KOHLER ® POWER SYSTEMS

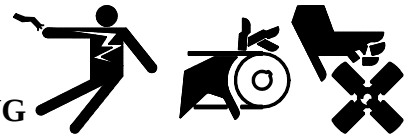
TT–605

INSTRUCTIONS
9/91

Uniboard to Decision Maker II (Dec–II) Tray Conversion for Fast–Response I to TR–Series Generator Sets Installation and Operation

	Uniboard		Decision Maker II		
	Tray No.	Board No.	Controller Assy. No.	Kit No.	Board No.
12V	A–291779 (NFPA) A–291850 (Basic)	C–291492 C–291849	B–292315	292780	C–292302
24V	A–291780 (NFPA) A–291870 (Basic)	C–291492 C–291849	B–292335	292781	C–292782

The conversion kit eliminates the uniboard tray and provides a complete Decision Maker II tray assembly to make interchange a simple procedure. See Figure 1 and use the following procedure. Keep this instruction for reference.



⚠ WARNING

Accidental starting can cause death or serious personal injury. Turn Generator Master Switch to OFF position, disconnect power to battery charger, and remove battery cables (remove negative lead first and reconnect it last) to disable generator set before working on any equipment connected to generator. The generator set can be started by automatic transfer switch or remote start/stop switch unless these precautions are followed.

Installation

1. Place controller master switch to OFF position. Disconnect battery of generator set, negative lead first.

2. Remove four screws, lock washers, and washers on lower controller enclosure and slide out uniboard tray by grasping P1, P2, and P3 connectors. Once the tray back panel clears enclosure, remove P1, P2, and P3 connectors. While sliding out tray, it may be necessary to tilt tray in order to clear mounting hardware of upper controller

3. JUMPER OPTIONS: Cut J1 on main circuit board for 60–second continuous cranking. Cut J2 on main circuit board for 50 Hz. operation.

NOTE

On kits ordered for 24 Volt operation, jumper J4 is sent from the factory already cut. Jumper J4 is for high battery voltage only – not for board conversion from 12 to 24 volt.

4. If the factory HI/LO battery voltage adjustments are not to be used or are suspected to be incorrect, proceed as follows: otherwise omit Step 4.

   a. Connect Fast Check on Decision Maker II tray connectors and variable DC voltage power supply.

   b. Move generator master switch to AUTO position. SYSTEM READY lamp should go on.

   c. Slowly turn DC supply voltage up unit BAT. HIGH VOLTS lamp goes on. DC supply voltmeter should read about 15 Volts for 12 Volt systems and about 30 Volts for 24 Volt systems. If adjustment is needed, turn DC supply to desired HI voltage and turn Pot. R42 just to the point where the BAT. HIGH VOLTS lamp goes on.

   d. Slowly turn DC supply voltage down until BAT. LOW VOLTS lamp goes on. DC supply voltmeter should read about 11 Volts for 12 Volt systems and 22 Volts for 24 Volt systems. If adjustment is needed, turn DC

supply to desired LO voltage and turn Pot. R25 just to the point where the BAT. LOW VOLTS lamp goes on.

e. Seal Pots. R25 and R42 with insulating varnish or equivalent.

f. Disconnect Fast Check from Decision Maker II tray connectors and DC power supply.

5. Slide in Decision Maker II tray. Tilt tray slightly to clear mounting hardware of upper controller.

6. Install four screws, lock washer. and washers to secure Decision Maker II tray to enclosure.

7. Connect P1, P2, and P3 connectors to Decision Maker II tray.

8. Check that the controller master switch is in the OFF position. Reconnect battery, negative lead last.

Operation and Features

For identification of components, see Figure 2; for an explanation of their function refer to the following paragraphs.

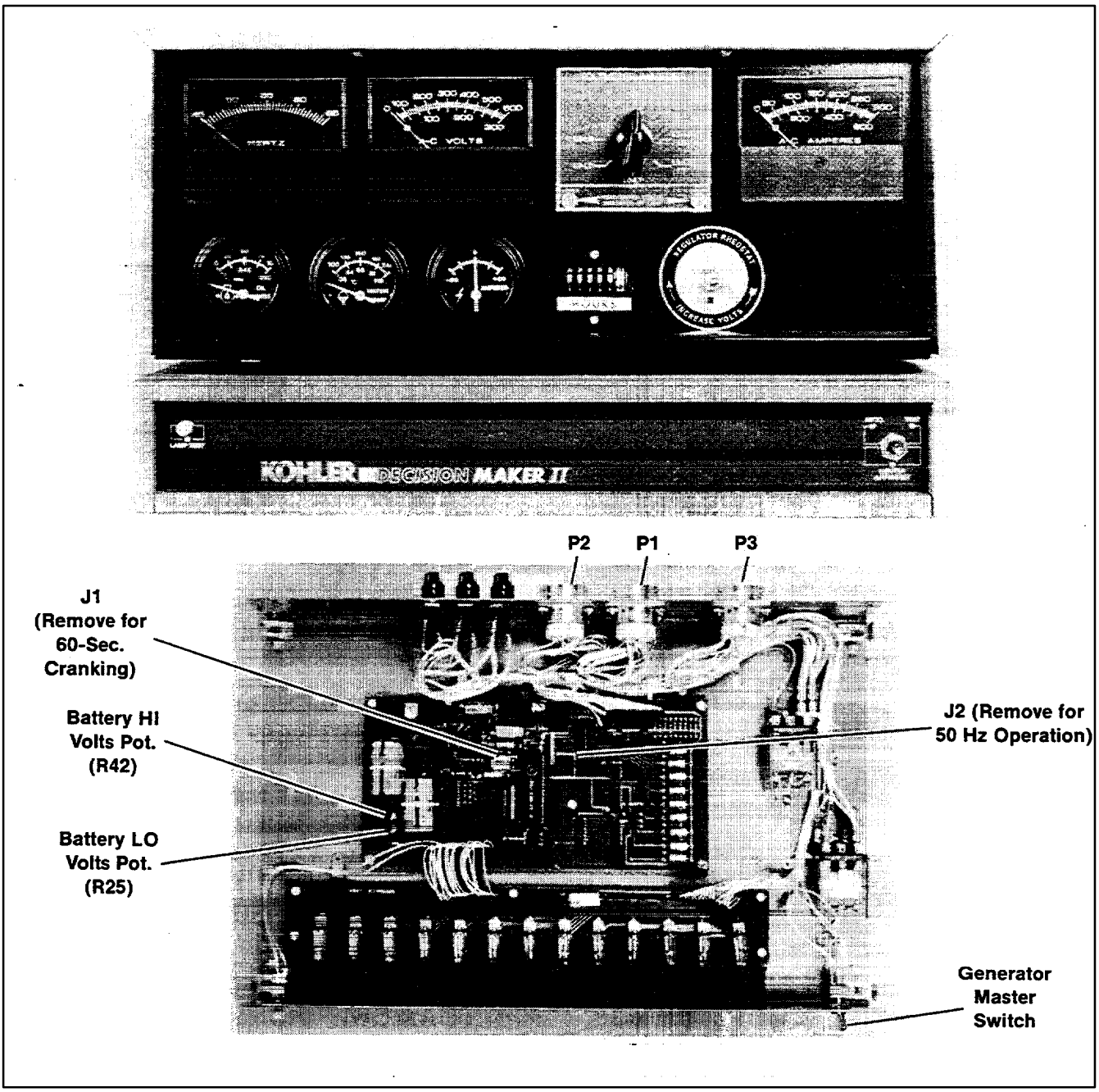


Figure 1. Fast–Response I/TR–Series with Decision Maker II Microprocessor Tray

LAMPS:

1. Switch off – lamp flashes when generator master switch is in the OFF/RESET position. Lamp will not light when generator master switch is in the AUTO or TEST position.
2. Overcrank
   – cranking stops and overcrank lamp will light if engine does not start after 60 seconds.

   – lamp will light after 25 seconds of attempted cranking if starter or engine will not turn.

   – lamp will light and engine will stop after starting and 25 seconds running without speed sensor signal.

   Overcrank Flashing – lamp will flash if speed sensor fails during a normal run. Engine will keep running.
3. Emergency Stop – lamp lights if emergency stop has been made or if overvoltage device (if equipped) has shut down. See ”Emergency Stopping” following.
4. High Water Temp. – lamp lights if set has shut down due to high engine coolant temperature.
5. Overspeed – lamp lights if set shuts down due to overspeed.
6. Low Oil Pressure – lamp lights if set shuts down due to loss of engine oil pressure.
7. Anticipated Low Oil Pressure (if equipped) – lamp lights if engine oil pressure approaches shutdown level.
8. Anticipated High Water Temperature (if equipped) – lamp lights if engine coolant temperature approaches shutdown level.
9. Low Water Temperature (if equipped) – lamp lights if optional engine block heater is not working and/or temperature may be too low (below 70°F, 21°C) for 10–second start–up.
10. Battery High Volts – lamp lights if battery or charging voltage exceed 15 Volts for 12–Volt systems; 30 Volts for 24–Volt systems (will also light if overvoltage occurs due to battery charger malfunction while set is not operating).
11. Battery Low Volts – lamp lights if battery or charging voltage drops below 11 Volts for 12–Volt systems; 22 Volts for 24–Volt systems (will also light if undervoltage occurs due to

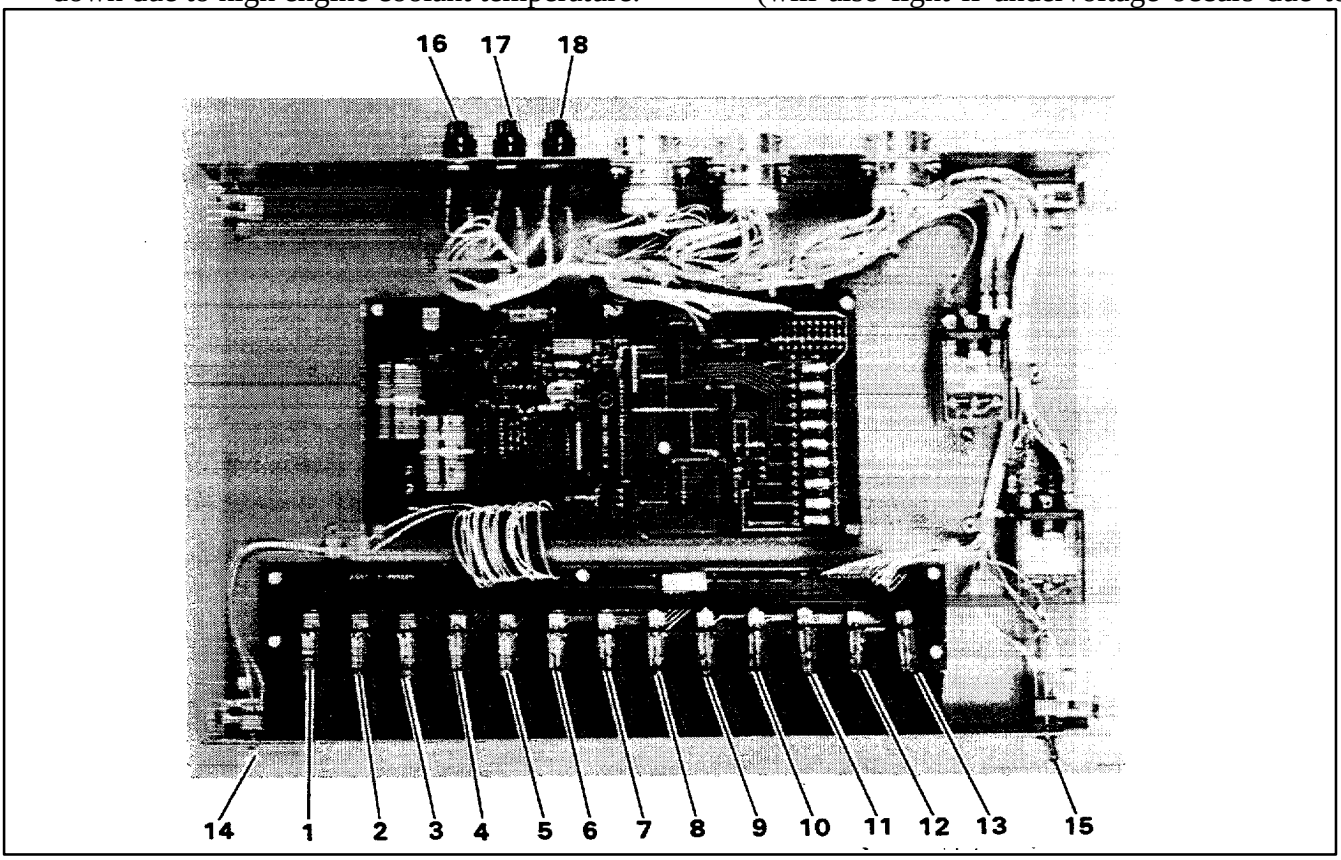


Figure 2. Decision Maker II Microprocessor Base Tray

battery or charger malfunction while set is not operating).

12. Low Fuel (if equipped) – lamp lights if fuel tank level approaches empty.

13. System Ready – lamp lights when Generator Master Switch is in the AUTO or TEST position and system senses NO faults.

SWITCHES:

14. Lamp Test – used to test indicator lamps.

15. Generator Master Switch – 3–position AUTO, CENTER OFF/RESET, and TEST switch. AUTO position allows start–up by automatic transfer switch or remote start–stop switch connected to controller terminals 3 and 4. CENTER OFF/RESET position will stop the generator set regardless of the cool–down time delay. The master switch must be in the AUTO position for the cool–down time delay to function.

NOTE

If engine stop is signaled by a remote switch or Automatic Transfer Switch, the generator set will keep running for a cool–down cycle of 5 minutes.

TEST position will start the generator set locally.

FUSES:

16. 4–Amp – protects remote annunciator circuit, lamp circuit board, and alarm horn circuit (if equipped).

17. 1–Amp – protects the main circuit board, and the CR and 1CR relay coils.

18. 15–Amp – protects engine DC and primary starting circuits.

Emergency Stopping

Turn generator master switch to OFF/RESET, or operate remote emergency stop switch (if equipped), for immediate shutdown.

Fault Shut–Downs

The generator set will shut down automatically under the following fault conditions:

Overcrank: See ”Overcrank” preceding.

High Temperature: Shutdown occurs 4 seconds after fault.

NOTE

High temperature shutdown will not function if proper coolant level is not maintained.

NOTE

High temperature and low oil pressure shutdowns are overridden during the first 30 seconds after start–up.

Low Oil Pressure: Shutdown occurs 4 seconds after fault.

NOTE

Low oil pressure shutdown is not intended to provide protection against low oil level. Check for proper oil level at engine dipstick.

Overspeed: Unit shuts down immediately, if governed frequency exceeds 70 Hz. on 60 Hz. sets, or 60 Hz. on 50 Hz. sets.

Overvoltage (if equipped): Unit will shut down after approximately one second of 15% or more over nominal voltage. EMERG. STOP lamp will light.

NOTE

Sensitive equipment may suffer damage in less than one second of an overvoltage condition. On–line equipment requiring faster shutdowns should have its own overvoltage protection.

Resetting

Use the following procedure to restart set after a fault shutdown.

1. Move generator master switch to OFF/RESET position.

2. Disconnect generator set from load with line circuit breaker or automatic transfer switch.

3. Correct cause of fault shutdown.

4. Move generator master switch to TEST position for start–up.

5. Verify that cause of shutdown has been corrected.

6. Reconnect to load.

7. Move generator master switch to proper position (AUTO or TEST) for start–up.