Use Group: B Construction Classification: _____

Maximum Live Load: 0 Maximum Occupancy Load: 0

Description of Work/Use: GENERATOR - UNIT 102 ...DIRECT REPLACEMENT

Certificate Comments:

☐ **Certificate of Occupancy**

This serves notice that said building or structure has been constructed in accordance with the New Jersey Uniform Construction Code and is approved for occupancy.

☒ **Certificate of Approval**

This serves notice that the work completed has been constructed or installed in accordance with the New Jersey Uniform Construction Code and is approved. If the permit was issued for minor work, this certificate was based upon what was visible at the time of inspection.

☐ **Certificate of Continued Occupancy**

This serves notice that based on a general inspection of the visible parts of the building there are no imminent hazards and the building is approved for continued occupancy.

☐ **Temporary Certificate of Compliance**

The following conditions must be met no later than or the owner will be subject to fine or order to vacate: This certificate has an expiration date of:

Conditions to be met:

☐ **Certificate of Clearance - Lead Abatement 5:17**

This serves notice that based on written certification, lead abatement was performed as per NJAC5:17 to the following extent.

- ☐ Total removal of lead-based paint hazards in scope of work
☐ Partial or limited time period (years); see file

☐ **Certificate of Clearance - Asbestos Abatement**

This serves notice that based on written certification, asbestos abatement was performed to the following extent.

- ☐ Total removal of asbestos hazards in scope of work
☐ Partial or limited time period (years); see file

☐ **Certificate of Compliance**

This serves notice that said potentially hazardous equipment has been installed and/or maintained in accordance with the New Jersey Uniform Construction Code and is approved for use until

☐ **Temporary Certificate of Occupancy**

The following conditions must be met no later than: or the owner will be subject to fine or order to vacate: This certificate has an expiration date of:

Conditions to be met:

Construction Official

Fee: \$0.00

Check Number: _____

Collected By: _____



FIRE PROTECTION SUBCODE TECHNICAL SECTION



A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 1170 Lot 14102 Qualification Code 00002
Work Site Location 1640 RT-88 UNIT 102

Owner In Fee: MEMORIAN HEALTH REENTRY

Tel: 732 206-0800 e-mail _____

Address 81 DAVID AVE NEWARK NJ 07102

Contractor: MAHATHAN ELEC Tel. _____ zip code _____

Address 32, EROSTRATE DR e-mail _____

CHERUBO NJ 07735

Fire Protection Equipment, NJ Div of Fire Safety Permit No. _____

Fire Alarm Contractor No. _____ Exp. Date _____

Home Improvement Contractor Registration No. or Exemption Reason _____

Federal Emp. ID No. 223136946 FAX: 732 583-7028

B. FIRE PROTECTION CHARACTERISTICS

Use Group: Present _____ Proposed _____ Fuel Storage Tank: _____

Constr. Class: Present _____ Proposed _____ Capacity _____

Heating System: ☐ New or ☐ Modification to Existing ☐ Replacement

Fuel Type: ☐ Gas ☐ Oil ☐ Electric ☐ Solar

Location: _____ Location of Main Control Valve: _____

Total Cost of Fire Protection Work \$ 100

JOB SUMMARY (Office Use Only)

PLAN REVIEW

☐ No Plans Required

☐ Partial - Underlab Utilities Approved

Date: _____ Approved by: _____

☒ Fire Protection Plans Approved

Date: _____ Approved by: _____

Joint Plan Review Required: _____

☐ Bldg. ☐ Elec. ☐ Plumb. ☐ Elev.

SUBCODE APPROVAL for PERMIT

Date: 8-17-03

Approved by: _____

SUBCODE APPROVAL for CERTIFICATE

☐ CO ☐ LCCO ☐ CA

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Applicant/Contractor sign here: STEVEN VEATCHO

Print name here: _____

D. TECHNICAL SITE DATA ☐ Certified Contractor ☐ Exempt Applicant

DESCRIPTION OF WORK: REPAIR EXIST GENERATOR w/SAFE

Water Supply Source _____

Method of Alarm/Suppression System Supervision _____

Flammable/Combustible Tanks

Alarm Systems ☐ System

☐ 110v Interconnected

☐ CO Detectors/110v

Alarm Devices (i.e., smoke, heat, pulls, water/flow)

Supervisory Devices (i.e., tampers, low/high air)

Signaling Devices (i.e., horns/strobes, bells)

Other Devices _____

TOTAL _____

Suppression Systems

Fire Pump _____ GPM Type _____

Dry Pipe/Alarm Valves

Pre-action Valves

Sprinkler Heads (Dry and Wet)

Standpipes

Pre-engineered Systems

Wet Chemical

Dry Chemical

CO₂ Suppression

Foam Suppression

FM200 Suppression

Other _____

Other Systems

Kitchen Hood Exhaust System

Smoke Control System

Fuel-Fired Appliances ☒ Gas ☐ Oil ☐ Solid

Date Received 2/22/17
Control # 17-0534
Date Issued
Permit #

COMMERCIAL

NUMBER \$ _____

FEE (Office Use Only)

Administrative Surcharge \$ _____

Minimum Fee \$ _____

State Permit Surcharge Fee \$ _____

TOTAL FEE \$ _____

Existing paid



BUILDING SUBCODE TECHNICAL SECTION



A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION, WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 1170 Lot 1410.2 Qualification Code 0002
Work Site Location 1640 Rt 88 Unit 102

Owner in Fee: MEMORIAL HEALTH CENTER

Tel. (732) 206-0800 e-mail _____
Address 81 DAVIS AVE NEPTUNE NJ 07753

Contractor: MAATHAN ELEC Municipality _____ Tel. (732) 290-0466 ZIP code _____
Address 38 TROUSMAN DR e-mail _____

Contractor License No. or Builder Registration No. ELC 2242 Exp. Date 3-18
Home Improvement Contractor Registration No. or Exemption Reason (if applicable): _____
Federal Emp. ID No. 223136496 FAX: (732) 583-7028

JOB SUMMARY (Office Use Only)
PLAN REVIEW Date Initial INSPECTIONS

☒ No Plans Required initial OK Type: _____
☒ All _____ Footing _____
☐ Footings/Foundations _____ Footing Bonding _____
☐ Structural/Framework _____ Foundation _____
☐ Exterior _____ Slab _____
☐ Interior _____ Frame _____
☐ Truss Sys./Bracing _____
☐ Barrier-Free _____
☐ Elec. ☐ Plumb. ☐ Fire ☐ Elevator _____
☐ Insulation _____
☐ Finishes -Base Layer _____
☐ Finishes -Final _____
☐ Energy _____
☐ Mechanical _____
☐ TCO _____
☐ Other _____
☐ Final _____
☐ Barrier-Free _____

Joint Plan Review Required: _____
SUBCODE APPROVAL for PERMIT Date: 02/14/17 KEA
Approved by: _____
SUBCODE APPROVAL for CERTIFICATE Date: 03/01/17 MA
Approved by: _____

B. BUILDING CHARACTERISTICS
Use Group Present _____ Proposed _____
No. of Stories _____

Height of Structure _____ ft.
Area — Largest Floor _____ sq. ft.
New Bldg. Area/All Floors _____ sq. ft.
Volume of New Structure _____ cu. ft.
Max. Live Load _____
Max. Occupancy Load _____

Constr. Class Present _____ Proposed _____
If Industrialized Building: _____
State Approved _____ HUD _____
Est. Cost of Bldg. Work: _____
1. New Bldg. \$ _____
2. Rehabilitation \$ _____
3. Total (1+2) \$ 100-

U.C.C. F110 (rev. 11/09)

C. CERTIFICATION IN LIEU OF OATH
I hereby certify that I am the (owner/owner of record and am authorized to make this application.
Sign here: STEVEN VECCHIO

Print name here: STEVEN VECCHIO
D. TECHNICAL SITE DATA

DESCRIPTION OF WORK
REPLACE EXIST GENERATOR WITH SAME

TYPE OF WORK:
☐ New Building
☐ Addition
☐ Rehabilitation
☐ Roofing
☐ Siding
☐ Fence _____ Height (exceeds 6')
☐ Sign _____ Sq. Ft.
☐ Pool
☐ Retaining Wall _____ Sq. Ft.
☐ Asbestos Abatement Subchapter 8
☐ Lead Haz. Abatement NJAC 5:17
☐ Radon Remediation
☐ Other _____
☐ Demolition

FEE (Office Use Only)
\$ _____

Administrative Surcharge \$ _____
Minimum Fee \$ _____
State Permit Surcharge Fee \$ _____
TOTAL FEE \$ _____

1 Write = Inspector Copy
2 Canary = Office Copy
3 Pink = Office Copy
4 Gold = Applicant Copy



ELECTRICAL SUBCODE



A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 1120 Lot 1402 Qualification Code C0002

Work Site Location 1640 R 88 UNIT 102

Owner in Fee: MEDIAVA HEALTH RESEARCH

Tel. (232) 206-8800

e-mail

Address 810 AVIS AVE NEPTUNE NJ 07753

Contractor: MARATHON ELECTRICAL INC. Tel. (232) 290-0466

Address 32 CHATELAIN BLVD. 07735

Contractor License No. 7242 Exp. Date 3-18

Home Improvement Contractor Registration No. or Exemption Reason (if applicable):

Federal Emp. ID No. 223136996 FAX: (232) 583-7078

B. ELECTRICAL CHARACTERISTICS

Use Group Present _____ Proposed _____
☐ Pole/Pad # _____ ☐ Temporary ☐ Other _____
Building Occupied as _____ Utility Co. _____
Est. Cost of Elec. Work \$ 8500

JOB SUMMARY (Office Use Only)

PLAN REVIEW		INSPECTIONS		Dates (Month/Day)	
		Type:	Failure	Failure	Approval
☐ No Plans Required		Rough			Initial
☐ Partial - Underslab Utilities Approved		Barrier-Free			
Date: _____	Approved by: _____	Trench			
☒ Electric Plans Approved	Date: <u>2-15-17</u> Approved by: <u>WMA</u>	Temp. Serv.			
Joint Plan Review Required:		Constr. Serv.			
☐ Bldg. ☐ Plumb. ☐ Fire. ☐ Elev.		TCO			
		Other			
SUBCODE APPROVAL for PERMIT	Date: <u>2/15/17</u>	Service			
Final		Barrier-Free			
SUBCODE APPROVAL for CERTIFICATE	Approved by: _____	Temp. Cut-In-Card Date Issued			
☐ CO ☐ CCO		Final Cut-In-Card Date Issued			
Date: <u>2/15/17</u>		Annual Pool Inspection			
Approved by: _____		Date of Grounding and Bonding			

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application and perform the work listed on this application.

Applicant sign/Contractor sign and seal here:

Print name here: STEVEN VECCHIO

Licensed Elec. Contractor ☐ Certified Landscape Irrigation Contr ☐ Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK: REPLACE EXIST GEN-SET LIKE FOR LIKE

QTY.

SIZE

ITEMS

Lighting Fixtures

Receptacles

Switches

Detectors

Light Poles

Motors—Fract. HP

Emergency & Exit Lights

Communications

Alarm Devices/Fire Panel

TOTAL NUMBERS

\$

Pool Permitt/Pool Lights

Storable Pool/Spa/Pool Tub

KW Elec. Range/Receptacle

KW Oven/Surface Unit

KW Elec. Water Heater

KW Elec. Dryer/Receptacle

KW Dishwasher

HP Garbage Disposal

KW Central A/C Unit

HP/KW Space Heater/Air Handler

KW Baseboard Heat

HP Motors 1/2 HP

KV Transformer/Generator

AMP Service

AMP Subpanels

AMP Motor Control Center

KV Elec. Sign/Outline Light

Administrative Surcharge \$

Minimum Fee \$

State Permit Surcharge Fee \$

TOTAL FEE \$



CONSTRUCTION PERMIT

Date Issued 2/22/17
Control # C-17-000526
Permit # 17-0534

IDENTIFICATION Block: 1170 Lot: 14.02 Qualifier: C0002
Work Site Location: 1640 ROUTE 88 UNIT 102 Brick Township, NJ Contractor: Marathon Electrical
Address: 32 INDUSTRIAL DR CLIFFWOOD NJ 07747
Owner in Fee: MERIDIAN HEALTH REALTY CORP
81 DAVIS AVENUE NEPTUNE NJ 07753 Telephone: (732) 290-0466
Telephone: (732) 206-8200 Lic. No. or Bldrs. Reg. No. 7242 7242 7242 7242
Federal Employee. No. 22-3136996

Is hereby granted permission to perform the following work:

- ☒ BUILDING ☐ PLUMBING ☐ LEAD HAZARD ABATEMENT
☒ ELECTRICAL ☒ FIRE PROTECTION ☐ DEMOLITION
☐ ELEVATOR DEVICES ☐ ASBESTOS ABATEMENT (Subchapter 8 only) ☐ OTHER

DESCRIPTION OF WORK:

GENERATOR - UNIT 102 DIRECT REPLACEMENT

Note: If construction does not commence within one (1) year of date of issuance, or if construction ceases for a period of six (6) months, this permit is void.

Estimated Cost of Work \$2,700

D. Newman
Construction Official

2/17/17
Date

U.C.C. F170
equiv (rev 1/04)

1 WHITE - INSPECTOR

2 CANARY - OFFICE

3 PINK - TAX ASSESSOR

4 GOLD - APPLICANT

PAYMENTS (Office Use Only)

Building	\$150
Electrical	\$250
Plumbing	\$0
Fire Protection	\$100
Elevator Devices	\$0
Other	\$0.00
DCA Training Fee	\$5
CO Fee	
Other	\$0
Total	\$505
Check No.	<u>16067</u>
Cash	\$0
Credit	\$0
Collected By	<u>Muri Rogers</u>

REQUIRED INSPECTIONS

Construction work must be inspected in accordance with the State Uniform Construction Code Regulations N.J.A.C. 5:23-2.18. This agency will carry out such periodic inspections during the progress of work as are necessary to insure that the work installed conforms with the requirements of the Uniform Construction Code.

The owner or other responsible person in charge of work must notify this agency when work is ready for any required inspections specified below. Requests for inspections must be made at least 24 hours prior to the time the inspection is desired. Inspections will be performed within three business days of the time for which they are requested. The work must not proceed in a manner which will preclude the inspection until it has been made and approval granted.

☐ Required inspections for all subcodes for one- and two-family dwellings are as follows:

1. The bottom of footing trenches before placement of footings, except that in cases of pile foundations, inspections shall be made in accordance with the requirements of the building subcode.
2. Foundations and all walls up to grade level prior to back filling.
3. All structural framing, connections, wall and roof sheathing and insulation; electrical rough wiring, panel and service installation; rough plumbing. The framing inspection shall take place after the rough electrical and plumbing inspections and after the installation of the heating, ventilation and /or air conditioning duct system. The insulation inspection shall be performed after all other subcode rough inspections and prior to the installation of any interior finish material.
4. Installation of all finished materials, sealings of exterior joints, plumbing piping, trim and fixtures; electrical wiring, devices and fixtures; mechanical systems equipment.

02/22/17
BUILDING \$150.00
ELECTRIC \$250.00
FIRE \$100.00
DCA \$5.00
CHECK \$505.00

Additional required inspections for all subcodes of construction, for other than one- and two-family dwellings, are fire suppression systems, heat producing devices and Barrier Free subcode accessibility, if applicable.

☐ Required special inspections. The applicant by accepting the permit will be deemed to have consented to these requirements:

☒ A final inspection is required for each applicable subcode area before a final Certificate of Occupancy or Approval may be issued. The final inspections include the installation of all interior and exterior finish materials, sealing of exterior joints, mechanical system and other required equipment; electrical wiring, devices and fixtures; plumbing pipes, trim and fixtures; tests required by any provision of the adopted subcodes, Barrier Free accessibility, if applicable; and verification of compliance with NJAC 5:23-3.5, "Posting structures".

☒ A complete copy of released plans must be kept on the job site.

If you do not understand any of this information, please ask.



ELECTRICAL SUBCODE TECHNICAL SECTION



A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 1170 Lot 14.02 Qualification Code C0002
Work Site Location 1640 A 88 UNIT 102

Owner in Fee: MENDIAN HEALTH REALTY
Tel. (232) 206-8200 e-mail _____

Address 81 DAVIS AVE NEPTUNE NJ 07753

Contractor: MARATHON ELEC. INC. Tel. (232) 290-0466

Address 32 Cliffwood Ave Cliffwood NJ 07735

Contractor License No. 7242 Exp. Date 3-18

Home Improvement Contractor Registration No. or Exemption Reason (if applicable): _____

Federal Emp. ID No. 223136996 FAX: (732) 583-7078

B. ELECTRICAL CHARACTERISTICS

Use Group _____ Present _____ Proposed _____
☐ Pole/Pad # _____ ☐ Temporary ☐ Other _____

Building Occupied as _____ Utility Co. _____
Est. Cost of Elec. Work \$ 2500-

JOB SUMMARY (Office Use Only)		INSPECTIONS		Dates (Month/Day)	
PLAN REVIEW		Type:	Failure	Approval	Initial
☐ No Plans Required		Rough	_____	_____	_____
☐ Partial - Underslab Utilities Approved		Barrier-Free	_____	_____	_____
Date: _____ Approved by: _____		Trench	_____	_____	_____
☒ Electric Plans Approved		Temp. Serv.	_____	_____	_____
Date: <u>2-10-17</u> Approved by: <u>MD</u>		Constr. Serv.	_____	_____	_____
Joint Plan Review Required:		TCO	_____	_____	_____
☐ Bldg. ☐ Plumb. ☐ Fire. ☐ Elev.		Other	_____	_____	_____
SUBCODE APPROVAL FOR PERMIT		Service	_____	_____	_____
Date: _____ Approved by: _____		Final	_____	_____	_____
SUBCODE APPROVAL FOR CERTIFICATE		Barrier-Free	_____	_____	_____
☐ CO ☐ CCO ☐ CA		Temp. Cut-in-Card Date Issued	_____	_____	_____
Date: _____		Final Cut-in-Card Date Issued	_____	_____	_____
Approved by: _____		Annual Pool Inspection	_____	_____	_____
Date: _____		Date of Grounding and Bonding	_____	_____	_____
Approved by: _____		Certification	_____	_____	_____

Engineer Books

Date Received

Control #

Permitted

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) duly recorded and am authorized to make this application and perform the work listed on this application.
Applicant sign/Contractor sign and seal here:

Print name here: STEVEN VECCHIO

☒ Licensed Elec. Contractor ☐ Certifd Landscape-Irrigation Contr ☐ Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK:

REPLACE EXIST GEN-SET LIKE FOR LIKE

FEE (Office Use Only)

QTY. SIZE ITEMS

Lighting Fixtures

Receptacles

Switches

Detectors

Light Poles

Motors—Fract. HP

Emergency & Exit Lights

Communications Points

Alarm Devices/F.A.C. Panel

TOTAL NUMBERS

Pool Permit/with UW Lights

Storable Pool/Spa/Hot Tub

KW Elec. Range/Receptacle

KW Oven/Surface Unit

KW Elec. Water Heater

KW Elec. Dryer/Receptacle

KW Dishwasher

HP Garbage Disposal

KW Central A/C Unit

HP/KW Space Heater/Air Handler

KW Baseboard Heat

HP Motors 1/4 HP

KW Transformer/Generator

AMP Service

AMP Subpanels

AMP Motor Control Center

KW Elec. Sign/Outline Light

1

100

Administrative Surcharge \$

Minimum Fee \$

State Permit Surcharge Fee \$

TOTAL FEE \$



FIRE PROTECTION SUBCODE TECHNICAL SECTION



A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION, WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 1170 Lot 74.02 Qualification Code 10002

Work Site Location 1640 15th St Unit 102

Owner in Fee: MERIDIAN HEALTH REARLY

Tel. 232 206-0500 e-mail _____

Address 81 DAVIS AVE NOTTOWNE NJ 07753

Contractor: MARATHON FIRE 30. INDUSTRIAL DR Tel. _____ e-mail _____

Address CLIFTON NJ 07035 zip code _____

Fire Protection Equipment, NJ Div of Fire Safety Permit No. _____

Fire Protection Equipment, NJ Div of Fire Safety Installer No. _____

Home Improvement Contractor Registration No. or Exemption Reason _____ Exp. Date _____

Federal Emp. ID No. 223136596 FAX: 232 553-2028

B. FIRE PROTECTION CHARACTERISTICS

Use Group: Present _____ Proposed _____ Fuel Storage Tank: _____
Constr. Class: Present _____ Proposed _____ Fuel Type: ☐ Flammable or ☐ Combustible
Capacity _____

Heating System: ☐ New or ☐ Modification to Existing Fire Alarm System: ☐ New or ☐ Existing
or ☐ Conversion or ☐ Replacement Location of Panel: _____

Fuel Type: ☐ Gas ☐ Oil ☐ Electric ☐ Solar Fire Suppression/Standpipe System: _____
☐ Other _____ Location of Main Control Valve: _____

Location: _____

Total Cost of Fire Protection Work \$ 100

JOB SUMMARY (Office Use Only)

PLAN REVIEW

☐ No Plans Required

☐ Partial -Understand Utilities Approved

Date: _____ Approved by: _____

☒ Fire Protection Plans Approved

Date: _____ Approved by: _____

Joint Plan Review Required: _____

☐ Bldg. ☐ Elec. ☐ Plumb. ☐ Elev. Mechanical

SUBCODE APPROVAL for PERMIT

Date: _____ Approved by: _____

SUBCODE APPROVAL for CERTIFICATE

☐ CO ☐ CCO ☐ CA

Date: _____ Approved by: _____

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Applicant/Contractor sign here: _____

Print name here: STEVEN VECKIC

D. TECHNICAL SITE DATA ☐ Certified Contractor ☐ Exempt Applicant

DESCRIPTION OF WORK: REPAIR EXIST GENERATOR w/SAFE

Water Supply Source _____

Method of Alarm/Suppression System Supervision _____

Flammable/Combustible Tanks _____

Alarm Systems ☐ System _____

☐ 110v Interconnected _____

☐ CO Detectors/110v _____

Alarm Devices (i.e., smoke, heat, pulls, water/flow) _____

Supervisory Devices (i.e., tamper, low/high air) _____

Signaling Devices (i.e., horn/strobes, bells) _____

Other Devices _____

TOTAL _____

Suppression Systems _____

Fire Pump _____ GPM Type _____

Dry Pipe/Alarm Valves _____

Pre-action Valves _____

Sprinkler Heads (Dry and Wet) _____

Standpipes _____

Pre-engineered Systems _____

Wet Chemical _____

Dry Chemical _____

CO₂ Suppression _____

Foam Suppression _____

FM200 Suppression _____

Other _____

Other Systems _____

Kitchen Hood Exhaust System _____

Smoke Control System _____

Fuel-Fired Appliances ☒ Gas ☐ Oil ☐ Solid _____

Fireplace Venting/Metal Chimney _____

Other _____

Date Received 2/22/17

Control # _____

Date Issued 17-0534

Permit # _____

Administrative Surcharge \$ _____
Minimum Fee \$ _____
State Permit Surcharge Fee \$ _____
TOTAL FEE \$ _____

Nardone Electrical
Corporation
Generator Division



Inspection &
Preventative
Maintenance Checklist

Customer: FMC # 9720		Telephone:		Date: 2/2/17
Address: 1640 Route 88		City/State: Brick NJ		
Contact: Sohn	Shop: w/o 10821	Hours on Unit: 6		
Generator: Kohler	Model: 100REZGD	Serial #: JGM 32475B		
Engine: PSI	Model: PSI-5.7L	Serial #: 39003062		
Transfer Switch: Kohler	Model: KCT-AMTA-01505	Serial #: K0778250		

Description of Work:
Generator replacement - take old generator back to NEC shop. Do start up on new unit.

QTY:	PARTS USED:	QTY:	PARTS NEEDED:

ENGINE:	STARTING BATTERIES:	COOLING SYSTEM:	FUEL SYSTEM:	AUTOMATIC SHUTDOWN:
Oil Temp: OK	Type: Interstate OK	Level: Full OK	GAS:	Low Coolant Level SD: OK
	Date: 2/2/17 OK	Hoses: OK	Fuel Line: Good	Low Coolant Prewarn: OK
Oil Pressure: OK	Voltage: 12VDC OK	Clamps: OK	Pressure: Good	Oil Pressure SD: OK
59 PSI	Water: OK OK	Radiator: OK	DIESEL:	Oil Pressure Prewarn: OK
Oil Filter: OK	Crank volts: 11VDC OK	Surge Tank: OK	Filters: /	High Water Temp SD: OK
	Connections: 2 OK	Water Pump: OK	Main Tank: /	Hi. Water Temp Prewarn: OK
Water Temp: OK	Cables: 2 OK	Blockheater: OK	Gallons: /	Over Speed: OK
168°F	Charger: OK ✓	Air Flow: OK	Filter: /	Over Crank: OK
Belts: OK	ENGINE LEAKS:	TRANSFER SWITCH	Vents: /	Low Water Level: OK
Exhaust: OK	Oil: NO ✓	Exercise Set: yes	Level: /	Low Water Temp: OK
Air Filter: OK	Water: NO ✓	Load/No Load? NO	Fuel Lines: /	OIL SYSTEM:
Starter: OK	Fuel: NO ✓	TD: N → E 10 sec	Inj. Pump: /	Level: Full OK
Gov. Linkage: OK	Exhaust: NO ✓	TD: E → N 15 min		Condition: clean
Clean & Free: OK		TD: Cooldown: 5 min		Last Changed: Factory
Volts: 480VAC OK		SET TO AUTO yes		
Amperage: 105 AMPs				

RECOMMENDATIONS/COMMENTS

Leg 3 current will not pick up on controller.

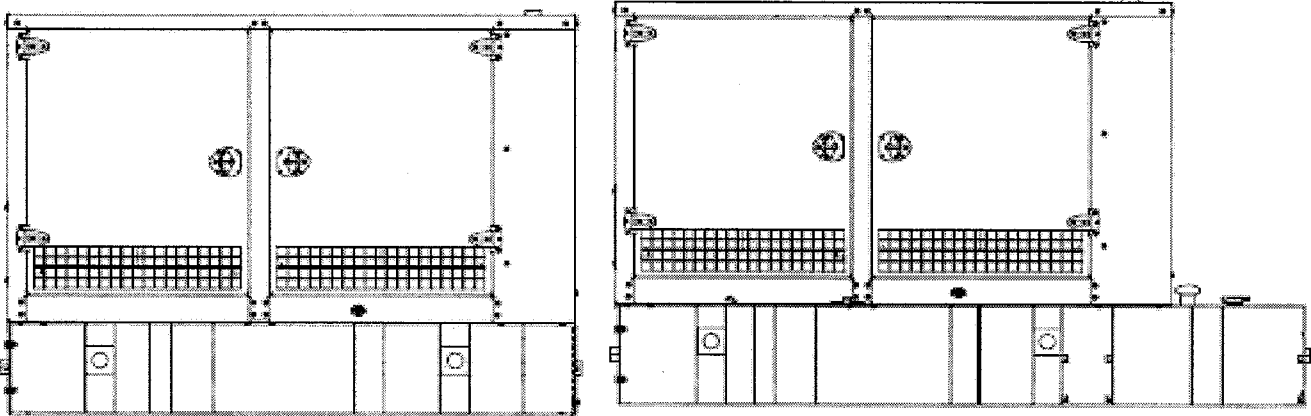
[Signature]	2/2	[Signature]	2/2
Service Technician	DATE	Customer Representative	DATE

FILE COPY

Engineering Submittal

For:

**FRESENIUS MEDICAL CARE
100REZGD
BRICK, NJ #9720**



TOWNSHIP OF BRICK
RELEASED FOR PERMIT
Building Subcode _____
Plumbing Subcode _____
Fire Subcode _____
Electrical Subcode _____
Plan Reviewer 2-15-17 MM
Plans Released _____
Construction Official _____

INITIAL KLL
DATE 02/14/17

Nardone Electric
100 Winchester St
Medford, MA 02155
USA
Phone: 781-391-2727
Fax: 781-395-7530
Jay Nardone



Generator Check List

Facility Address: _____

Date: _____

Return To: _____

Nardone Electric Corp.

160 Olympia Ave

Woburn, MA 01810

Fax # 781-395-7530

Attn: James Crooker

E-mail:

gensupport@nardoneelectric.com

FMC Fac. Name: _____

FMC Fac. # _____

www.nardoneelectric.com

CONTRACTOR'S GENERATOR INSTALLATION CHECKLIST

Please fill out the checklist to verify that all systems are complete and the unit is ready for start-up. When this form is complete and returned start-up will be scheduled.

Generator Model _____ SER# _____

ATS Model(s) _____ SER# _____

Remote Annunciator Powered and Communication Wire Terminated ☐

Was Belden 9841 used as specified? ☐

Power Wiring Complete: Generator ☐ ATS ☐

Start Wires Connected ☐

Block Heater Powered (non GFCI)* ☐ Battery Charger Powered (non GFCI)* ☐

Normal Utility Power is Present ☐ Debris removed from inside all housings ☐

Fuel Tank Filled (to 80% of capacity) ☐ *do not plug-in

I hereby certify that the above work is complete:

Signature _____ Print Name: _____

Company _____ Phone: _____

Requested Start-up Date: _____

Note:

Electrical Contractor must be present at startup to handle any electrical issues that may arise. Once scheduled, if for any reason the Generator is not ready for start-up, Electrical Contractor is not present at the startup, and the start-up is not able to proceed, the Contractor will be back charged by FMC-NA for the next visit.

Comments: _____

TABLE OF CONTENTS

GENERATOR SUBMITTAL

<u>Bill of Materials</u>	<u>Page# 4</u>
<u>Customer Control Connections</u>	<u>Page# 7</u>
<u>Generator Spec Sheet</u>	<u>Page# 9</u>
<u>Controller Spec Sheet</u>	<u>Page# 14</u>
<u>Circuit Breakers</u>	<u>Page# 18</u>
<u>Housing Spec Sheet</u>	<u>Page# 25</u>
<u>Annunciator Spec Sheet</u>	<u>Page# 31</u>
<u>Alternator Spec Sheet</u>	<u>Page# 36</u>
<u>Emissions Data Sheet</u>	<u>Page# 40</u>
<u>Generator Dimensions</u>	<u>Page# 44</u>
<u>Controller Dimensions</u>	<u>Page# 46</u>
<u>Housing Dimensions</u>	<u>Page# 47</u>
<u>Tank Dimensions</u>	<u>Page# N/A</u>
<u>Pad Drawing</u>	<u>Page# 48</u>
<u>Controller Wiring</u>	<u>Page# 51</u>
<u>Miscellaneous</u>	<u>Page# 61</u>
<u>Warranty</u>	<u>Page# 67</u>
<u>Certifications</u>	<u>Page# 69</u>

**BILL OF MATERIAL
100KW HOUSED GAS FUELED
EMERGENCY GENERATOR SET
FRESINIUS MEDICAL CARE
100REZGD
BRICK, NJ #9720**

The following represents the equipment, materials and services being proposed by KRAFT POWER CORP. for the subject job.

One (1) Sound Attenuated Enclosed Natural Gas Fueled Generator Set, Kohler Model 100REZGD with model 4R12X Alternator, Standby rated at 100KW, 125KVA, 277/480 Volts, 3 Phase, 60Hertz, 0.8 Power Factor, 1800 RPM, 150 amps, UL2200, comprised of the following:

ENGINE: General Motors Industrial Powertrain, Vortec 8.1L, 4 Cycle, Natural Aspiration, V8, 4.25" Bore, 4.37" Stroke, 496 Cubic Inch Displacement, Natural Gas Fueled, 162 HP maximum at 1800 RPM with:

- Natural Gas Fuel System with Carburetor Solenoid Valve, Regulator and Flexible Fuel Connectors
- Full-Pressure Lubrication System with Oil Cooler and Full Flow Filter System with Bypass Filter Arrangement
- Governor: Barber Colman Isochronous with ± 0.5 Steady State Regulation
- Flywheel and Flywheel Housing
- Dry Type Heavy Duty Air Cleaner
- 12 Volt Run Solenoid
- Flexible Fuel Lines
- Oil Drain Extension with Valve
- DEP Required Emission Catalyst

COOLING SYSTEM: Unit Mounted Radiator with Pusher Fan, Engine Driven Jacket Water Pump with Thermostatic Control. Radiator is designed to cool the engine at full rated load in a maximum ambient temperature of 122 degrees Fahrenheit, using a 50% solution of glycol and water.

ENGINE HEATER: An 1500 Watt, 120 Volt Jacket Water Heater with thermostatic control is mounted and piped on the unit.

ENGINE GENERATOR MOUNTING: The engine and generator are close coupled, mounted and aligned on a common structural steel sub base designed to maintain proper alignment. Unit can be mounted on any level surface, vibration isolation is provided between engine/generator and base.

GENERATOR: Alternator is Single Bearing, brushless, 12-lead reconnectable, self-ventilated of drip-proof construction with amortisseur rotor windings and skewed stator for smooth voltage waveform. The insulation meets NEMA standard (MG1-22.40 and 16.40) for Class "H" and is insulated with epoxy varnish to be fungus resistant per MIL1-24092. Temperature rise of the rotor and stator is to NEMA Class "F" ratings. The excitation system is of brushless construction controlled by a solid-state voltage regulator capable of maintaining voltage within +/-2% at any constant load of 0% to 100% of rating. The regulator is isolated to prevent tracking when connected to SCR loads, and provided with individual adjustments for voltage range, stability and volts-per-hertz operation; and is protected from the environment by conformal coating.

The generator is capable of sustaining 300% of rated current for at least 10 seconds under a three-phase symmetrical short by inherent design.

LINE CIRCUIT BREAKER: One (1) molded case line circuit breakers, one rated 150 amps, resettable line current sensing circuit breaker with inverse time verses current response will be mounted within the generator enclosure.

SAFETY SWITCHES: The Generator Set is equipped with Safety Switches for:

- Low Coolant Level Shutdown
- Low Oil Pressure Shutdown and Prewarn
- High Water Temperature Shutdown and Prewarn
- Low Water Temperature and Prewarn
- Overspeed-separate device to shut the engine down on overspeed
- Overvoltage Protection and Shutdown
- Overcrank
- The Safety Switches activate the shutdown circuits in the Auto-Start Control described herein

ENGINE GENERATOR CONTROL PANEL: Model DEC3000- a Digital Generator Control Panel is shock-mounted at the generator end of the unit. The panel is the dead front type with removable top panel as described in the attached brochure:

MUFFLER: A Super Critical Silencer from Kohler is included as described in the enclosed brochure. A stainless steel flex exhaust connection is also included. Silencer is mounted on top of the Generator Enclosure.

RUN RELAY KIT: A Run Relay Kit is also provided.

REMOTE ANNUNCIATOR: A Digital Remote Annunciator, surface and/or flush mounted, as manufactured by Kohler Model # RSA III is provided as described in the enclosed brochure.

SOUND ATTENUATED WEATHERPROTECTIVE HOUSING: A Kohler Sound Attenuated Weather protective Enclosure constructed of Powder Painted Galvanized Steel is included with the following features:

- 14 Gauge Construction
- Removable Hinged Doors for Servicing the Generator Keyed Alike (5)
- Stainless Steel Latches
- Pitched Roof to prevent standing Water
- Internal Silencer
- 73 DBA @ 23 ft.

STARTING SYSTEM: A complete 12 Volt D.C. Starting System is included with:

- One (1) 12 Volt Starting Battery rated at 950 CCA
- One (1) Battery Rack and Cable
- Belt-Driven Battery Charging Alternator, 12 Volt D.C. Rated 60 Ampere
- 12-Volt Automotive Type Starting Motor
- Starting Solenoid
- Starting System is controlled by Start Control described herein

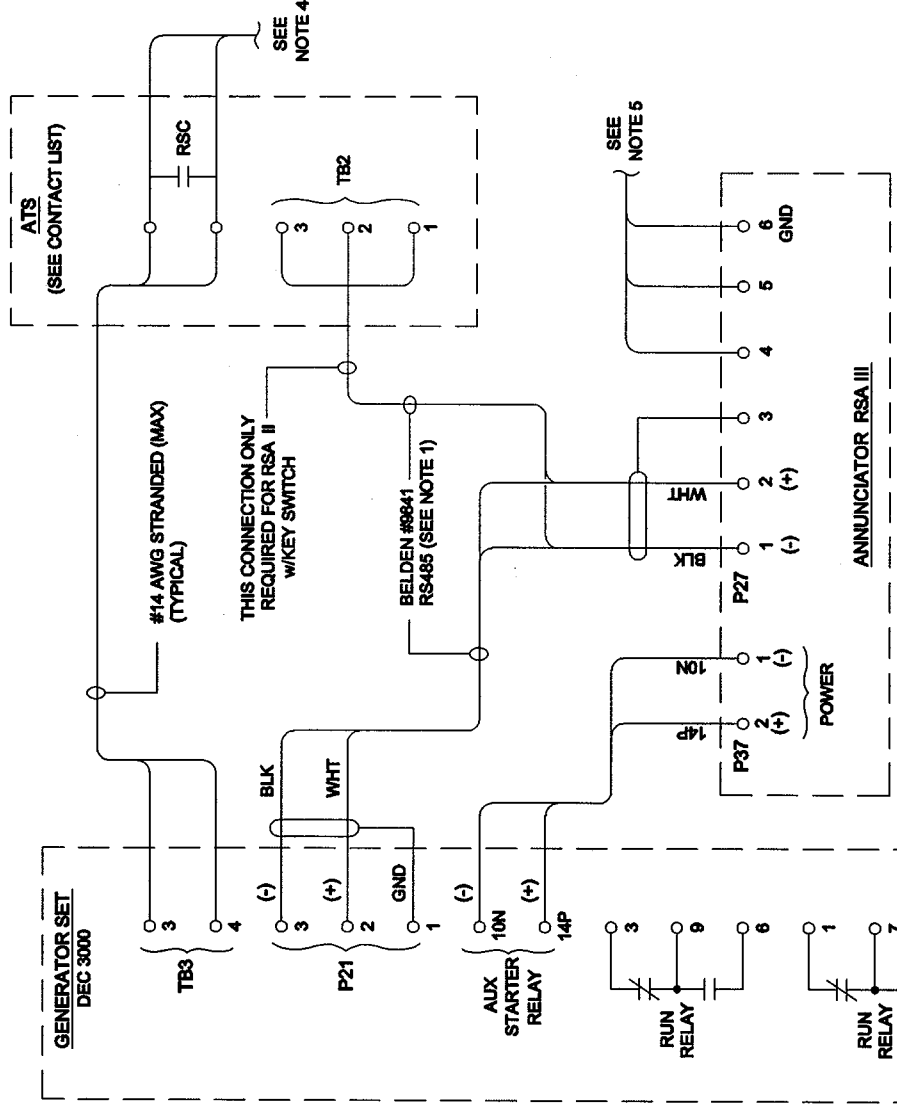
BATTERY CHARGER: A Kohler, Model GM-28569-KA4, is included as described in the enclosed brochure. Installed in the Generator Enclosure.

LUBE OIL & ANTIFREEZE: Initial charges of lubricating oil and 50/50 solution of glycol antifreeze and water are included.

TEST: The services of qualified field service technician to perform initial start-up, adjustment and test are included, per the specification.

WARRANTY: Five (5) year from date of final field test or first beneficial use to the owner, whichever comes first.

REVISIONS			
REV	DESCRIPTION	DWN	DATE
1	INITIAL RELEASE	MAB	05/09/14
			P.C.



LENGTH in (ft)	WIRE GAUGE
0 - 137 (0 - 450)	22
137 - 213 (450 - 700)	20
213 - 343 (700 - 1125)	18
343 - 549 (1125 - 1800)	16
549 - 853 (1800 - 2800)	14
853 - 1219 (2800 - 4000)	12

WIRE SPECIFICATION FOR THE COMMUNICATION MODULE AND ANNUNCIATOR CONNECTIONS.

KOHLER TRANSFER SWITCH REMOTE START CONTACTS

ATS MODEL	RSC
KCS 30 - 400 (S)	TBF 1-2
KCS 600 - 1200	TBF 1-2
KCS 1800 - 3000	TBF 1-2
KCS 4000	TBF 1-2
KCP 150 - 400 (2/3P) (S)	TBF 1-2
KCP 150 - 400 (4P) (S)	TBF 1-2
KCP 150 - 600 (4P) (B)	TBF 1-2
KCP 600 - 1200	TBF 1-2
KCP 1800 - 3000	TBF 1-2
KCP 4000	TBF 1-2
KSS 40 - 280	3 - 4 CONTACTOR ASSY
KSS 400 - 600	TB2 3-4
KSP 100 - 600 208/240	TB2 3-4
KSP 100 - 600 480	TB2 3-4

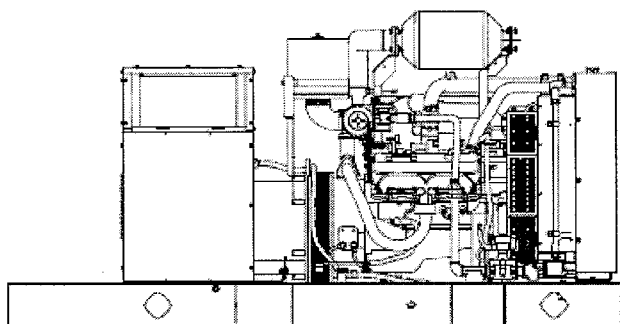
NOTES:

1. RS485 CONNECTORS SUPPLIED. SEE TABLE FOR WIRE SIZE.
2. GENERATOR PHASE ROTATION IS A-B-C.
3. CONTRACTOR TO INSTALL PROPERLY SIZED DUPLEX RECEPTACLE(S) FOR BLOCK HEATER AND BATTERY CHARGER.
4. IF MULTIPLE ATS'S CONNECT ALL RSC IN PARALLEL.
5. IF MULTIPLE ANNUNCIATORS SEE KOHLER DWG# 62554

Kraft Power Corporation 199 WILDWOOD AVENUE WOBURN, MA 01801

TITLE			
DWN BY: MAB	DATE: 05/09/14	TYPICAL FIELD WIRING CONNECTIONS	
APPROVED BY: P.C.	DEC 3000 ATS(1800)/RSA III		
DATE: 05/09/14	SCALE: NONE	100% TYP	REV 1
DO NOT SCALE DRAWING	COMPUTER FILE NAME: KPC-1004-FW		SHEET 1 OF 1

Spec Sheets



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.
- 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 systems and components. Two- and five-year extended warranties are also available.
- EPA-certified for Stationary Emergency Applications

Alternator Features

- The unique Fast-Response X excitation system delivers excellent voltage response and short circuit capability using a rare-earth permanent magnet (PM)-excited alternator.
- The brushless, rotating-field alternator has broad range reconnectability.

Other Features

- Kohler designed controllers for guaranteed system integration and remote communication. 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	Standby130C Ratings	
				kW/kVA	Amps
4R12X	277/480	3	60	100 / 125	150

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 and continuous 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. For units having enclosures with enclosed silencers, add 10°C (18°F) to the ambient temperature.

Model: 100REZGD, continued

Alternator Specifications

Specifications	Alternator
Alternator manufacturer	Kohler
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Rare-Earth Permanent-Magnet
Leads, quantity	4RX: 12, Reconnectable 4TX: 4, 110-120/220-240
Voltage regulator	Solid State, Volts/Hz
Insulation	NEMA MG1
Insulation: Material	Class H
Insulation: Temperature Rise	130°C, Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Voltage regulation, no-load to full-load RMS	Controller Dependent
One-Step Load Acceptance	100% of rating
Unbalanced load capability	100% of Rated Standby Current
• 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 down stream circuit breakers to trip without collapsing the alternator field. • Self-ventilated and drip-proof 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.	

Engine

Engine Specification

Engine Manufacturer	General Motors
Engine Model	Industrial Powertrain Vortec 5.7L
Engine: type	4-Cycle, Turbocharged
Cylinder arrangement	V-8
Displacement, L (cu. in.)	5.7 (350)
Bore and stroke, mm (in.)	101.6 x 88.4 (4.00 x 3.48)
Compression ratio	9.1:1
Piston speed, m/min. (ft./min.)	318 (1044)
Main bearings: quantity, type	5, M400 Copper Lead
Rated rpm	1800
Max. power at rated rpm, kWm (BHP)	115 (155)
Cylinder head material	Cast Iron
Piston: type, material	High Silicon Aluminum
Crankshaft material	Nodular Iron
Valve (exhaust) material Exhaust	Forged Steel
Governor: type, make/model	Electronic
Frequency regulation, no-load to-full load	Isochronous
Frequency regulation, steady state	±0.5%
Frequency	Fixed
Air cleaner type, all models	Dry

Model: 100REZGD, continued

Exhaust

Exhaust System

Exhaust Manifold Type	Dry
Exhaust flow at rated kW, m3/min. (cfm)	24.8 (876)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	677 (1250)
Maximum allowable back pressure, kPa (in. Hg)	10.2 (3.0)
Exh. outlet size at eng. hookup, mm (in.)	Flanged Outlet at Catalyst, see ADV drawing

Engine Electrical

Engine Electrical System

Ignition system	Individual Coil Near Plug Ignition
Battery charging alternator: Ground (negative/positive)	Negative
Battery charging alternator: Volts (DC)	12
Battery charging alternator: Ampere rating	70
Starter motor rated voltage (DC)	12
Battery, recommended cold cranking amps (CCA): Qty., CCA rating each	One, 630
Battery voltage (DC)	12

Fuel

Fuel System

Fuel type	Natural Gas
Fuel supply line inlet	1 1/4 NPFT
Natural gas/LPG fuel supply pressure, kPa (in. H2O). Fuel supply pressure measured at the generator set fuel inlet downstream of any fuel system equipment accessories.	1.74-2.74 (7-11)

Fuel Composition

Fuel Composition

Natural Gas: Methane, % by volume	90 min.
Natural Gas: Ethane, % by volume	4.0 max.
Natural Gas: Propane, % by volume	1.0 max.
Natural Gas: Propene, % by volume	0.1 max.
Natural Gas: C4 and higher, % by volume	0.3 max.
Natural Gas: Sulfur, ppm mass	25 max.
Natural Gas: Lower heating value, kJ/m3 (Btu/ft3), min.	33.2 (890)

* Fuels with other compositions may be acceptable. If your fuel is outside the listed specifications, contact your local distributor for further analysis and advice.

Lubrication

Lubrication System

Type	Full Pressure
Oil pan capacity, L (qt.)	4.7 (5.0)
Oil pan capacity with filter, L (qt.)	6.2 (6.5)
Oil filter: quantity, type	1, Cartridge

Model: 100REZGD, continued

Cooling

Radiator System

Ambient temperature, °C (°F)	50 (122)
Engine jacket water capacity, L (gal.)	6.8 (1.8)
Radiator system capacity, including engine, L (gal.)	22.5 (6.0)
Engine jacket water flow, Lpm (gpm)	144 (38)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	72 (4100)
Heat rejected to air charge cooler at rated kW, dry exhaust, kW (Btu/min.)	10.5 (600)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	660 (26)
Fan, kWm (HP)	10.4 (14)
Max. restriction of cooling air, intake and discharge side of radiator, kPA (in. H ₂ O)	0.125 (0.5)

* Enclosure with internal silencer reduces ambient temperature capability by 5°C (9°F).

Operation Requirements

Air Requirements

Radiator-cooled cooling air, m ³ /min. (scfm) *	198 (7000)
Combustion air, m ³ /min. (cfm)	8.4 (298)
Heat rejected to ambient air: Engine, kW (Btu/min.)	57.4 (3265)
Heat rejected to ambient air: Alternator, kW (Btu/min.)	13.7 (780)
Radiator-cooled cooling air, m ³ /min. (scfm) *	198 (7000)
Combustion air, m ³ /min. (cfm)	8.4 (298)
Heat rejected to ambient air: Engine, kW (Btu/min.)	57.4 (3265)
Heat rejected to ambient air: Alternator, kW (Btu/min.)	13.7 (780)

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

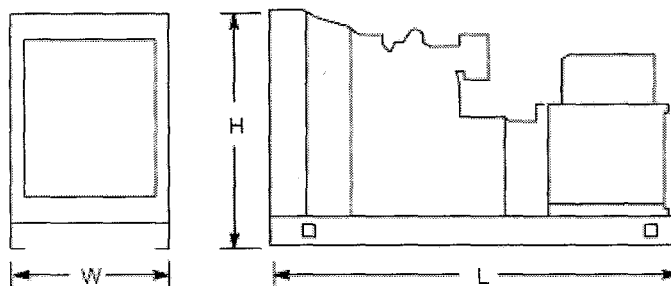
Fuel Consumption

Natural Gas, m ³ /hr. (cfh) at % load	Rating
Standby Fuel Consumption at 100% load	39.9 m ³ /hr. (1389 cfh)
Standby Fuel Consumption at 75% load	32.1 m ³ /hr. (1134 cfh)
Standby Fuel Consumption at 50% load	24.9 m ³ /hr. (879 cfh)
Standby Fuel Consumption at 25% load	17.7 m ³ /hr. (624 cfh)
Standby Fuel Consumption at 0% load	10.4 m ³ /hr. (369 cfh)

Dimensions and Weights

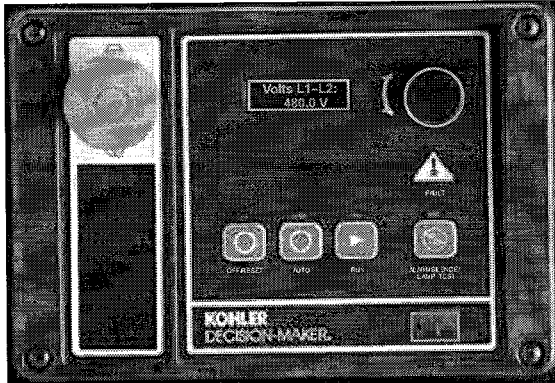
Dim Weight Spec	Dim Weight Value
Fuel	All
Engine Manufacturer	General Motors
Overall Size, L x W x H, mm (in.): Wide Skid	2800 x 1120 x 1456 (110.2 x 44.1 x 57.3)
Weight (radiator model), wet, kg (lb.):	1403 (3094)

Model: 100REZGD, continued



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

ISO 9001
KOHLER
POWER SYSTEMS
NATIONALLY REGISTERED



Decision-Maker 3000

Kohler Decision-Maker 3000 Controller

General Description and Function

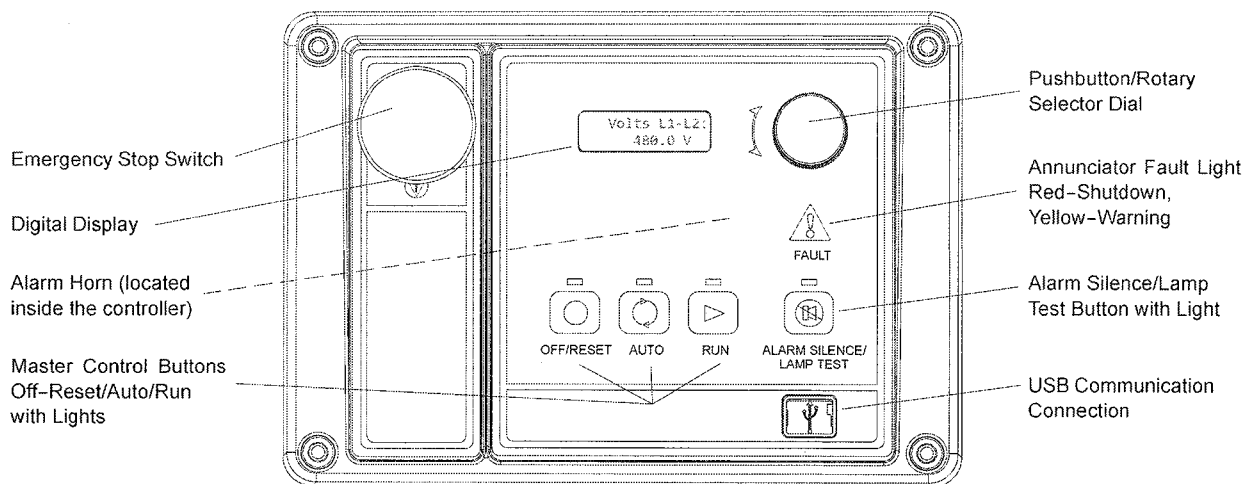
The Decision-Maker 3000 generator set controller provides advanced control, system monitoring, and system diagnostics for optimum performance.

The Decision-Maker 3000 controller meets NFPA 110, Level 1 when equipped with the necessary accessories and installed per NFPA standards.

The Decision-Maker 3000 controller uses a patented hybrid voltage regulator and unique software logic to manage alternator thermal overload protection features normally requiring additional hardware. Additional features include:

- D A digital display and pushbutton/rotary selector dial provide easy local access to data.
- D Measurements selectable in metric or English units.
- D The controller can communicate directly with a personal computer via a network or serial configuration using SiteTech™ or Monitor III software.
- D The controller supports Modbus™ protocol. Use with serial bus or Ethernet networks. (Ethernet requires an external Modbus/Ethernet converter module.)
- D Scrolling display shows critical data at a glance.
- D Digital display of power metering (kW and kVA).
- D Integrated hybrid voltage regulator providing $\pm 0.5\%$ regulation.
- D Built-in alternator thermal overload protection.

Modbus is a registered trademark of Schneider Electric.



User Interface Controls and Components

- D Emergency stop switch
- D Backlit LCD digital display with two lines of 12 characters
(see *User Interface Displays for menus*)
- D Alarm horn indicates generator set shutdown and warning faults
- D Environmentally sealed membrane keypad with three master control buttons with lights
 - d Off/Reset (red)
 - d Auto (green)
 - d Run (yellow)
- D Pushbutton/rotary selector dial for menu navigation
 - d Rotate dial to access main menus
 - d Push dial and rotate to access sub menus
 - d Press dial for 3 seconds to return to top of main menu
- D Annunciator fault light
 - d System shutdown (red)
 - d System warning (yellow)
- D Alarm silence/lamp test button
 - d Alarm silence
 - d Lamp test
- D USB and RS-485 connections
 - d Allows software upgrades
 - d Provides access for diagnostics
 - d PC communication using SiteTech[™] or Monitor III software
- D Dedicated user inputs
 - d Remote emergency stop switch
 - d Remote 2-wire start for transfer switch
 - d Auxiliary shutdown
- D Integrated hybrid voltage regulator
- D Auto-resettable circuit protection mounted on circuit board.
- D One relay output standard. Optional five relay output available.
- D One analog and three digital inputs standard. Optional two inputs available.

NFPA 110 Requirements

In order to meet NFPA 110, Level 1 requirements, the generator set controller monitors the engine/generator functions/faults shown below.

- D Engine functions:
 - d Overcrank
 - d Low coolant temperature warning
 - d High coolant temperature warning
 - d High coolant temperature shutdown
 - d Low oil pressure shutdown
 - d Low oil pressure warning
 - d High engine speed
 - d Low fuel (level or pressure) *
 - d Low coolant level
 - d EPS supplying load
 - d High battery voltage
 - d Low battery voltage
- D General functions:
 - d Master switch not in auto
 - d Battery charger fault *
 - d Lamp test
 - d Contacts for local and remote common alarm
 - d Audible alarm silence button
 - d Remote emergency stop *

* Function requires optional input sensors or kits and is engine dependent, see Controller Displays as Provided by the Engine ECM.

User Interface Displays

The listing below has D denoting main menus and d denoting sub-menus.

- D Overview
 - d Software version
 - d Active shutdowns and warnings (if any are present)
 - d Engine run time, total hours
 - d Average voltage line-to-line
 - d Frequency
 - d Average current
 - d Coolant temperature
 - d Fuel level or pressure *
 - d Oil pressure
 - d Battery voltage
- D Engine Metering
 - d Engine speed
 - d Oil pressure
 - d Coolant temperature
 - d Battery voltage
- D Generator Metering
 - d Total power, VA
 - d Total power, W
 - d Rated power, %
 - d Voltage, L-L and L-N for all phases
 - d Current, L1, L2, L3
 - d Frequency
- D GenSet Information
 - d Generator set model number
 - d Generator set serial number
 - d Controller serial number
- D GenSet Run Time
 - d Engine run time, total hours
 - d Engine loaded, hours
 - d Number of engine starts
 - d Total energy, kWh
- D GenSet System
 - d System voltage
 - d System frequency, 50 or 60 Hz
 - d System phase, single or three (wye or delta)
 - d Power rating, kW
 - d Amp rating
 - d Power type, standby or prime
 - d Measurement units, metric or English (user selectable)
 - d Alarm silence, always or auto only (NFPA 110)
 - d Manual speed adjust *
- D GenSet Calibration
 - d Voltage, L-L and L-N for all phases
 - d Current, L1, L2, L3
 - d Reset calibration
- D Voltage Regulation
 - d Adjust voltage, $\pm 10\%$
- D Digital Inputs
 - d Input settings and status
- D Digital Outputs
 - d Output settings and status
- D Analog Inputs
 - d Input settings and status
- D Event Log
 - d Event history (stores up to 1000 system events)
- D Selector Switch (requires initial activation by SiteTech[™])

Controller Features

- D **AC Output Voltage Regulator Adjustment.** The voltage adjustment provides a maximum of $\pm 10\%$ of the system voltage.
- D **Alarm Silence.** The controller can be set up to silence the alarm horn only when in the AUTO mode for NFPA-110 application or Always for user convenience.
- D **Alternator Protection.** The controller provides generator set overload and short circuit protection matched to each alternator for the particular voltage/phase configuration.
- D **Automatic Restart.** The controller automatic restart feature initiates the start routine and recrank after a failed start attempt.
- D **Common Failure Relay.** This relay is integrated on the controller circuit board. Contacts are rated 2 amps at 32 VDC or 0.5 amp at 120 VAC.
- D **Communication.** Controller communication is available.
- D **Cyclic Cranking.** The controller has programmable cyclic cranking.
- D **ECM Diagnostics.** The controller displays engine ECM fault code descriptions to help in engine troubleshooting.
- D **Engine Start Aid.** The starting aid feature provides control for an optional engine starting aid.
- D **Event Logging.** The controller keeps a record (up to 1000 entries) for warning and shutdown faults. This fault information becomes a stored record of system events and can be reset.
- D **Historical Data Logging.** Total number of generator set successful starts is recorded and displayed.
- D **Integrated Hybrid Voltage Regulator.** The voltage regulator provides $\pm 0.5\%$ no-load to full-load regulation with three-phase sensing.
- D **Lamp Test.** Press the alarm silence/lamp test button to verify functionality of the indicator lights.
- D **LCD Display.** Adjustable contrast for improving visibility.
- D **Measurement Units.** The controller provides selection of English or metric displays.
- D **Power Metering.** Controller digital display provides kW and kVA.
- D **Programming Access (USB).** Provides software upgrades and diagnostics.
- D **Remote Reset.** The remote reset function resets faults and allows restarting of the generator set without going to the master control switch off/reset position.
- D **Remote Monitoring Panel.** The controller is compatible with the Kohler Remote Serial Annunciator.
- D **Run Time Hourmeter.** The generator set run time is displayed.
- D **Time Delay Engine Cooldown (TDEC).** The TDEC provides a time delay before the generator set shuts down.
- D **Time Delay Engine Start (TDES).** The TDES provides a time delay before the generator set starts.
- D **Voltage Selection Menu.** This menu provides the capability of quickly switching controller voltage calibrations. Requires initial activation using SiteTech[®] software. **NOTE:** Generator set output leads require voltage reconnection.

Controller Functions

The following chart shows which functions cause a warning or shutdown. All functions are available as relay outputs.

Warning causes the fault light to show yellow and sounds the alarm horn signaling an impending problem.

Shutdown causes the fault light to show red, sounds the alarm horn, and stops the generator set.

	Warning Function	Shutdown Function
Engine Functions		
Critically high fuel level *	d	
ECM communication loss		D
ECM diagnostics	D	D
Engine over speed		D[
Engine start aid active		
Engine under speed		D
Fuel tank leak *	d	d
High battery voltage	D	
High coolant temperature	D	D[
High fuel level *	d	
Low battery voltage	D	
Low coolant level		D
Low coolant temperature	D	
Low cranking voltage	D	
Low engine oil level *	d	d
Low fuel level (diesel models) *	d	d
Low fuel pressure (gas models) *	d	
Low oil pressure	D	D[
No coolant temperature signal		D
No oil pressure signal		D
Overcrank		D[
Speed sensor fault	D	
General Functions		
Alarm horn silenced		
Analog inputs	d	d
Battery charger fault *	D	
Chicago code active *		
Common fault (includes [)		D
Common warning	D	
Digital inputs	d	d
Emergency stop		D[
Engine cooldown (delay) active		
Engine start delay active		
Engine started		
Engine stopped		
EPS supplying load		
Generator running		
Input/output communication loss	D	
Internal failure		D
Master switch not in auto	D	
NFPA 110 alarm active		
Remote start		
System ready		
Generator Functions		
AC sensing loss	D	D
Alternator protection		D
Ground fault input *	D	
kW overload		D
Locked rotor		D
Overfrequency		D
Overvoltage (each phase)		D
Underfrequency		D
Undervoltage (each phase)		D

D Standard function

d Available user function

* Function requires optional input sensors or kits and is engine dependent; see Controller Displays as Provided by the Engine ECM.

[Items included with common fault shutdown

Controller Displays as Provided by the Engine ECM (availability subject to change by the engine manufacturer)						
Display	GM/PSI	Doosan	John Deere (JDEC)	Volvo (EMS II)	Volvo (EDC III)	DD/MTU (ADEC)
Ambient temperature		X				
Charge air pressure	X	X		X	X	X
Charge air temperature	X	X	X	X	X	
Coolant level				X	X	X
Coolant pressure				X	X	
Coolant temperature	X	X	X	X	X	X
Crankcase pressure				X	X	
ECM battery voltage	X	X				X
ECM fault codes	X	X	X	X	X	X
ECM serial number						X
Engine model number			X			X
Engine serial number			X			X
Engine speed	X	X	X	X	X	X
Fuel pressure				X	X	
Fuel rate	X	X	X	X	X	X
Fuel temperature			X	X	X	X
Oil level					X	
Oil pressure	X	X	X	X	X	X
Oil temperature				X	X	X
Trip fuel				X	X	X

NOTE: 15-60REOZK (Kohler KDI engines) do not include an ECM as standard equipment. REOZMD/ROZMC (Mitsubishi engines) have an ECM but do not send signals to the generator set controller.

Controller Specifications

Decision-Makerr 3000—Software Version 3.11 or higher

- D Power source with circuit protection: 12- or 24-volt DC
- D Power drain: 200 milliamps at 12 VDC or 100 milliamps at 24 VDC
- D Humidity range: 5% to 95% noncondensing
- D Operating temperature range: -40°C to +70°C (-40°F to +158°F)
- D Storage temperature range: -40°C to +85°C (-40°F to +185°F)
- D Standards:
 - d CE Directive
 - d NFPA 99
 - d NFPA 110, Level 1
 - d CSA 282-09
 - d UL 508
 - d ASTM B117 (salt spray test)
- D Panel dimensions—W x H, 229 x 160 mm (9.0 x 6.3 in.)

Communication and PC Software Available Options

Refer to G6-76 Monitor III Software and the communication literature for additional communication and PC software information including Modbusr communication.

- **Monitor III Software for Monitoring and Control (Windowsr-based user interface)**
- **Converter, Modbusr/Ethernet.** Supports a power system using controllers accessed via the Ethernet. Converter is supplied with an IP address by the site administrator. Refer to G6-79 for converter details.
- **Converter, RS-232/RS-485.** Supports a power system using controllers accessed via a serial (RS-232) connection.

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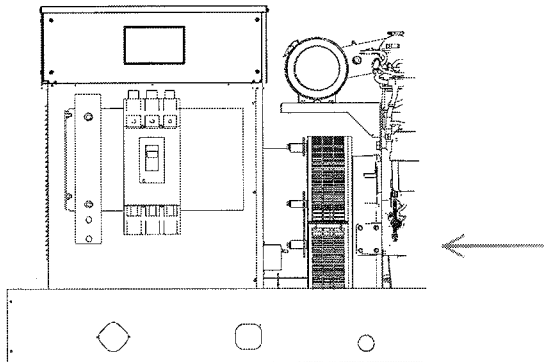
Decision-Makerr 3000 Available Options

- **Float/Equalize Battery Charger** available with 6 or 10 amp DC volt output. The 10 amp models are available with and without NFPA alarm to signal a battery charger fault.
- **Manual Speed Adjust** available for applications using closed transition ATS. Adjustment range for 60 Hz: 1751-1849 rpm (58.2-61.8 Hz) and for 50 Hz: 1451-1549 rpm (48.2-51.8 Hz).
- **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 Emergency Stop Switch** available as a wall mounted panel to remotely shut down the generator set.
- **Remote Monitoring Panel.** The Kohler Remote Serial Annunciator (RSA) enables the operator to monitor the status of the generator set from a remote location, which may be required for NFPA 99 and NFPA 110 installations.
- **Run Relay** provides a relay indicating that the generator set is running.
- **Shunt Trip Wiring** provides relay outputs to trip a shunt trip circuit breaker and to signal the common fault shutdowns. Contacts rated at 10 amps at 28 VDC or 120VAC.
- **Two Input/Five Output Module** provides a generator set mounted panel with two inputs and five relay outputs.

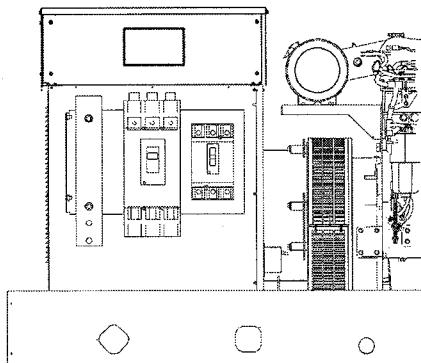
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Windowsr is a registered trademark of Microsoft Corporation.

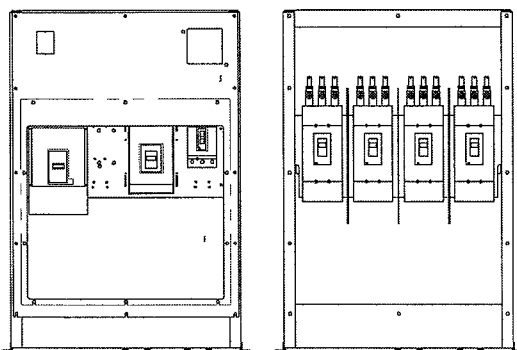
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Single Circuit Breaker Kit with Neutral Bus Bar
15–300 kW Model Shown



Dual Circuit Breaker Kit with Neutral Bus Bar
15–300 kW Model Shown



Multiple Circuit Breaker Kits with Neutral Bus Bar
350–2250 kW Model Shown
(also applies to some 300 kW models)

Standard Features

- D The line circuit breaker interrupts the generator set output during a short circuit and protects the wiring when an overload occurs. Use the circuit breaker to manually disconnect the generator set from the load during generator set service.
- D Circuit breaker kits are mounted to the generator set and are provided with load-side lugs and neutral bus bar.
- D Kohler Co. offers a wide selection of molded-case line circuit breaker kits including single, dual, and multiple configurations for each generator set.
- D Four types of line circuit breakers are available: (see page 2 for definitions and pages 3 and 4 for application details)
 - d Magnetic trip
 - d Thermal magnetic trip
 - d Electronic trip
 - d Electronic with ground fault (LSIG) trip
- D In addition, line circuit breakers are offered with 80% and 100% ratings.
- D Single line circuit breaker kits allow circuit protection of the entire electrical system load.
- D Dual line circuit breaker kits allow circuit protection of selected priority loads from the remaining electrical system load.
- D Multiple line circuit breaker kits with field connection barrier allow circuit protection for special applications (350–2250 kW).
- D Line circuit breakers comply with the following codes and standards unless otherwise stated.
 - d UL 489 Molded Case Circuit Breakers
 - d UL 1077 Supplementary Protectors
 - d UL 2200 Stationary Engine Generator Assemblies

15-300 kW Line Circuit Breaker Specifications

80% Rating Circuit Breaker

Gen. Set kW	Alt. Model	Ampere Range	Trip Type	C. B. Frame Size
15-80	4D/4E/ 4P/4PX/ 4Q/4QX	30-100	Magnetic, UL 1077	E (480 V max.)
			Magnetic, UL 1077 with 12 V shunt trip	
			Magnetic, UL 1077 with 24 V shunt trip	
		15-150	Thermal magnetic	HD
		60-150	Electronic LI	
			Electronic LSIG	
		175-250	Thermal magnetic	JD
		250	Electronic LI	
			Electronic LSIG	
		300-400	Thermal magnetic	LA
50-200	4RX/4S/ 4SX/ 4TX/4V	30-100	Magnetic, UL 1077	E (480 V max.)
			Magnetic, UL 1077 with 12 V shunt trip	
			Magnetic, UL 1077 with 24 V shunt trip	
		15-150	Thermal magnetic	HD
		60-150	Electronic LI	
			Electronic LSIG	
		175-250	Thermal magnetic	JD
		250	Electronic LI	
			Electronic LSIG	
		300-400	Thermal magnetic	LA
		400-600	Electronic LI	LG
			Electronic LSIG	
		700-800	Thermal magnetic	MG
		1000-1200	Thermal magnetic	PG
200-300	4UA/ 4M6226	15-150	Thermal magnetic	
			Electronic LI	
		60-150	Electronic LSIG	HD
			Electronic LSIG	
		175-250	Thermal magnetic	JD
		250	Electronic LI	
			Electronic LSIG	
		300-400	Thermal magnetic	LA
		400-600	Electronic LI	LG
			Electronic LSIG	
		700-800	Thermal magnetic	MG
		1000-1200	Thermal magnetic	PG
		800-1200	Electronic LSI	
			Electronic LSIG	
		15-150	Thermal magnetic	HD
			Electronic LI	
		60-150	Electronic LSIG	JD
			Electronic LSIG	
		175-250	Thermal magnetic	LG
		250	Electronic LI	
			Electronic LSIG	
		400	Electronic LI	PG
		600-1200	Electronic LSI	
			Electronic LSIG	

100% Rating Circuit Breaker

Gen. Set kW	Alt. Model	Ampere Range	Trip Type	C. B. Frame Size
15-80	4D/4E/ 4P/4PX/ 4Q/4QX	15-150	Thermal magnetic	HD
		60-150	Electronic LI	
			Electronic LSIG	
		175-250	Thermal magnetic	JD
		250	Electronic LI	
			Electronic LSIG	
60-200	4RX/4S/ 4SX/ 4TX/4V	400	Electronic LI	LG
		600-1200	Electronic LSIG	
			Electronic LSIG	PG
		15-150	Thermal magnetic	
		60-150	Electronic LI	
			Electronic LSIG	
		175-250	Thermal magnetic	JD
		250	Electronic LI	
			Electronic LSIG	
		400	Electronic LI	LG
200-300	4UA/ 4M6226	600-1200	Electronic LSI	PG
			Electronic LSIG	
		15-150	Thermal magnetic	HD
		60-150	Electronic LI	
			Electronic LSIG	
		175-250	Thermal magnetic	JD
		250	Electronic LI	
			Electronic LSIG	
		400	Electronic LI	LG
		600-1200	Electronic LSIG	
			Electronic LSIG	

Circuit Breaker Lugs Per Phase (Al/Cu)

Frame Size	Ampere Range	Wire Range
E (480 V max.)	30-100	Up to two wire terminals fitting 10-32 or 1/4-20 stud
HD	15-150	One #14 to 3/0
JD	175	One 1/0 to 4/0
	200-250	One 3/0 to 350 kcmil
LA	300-400	One #1 to 600 kcmil or Two #1 to 250 kcmil
LG	400-600	Two 2/0 to 500 kcmil
MG	700-800	Three 3/0 to 500 kcmil
PG	600-800	Three 3/0 to 500 kcmil
	1000-1200	Four 3/0 to 500 kcmil

Interrupting Ratings

Circuit Breaker Frame Size	240 Volt, kA	480 Volt, kA	600 Volt, kA
HD	25	18	14
JD			
LA	42	30	22
LG	65	35	18
MG			
PG			

Line Circuit Breaker Types

Magnetic Trip

The magnetic trip features an electromagnet in series with the load contacts and a moveable armature to activate the trip mechanism. When a sudden and excessive current such as a short circuit occurs, the electromagnet attracts the armature resulting in an instantaneous trip (UL 1077 circuit breakers).

Thermal Magnetic Trip

Thermal magnetic trip contains a thermal portion with a bimetallic strip that reacts to the heat produced from the load current. Excessive current causes it to bend sufficiently to trip the mechanism. The trip delay is dependant on the duration and excess of the overload current. Elements are factory-calibrated. A combination of both thermal and magnetic features allows a delayed trip on an overload and an instantaneous trip on a short circuit condition.

Electronic Trip

These line circuit breakers use electronic controls and miniature current transformers to monitor electrical currents and trip when preset limits are exceeded.

LI breakers are a combination of adjustable trip functions including long-time ampere rating, long-time delay, and instantaneous pickup. LSI breakers have all of the LI breaker features plus short-time pickup, short-time delay, and defeatable instantaneous pickup. LSIG breakers have all of the LSI breaker features plus ground-fault pickup and delay.

Electronic with Ground Fault Trip

The ground fault trip feature is referred to as LSIG in this document. Models with LSIG compare current flow in phase and neutral lines, and trip when current unbalance exists.

Ground fault trip units are an integral part of the circuit breaker and are not available as field-installable kits. The ground fault pickup switch sets the current level at which the circuit breaker will trip after the ground fault delay. Ground fault pickup values are based on circuit breaker sensor plug only and not on the rating plug multiplier. Changing the rating plug multiplier has no effect on the ground fault pickup values.

80% Rated Circuit Breaker

Most molded-case circuit breakers are 80% rated devices. An 80% rated circuit breaker can only be applied at 80% of its rating for continuous loads as defined by NFPA 70. Circuit conductors used with 80% rated circuit breakers are required to be rated for 100% of the circuit breaker's rating.

The 80% rated circuit breakers are typically at a lower cost than the 100% rated circuit breaker but load growth is limited.

100% Rated Circuit Breaker

Applications where all UL and NEC restrictions are met can use 100% rated circuit breakers where 100% rated circuits can carry 100% of the circuit breaker and conductor current rating.

The 100% rated circuit breakers are typically at a higher cost than the 80% rated circuit breaker but have load growth possibilities.

When applying 100% rated circuit breakers, comply with the various restrictions including UL Standard 489 and NEC Section 210. If any of the 100% rated circuit breaker restrictions are not met, the circuit breaker becomes an 80% rated circuit breaker.

Line Circuit Breaker Options

- Alarm Switch

The alarm switch indicates that the circuit breaker is in a tripped position caused by an overload, short circuit, ground fault, the operation of the shunt trip, an undervoltage trip, or the push-to-trip pushbutton. The alarm resets when the circuit breaker is reset.

- Auxiliary Contacts

These switches send a signal indicating whether the main circuit breaker contacts are in the open or closed position.

- Breaker Separators (350-2250 kW)

Provides adequate clearance between breaker circuits.

- Bus Bars

Bus bar kits offer a convenient way to connect load leads to the generator set when a circuit breaker is not present.
15-300 kW. Bus bar kits are available on alternators with leads for connection to the generator set when circuit breakers are not ordered.

350-2250 kW. A bus bar kit is provided on the right side of the unit when no circuit breaker is ordered. Bus bars are also available in combination with circuit breakers or other bus bars on the opposite side of the junction box. On medium voltage (3.3 kV and above) units, a bus bar kit is standard.

- Field Connection Barrier

Provides installer wiring isolation from factory connections.

- Ground Fault Annunciation

A relay contact for customer connection indicates a ground fault condition and is part of a ground fault alarm.

- Lockout Device (padlock attachment)

This field-installable handle padlock attachment is available for manually operated circuit breakers. The attachment can accommodate three padlocks and will lock the circuit breaker in the OFF position only.

- Neutral Lugs

Various neutral lug sizes are available to accommodate multiple cable sizes for connection to the bus bar only.

- Overcurrent Trip Switch

The overcurrent trip switch indicates that the circuit breaker has tripped due to overload, ground fault, or short circuit and returns to the deenergized state when the circuit breaker is reset.

- Shunt Trip, 12 VDC or 24 VDC

A shunt trip option provides a solenoid within the circuit breaker case that, when momentarily energized from a remote source, activates the trip mechanism. This feature allows the circuit breaker to be tripped by customer-selected faults such as alternator overload or overspeed. The circuit breaker must be reset locally after being tripped. Tripping has priority over manual or motor operator closing.

- Shunt Trip Wiring

Connects the shunt trip to the generator set controller.

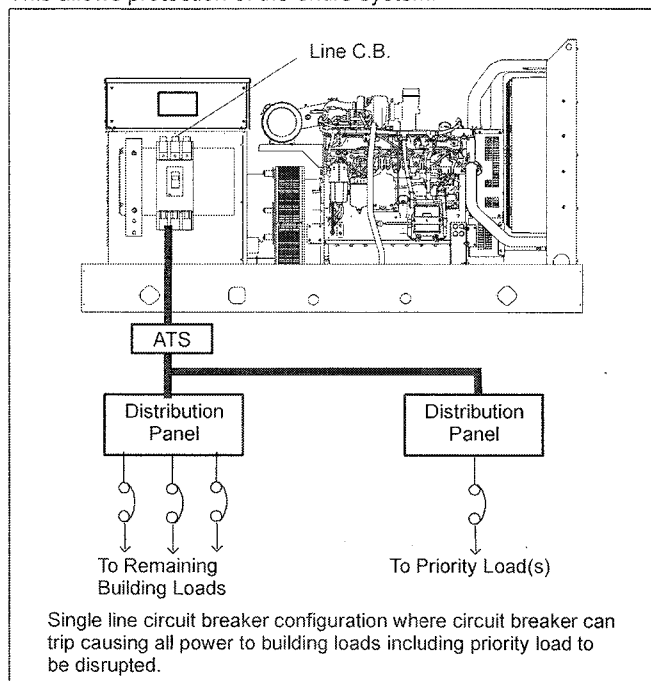
- Undervoltage Trip, 12 VDC or 24 VDC

The undervoltage trips the circuit breaker when the control voltage drops below the preset threshold of 35%-70% of the rated voltage.

15-300 kW Line Circuit Breaker Applications

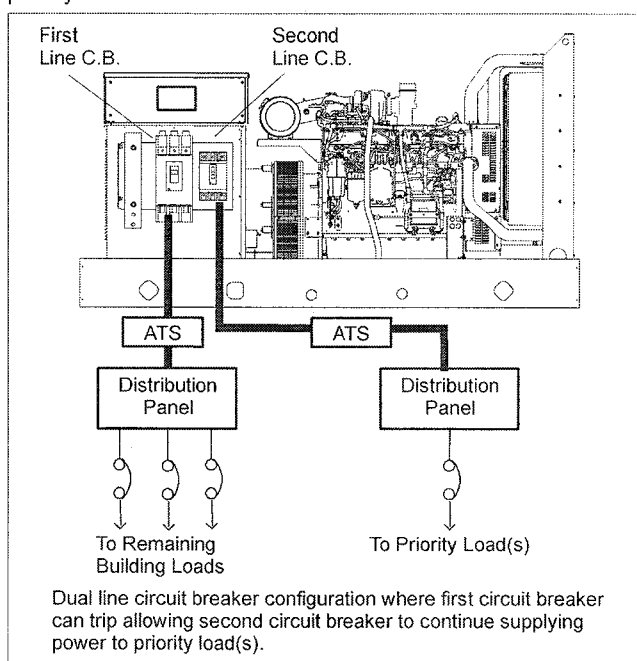
Single Circuit Breaker Installations

A generator set with a single circuit breaker installed typically feeds a single transfer switch and then a distribution panel. This allows protection of the entire system.



Dual Circuit Breaker Installations

A generator set with dual circuit breakers installed is used to separate critical loads. Typically, one circuit breaker will feed a main transfer switch with noncritical loads and the other circuit breaker will feed a second transfer switch that feeds critical or priority loads.



Dual Circuit Breaker Combinations

Alternator Model	First C. B. Frame Size	Second C. B. Frame Size	Comments
All, except 4D/4E	HD	—	Standard or LSIG
	JD	—	Standard only
	LA	—	Standard only
	LG	—	Standard or LSIG
4D/4E	HD	—	Standard only
4D/4E	HD	HD	Standard only
4P/4PX/4Q/ 4QX/4RX/4S/ 4SX/4TX/4V/ 4UA	HD	HD	Standard only
	JD	HD or JD	
	LA	HD or JD	
	LG	HD or JD	
	LG	LG	
4RX/4S/ 4SX/4TX/4V	MG	—	Standard only
	PG	—	Standard or LSIG
	HD	HD	Standard only
	JD	HD or JD	
	LA	HD, JD, LA	
	LG	—	
	MG	HD, JD, LA, or LG	
	PG	—	

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Alternator Model	First C. B. Frame Size	Second C. B. Frame Size	Comments
4UA/4M6226	MG	—	Standard only
	PG	—	Standard only
	HD	HD	Standard or LSIG
	JD	HD or JD	Standard only
	LA	HD, JD, or LA	Standard only
	LG	HD, JD, LA, or LG	HD, JD, LG (1 or 2 may be standard or LSIG)
	MG	—	PG and/or HD, JD, LG may be LSIG
	PG	PG	Standard only

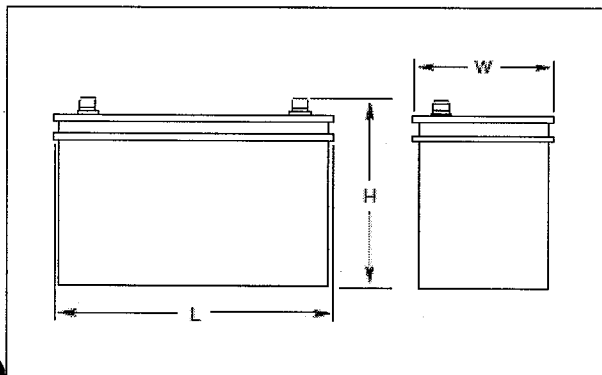
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Typical Overall Dimensions

Typical Overall Dimensions



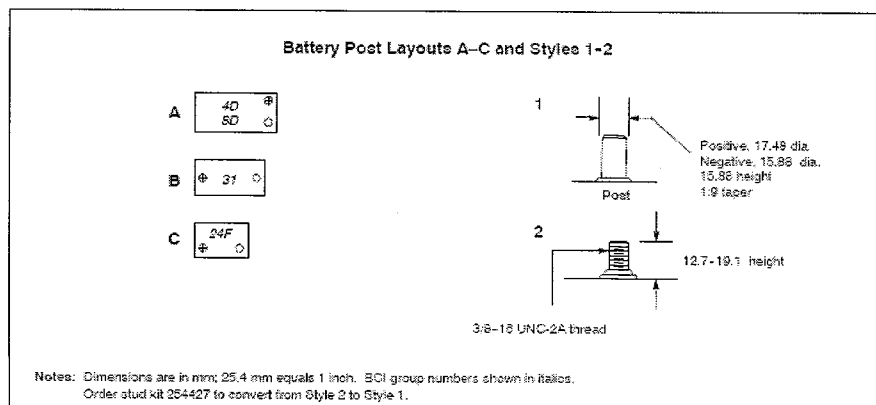
Standard Features

- Kohler Co. selects batteries to meet the engine manufacturer's specifications and to comply with NFPA requirements for engine-cranking cycles.
- Heavy-duty starting batteries are the most cost-effective means of engine cranking and provide excellent reliability in generator set applications.
- Batteries are rated according to SAE standard J-537. All batteries are 12-volt and have lead-calcium or lead-antimony plates with sulfuric acid electrolyte.
- Most generator set battery kits offer dry-charged or wet-charged batteries.
- Tough polypropylene cases protect against life-shortening vibration and impact damage.
- Removable cell covers allow checking of electrolyte specific gravity.

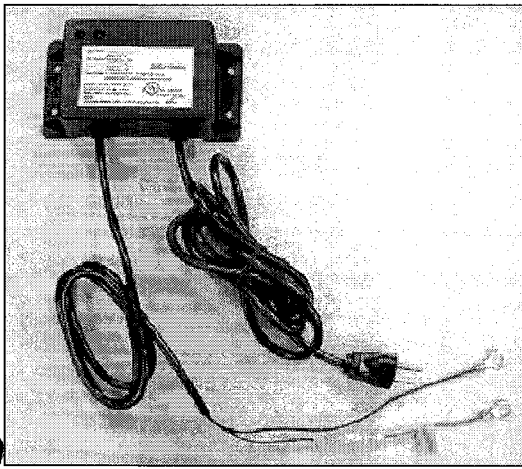
Charge Type*	Battery Part Number	Battery Qty. per Size	BCI Group Size	Battery SAE Dimension, mm (in.)			Cold Cranking Amps at 18°C (0°F) Min.	Reserve Capacity Minutes at 27° (80°F) Min.	Battery Post Layout and Style
				L	W	H			
Wet	256984	1	24	273.0 (10.8)	173.0 (6.8)	228.6 (9.0)	650	130	C/1

Battery Specifications

Battery Specifications



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Standard Features

- 12 VDC output. * Use two battery chargers for 24-volt electrical systems.
- Automatic 3-stage float/equalize battery charger
- Charges both lead-acid and gel-cell type batteries
- Indicator lamps: red and green LEDs indicate bulk charge, absorption, and float charge stages
- Durable potted assembly for full waterproofing and shockproofing
- Reverse-polarity protection
- Short-circuit protection
- UL 1236 listed
- UL 2200 compliant
- UL 991 compliant for vibration and shock
- UL listed to Canadian safety standards
- UL rated inline fuse
- FCC Class B-compliant for EMI/RFI (Date code 8/26/04 or later)
- 1-year warranty
- Easy installation:
 - o Integral mounting flanges
 - o Ring terminals for battery connection
 - o Standard US style 3-prong AC plug

Specifications

Input Voltage / Frequency	90-135 VAC / 50/60 Hz
DC Output: Bulk	11.8-14.0 VDC @ 5.0-6.0 amps
Absorption	14.0-14.5 VDC @ 1.5-5.0 amps
Float	13.3-14.5 VDC @ 0.1-1.5 amps
Steady Full-Load Output Current	6 amps
Current Limit	7 amps
Output Power Limit	70 +2/-5 watts
Line Regulation Across Input Voltage Range	0.01
Isolation, Input to Output	2500 V
Dimensions (L x W x D)	164 x 87 x 53 mm (6.4 x 3.5 x 2.1 in)
Weight	1.6 kg (3.5 lb.)
Temperature Range, Operating and Storage	-40°C to 70°C (-40°F to 158°F)
Humidity	0 to 100% (condensing)



Lead Length 1.2 m (4 ft.)

AC Power Connections

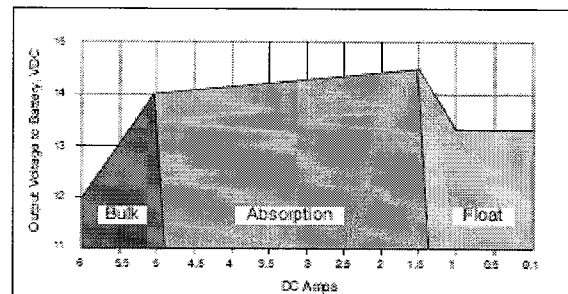
Connection Standard US style 3-prong AC plug

Carton Size 254 x 152 x 89 mm
Shipping Weight 1.8 kg (4 lb.)

Shipping Weight 1.8 kg (4 lb.)

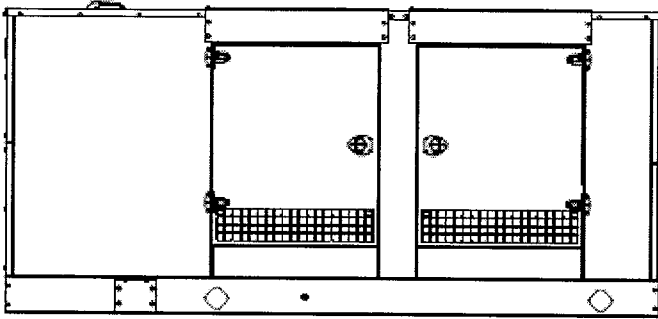
The graph shows the output voltage of a power supply as a function of the DC load current. The y-axis represents the output voltage in VDC, ranging from 11 to 15. The x-axis represents the DC Amps, ranging from 0 to 6. The graph is divided into three distinct regions: Bulk, Absorption, and Float.

DC Amps	Output Voltage (VDC)	Stage
0	12.0	Bulk
0.5	13.0	Bulk
1.0	14.0	Bulk
1.5	14.5	Absorption
2.0	14.5	Absorption
2.5	14.5	Absorption
3.0	14.5	Absorption
3.5	14.5	Absorption
4.0	14.5	Absorption
4.5	14.5	Absorption
5.0	14.5	Absorption
5.5	14.5	Absorption
6.0	14.5	Absorption
6.5	14.0	Float
7.0	14.0	Float
7.5	14.0	Float
8.0	14.0	Float
8.5	14.0	Float
9.0	14.0	Float
9.5	14.0	Float
10.0	14.0	Float



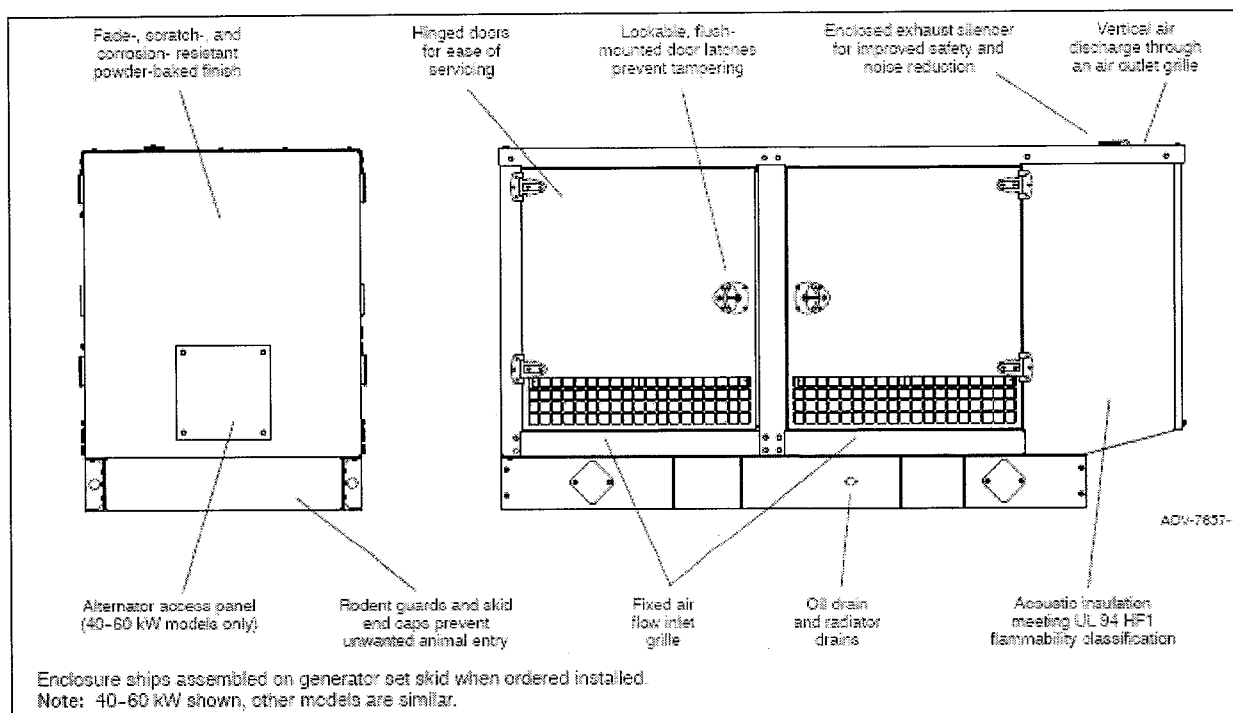
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Sound Enclosure Standard Features

- Internal-mounted critical silencer and flexible exhaust connector.
- Skid-mounted, steel construction with hinged doors.
- Fade-, scratch-, and corrosion-resistant Kohler® Power Armor automotive-grade textured finish.
- Enclosure has four access doors which allow for easy maintenance.
- Lockable, flush-mounted door latches.
- Vertical air inlet and outlet discharge to redirect air and reduce noise.
- High wind bracing, 241 kph (150 mph).
- Skid-mounted, steel construction with hinged doors.
- Acoustic insulation that meets UL 94 HF1 flammability classification and repels moisture adsorption.
- Sound attenuated enclosure that uses up to 51 mm (2 in.) of acoustic insulation, acoustic-lined air intake hoods, and acoustic-lined air discharge hood.



Sound Enclosure Features

- Available in steel (14 gauge) formed panel, solid construction. Preamsembled package offering corrosion resistant, dent resilient structure that mounts directly to lift base or fuel tank.
- Power-Armor automotive-grade finish resulting in advanced corrosion and abrasion protection as well as enhanced edge coverage and color retention.
- Internal critical exhaust silencer offering maximum component life and operator safety.
- Interchangeable modular panel construction. Allows complete serviceability or replacement without compromising enclosure design.
- Cooling/combustion air intake with a horizontal air inlet. Sized for maximum cooling airflow.
- Service access. Multi-personnel doors for easy access to generator set control and servicing of the oil fill and battery.
- Cooling air discharge. Weather protective design featuring vertical air discharge outlet grille. Redirects cooling air up and above enclosures to reduce noise ambient.
- Attenuated design. Acoustic insulation UL 94 HF1 listed for flame resistance offering up to 51 mm (2 in.) mechanically restrained acoustic insulation.
- Cooling air discharge. The sound enclosures include acoustic insulation with urethane film.

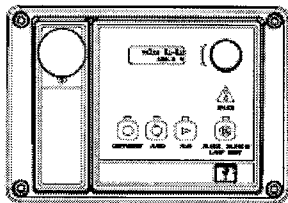
Fuel Tank Capacity, L (gal.)	Est. Fuel Supply Hours at 60 Hz with Full Load	Max. Length, mm (in.)	Max. Width, mm (in.)	Sound Pressure with full load at 7m (23ft.), dB(A)	Max. Height, mm (in.)	Weight, kg (lb.)
Lift base	0	3526 (138.8)	1153 (45.4)	72	1694 (66.7)	1568 (3457)

Note: Refer to the respective ADV drawings for details.
Weight includes the generator set (wet), enclosure, and silencer.
The generator set weight represents the largest alternator option.

KOHLER Power Systems



Integral Voltage Regulator with Kohler® Decision-Maker® 3000 and Menu-Driven Selections (15-1000 kW Generator Set Models)



Decision-Maker® 3000 Controller
with Integral Voltage Regulator

Voltage Regulators

The following information provides general features, specifications, and functions of available voltage regulators.

This information generally applies to a single generator set and multiple generator sets with paralleling applications. Refer to the respective generator set specification sheet and see your authorized distributor for information regarding specific voltage regulator applications and availability.

The voltage regulator is integral to the controller and uses patented hybrid voltage regulator design providing $\pm 0.5\%$ no-load to full-load regulation using root-mean-square (RMS) voltage sensing. The voltage regulator features three-phase sensing and is available for 12- or 24-volt engine electrical systems.

Integral Voltage Regulators with Decision-Maker® 3000 Controllers

Calibration	Digital Display	Range Settings	Default Selection
Voltage Adjustment	Volt Adj	$\pm 10\%$ of System Voltage	System Voltage
Underfrequency Unload or Frequency Setpoint	Frequency Setpoint	42 to 62 Hz	2.5 Hz Below Nominal Frequency
Underfrequency Unload Scope	Slope	0-10% of System Voltage (Volts per Cycle)	5% of System Voltage

KOHLER Power Systems

Specification/Feature	Integral with Decision-Maker® 3000
Generator Set Availability	15-1000 kW
Type	Patented Hybrid Design
Status and Shutdown Indicators	LEDs and Text LCD Display
Operating Temperature	-40°C to 70°C (-40°F to 158°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Humidity	5-95% Non-Condensing
Circuit Protection	Solid-State, Redundant Software and Fuses
Sensing, Nominal	100-240 Volts (L-L), 50-60 Hz
Sensing Mode	RMS, Single- or 3-Phase
Input Requirements	8-36 VDC
Continuous Output	5 VDC @ 100mA max. 5.0 ADC with GM88453 Activator Board
Maximum Output	5 VDC @ 100mA max. 7.8 ADC with GM88453 Activator Board
Transition Frequency	42.0-62.0Hz
Exciter Field Resistance	4-30 Ohms with GM88453 Activator Board
No-Load to Full-Load Voltage Regulation	±0.5%
Thermal Drift	<0.5% (-40°C to 70°C) [-40°F to 158°F] Range
Response Time	Less than 5µS
System Voltage Adjust.	±10%
Voltage Adjustment	Controller Menu Knob
Remote Voltage Adjustment	not available
Paralleling Capability	not available
VAR/PF Control Input	not available

Integral Voltage Regulator with Decision-Maker® 3000 Controller

- The Decision-Maker® 3000 digital display and pushbutton/rotary dial provide access to data. A two-line LCD display provides complete and concise information. A two-line vacuum fluorescent display provides complete and concise information.
- The Decision-Maker® 3000 graphical display and pushbutton/rotary dial provide access to data. A five-line, 35-characters per line LCD display provides complete and concise information include gain, ramp rate, reactive droop, VAR control (P, I, D gains) and PF control (P, I, D gains).
- The controllers provide ISO 8528-5, Class G3, compliance for transient response on some 20-300 kW generator set models. Both controllers support Modbus®.
- These controllers can control Fast Response™ II, Fast Response™ X, and wound field alternators using the GM88453 activator board.

Voltage Regulator Menu

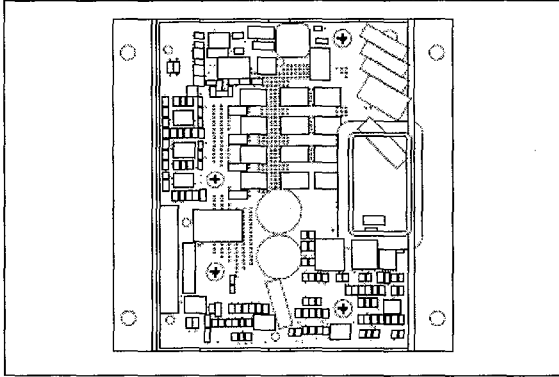
- Voltage adjustment, ±10% of system voltage
- V/Hz cut-in, 42-62 Hz
- Underfrequency unload slope, 0-10% of system voltage

Generator Set Calibration Menu

- L1-L2 volts
- L2-L3 volts (3-phase)
- L3-L1 volts (3-phase)
- L1-N volts
- L2-N volts
- L3-N volts (3-phase)

KOHLER Power Systems

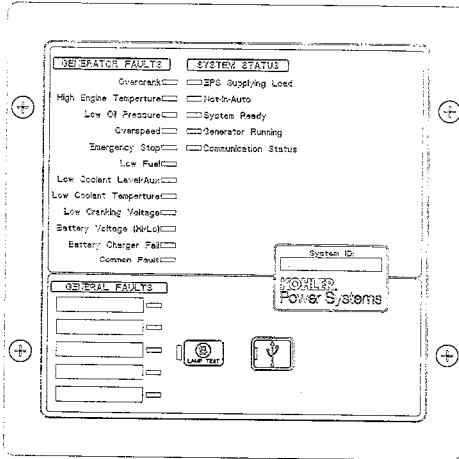
Activator Board GM88453



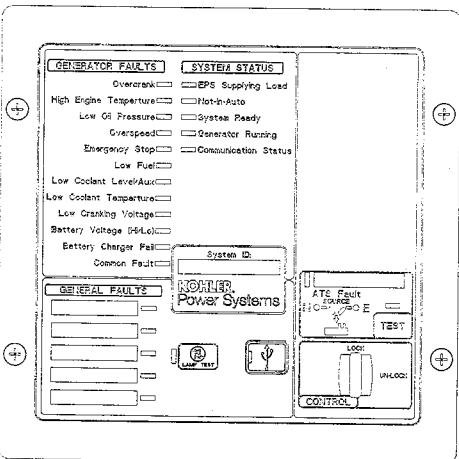
- Interfaces between the controller and alternator assembly using rotor field leads, auxiliary power windings, and optic board leads.
- Allows the Decision-Maker® controllers the ability to control a wound-field alternator using the same control signal as Fast Response™ alternator.
- Permits the generator set controller to control the current to the exciter field of a wound-field excited alternator.
- Contains two isolated relay driver outputs (RDO) rated at 250 mA. Provides RDO outputs indicating a field over-excitation condition and that the alternator is supplying voltage to the activator.

Modbus® is a registered trademark of Schneider Electric.

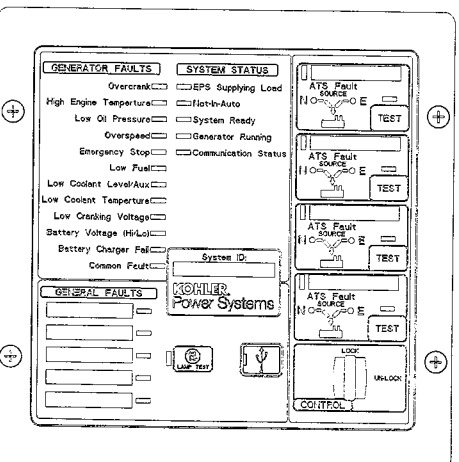
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RSA III



RSA III with a Single ATS Control



RSA III with Four ATS Controls

Remote Serial Annunciator III (RSA III) for Kohler Controllers

D Monitors the generator set equipped with one of the following controllers:

- KPC 1000
- Decision-Makerr 3+
- Decision-Makerr 550
- Decision-Makerr 3000
- Decision-Makerr 3500
- Decision-Makerr 6000

D Allows monitoring of the common alarm, remote testing of the automatic transfer switch, and monitoring of the normal/emergency source for up to four ATS with any of the following controllers:

- Decision-Makerr MPACr 750, 1200, and 1500
- MPACr 1000 and 1500

D Configuration via a personal computer (PC) software.

D Writable surfaces (white boxes in illustrations) for user-defined selections.

D Uses Modbus RTU protocol.

D Controller connections:

RS-485 for serial bus network

USB port. Connect a personal computer and use Kohler SiteTech t. software to view events and adjust settings. *

12-/24-volt DC power supply

120/208 VAC power supply (available accessory)

D Meets the National Fire Protection Association Standard NFPA 110, Level 1.

Dimensions

D Dimensions—W x H x D, mm (in.).

Surface Mounted:

203 x 203 x 83 (8.0 x 8.0 x 3.3)

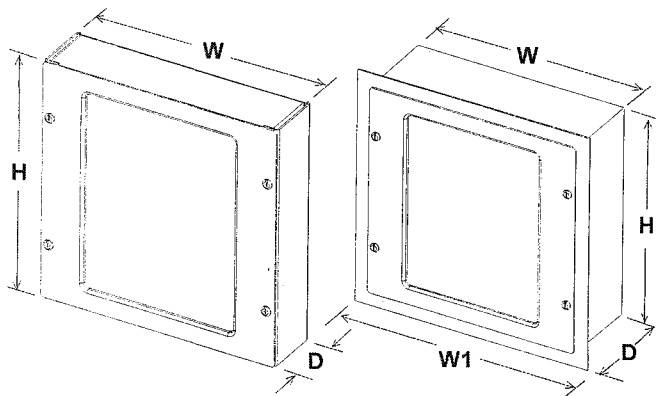
Flush Mounted (Inside Wall):

203 x 203 x 76 (8.0 x 8.0 x 3.0)

Flush mounting plate W1: 254 (10.0)

* SiteTech t. software is available to Kohler authorized distributors and dealers.

Modbus is a registered trademark of Schneider Electric.



Surface Mounted

Flush Mounted

Fault and Status Conditions	Fault LEDs	Fault Horn	System Ready LED	Generator Running LED	Communication Status LED
Overcrank Shutdown	Red	On	Red	Off	Green
High Engine Temperature Warning *	Yellow	On	Red	Green	Green
High Engine Temperature Shutdown	Red	On	Red	Off	Green
Low Oil Pressure Warning *	Yellow	On	Red	Green	Green
Low Oil Pressure Shutdown	Red	On	Red	Off	Green
Overspeed Shutdown	Red	On	Red	Off	Green
Emergency Stop *	Red	On	Red	Off	Green
Low Coolant Level/Aux. Shutdown	Red	On	Red	Off	Green
Low Coolant Temperature *	Yellow	On	Red	Off	Green
Low Cranking Voltage	Yellow	On	Red	Off	Green
Low Fuel—Level or Pressure *	Yellow	On	Red	Green or Off	Green
Not-In-Auto	Red	On	Red	Green or Off	Green
Common Fault	Red	On	Green	Green or Off	Green
Battery Charger Fault (1) *	Yellow	On	Red	Green or Off	Green
Battery Charger Fault (2) *	Yellow	On	Green	Green or Off	Green
High Battery Voltage *	Yellow	Off	Green	Green or Off	Green
Low Battery Voltage *	Yellow	Off	Green	Green or Off	Green
User Input #1 (Warning)	Yellow	Off	Green	Green or Off	Green
User Input #1 (Shutdown)	Red	On	Green	Off	Green
User Input #2 (Warning)	Yellow	Off	Green	Green or Off	Green
User Input #2 (Shutdown)	Red	On	Green	Off	Green
User Input #3 (Warning) (1) [	Yellow	Off	Green	Green or Off	Green
User Input #3 (Shutdown) (1) [	Red	On	Green	Off	Green
User Input #4 (Warning) (1)	Yellow	Off	Green	Green or Off	Green
User Input #4 (Shutdown) (1)	Red	On	Green	Off	Green
User Input #5 (Warning) (1)	Yellow	Off	Green	Green or Off	Green
User Input #5 (Shutdown) (1)	Red	On	Green	Off	Green
EPS Supplying Load	Yellow	Off	Green	Green	Green
Communications Status (Fault mode)	—	Off	Green or Red	Green or Off	Red
ATS Fault (RSA III with ATS Controls only)	Red	On	Red or Yellow	Green or Off	Green

Green LEDs appear as steady on when activated.
Yellow LEDs slow flash when activated except steady on with EPS supplying load and high battery voltage.
Red LEDs slow flash when activated except fast flash with loss of communication and not-in-auto.

Specifications

- D LED indicating lights for status, warning, and/or shutdown.
- D Power source with circuit protection: 12- or 24-volt DC
- D Power source with 120/208 VAC, 50/60 Hz adapter (option)
- D Power draw: 200 mA
- D Humidity range: 0% to 95% noncondensing
- D Operating temperature range: -20°C to +70°C (-4°F to +158°F)
- D Storage temperature range: -40°C to +85°C (-40°F to +185°F)
- D Standards:
 - d NFPA 110, level 1
 - d UL 508 recognized
 - d CE directive
 - d NFPA 99
 - d ENS 61000-4-4
 - d EN6114-4 fast transient immunity
- D RS-485 Modbus: isolated port @ 9.6/19.2/38.4/57.6 kbps (default is 19.2 kbps)
- D USB device port
- D NEMA 1 enclosure

(1) All generator set controllers except Decision-Makerr 3+ controller.
(2) Decision-Makerr 3+ controller only.

* May require optional kit or user-provided device to enable function and LED indication.

[Digital input #3 is factory-set for high battery voltage on the Decision-Makerr 3+ controller.

Modbus is a registered trademark of Schneider Electric.

ATS Controls (RSA III with ATS controls only)

- D ATS position LED (normal or emergency)
- D Power source indicator LED (normal or emergency)
- D ATS fault LED
- D Key-operated lock/unlock switch for Test feature
- D Test pushbutton

NFPA Requirements

- D NFPA 110 compliant
- D Engine functions:
 - d High battery voltage warning *
 - d High engine temperature shutdown
 - d High engine temperature warning *
 - d Low battery voltage warning *
 - d Low coolant level/aux. shutdown
 - d Low coolant temperature warning *
 - d Low cranking voltage
 - d Low fuel warning (level or pressure) *
 - d Low oil pressure shutdown
 - d Low oil pressure warning *
 - d Overcrank shutdown
 - d Overspeed shutdown
- D General functions:
 - d Audible alarm silence
 - d Battery charger fault *
 - d Lamp test
 - d Master switch not-in-auto

Fault and Status LEDs and Lamp Test Switch

Alarm Horn. Horn sounds giving a minimum 90 dB at 0.1 m (0.3 ft.) audible alarm when a warning or shutdown fault condition exists except on high/low battery voltage or EPS supplying load.

Alarm Silenced. Red LED on lamp test switch lights when alarm horn is deactivated by alarm silence switch.

Alarm Silence Switch. Lamp test switch quiets the alarm during servicing. The horn will reactivate upon additional faults.

ATS Fault. Red LED lights when ATS fails to transfer.

Battery Charger Fail. LED lights if battery charger malfunctions. Requires battery charger with alarm contact.

Battery Voltage Hi/Lo. LED flashes if battery or charging voltage drops below preset level. LED lights steady if battery voltage exceeds preset level.

Common Fault. LED lights when a single or multiple common faults occur.

Communication Status. Green LED lights indicating annunciator communications functional. Red LED indicates communication fault.

EPS Supplying Load. LED lights when the Emergency Power System (EPS) generator set is supplying output current (Decision-Makerr 550, 3000, 3500, and 6000 controllers) or when transfer switch is in the emergency position (Decision-Makerr 3+ controller).

Emergency Stop. LED lights and engine stops when emergency stop is made. May require a local emergency stop switch on some Decision-Makerr 3+ controllers.

Generator Running. LED lights when generator set is in operation.

High Engine Temperature. Red LED lights if engine has shut down because of high engine coolant temperature. Yellow LED lights if engine coolant temperature approaches shutdown range. Requires warning sender on some models.

Lamp Test (Switch). Switch tests all the annunciator indicator LEDs and horn.

Low Coolant Level/Aux. LED lights when engine coolant level is below acceptable range on radiator-mounted generator sets only. When used with a Decision-Makerr 3+ controller, the LED indicates low coolant level or an auxiliary fault shutdown. Requires user-supplied low coolant level switch on remote radiator models.

Low Coolant Temperature. LED lights if optional engine block heater malfunctions and/or engine coolant temperature is too low. Requires prealarm sender on some models.

Low Cranking Voltage. LED lights if battery voltage drops below preset level during engine cranking.

Low Fuel (Level or Pressure). LED lights if fuel level in tank approaches empty with diesel models or fuel pressure is low on gas models. Requires customer-supplied switch.

Low Oil Pressure. Red LED lights if generator set shuts down because of insufficient oil pressure. Yellow LED lights if engine oil pressure approaches shutdown range. Requires warning sender on some models.

Not In Auto. LED lights when generator set master switch is in RUN or OFF/RESET position.

Overcrank. LED lights and cranking stops if engine does not start in either continuous cranking or cyclic cranking modes.

Overspeed. LED lights if generator set shuts down because of overspeed condition.

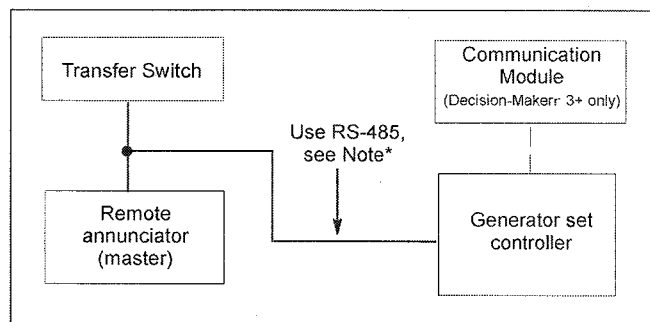
System Ready. Green LED lights when generator set master switch is in AUTO position and the system senses no faults. Red LED indicates system fault.

User-Defined Digital Inputs #1-#5. Monitors five digital auxiliary inputs (warnings or shutdowns). Individual red LEDs flash when a fault occurs or the status changes. User-defined digital inputs are selected via the RSA III master for local or remote (generator set or ATS). The user-defined digital input can be assigned at the controller or via PC using SiteTech t setup software.

Communications (Shown with RSA III with ATS Controls)

Local Single (Master) Connection

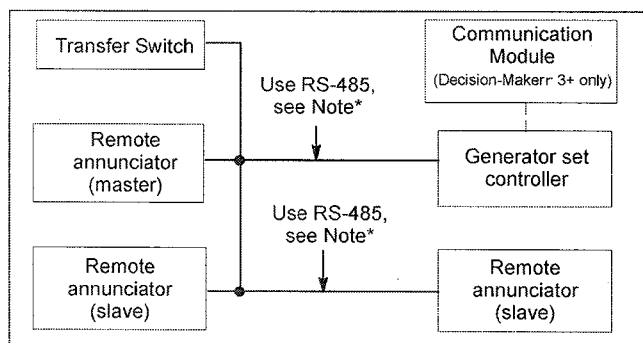
A single RSA III connects directly to the controller's communication port with an RS-485 cable.



Note*: Use RS-485 for a total of up to 1220 m (4000 ft.) maximum from the first device to the last device.

Local Multiple (Master/Slave) Connections

A single RSA III master connects directly to the controller's communication port with an RS-485 cable. Additional RSA III slaves can connect to the single master RSA III. Status of the RSA III master is annunciated on the RSA III slave panel.

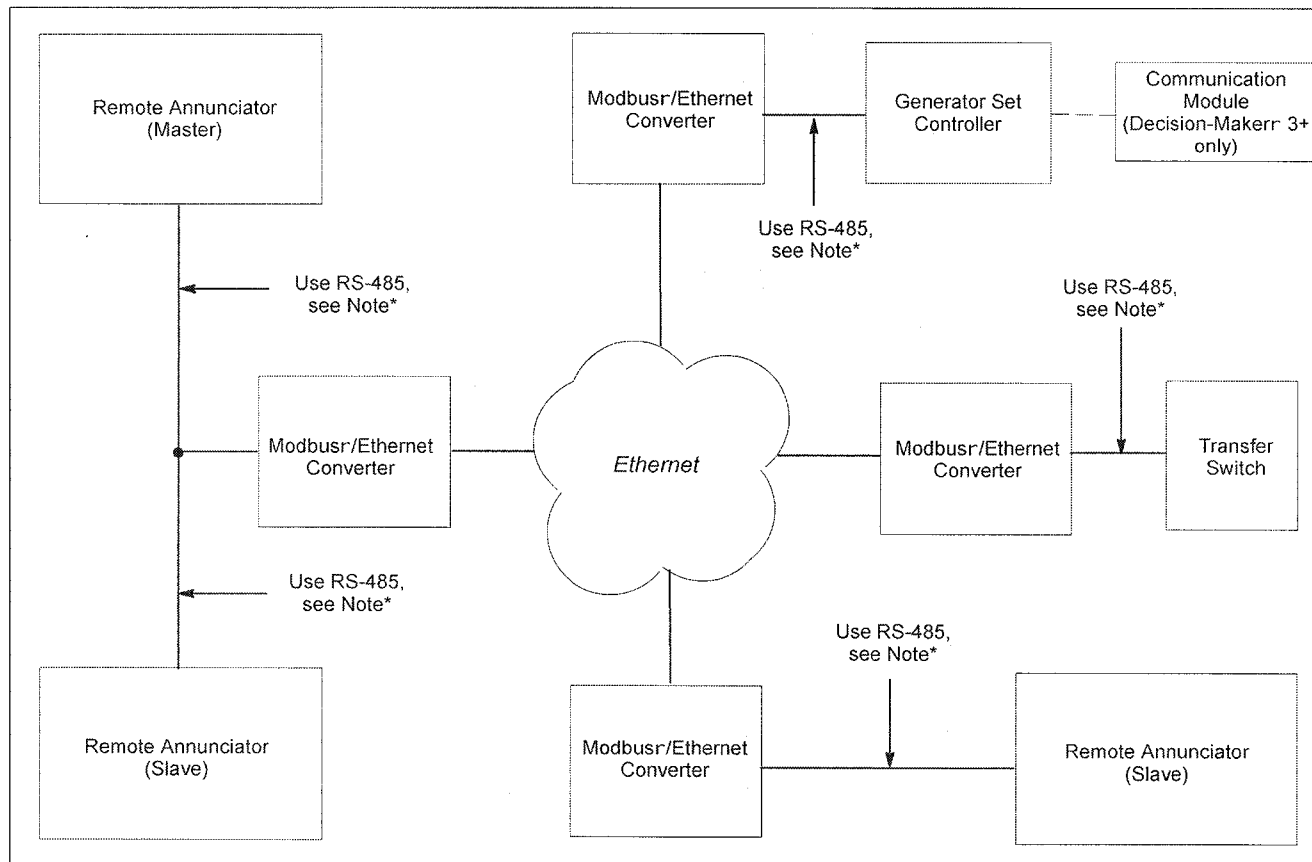


Modbus/Ethernet, Single Master or Multiple Master/Slave Connections (Shown with RSA III with ATS Controls)

An RSA III master communicates with a controller and RSA III slaves through an Ethernet network. A Modbus/Ethernet converter is required for each RSA III and controller. RS-485 cable connects the RSA III to the converter. Category 5e (Cat 5e) network cable connects the Modbus/Ethernet converter to the Ethernet.

Note: Combining RSA III remote annunciators with the RSA II and RSA 1000 is permissible provided that the master remote annunciator is an RSA III remote annunciator.

Note*: Use RS-485 for a total of up to 1220 m (4000 ft.) maximum from the first device to the last device.



Accessories

- Power source adapter kit 120/208 VAC, 50/60 Hz.
- Modbus/Ethernet converter GM41143-KP2 for serial to Ethernet communication.
- Communication module GM32644-KA1 or GM32644-KP1 is required with Decision-Maker 3+ controllers.

Modbus is a registered trademark of Schneider Electric.

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Alternator Data

TECHNICAL INFORMATION BULLETIN
Alternator Data Sheet

Alternator Model: 4R12X

Frequency: 60 Hz

Speed: 1800 RPM

Leads: 12 (6 Lead, 600 Volt)

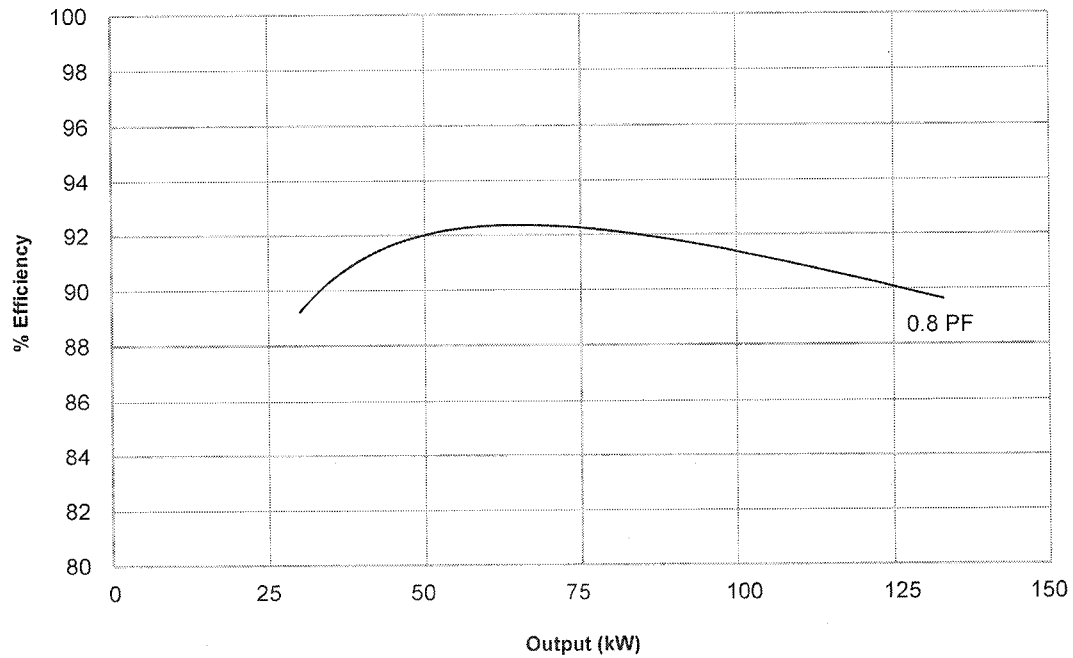
Voltage L-N/L-L	Phase	Power Factor	Connection	kW* (kVA)							
				Class B	Class F				Class H		
				80°C Continuous	90°C Lloyds	95°C ABS	105°C Continuous	130°C Standby	125°C Continuous	150°C Standby	
139/240 277/480	3	0.8	Wye	111.0 (138.5)	116.0 (145.0)	119.0 (148.5)	124.0 (155.0)	134.5 (168.0)	132.5 (165.5)	142.5 (178.0)	
127/220 254/440	3	0.8	Wye	107.5 (134.0)	113.5 (141.5)	115.5 (144.0)	121.5 (151.5)	130.5 (163.0)	128.5 (160.5)	138.0 (172.5)	
120/208 240/416	3	0.8	Wye	104.0 (130.0)	108.5 (135.5)	111.0 (138.5)	115.0 (143.5)	124.0 (155.0)	123.0 (153.5)	131.0 (163.5)	
110/190 220/380	3	0.8	Wye	94.0 (117.5)	98.0 (122.5)	100.0 (125.0)	104.0 (130.0)	112.0 (140.0)	111.0 (138.5)	118.5 (148.0)	
120/240	3	0.8	Delta	104.0 (130.0)	108.5 (135.5)	111.0 (138.5)	115.0 (143.5)	124.0 (155.0)	123.0 (153.5)	131.0 (163.5)	
120/240	1	1.0	Dogleg	76.0 (76.0)	79.5 (79.5)	81.0 (81.0)	84.0 (84.0)	91.0 (91.0)	90.0 (90.0)	96.0 (96.0)	
347/600	3	0.8	Wye	102.0 (127.0)	108.0 (135.0)	111.0 (138.0)	116.0 (145.0)	130.0 (162.0)	127.0 (158.0)	139.0 (173.0)	

* All data tested in accordance with IEEE Standard 115. Kohler Co. reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

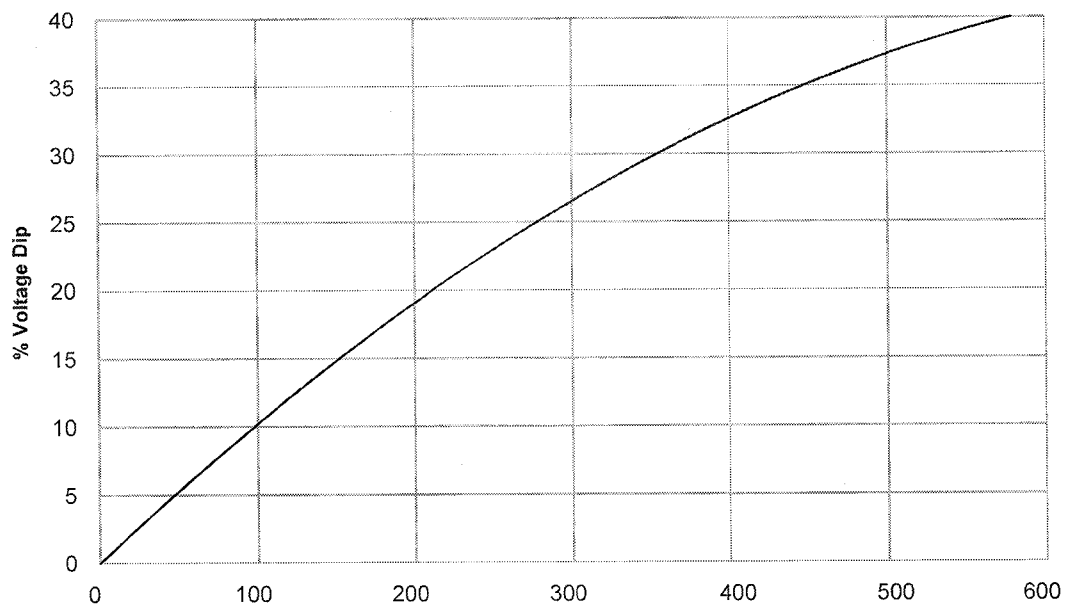
Submittal Data: 139/240 Volts, 0.8 PF, 1800 RPM, 60 Hz, 3 Phase, 130°C Rise

Typical Cold Resistances				Typical Time Constants			
Symbol	PerUnit	Ohms		Symbol	Value		
Phase Resistance	0.029	0.010		Armature Short Circuit	T _a	0.008 sec.	
Rotor Resistance	17.83	6.112		Transient Short Circuit	T' _d	0.074 sec.	
Typical Reactances				Transient Open Circuit	T' _{do}	0.860 sec.	
				Typical Field Current			
Synchronous				Full Load	I _{fFL}	18.9 amps	
Direct	X _d	2.973	1.019	No Load	I _{fNL}	5.2 amps	
Quadrature	X _q	1.526	0.523	Typical Short Circuit Ratio			
Transient						0.336	
Unsaturated	X' _{du}	0.290	0.099	Harmonic Distortion			
Saturated	X' _d	0.255	0.087	RMS Total Harmonic Distortion		3.25%	
Subtransient				Max. Single Harmonic		5th	
Direct	X'' _d	0.122	0.042	Deviation Factor (No Load, L-L)		<5%	
Quadrature	X'' _q	0.116	0.040	Telephone Influence Factor		<50	
Negative Sequence	X ₂	0.119	0.041	Insulation Class			
Zero Sequence	X ₀	0.010	0.003	per NEMA MG1-1.66		H	
				Phase Rotation		ABC	

**4R12X, 60 Hz, 139/240, 277/480 Volts, Wye
TYPICAL ALTERNATOR EFFICIENCY***

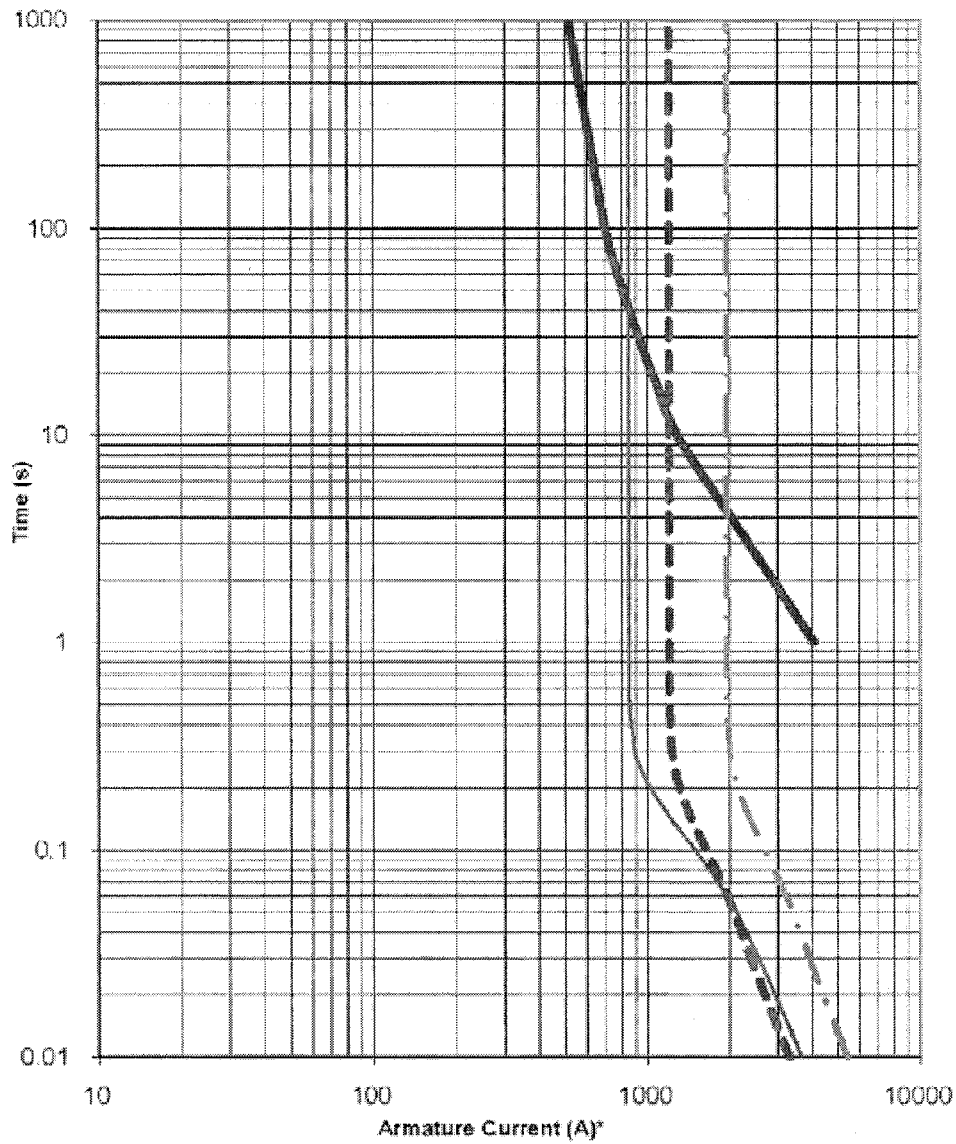


**4R12X, 60 Hz, 139/240, 277/480 Volts, Wye
TYPICAL MOTOR STARTING CHARACTERISTICS***



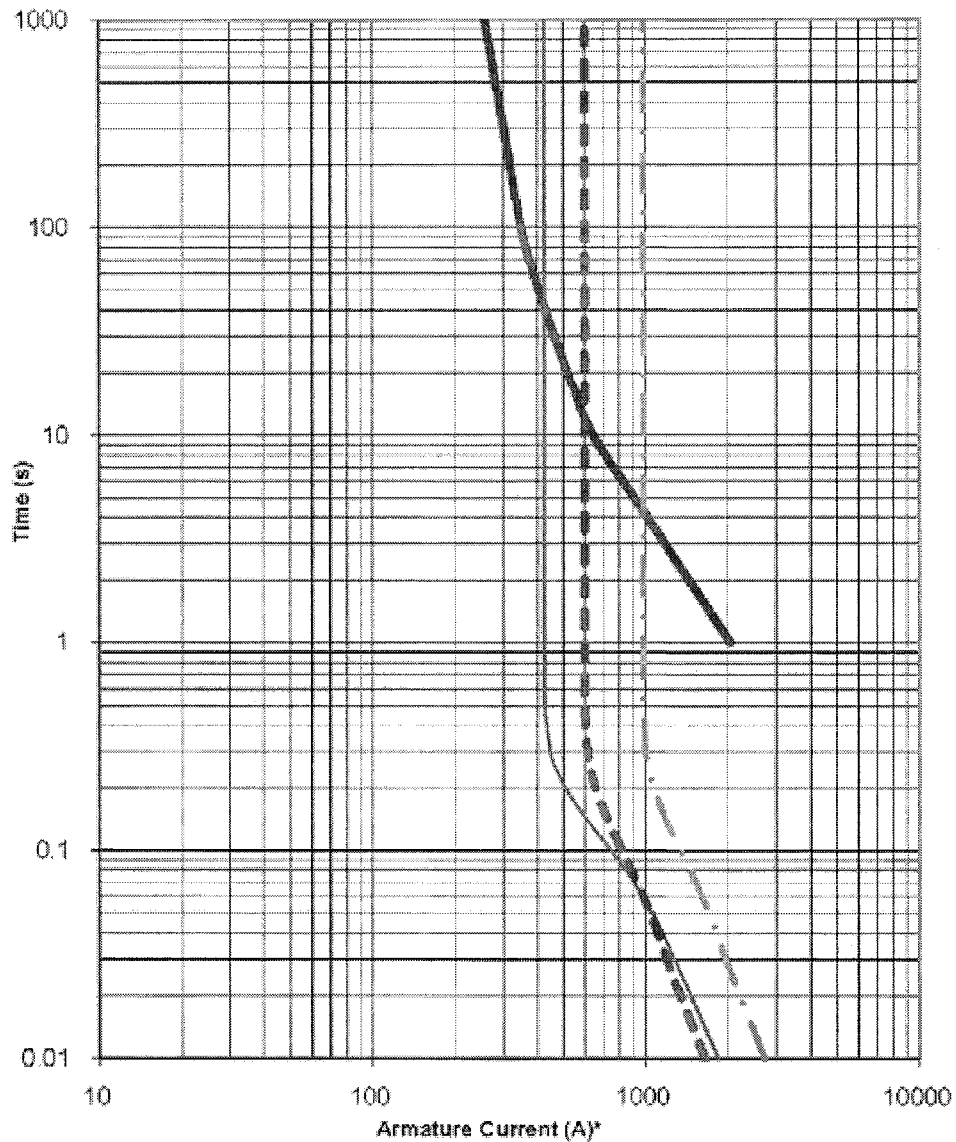
* All data tested in accordance with IEEE Standard 115. Kohler Co. reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

4R12X, 60 Hz, Low Wye or Delta Connection
SHORT CIRCUIT DECREMENT CURVE



*Instantaneous current (t=0) is asymmetric. Divide by 1.73 for symmetric.

4R12X, 60 Hz, High Wye Connection
SHORT CIRCUIT DECREMENT CURVE



*Instantaneous current (t=0) is asymmetric. Divide by 1.73 for symmetric.

Emissions Data



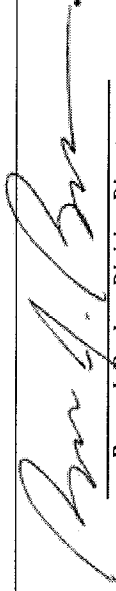
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2016 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Power Solutions International, Inc.
(U.S. Manufacturer or Importer)

Certificate Number: GPSIB5.70EMT-010

Effective Date:
11/30/2015
Expiration Date:
12/31/2016


Byron J. Bunker, Division Director
Compliance Division

Issue Date:
11/30/2015
Revision Date:
N/A

Manufacturer: Power Solutions International, Inc.

Engine Family: GPSIB5.70EMT

Mobile/Stationary Certification Type: Stationary

Fuel : LPG/Propane

Natural Gas (CNG/LNG)

Emission Standards :

Stationary Part 1048

NMHC + NOx (g/kW-hr) : 2.7

HC + NOx (g/kW-hr) : 2.7

CO (g/kW-hr) : 4.4

Part 60 Subpart JJJJ Table 1

CO (g/Hp-hr) : 4

NOx (g/Hp-hr) : 2

VOC (g/Hp-hr) : 1

Emergency Use Only : Y

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 60, 1065, 1068, and 60 (stationary only and combined stationary and mobile) and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new nonroad spark-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60. This certificate of conformity does not cover nonroad engines imported prior to the effective date of the certificate.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068.20 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover large nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

KOHLER. Power Systems

PSI 2016 Stationary 60 Hz Emergency Standby1 Certified Power Generation Rating Data															
Generator Model	Engine	Speed RPM	Freq Hz	Fuel	Duty Cycle	Flywheel power ^{2,3} HP	kW	Engine Family	CO2 (g/KW-hr)	THC (g/KW-hr)	Nox (g/KW-hr)	THC+NOx (g/KW-hr)	CO (g/KW-hr)	bsfc ⁵ (g/kW-hr)	Catalyst
100REZGD	5.7LTCAC	1800	60	LP	Emergency	148	110.6	GPSIB5.70EMT	813.6	0.11	0.02	0.13	0.89	-	Yes
	5.7LTCAC	1800	60	NG	Emergency	158	117.82	GPSIB5.70EMT	707.4	0.64	0.02	0.66	0.95	-	Yes

¹ Standby and overload ratings based on ISO3046. Continuous ratings based on ISO 8528.

² All ratings are gross flywheel horsepower corrected to 77°F at an altitude of 328 feet with no cooling fan or alternator losses using heating value for NG of 1015 BTU/SCF.

³

⁴ Production tolerances in engines and installed components can account for power variations of +/- 5%. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations.

⁵ Electrical ratings are an estimated based on assumed fan and generator losses and may vary depending on actual equipment losses.

⁵ Bsfc is based on 100% gross flywheel power rating and does not include fan or generator losses.

For additional questions contact:

Power Solutions International, Inc.

201 Mittel Drive, Wood Dale, IL 60191

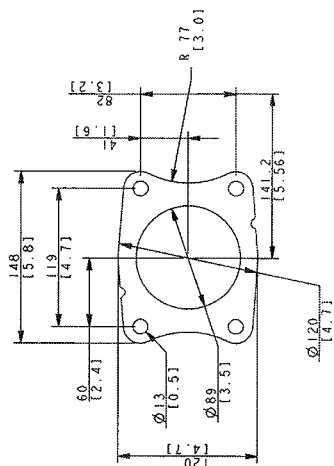
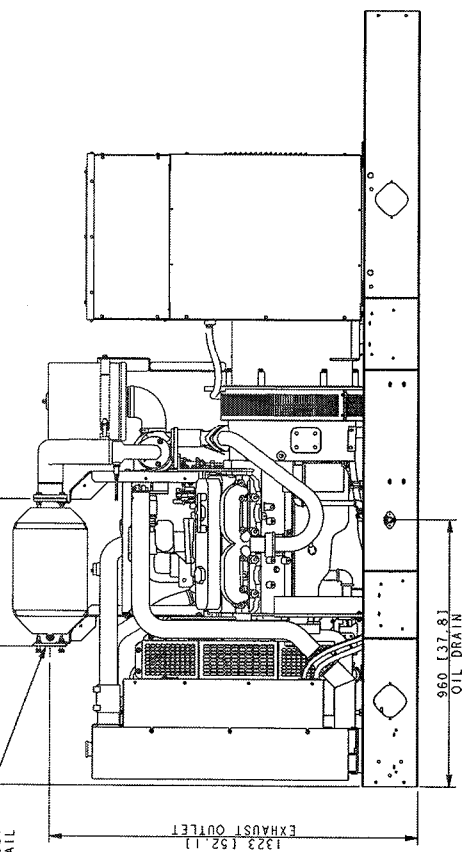
630.350.9400 (Main) – 630.350.9900 (Fax)

www.psiengines.com

info@psiengines.com

Dimensional Drawings

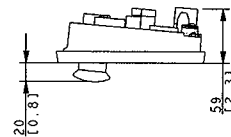
1030 [40.6] NON-EPA
EXHAUST OUTLET
NOTE: CATALYST NOT SUPPLIED WITH NON-EPA GENSETS.
- 1499 [19.7] EPA



EXHAUST OUTLET
DETAIL A
SCALE 0.50

DIMENSIONS IN [] ARE ENGLISH
STANDARD EQUIVALENTS

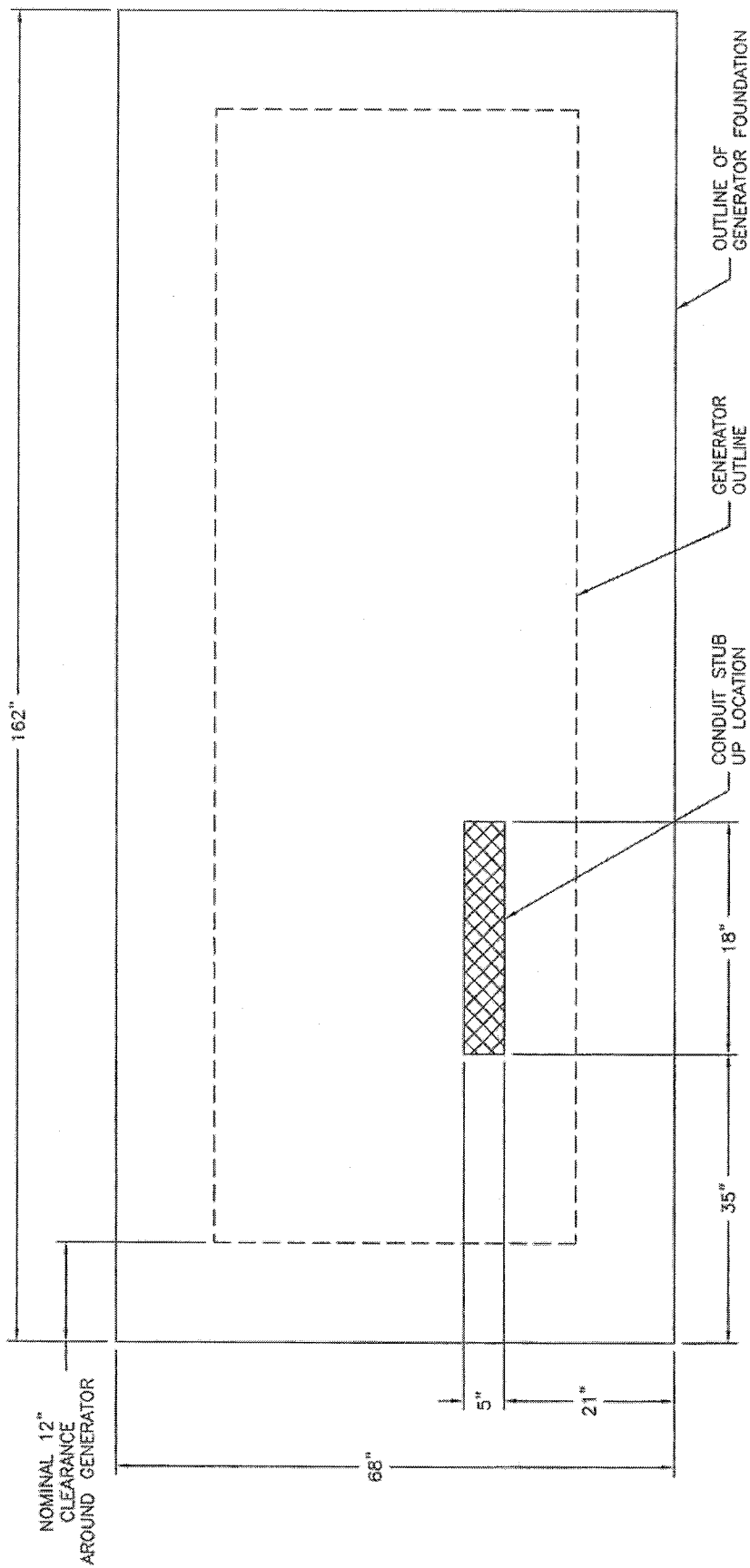
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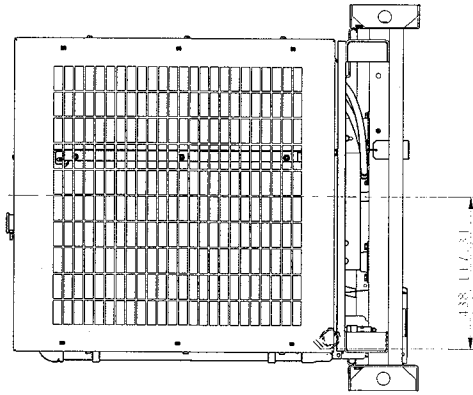
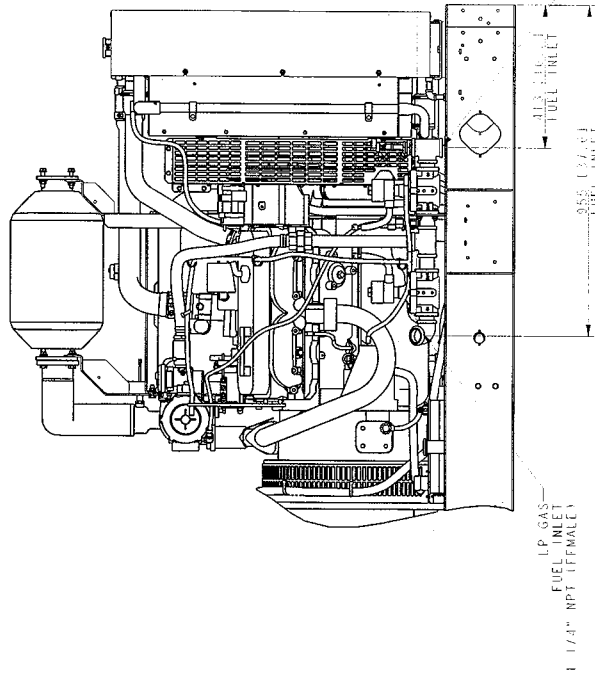
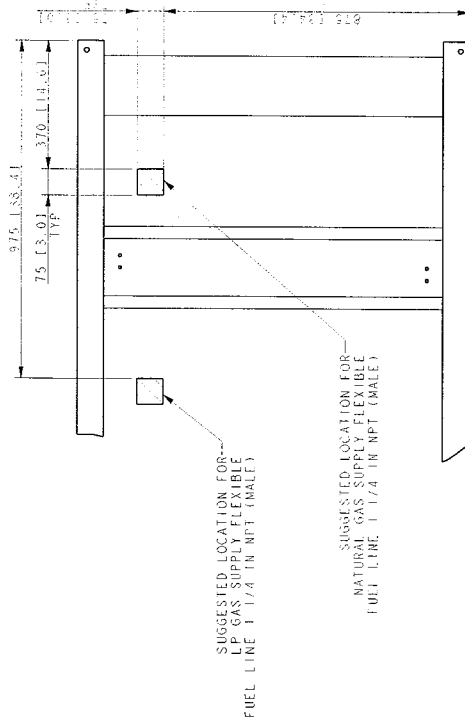
REV	DATE	ON COMPOSITE DWGS. SEE PART NO. FOR REVISION LEVEL	BY	DESCRIPTION OF REVISIONS
-	10-15-10	NEW DRAWING (200391)	DJ	
DIMENSIONS IN [] ARE ENGLISH EQUIVALENTS. A				
KOHLER CO. METRIC PRO- FORMA POWER SYSTEMS, KOHLER, WI 53044, U.S.A. PRODUCE AND MANUFACTURE BY KOHLER CO. PRODUCE AND MANUFACTURE BY THE LITTLE OF DESIGN AND MANUFACTURE BY THE LITTLE OF DESIGN AND MANUFACTURE BY THE LITTLE OF				
DIMENSION PRINT, CONTROLLER				
TYPICAL				
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SHEET 1 OF 1				
ADV-7935				
D				

REVISIONS

REV	DESCRIPTION	OWN	DATE	APPD
A	INITIAL RELEASE	MAB	5-10-12	P.C.



Kraft Power Corporation		199 WILDWOOD AVENUE WOBBURN, MA 01801	
THIS DRAWING AND THE DESIGNS HEREIN ARE THE PROPERTY OF KRAFT POWER CORP. AND MAY NOT BE REPRODUCED, COPIED OR UNLIT IN ANY MANNER WITHOUT THE PERMISSION OF KRAFT POWER CORP.		DATE: 07/03/09 BY: P.C.	DATE: 08/08/09 BY: P.C.
TITLE: FOUNDATION PLAN 100REZGD		SIZE: 1:10	DWG NO: 1922-56D
REV: A		SHEET 1 OF 1	



DUAL FUEL NAT GAS / LPG

100 AMPERE
120/240 VOLT
RECORD TABLE
RECORDING
5.7L GM TURBO DIESEL

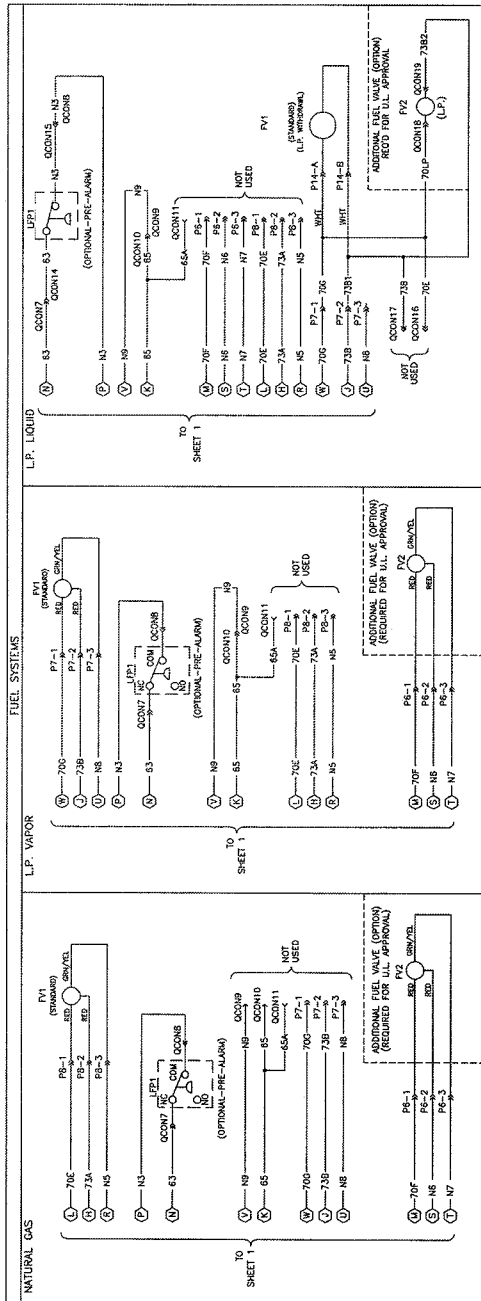
SEE GENSET ADV FOR GENSET DIMENSIONS

KOHLER CO [METRIC] PROE

ADV-7873

Wiring Schematics

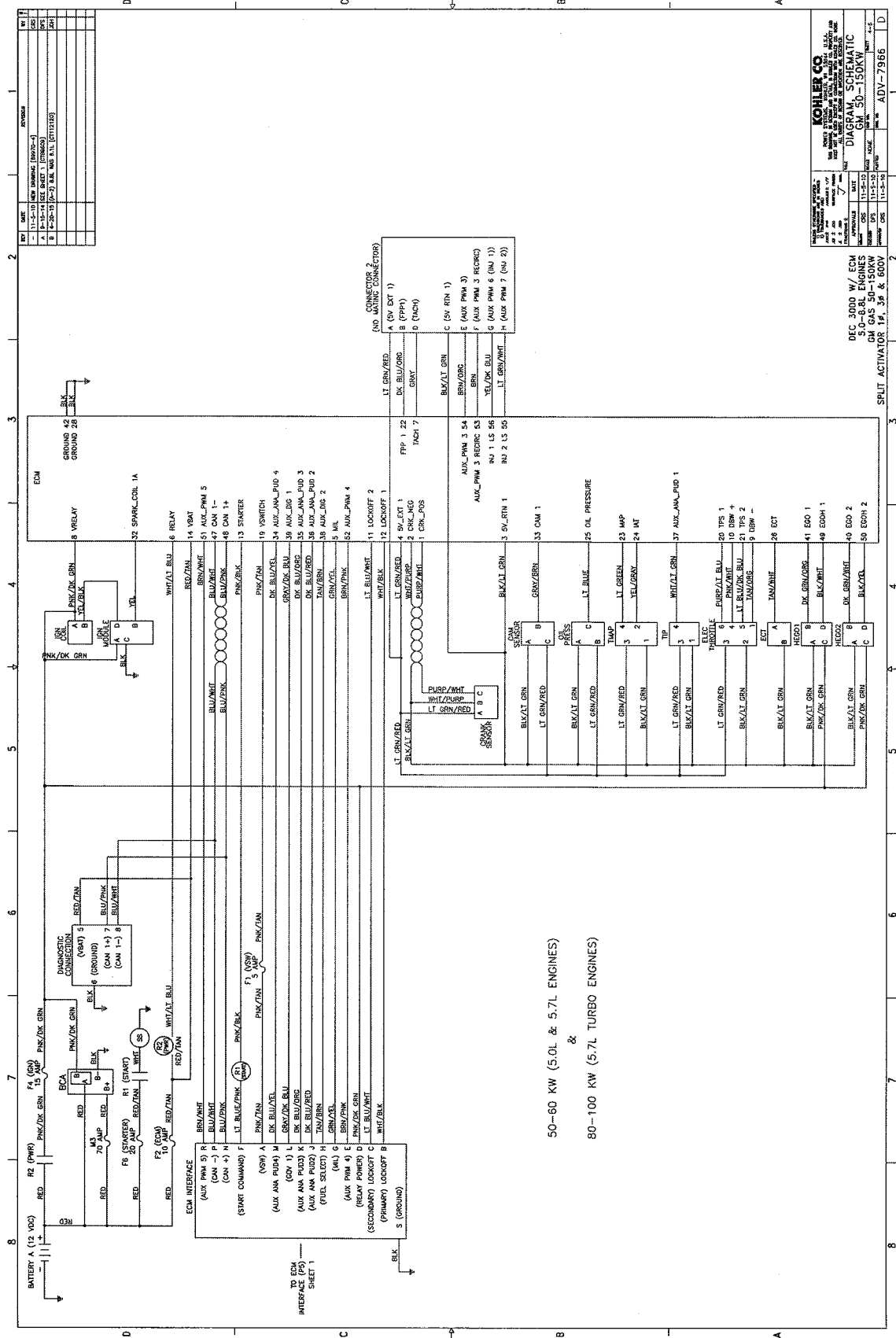
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4	11-20-11	ISS SHEET 1 (REVISION)		
5	11-20-11	ISS SHEET 1 (REVISION)		
6	11-20-11	ISS SHEET 1 (REVISION)		
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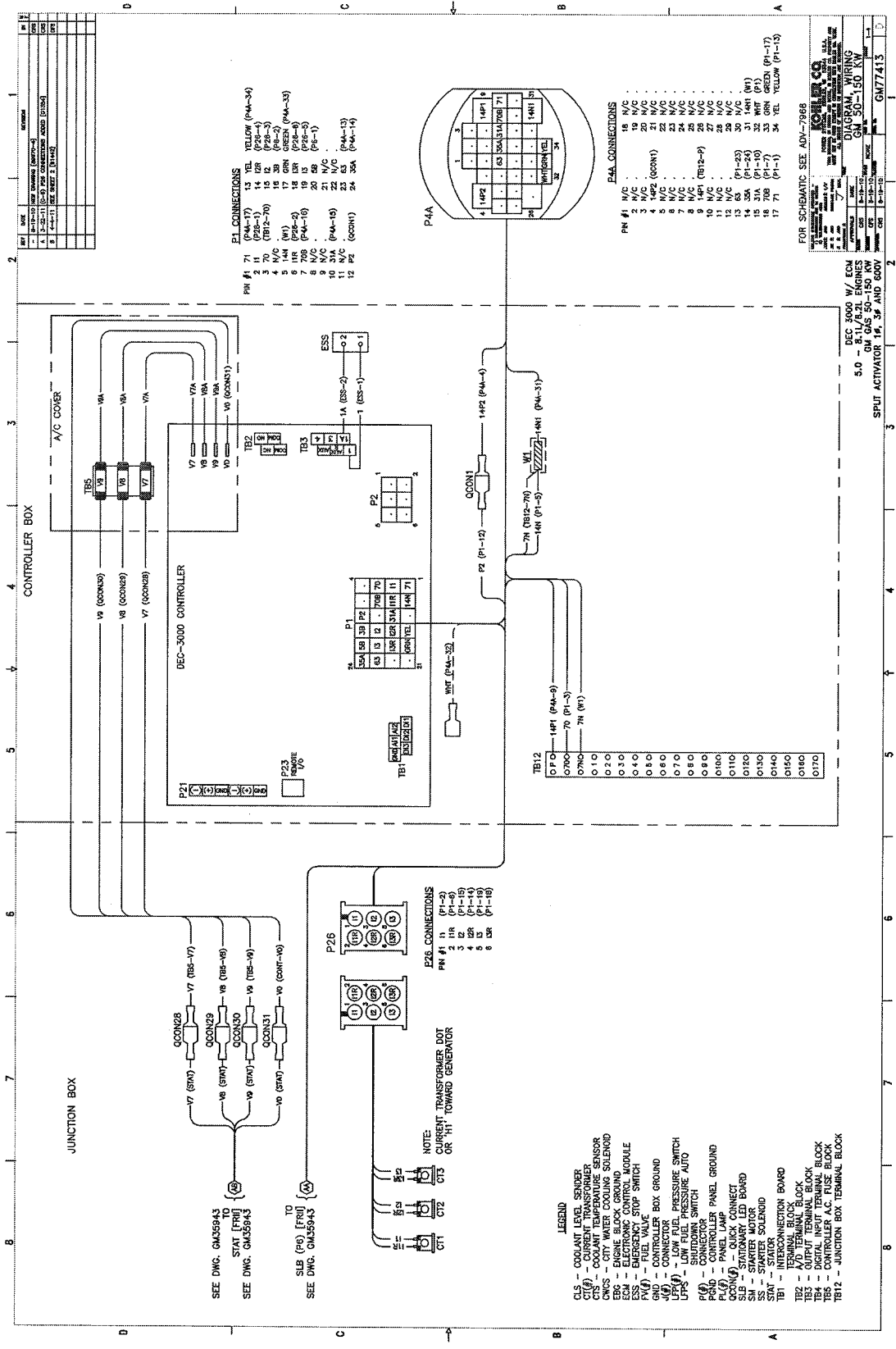


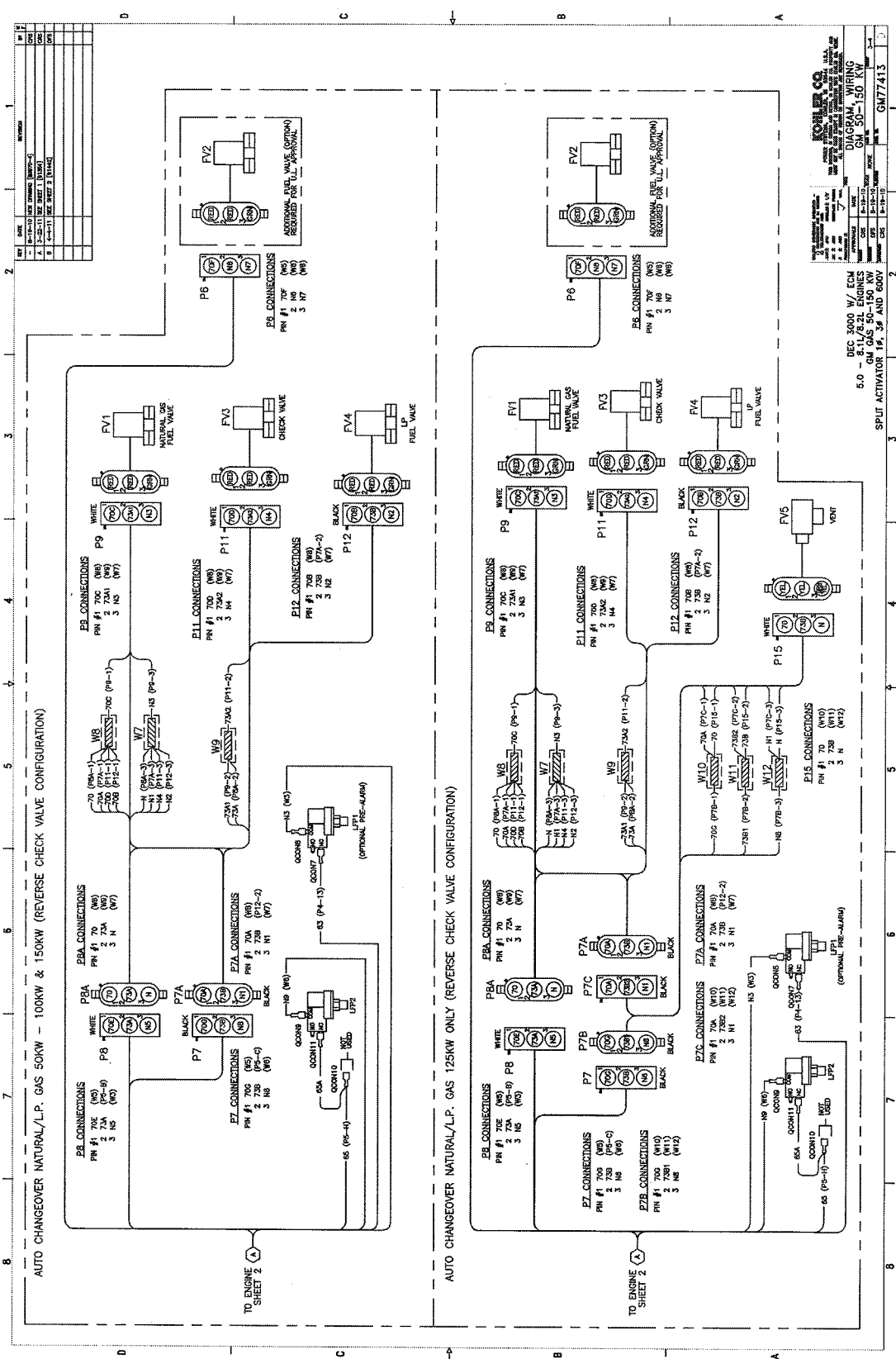
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DEC 3000 W/ECM	
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Miscellaneous

OVERVIEW:
THE AUTOMATIC MULTI-LEVEL FLOAT/ EQUALIZE CHARGER SPECIFIED BELOW IS INTENDED TO CHARGE ENGINE STARTING BATTERIES EITHER INDEPENDENT OR IN CONJUNCTION WITH AN ENGINE DRIVEN CHARGING SYSTEM.

BATTERY TYPES TO BE CHARGED:
LEAD ACID
GEL CELL

INPUT: 90-135 VOLTS AC
INPUT VOLTAGE: 50/60 HZ
INPUT FREQUENCY:

INPUT LEAD:
APPROXIMATELY 18M (72") (REF) TYPE SJTOW -40°C TO 105°C UL RATED WIRE,
TERMINATED IN PRE-MOLDED US STYLE 120 V 3 PRONG AC PLUG

DC OUTPUT:	6 AMPS	2 50-5.0 AMPS
AUTOMATIC FLOAT EQUALIZE	11.8-14.0 VOLTS	2 11.8-14.0 VOLTS
STEADY FULL LOAD CURRENT:	12.3-14.5 VOLTS	2 12.3-14.5 VOLTS
BULK CHARGE VOLTAGE:	14.0 VOLTS	2 14.0 VOLTS
ABSORPTION VOLTAGE:	15 AMPS	2 15 AMPS
BULK TO ABSORPTION TRANSITION:	7 AMPS	2 7 AMPS
ABSORPTION TO FLOAT TRANSITION:	70 $\pm$ 5 WATTS	2 70 $\pm$ 5 WATTS
CURRENT LIMIT	206 VOLTS PER CELL	2 206 VOLTS PER CELL
FLOAT POWER LIMITS:		
FLOAT TO ABSORPTION TRANSITION:		
ABSORPTION TO BULK TRANSITION:		
VOLTAGE RANGE	1%	2 1%
SPARK PROTECTION	CONNECTION AND OPERATION	2 CONNECTION AND OPERATION

OUTPUT LEAD:
APPROX. 12M (48") (REF) TYPE SJTOW -50°C TO +105°C UL RATED WIRE WITH
AND BLACK WIRE INSULATION. TERMINATED IN 95 MM (REF) RING STYLE TERMINALS. RED

FUSES:
THE FUSE MUST BE LOCATED APPROXIMATELY 5" FROM RING TERMINAL ON RED OUTPUT LEAD.
RATED PER UL (125% RATED OUTPUT)
DC OUTPUT:

ISOLATION: 2500V
INPUT TO OUTPUT:

ENVIRONMENTAL:
STORAGE TEMPERATURE RANGE:
-40 TO +70°C (-40 TO +158°F)
-40 TO +70°C (-40 TO +158°F)
OPERATING TEMPERATURE RANGE:
0 TO 100% (CONDENSING)
HUMIDITY:
VIBRATION AND SHOCK: UL921

REVERSE POLARITY PROTECTION:
THE CHARGER SHALL SUSTAIN NO DAMAGE WHEN INCORRECTLY
CONNECTED TO THE BATTERY IN REVERSE ORIENTATION.

SHALL HAVE INTEGRAL MTG. FLANGES.

ENCLOSURE:
SHALL PROTECT THE CHARGER COMPONENTS FROM RAIN, SNOW, DUST AND DRIPPING WATER. ALL INTERNAL COMPONENTS PROTECTED FROM WATER DROPLETS.

INDICATORS:
CHAI HAVE CHARGE INDICATOR LAMP TO INDICATE BULK CHARGE AND FLOAT CHARGE CYCLES.

OPERATIONAL:
CAPABLE OF WITHSTANDING AN INDEFINITE OUTPUT SHORT CIRCUIT WITHOUT DAMAGE TO THE CHARGER
SHALL OPERATE PROPERLY AND SUSTAIN NO DAMAGE WHEN CONNECTED TO INPUT POWER WHILE CONNECTED TO
THE BATTERY AND CHARGING SYSTEM OF ENGINE WHILE ENGINE IS CRANKING RUNNING OR SHUTDOWN

DOCUMENTATION: THESE SHALL BE AN INSTALLATION / OPERATIONAL MANUAL SUPPLIED WITH EACH CHARGER:

PER KUHLEK SUPPLIED ARTWORK.
CERTIFICATIONS (US AND CANADA):
MUST COMPLY WITH 112200

MUST COMPLY WITH UL2200
UL1236
MUST MEET CSA REQUIREMENTS

MUST MEET CSA REQUIREMENTS
FMI / REF1 FCC CLASS B COMPLIANT AFTER CHARGER DATE CODE 8/26/04

PRODUCT LABELING:
THE LABEL ATTACHED TO THE CHARGER SHALL HAVE THE FOLLOWING INFORMATION:

- UL LISTING
- COHLESTER PART NUMBER
- DESCRIPTION OF ALL INDICATOR
- ALLOWABLE RANGE OF BATTERY
- ALLOWABLE BATTERY TYPES
- OUTPUT CURRENT AND VOLTAGE
- INPUT VOLTAGE AND FREQUENCY

[illegible]

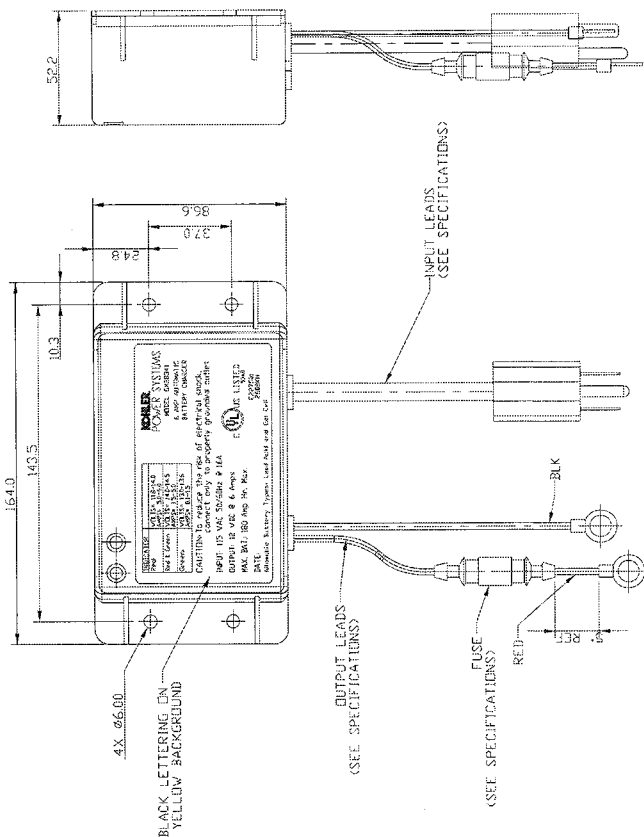
2

LD

4

3

21



PACKAGING:
EACH CHARGER TO BE SHIPPED IN 254mm x 152mm x 89mm (10" x 6" x 3.5") (REF) CARTON
WITH AN APPROPRIATE LABEL ATTACHED. AN OPERATIONAL / INSTALLATION MANUAL SHALL
BE SUPPLIED WITH EACH INDIVIDUAL PACKAGE.

PACKAGING LABEL:
THE PACKAGING LABEL SHALL CONTAIN THE FOLLOWING INFORMATION:

NUMBER P/N
DESCRIPTION - BATTERY CHARGER
MFG. MODEL NO.
MFG. PART NUMBER
DATE CODE

WARRANTY:
2 YEAR FROM DATE OF PURCHASE FROM MANUFACTURE.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00
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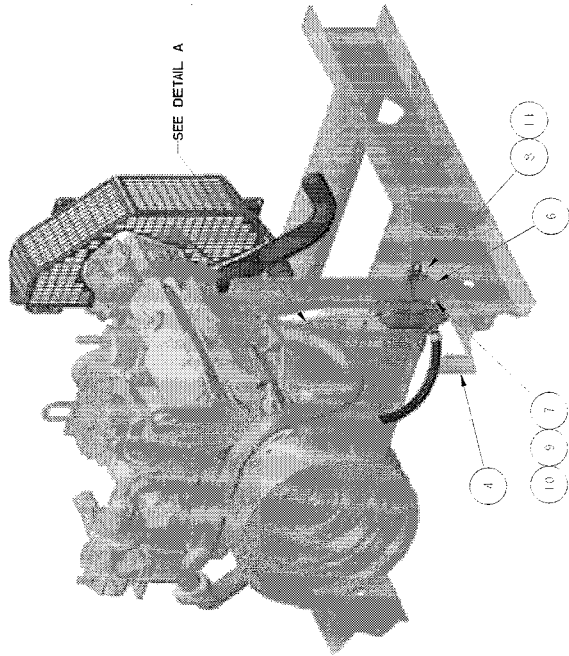
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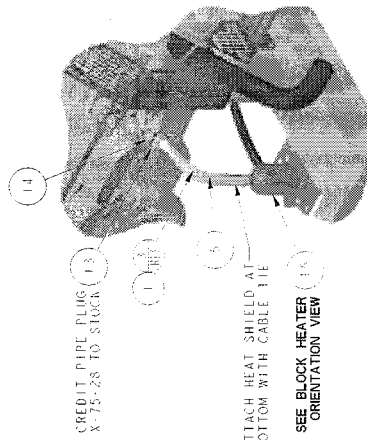
1999

KIT NO.	ITEM	PART NO	QTY	DESCRIPTION
GM77944-KB	1	55150-00065	3 1/8 FT	BASE GRP. BLOCK HEATER, 1500W
	2	X-312-35 (REF)	1	HOSE
	3	X-312-52 (REF)	1	HOSE
	4	278047	1	TAG, HANG
	5	GM4138	1	SHIELD, HEAT
	6	GM61355	1	BRACKET, BLOCK HEATER MFG.
	7	W12A 06-50	2	WASHER, FLAIN
	8	W175A 10-50	2	WASHER, FLAIN 10.5 10 X 29.0 OD
	9	W6923-06-50	2	NUT, HEX GRM
	10	M933-06020-60	2	SCREW, HEX CAP FULLY THRD M10 X 25MM
	11	M933-10025-60	2	SCREW, HEX CAP FULLY THRD M10 X 25MM
	12	X-214-13	1	ELBOW, 45 DEGREE STREET
	13	X-426-12	4	CLAMP, HOSE 5/8" X 1/2" MIP BRASS
	14	X-582-1	2	CONNECTOR, HOSE 5/8" X 1/2" MIP BRASS
GM77944-KA1				BLOCK HEATER, 1500W, 120V
	15	357945	1	HEATER, BLOCK (120V, 1500W)
GM77944-KA2				BLOCK HEATER, 1500W, 240V
	15	357946		HEATER, BLOCK (240V, 1500W)

THIS IS AN AUTOMATED TABLE. ALL UPDATES MUST BE MADE IN THE ASSEMBLY. ITEMS 1, 2 & 3 ARE FIXED. ITEM 1 IS A MANUAL BALLOON.



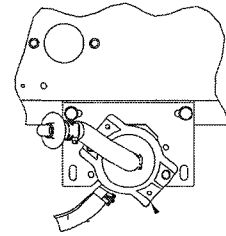
SEE DETAIL A



CREDIT PIPE PLUG
X-75-28 TO STOCK

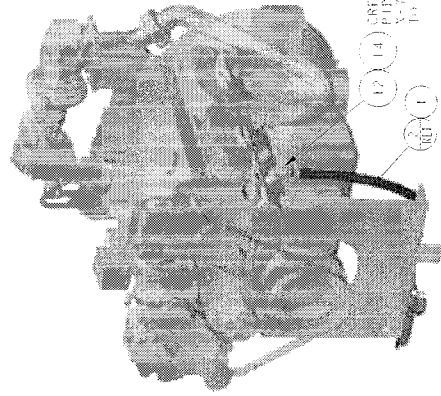
ATTACH HEAT SHIELD AT
BOTTOM WITH CABLE TIE

SEE BLOCK HEATER
ORIENTATION VIEW



BLOCK HEATER ORIENTATION
SCALE 1/2" = 1"

DETAIL A



CREDIT
PIPE PLUG
X-75-28
TO STOCK

REV	DATE	BY	CHKD	APP'D	DESCRIPTION
1	8-14-10	W. J. BROWN	J. L. BROWN	J. L. BROWN	REVISED TO ADD CREDIT PIPE PLUG TO STOCK
2	7-23-12	W. J. BROWN	J. L. BROWN	J. L. BROWN	REVISED TO ADD CREDIT PIPE PLUG TO STOCK

KOHLER CO. METRIC PROE
DWG ASSY BLOCK HEATER, 1500W
GM77944

80/100KW
5.7L GM TURBO & TURBO/CAC

Warranty

Stationary Standby Industrial Generator Set Extended Five-Year or Three Thousand (3000)-Hour Limited Warranty

Your Kohler product has been manufactured and inspected with care by experienced craftsmen. If you are the original end user, Kohler Co. warrants, for the period indicated below, each product to be free from defects in materials and workmanship. In the event of a defect in materials or workmanship, Kohler Co. will repair, replace, or make appropriate adjustment at Kohler Co.'s option if the product, upon Kohler Co.'s inspection, is found to be properly installed, maintained, and operated in accordance with Kohler Co.'s instruction manuals. A Kohler distributor, dealer, or authorized service representative must perform startup.

Kohler Product

Stationary Standby Generator Set & Accessories

Warranty Coverage

Five (5) years from registered startup or three thousand (3000) hours (whichever occurs first). Labor and travel charges are included in the warranty for the first and second year of the five-year warranty.

This warranty is not effective unless a proper extended warranty registration form and warranty fee have been sent to Kohler Co. within one year of registered startup. The extended warranty start date is determined by the standard warranty requirements and runs concurrent with the standard warranty during the first year. To receive extended warranty coverage, the provisions of the standard warranty registration must be met.

The following will **not** be covered by the warranty:

1. Normal engine wear, routine tuneups, tuneup parts, adjustments, and periodic service.
2. Damage caused by accidents, improper installation or handling, faulty repairs not performed by an authorized Kohler service representative, or improper storage.
3. Damage caused by operation with improper fuel or at speeds, loads, conditions, modifications, or installation contrary to published specifications or recommendations.
4. Damage caused by negligent maintenance such as:
 - a. Failure to provide the specified type and sufficient quantity of lubricating oil.
 - b. Failure to keep the air intake and cooling fin areas clean.
 - c. Failure to service the air cleaner.
 - d. Failure to provide sufficient coolant and/or cooling air.
 - e. Failure to perform scheduled maintenance as prescribed in supplied manuals.
 - f. Failure to regularly exercise the generator set under load (stationary applications only).
5. Original installation charges and startup costs.
6. Starting batteries and the following related expenses:
 - a. Labor charges related to battery service.
 - b. Travel expense related to battery service.
7. Engine coolant heaters, heater controls, and circulating pumps after the first year.
8. Additional expenses for repair after normal business hours, i.e. overtime or holiday labor rates.
9. Rental of equipment during performance of warranty repairs.
10. Removal and replacement of non-Kohler-supplied options and equipment.
11. Replacement of a failed Kohler part with a non-Kohler part voids the warranty on that part.
12. Radiators replaced rather than repaired.
13. Fuel injection pumps not repaired by an authorized Kohler service representative.
14. Non-Kohler-authorized repair shop labor without prior approval from Kohler Co. Warranty Department.
15. Engine fluids such as fuel, oil, or coolant/antifreeze.
16. Shop supplies such as adhesives, cleaning solvents, and rags.
17. Expenses incurred investigating performance complaints unless the problem is caused by defective Kohler materials or workmanship.
18. Maintenance items such as fuses, lamps, filters, spark plugs, loose or leaking clamps, and adjustments.
19. Labor and travel charges for the third, fourth, and fifth years of the warranty.
20. Travel time and mileage exceeding 300 miles round trip.

To obtain warranty service, call 1-800-544-2444 for your nearest authorized Kohler service representative or write Kohler Co., Kohler Power Systems Service Department, MS072, Kohler, WI 53044 USA.

KOHLER CO. SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL, AND/OR CONSEQUENTIAL DAMAGES OF ANY KIND including, but not limited to, incidental and/or consequential labor costs, installation charges, telephone charges, or transportation charges in connection with the replacement or repair of defective parts.

This is our exclusive written warranty. We make no other express warranty nor is anyone authorized to make any on our behalf.

ANY IMPLIED OR STATUTORY WARRANTY, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS EXPRESSLY LIMITED TO THE DURATION OF THIS WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental and/or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

KOHLER® Power Systems

KOHLER CO. Kohler, Wisconsin 53044
Phone 920-457-4441, Fax 920-459-1646
For the nearest sales/service outlet in the
US and Canada, phone 1-800-544-2444
KOHLERPower.com

TP-5498 8/13d

Certification

Certificate US95/0189

The management system of

Kohler Power Systems, a Business Unit of Kohler Co.

N7650 Lakeshore Drive (known as Mosel Plant)
Sheboygan, WI, 53083, United States

has been assessed and certified as meeting the requirements of

ISO 9001:2008

For the following activities

**Design, manufacture, and distributor support for electrical generators,
alternators, automatic transfer switches, and switchgear.**

Further clarifications regarding the scope of this certificate and the applicability of
ISO 9001:2008 requirements may be obtained by consulting the organization

This certificate is valid from 6 November 2015 until 15 September 2018 and
remains valid subject to satisfactory surveillance audits.

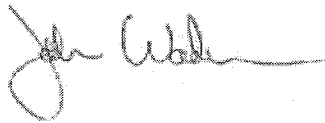
Recertification audit due a minimum of 60 days before the expiration date.

Issue 12 : 14 October 2015. Certified since November 2003

This is a multi-site certification.

Additional site details are listed on subsequent pages.

Authorized by



John Woodman

Senior Vice President SSC, North America
SGS Systems & Services Certification, a Division of SGS North America, Inc.
201 Route 17 North, Rutherford, NJ 07070, USA
t (201) 508-3000 f (201) 935-4555 www.us.sgs.com

This certificate remains the property of SGS and shall be returned upon request

Page 1 of 2



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SGS

**Kohler Power Systems, a
Business Unit of Kohler Co.**

ISO 9001:2008

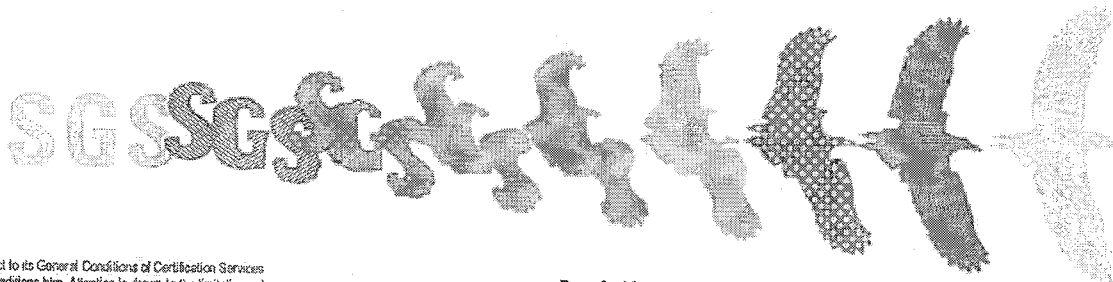


Issue 12 : 14 October 2015

Additional facilities

300 N. Dekora Woods Blvd., Saukville, WI 53080 (Known as Sauk)
Scope: Manufacturer of fuel tanks, skids, fabricated components,
enclosures, and assembly of enclosures and generators.

4327 County EE, Sheboygan, WI 53081 (Known as KWIP Warehouse)
Scope: Receiving and storage of generator components & receiving
and shipping of generator sets.



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Kohler Standby/Prime Generator Set Test Program

Testing is an integral part of quality assurance. In keeping with our uncompromising commitment to quality, safety, and reliability, every Kohler Standby/Prime power generator set undergoes an extensive series of prototype and production testing.

Prototype Testing

Prototype testing includes the potentially destructive tests necessary to verify design, proper function of protective devices and safety features, and reliability expectations. Kohler's prototype testing includes the following:

- Alternator temperature rise test per NEMA MG1-32.6. Standby and prime ratings of the alternator are established during this test.
- Maximum power test to assure that the prime mover and alternator have sufficient capacity to operate within specifications.
- Alternator overload test per NEMA MG1-32.8.
- Steady-state load test to ensure voltage regulation meets or exceeds ANSI C84.1, NEMA MG1-32.17 requirements and to verify compliance with steady-state speed control specifications.
- Transient test to verify speed controls meets or exceeds specifications.
- Transient load tests per NEMA MG1-32.18, and ISO 8528 to verify specifications of transient voltage regulation, voltage dip, voltage overshoot, recovery voltage, and recovery time.
- Motor starting tests per NEMA MG1-32.18.5 to evaluate capabilities of generator, exciter, and regulator system.
- Three-phase symmetrical short-circuit test per NEMA MG1-32.13 to demonstrate short circuit performance, mechanical integrity, ability to sustain short-circuit current.
- Harmonic analysis, voltage waveform deviation per NEMA MG1-32.10 to confirm that the generator set is producing clean voltage within acceptable limits.

Torsional analysis data, to verify torsional effects are not detrimental and that the generator set will provide dependable service as specified, is available upon request.

Kohler offers other testing at the customer's request at an additional charge. These optional tests include power factor testing, customized load testing for specific application, witness testing, and a broad range of MIL-STD-705c testing. A certified test report is also available at an additional charge.

- Generator set cooling and air flow tests to verify maximum operating ambient temperature.
- Reliability tests to demonstrate product durability, followed by root cause analysis of discovered failures and defects. Corrective action is taken to improve the design, workmanship, or components.
- Acoustical noise intensity and sound attenuation effects tests.

Production Testing

In production, Kohler Standby/Prime generator sets are built to the stringent standards established by the prototype program. Every Kohler Generator set is fully tested prior to leaving the factory. Production testing includes the following:

- Stator and exciter winding high-potential test on all generators. Surge transient tests on stators for generators 180 kW or larger. Continuity and balance tests on all rotors.
- One-step, full-load pickup tests to verify that the performance of each generator set, regulator, and governor meets published specifications.
- Regulation and stability of voltage and frequency are tested and verified at no load, 1/4 load, 1/2 load, 3/4 load, and full-rated load.
- Voltage, amperage, frequency and power output ratings verified by full-load test.
- The proper operation of controller logic circuitry, prealarm warnings, and shutdown functions is tested and verified.
- Any defect or variation from specification discovered during testing is corrected and retested prior to approval for shipment to the customer.

KOHLER
POWER SYSTEMS

KOHLER CO. Kohler, Wisconsin 53044
Phone 920-565-3381, Fax 920-459-1646
For the nearest sales/service outlet in the
US and Canada, phone 1-800-544-2444
KohlerPowerSystems.com

G18-56 12/05a