Remote Serial Annunciator II (RSA II) for Kohler® Controllers

- Monitors the generator set equipped with one of the following controllers:
  - KPC 1000
  - Decision-Maker® 3+
  - Decision-Maker® 3000
  - Decision-Maker® 550
  - Decision-Maker® 6000
- Allows monitoring of the common alarm, remote testing of the automatic transfer switch, and monitoring of the normal/emergency source with one of the following controllers:
  - MPAC™ 1000
  - MPAC™ 1500
- Configuration via a personal computer (PC) software.
- RSA II panel includes writable surfaces (four white boxes in illustration) for user-defined selections.
- Uses Modbus® protocol, an industry standard.
- Controller connections:
  - RS-485 for serial bus network
  - USB device port for PC
  - 12-/24-volt DC power supply
  - 120/208 VAC power supply (available accessory)
- Meets the National Fire Protection Association Standard NFPA 110, Level 1.

Dimensions

- Dimensions—W x H x D, mm (in.). Also fits in a standard 203 mm x 203 mm (8 in. x 8 in.) Hoffman box.

  **Surface Mounted:**
  
  203 x 203 x 56 (8.0 x 8.0 x 2.2)

  **Flush Mounted:**

  203 x 203 x 58 (8.0 x 8.0 x 2.3)

  Flush mounting plate W1: 229 (9.0)

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## Fault and Status Conditions

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

*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

- LED indicating lights for status, warning, and/or shutdown. See the above chart for details.
- Power source with circuit protection: 12- or 24-volt DC
- Power source with 120/208 VAC, 50/60 Hz adapter (option)
- Power draw: 200 mA
- Humidity range: 0% to 95% noncondensing
- Operating temperature range: -20°C to +70°C (-4°F to +158°F)
- Storage temperature range: -40°C to +85°C (-40°F to +185°F)
- Standards:
  - NFPA 110, level 1
  - UL 508 recognized
  - CE directive
  - NFPA 99
  - EN611-4-4 fast transient immunity
- RS-485 Modbus® isolated port @ 9.6/19.2/38.4/57.6 kbps (default is 19.2 kbps)
- USB device port
- NEMA 2 enclosure

(1) All generator set controllers except Decision-Maker® 3+ controller.
(2) Decision-Maker® 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-Maker® 3+ controller.
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### ATS Controls (RSA II with ATS controls only)

- ATS position LED (normal or emergency)
- Power source indicator LED (normal or emergency)
- ATS fault LED
- Key-operated spring-loaded test switch (Re-Transfer/Auto/Test)

### NFPA Requirements

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

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G6-95 7/11c
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 lights when alarm horn is deactivated by alarm silence switch (lamp test switch).

**Alarm Silence Switch.** Switch quiets the alarm during servicing. The horn will reactivation upon additional faults.

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

**Aux.** See Low Coolant Level/Aux.

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

**High/Low Battery Voltage.** 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.

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

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

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

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

**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.** LED lights when engine coolant level is below acceptable range on radiator-mounted generator sets only. When used with a Decision-Maker® 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.

**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, #2, and #3.** Monitors two digital auxiliary inputs (warnings or shutdowns). Individual red LEDs flash when a fault occurs or the status changes. User-defined digital input #1 and #2 are selected via the RSA II 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™ setup software.

Communications (Shown with RSA II with ATS Controls)

**Local Single (Master) Connection**
A single RSA II connects directly to the controller’s communication port with an RS-485 cable.

**Local Multiple (Master/Slave) Connections**
A single RSA II master connects directly to the controller’s communication port with an RS-485 cable. Additional RSA IIs (slaves) can connect to the single master RSA II. Status of the RSA II (master) is annunciated on the RSA II (slave) panel.

**Note:** Use RS-485 for a total of up to 1220 m (4000 ft.) maximum from the first device to the last device.
Modbus®/Ethernet, Single Master or Multiple Master/Slave Connections
(Shown with RSA II with ATS Controls)

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

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

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