# Honeywell 2104B2111 RX SHORT

Installation & Commissioning Guide

## 01 Identity and preparation

### Confirm the receiver

Check 2104B2111 RX SHORT on the offered unit and 2104B2111 on the manufacturer order identity. The handbook identifies this as the standard short-range ATEX receiver. Retain the gas-calibration label and modification state with the maintenance record.

### Confirm the paired system

Identify the short-range transmitter, actual beam distance, termination arrangement and control-system channel. The 5–40 m range is a system relationship; a receiver alone does not establish a commissioned gas detector.

### Review protection functions

Place connected alarms and shutdowns in the approved maintenance state before tests. Agree who controls inhibits and who authorizes their removal. A detector fault or an interrupted beam must not be confused with a proven gas-free condition.

### Prepare the optical route

Check that supports are rigid and the beam cannot be routinely interrupted by doors, vehicles, equipment or people. Allow access for cleaning and alignment at both ends. Assess gas hazards and beam placement with the responsible site engineer.

### Gather service equipment

Use the suitable alignment telescope, SHC1 handheld interrogator and the correct functional test filter for the detector configuration. Record the installed path distance before beginning electronic alignment.

### Window care

Clean the optics with clean water and a soft cloth. Do not use solvents or abrasive materials. Control alarm consequences during cleaning, restore the clear gas-free path, and recheck zero and normal operation.

Technical source: Honeywell Searchline Excel Infrared Gas Detectors Technical Handbook, 2104M0506, MAN0530 Issue 12 (10/12). The handbook lists 2104B2111 as the standard short-range ATEX receiver; system performance requires the matching transmitter and commissioned optical path.

# 02 Electrical installation

### Identify the supply

Red is +24 V and black is 0 V. Measure voltage at the receiver terminals under operating load; the permitted range is 18–32 V DC and receiver operating consumption is 8 W maximum. Do not confuse this value with a certification-label power limit.

### Connect the signal

White is the 4–20 mA conductor. Check the control input and receiver version against the installed wiring diagram. The source/sink arrangement must agree with the actual receiver; a neighboring sink-model diagram is not interchangeable.

### Retain service communications

Orange is RS485 A and blue is RS485 B. Preserve polarity and the specified termination-unit arrangement so the handheld interrogator can communicate during alignment and maintenance.

### Connect protective earth

The green/yellow conductor is earth. Follow the applicable hazardous-area installation and bonding instructions, including approved glands and termination equipment. Do not open an enclosure in an explosive atmosphere.

### Allow cable voltage drop

For a 24 V control-room supply the handbook gives example cable limits of 550 m at 1.5 mm² and 900 m at 2.5 mm², using the stated conductor resistances. Confirm the complete actual circuit and terminal voltage rather than treating these examples as universal limits.

### Inspect before energizing

Check polarity, conductor identification, secure terminations and enclosure sealing. Confirm that unused entries are properly protected and that the installed equipment certification matches the hazardous-area application.

### Service boundary

The detector has no user-serviceable internal parts. Do not dismantle it as a field repair or open it in an explosive atmosphere. Use the manufacturer service process when diagnostics indicate an internal defect.

# 03 Alignment and initialization

### Establish safe conditions

Only appropriately trained personnel should perform installation and commissioning. Select suitable weather and a clear, gas-free optical path; heavy fog or rain can prevent reliable alignment.

### Align the transmitter

Use the specified telescope and mounting procedure to direct the transmitter toward the receiver. Never look at the sun through the alignment telescope. Tightening the support must not disturb the selected position.

### Align the receiver

Align the receiver toward the transmitter with the appropriate telescope arrangement. Check the final position after securing the mounting hardware; mechanical seating and beam direction must remain stable.

### Optimize electronically

Connect the SHC1 interrogator and follow the handbook alignment menu to optimize the received signal. Optical sighting is the starting point; the electronic signal assessment determines whether the commissioned path is acceptable.

### Enter the path information

Use the actual installed distance and correct detector configuration. Complete initialization successfully before treating the output as a valid operating gas measurement.

### Allow stabilization

The system becomes operational in less than 5 minutes and fully stabilizes in less than 1 hour under the handbook conditions. Schedule zero and acceptance checks for a stable clear-path condition.

### Record the commissioned state

Retain the receiver and transmitter identities, gas calibration, path distance, alignment result and output checks. Release the installation only after the complete control-system response has been proved.

### Replacement record

A receiver replacement requires confirmation of the matching transmitter, gas calibration, certification and modification state. Re-establish alignment and initialization, then repeat functional acceptance before removing the maintenance inhibit.

# 04 Functional checks and fault decisions

### Gas-response check

Use the correct test filter for the detector modification and calibration. Observe the expected receiver response and the associated control-system indication; do not substitute an arbitrary filter or infer alarm performance from a clear-path zero alone.

### Beam interrupted

A normal beam-block state uses 2.5 mA after the configured delay. The handbook gives default timing of 30 seconds to beam block followed by 120 seconds to fault. Confirm installed settings before interpreting a delay as failed detection.

### Gas reading retained

When the optical signal is lost after gas exceeds the configured internal threshold, the prior gas reading can be held. Investigate the gas condition and optical path; the last reading must not be dismissed merely because the beam is now obstructed.

### Low signal or fault

A 3 mA output indicates low signal and 0 mA indicates fault. Inspect obstruction, window condition, alignment, terminal voltage and interrogator diagnostics in a controlled sequence. Restore the underlying condition before clearing the maintenance record.

### Overrange and inhibit

21 mA identifies overrange and 2 mA identifies inhibit. Configure the receiving controller to distinguish these conditions from the 4–20 mA measurement span. Verify that maintenance inhibits are removed before final release.

### Acceptance decision

Prove the normal gas channel, required alarms, fault response and maintenance-state indication. Retain the test result and configuration with the unit record; unresolved diagnostic states prevent service release.

## Related products

Portfolio navigation only; these links do not establish compatibility or an approved substitution.

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| **Honeywell 05704-A-0121** | View product |
| **Honeywell FS-TSFIRE-1624** | View product |
| **Honeywell EC7850A1072** | View product |

### Discuss the exact offered unit

Send the complete marking, quantity and available label photos for review. Confirm condition and included items in the quotation.

sales13@apterpower.com | +86 18030235313