

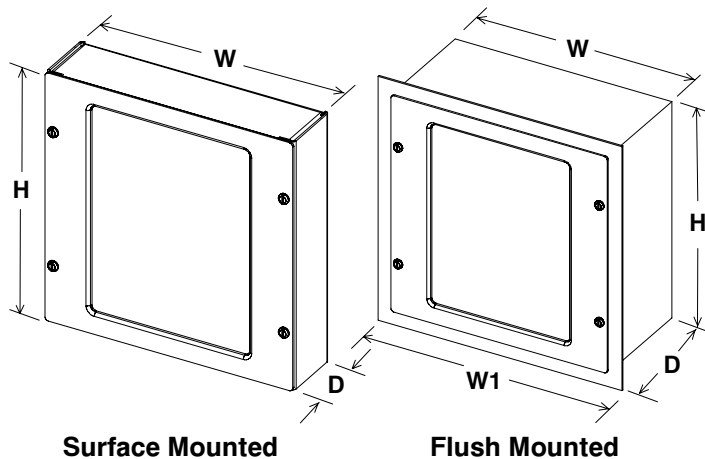
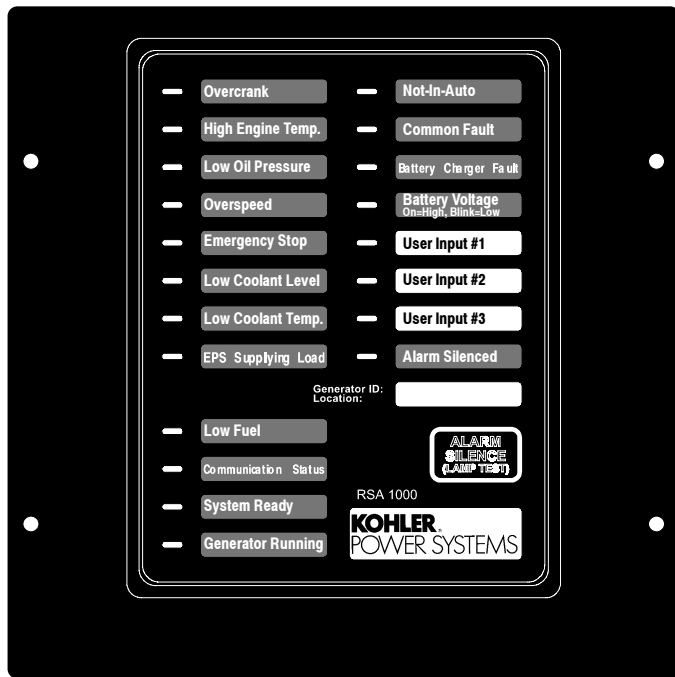
# Industrial Generator Set Accessories

# KOHLER POWER SYSTEMS

## Remote Serial Annunciator

**ISO 9001**  
**KOHLER**  
 POWER SYSTEMS  
 NATIONALLY REGISTERED

### Remote Serial Annunciator RSA 1000 for Kohler® Controllers



- Annunciator panel monitors the condition of a generator set equipped with one of the following controllers:
  - Decision-Maker™ 550 version 2.10 and higher
  - Decision-Maker™ 3+ version 1.13 \*
- Meets the National Fire Protection Association Standard NFPA 110 for critical facilities.
- Surface- or flush-mount box provided. Also fits in a standard 203 mm x 203 mm (8 in. x 8 in.) Hoffman box.
- Uses Modbus® RTU (Remote Terminal Unit), an industry standard open communication protocol.
- Controller connections:
  - RS-485 network communications
  - 12-/24-volt DC power supply
- One remote serial annunciator (master) can support additional remote serial annunciators (slaves). The RSA 1000 is a Modbus® master device to the generator set controller.
- RSA panel includes writable surfaces (four white boxes in illustration) for user data.
- Dimensions—W x H x D, mm (in.)
  - Surface Mounted:**  
203 x 203 x 51.5 (8.0 x 8.0 x 2.0)
  - Flush Mounted:**  
203 x 203 x 53.0 (8.0 x 8.0 x 2.1)  
Flush mounting plate W1: 229 (9.0)
  - Flush Mounted: †**  
203 x 203 x 103 (8.0 x 8.0 x 4.1)  
Flush mounting plate W1: 229 (9.0)

\* Requires controller main circuit board GM28725 and communication module kit GM32644-KP1

† Requires user-supplied Hoffman box 203 x 203 x 102 mm (8 x 8 x 4 in.)

Modbus® is a registered trademark of Schneider Electric.

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	Red	On	Red	Off	Green
Low Coolant Temperature *	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 (550 controller) *	Yellow	On	Red	Green or Off	Green
Battery Charger Fault (16-light controller) *	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	Red	On	Green	Green or Off	Green
User Input #2	Red	On	Green	Green or Off	Green
User Input #3 (550 controller) §	Red	On	Green	Green or Off	Green
EPS Supplying Load	Yellow	Off	Green	Green	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

- Power source with circuit protection: 12- or 24-volt DC
- 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:
  - CE Directive
  - EN61000-4-4 Fast Transient Immunity
  - NFPA 99
  - NFPA 110, Level 1
  - UL 508 Recognized
- RS-485 Modbus® isolated port
- 19200 baud rate
- NEMA 2 enclosure

## Standard Features

- Up to twenty-five LED indicating lights for status, warning, and/or shutdown. See the above chart for details.
- DIP Switches:
  - 1—Local or remote ATS (EPS supplying load) †
  - 2—User input #1
  - 3—User input #2
  - 4—Master or slave
  - 5—Generator Set Controller or Modbus®/Ethernet network connection ‡

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

† User may connect the ATS (EPS Supplying Load) signal wiring at either the controller (remote) or at the RSA master (local).

‡ RSA Version 2.0 or higher.

§ Digital input #3 is factory-set for high battery voltage on the 16-light controller.

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## NFPA Requirements

- To meet NFPA 110 requires the RSA 1000 must comply with Section 5.6.6.
- Engine functions:
  - High battery voltage warning \*
  - High engine temperature shutdown
  - High engine temperature warning \*
  - Low battery voltage warning \*
  - Low coolant level shutdown
  - Low coolant temperature warning \*
  - 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

## Accessories

- Additional remote serial annunciators can report to one RSA master.
- Communication module GM32644-KA1 or GM32644-KP1 is required with Decision-Maker™ 3+ controllers.
- Modbus®/Ethernet Converter GM41143-KP2 for network connections.

## Fault and Status LEDs and Lamp Test Switch

**Alarm Horn.** Horn sounds giving a maximum 65 dB at 1 m (3.3 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 de-activated by alarm silence switch.

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

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

**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 (550 controller) or when transfer switch is in the emergency position (16-light controller).

**Emergency Stop.** LED lights and engine stops when emergency stop is made. May require a local emergency stop switch on some 16-light 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.

**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 Fuel.** LED lights if fuel level in tank approaches empty. Requires customer-supplied level 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 three digital auxiliary inputs (status, warnings, and/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 master DIP switches for local or remote.

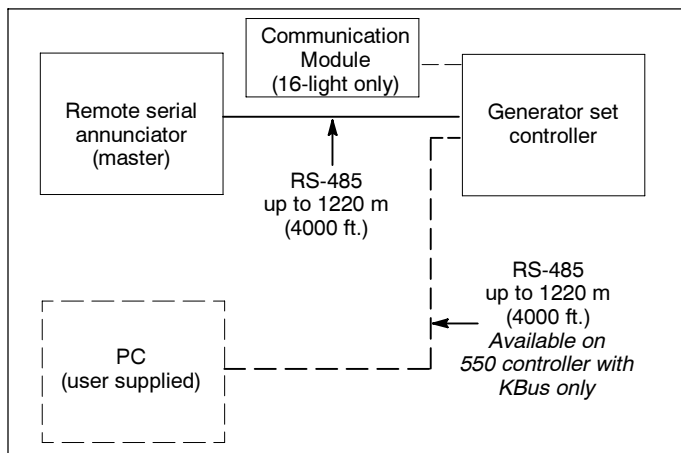
**16-Light Controller.** When remote, digital input #1 and #2 are tied to the communication module. When local, they are tied directly to the RSA master. Digital input #3 is factory-set for high battery voltage.

**550 Controller.** When remote, digital inputs #1, #2, and #3 are tied to controller digital inputs (D7, D8, and D10). When local, user-defined digital inputs #1 and #2 are tied directly to the RSA master. Input #3 is remote only.

## Communications

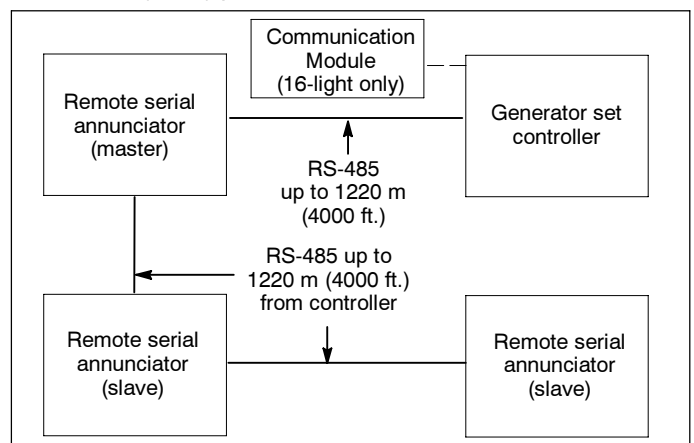
### Local Single (Master) Connection

A single RSA connects directly to the controller's communication port with an RS-485 cable for applications up to 1220 m (4000 ft.) from the device.



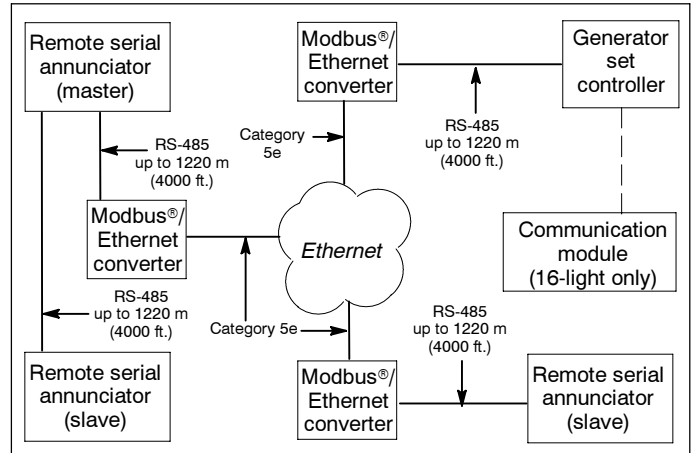
### Local Multiple (Master/Slave) Connections

A single RSA master connects directly to the controller's communication port with an RS-485 cable for applications up to 1220 m (4000 ft.) from the controller. Additional RSAs (slaves) can connect to the single master RSA up to 1220 m (4000 ft.) from the controller. Status of the RSA (master) is annunciated on the RSA (slave) panel.



## Modbus®/Ethernet, Single Master or Multiple Master/Slave Connections

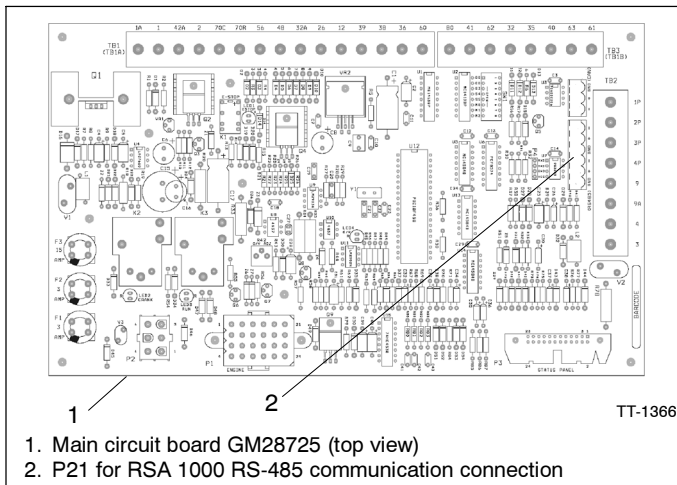
An RSA master communicates with a controller and RSA slaves through an Ethernet network. A Modbus®/Ethernet converter is required for each RSA and controller. RS-485 cable connects the RSA to the converter. Category 5e (Cat 5e) network cable connects the Modbus®/Ethernet converter to the Ethernet.



## Communication Connections

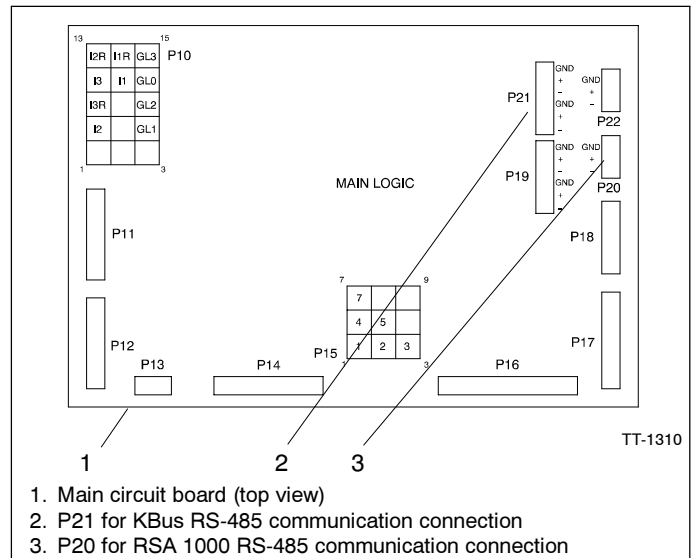
### Generator Set Decision-Maker™ 3+ Controller RS-485 Port

The remote serial annunciator connects to the controller circuit board.

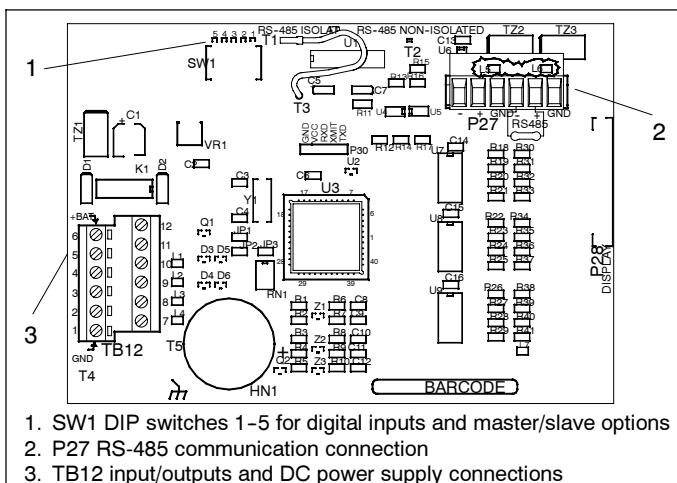


### Generator Set 550 Controller RS-485 Port

The remote serial annunciator connects to the controller circuit board.



## Remote Serial Annunciator Connections



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