reply® plus

Technical Specifications
for
Wireless Keypad Model WRS7200

Enclosure

- Compact and rugged ABS blend case.
- Dimensions: 5.25 in x 2.2 in x 1 in (133.8 mm x 54.5 mm x 26.5 mm).
- Weight: Approx. 3.1 oz (88 grams) without batteries installed. Add 1.6 oz (45 grams) for 2 alkaline AA cells.
- Color: 3 tone (off-white, light gray, slate). *[Note: Custom colors are available in minimum quantity with special terms.]*

User Identification

- Each keypad has an RF device identity ("address") between 1-500 plus an RF Base Station identifier between 1-31.
  - Addresses may be automatically assigned or preset.
- Each keypad also has a unique device serial number.
  - Serial numbers are permanent and set at manufacturing.
- Both address and serial number identifications are transmitted with each keypad's response.
- 'Log in' function permits secure user registration.

User Input

- 19 enamel coated elastomeric keys.
  - Ten keys numbered 0-9 plus a "SYM" key allow entry of simple or sophisticated responses. In multidigit mode, up to 12 characters in length (ex. -1/2*345.067) may be input. When in text mode, up to 140 alphanumeric characters may be input.
  - Three 'soft' keys coordinate with various response options shown in the display. The selections are programmable by software and include several options for simplified voting (e.g., Yes No, True False, Yes Abs No, etc.)
  - "Send", "Link", "Clear", and "Power" keys provide additional functions.
- Entries can be "speed scored" to 0.05 second (50 millisecond) resolution to identify group response sequence ('fastest finger') during competitive events.
- Audible keypress indicator can be enabled / disabled.

Display

- 2 line liquid crystal display (LCD) echoes user entries and displays messages from the Base Station. LCD features:
- Electroluminescent backlighting.
- 12 characters per line. [Note: When in text mode, characters will scroll.]
- Status icons to indicate battery level, response type, correct/ incorrect response, login status, RF link activity, RF signal strength, keypad address #, RF Base Station identity #.

RF Technology

- Two-way RF keypad uses eligible *license-free / license-exempt* frequencies to:
  - Communicate key presses to the Base Station.
  - Receive control information and messages from the Base Station.
  - Acknowledge keypad transmissions. *[Note: Response acknowledgment is one of several advantageous features found in products using patented Reply® technology.]*
- Employs manufacturers-engineered 2.4 GHz *frequency hopping spread spectrum* (FHSS) transceivers.
- FHSS offers excellent range, immunity to interference, and signal security.
- Integrated Wi-Fi avoidance feature improves performance in high density wireless environments.
- *Patented* and *proprietary* radio protocol.
  - Creates a secure communications network between keypads and their associated Base Station.
  - Permits Reply® systems to operate reliably in the presence of other RF devices (WLANs, PDAs, phones, etc.).
  - Integrated error checking discriminates system signals from all other RF traffic to ensure data accuracy and enhance security.
- 31 RF Base Station identifiers are available to provide installation flexibility and system expansibility.
- Internal antenna is protected by the keypad enclosure.

Range

- Programmable RF power level offers long range operation and flexibility in installation.
- Power output is selectable by software. Designed to operate in an indoor area up to 650 ft x 650 ft (200 m x 200 m) at maximum RF power level. See Base Station specs for details.
  - A room's geometry, radio propagation characteristics, and proximity to RF interferers can influence the actual range experienced.
  - Elevating the base station often results in a performance advantage.

Speed

- Polling rate is 200 keypads per second.
  - Multiple base stations may poll simultaneously, permitting collection of up to 15,500 keypads in 3 seconds.
- Time stamping can identify the speed and sequence of each keypad response.

Power and Power Management

- Powered by two replaceable alkaline AA batteries (not included).

- Battery life is ~100 hours depending on usage and features or battery shelf life, whichever comes first.
- Battery level is indicated on LCD. Also, keypad transmits battery level to the Base Station.

Security
- A proprietary response verification protocol integral to the radio design provides a high degree of signal security.
- Frequency hopping and proprietary data communications are additional deterrents to clandestine interception.
- Audible keypad return reminder and "ping" (keypad finder) function. Alarm can also be enabled to sound when a keypad leaves its Base Station's coverage zone.

Scalability
- Firmware resides in high performance microprocessor chips that can be reprogrammed via the RF link to facilitate easy in-field upgrade during the life of the product.
- Adding keypads to an existing system only requires them to be set to the channel identity of a Base Station and assigned an available address by either automatic or manual setting.

Compliance and Patents
- Call for details regarding these and other regulatory certifications: FCC , IC , CE .
- U.S. Patent Nos. 5,724,357; 6,021,119; 6,665,000. European Patent No. EP 0 697 773. Other U.S. and foreign patents and patents pending.

Warranty
- 2 YEAR Limited Warranty. Call for details.

Additional System Components and Accessories

Reply® Plus Base Station Model WRS971
- Base Station in miniature USB Stick styling that communicates with Reply® Plus and Reply® Mini+ keypads.
- Controlled by application software* (purchased separately).
- Dimensions: 3.1"L x .9"W x .57"H.
- RF Type: Proprietary FHSS (spread spectrum, frequency hopping). Creates a secure network with keypads and offers immunity to interference. 4 programmable RF power level settings provide regulatory compliance and installation flexibility. 7 programmable WiFi avoidance settings offer enhanced performance in high density RF environments.
- Capacity: 500 keypads per RF Base Station identifier. 31 RF Base Station identifiers allow 15,500 pads per room.
- Speed: Default setting is 200 keypads per second. Polling rates as fast as one-half second are possible with smaller groups (ex. 100). Multiple Base Stations may poll simultaneously to collect responses from up to 15,500 keypads in 3 seconds.
- Connections: Attaches to the operator's PC by USB.
- Primary Power Source: USB. Current draw 70-130 mA.

Reply® Plus Base Station Model CRS970
- A compact and programmable interface to your PC that communicates with Reply® Plus and Reply® Mini+ keypads.
- Controlled by application software* (purchased separately).
- Size: 6.3 in x 2.3 in x 5 in (159 mm x 57 mm x 126 mm).

Same performance characteristics as WRS971 plus:
- Display: LCD for viewing RF identity and diagnostics.
- RF Type: 5 RF power level settings, including maximum range.
- Connections: Ethernet in addition to USB.
- Alternate Power Source: POE ("Power Over Ethernet") using midspan and power injector. Call for details.

[Reminder: Base stations do not include accessories such as software* and carrycases. These items are priced separately.]

Modular Carrycases
- Wide variety available, ranging from compact ballistic nylon bags to ruggedized shipping cases with perimeter clasps.
- Keypads and base stations purchased separately.
- *Refer to Accessories Price Sheet for additional details.*

Application Software
- * Base Station requires application software to operate system.
- Multiple titles are available to conduct surveys, delegate voting, group decision making, market research, classroom learning, and other advanced applications.
- Contact your reseller for specifications and pricing of the application software they offer with Reply® systems.

System Configuration
A basic Reply® Plus system consists of...
- One Reply® Plus Wireless Keypad per participant
- One Reply® Plus Base Station per 500 keypads of the same radio channel in a room, and
- One copy of value-added application software.

Optional accessories (purchased separately) include carrycases for keypads and base stations, power over ethernet devices for remote base station placement, and lanyards. Training, on-site technical support, and similar 'for fee' services are also extra.

Pricing
For pricing contact your local Reply® reseller or E-Mail us at enquiries@replysystems.com for a referral.

The Reply® Plus Audience Response Systems are designed and assembled in the USA by our quality certified American Manufacturer.

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