

User Manual
For
Amron International, Inc.

Model 3222
Bell Communication Routing Panel



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1 INTRODUCTION

The Model 3222 Bell Communication Routing Panel is designed for use as a dive control communication routing panel for bell operations. This unit connects divers operating from a diving bell, along with bellman, to a helium speech unscrambler, or a back-up helium speech unscrambler. This gives the dive control operator (tender) the ability to select one of the two helium speech unscramblers at the flip of a switch.

2 FEATURES

- Communications routing panel for dive control during diving bell operations.
- Provides connections and switching for 3 divers, a bellman headset, a bellman speaker, through-water comms, and 2 helium speech unscrambler (HSU) communicators.
- Switching allows the tender/operator to select or deselect any combination of 3 divers and bellman comms and individually route each through either HSU communicator. This makes it possible to have two separate groups operating at the same time through different HSU comms units.
- The tender can select either HSU radio to communicate with either set of divers and/or the bellman selectively assigned to each HSU comms unit, or to turn either off.
- Through-water comms can be routed through either HSU communicator. A separate volume control for through-water comms is provided on the back of the 3222 enclosure to allow matching the volume of through-water comms with the HSU communicator volume.
- The tender can use the included 2405-28 handheld push-to-talk microphone or any of Amron's optionally available 4-wire headsets like Amron's 2401-28 Deluxe Headset with Boom Mic and Dual Banana Plugs.
- Diver and bellman connections are made on the rear panel of the 3222 where HSU comms are connected using 20-pin MS connectors and all other connections through terminal blocks.
- Amron recommends using the 3222 routing panel with the 3120 Diving Bell Box inside the bell to support both 2-wire and 4-wire comms for 3 divers, a bellman headset and a bellman speaker through EO style waterproof connectors.
- For the most complete functionality, Amron recommends using the Amron 2830R-02 Rack Mount DSP3 Helium Speech Unscrambler communicator with the 3222. The 3222 routing panel connects directly to the 2830R-02 using 20-pin MS connectors on the back of the 3222 and 2830R-02 units.

3 SPECIFICATIONS

OPERATOR CONTROLS AND SWITCHING

- Three Divers, Bell Headset, Bell Speaker, Through-Water Comms, Two 3-Diver Helium Speech Unscramblers, and Microphone Push-to-Talk

SIZE, WEIGHT, AND ENCLOSURE

- Enclosure Type: 19.0 in. RETMA Rack Mount
- Enclosure Material: Anodized Aluminum
- Width: 19.0 in. (48.3 cm)
- Height: 3.5 in. (8.9 cm)
- Depth: 13.0 in. (33.0 cm) – not including MS Connectors
- Weight: 7 lbs. (3.18 kg)
- HSU Connections: MS-3102A-28-16S 20-Pin Bulkhead Connector
- Umbilical & Bellman Connections: Terminal Blocks

INCLUDED WITH THE 3222 BELL COMMUNICATION ROUTING PANEL

- (1) Hand-Held Push-to-Talk Microphone - P/N 2405-28
- (2) MS Connector Cable 20 Pin Male - P/N MS-3106A-28-16P
- (2) MS Cable Clamp 24/28 Shell - P/N MS-3057-16A
- (2) MS Bushing for 24/28 Shell Cable Clamp - P/N MS-3420-16

4 OPERATIONAL DESCRIPTION

DISCLAIMER NOTICE: Amron's chamber communications are designed to be used in air chambers where oxygen concentrations remain below 23.5%. Our communications products (including communicators, speakers, entertainment systems, and other communications accessory items) are NOT designed for oxygen service, are not intrinsically safe, and do not meet the criteria given in NFPA-99, Chapter 20 and other applicable definitions. Misuse of our chamber communicator products in high-concentration Oxygen environments may result in serious injury and/or death.

The Amron 3222 Bell Communications Routing Panel connects up to 3 divers and a bellman operating from a diving bell to a dive control operator/tender during diving bell operations while using helium speech unscrambler (HSU) communications.

The 3222 routing panel provides connections and switching for 3 divers, a bellman headset, a bellman speaker, through-water comms, and 2 helium speech unscrambler (HSU) communicators. Switching allows the tender/operator to select or deselect any combination of 3 divers and bellman comms and individually route each through either HSU communicator. This makes it possible to have two separate groups operating at the same time through different HSU comms units. The tender can select either HSU radio to communicate with either set of divers and/or the bellman selectively assigned to each HSU comms unit, or turn either off.

Amron recommends using the 3222 routing panel with the 3120 Diving Bell Box inside the bell to support both 2-wire and 4-wire comms for 3 divers, a bellman headset and a bellman speaker through EO style waterproof connectors.

For complete functionality Amron recommends using the Amron 2830R-02 Rack Mount DSP3 Helium Speech Unscrambler communicator with the 3222. The 3222 routing panel connects directly to the 2830R-02 using 20-pin MS connectors on the back of the 3222 and 2830R-02 units.

Volume control for the 3222, when used with the Amron 2830R-02 HSU communicator, is accomplished using the individual diver volume controls on the communicator. Each diver's volume can be controlled independently. The tender controls on the communicator act as a master control for the system. Bell headset, bell speaker, and through water volume levels are controlled using diver 3 controls.

Through-water comms can be routed through either HSU communicator. A separate volume control for through-water comms is provided on the back of the 3222 enclosure to allow matching the volume of through-water comms with the HSU communicators.

The tender can use the included 2405-28 handheld push-to-talk microphone or any of Amron's 4-wire headsets like Amron's 2401-28 Deluxe Headset with Boom Mic and Dual Banana Plugs.

Diver and bellman connections are made via the rear panel of the 3222 where HSU comms are connected via 20-pin MS connectors and all other connections through terminal blocks.

5 CONTROLS AND CONNECTIONS

5.1 CONTROLS

The controls are divided into three groups:

The first group (left side of panel) allows the tender (operator) to select or de-select any diver, bellman, and/or bell speaker. As an example, diver 1, diver 2, and bell speaker may be on; the bellman may want to go on the headset. The bellman can be turned on and the bell speaker can be turned off providing less background noise, and clear communications.

The toggle switches used to select the divers, bellman, and bell speaker are three position switches. The upper position selects HSU "A", the center position is off, and the downward position connects that position to HSU "B". This has the added benefit of allowing diver 1 communication through HSU-A, and diver 2 communication through HSU-B. With a second operator two jobs could be run at the same time.

The second group (center group of controls) allows the output of the through water communication unit to be routed through either HSU, permitting the correction of the effects of helium voice. The input for the through water unit is located on the rear of the panel. A level control is provided to permit matching the levels between the through water communications unit and the HSU. The adjustment should be set upon installation and check out of the system, and after that time should not have to be adjusted again.

The third group of controls (right side of panel) are tender controls. The tender can select which HSU will be used. A push to talk microphone is provided, which operates the selected HSU automatically. The operator may also use a headset. Either HSU can also be operated via the front panel of the unit; this allows operation of two units at the same time.

Volume control, when used with the AMRON AMCOM II, is divided as follows. Diver 1 volume is controlled by the diver 1 volume controls on the AMCOM Model 2830R/24/26. Diver 2 is controlled by diver 2. Bell headset, bell speaker, and through water volume levels are controlled via diver 3 controls. Operator volume is controlled via the tender volume controls. The tender controls also act as a master control for the system.

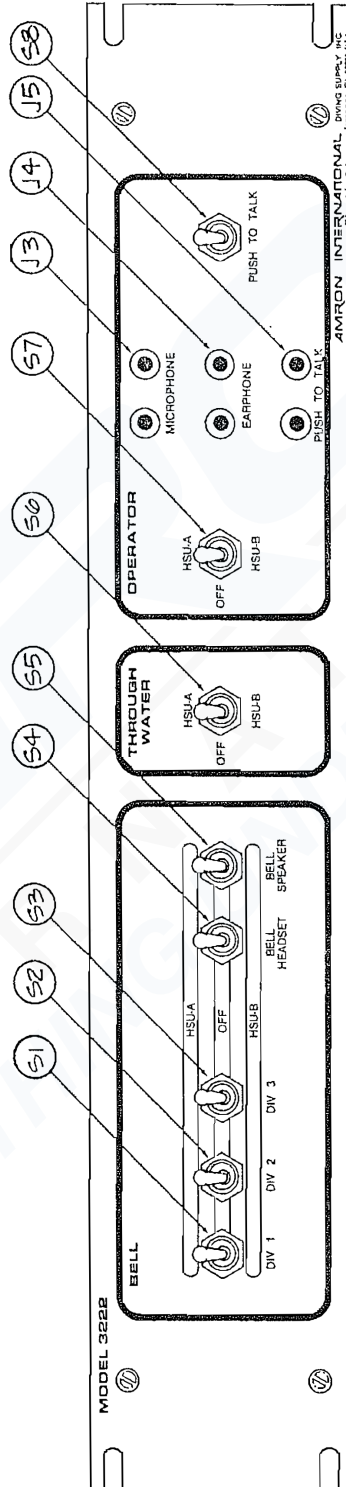
5.2 CONNECTIONS

All diver and bell connections are via the rear panel of the Model 3222. Terminal board inputs are provided for the bell umbilical and through water unit. Interface connections to the AMCOM III are provided via a single cable, with MS connectors. The method provides for an easy system installation.

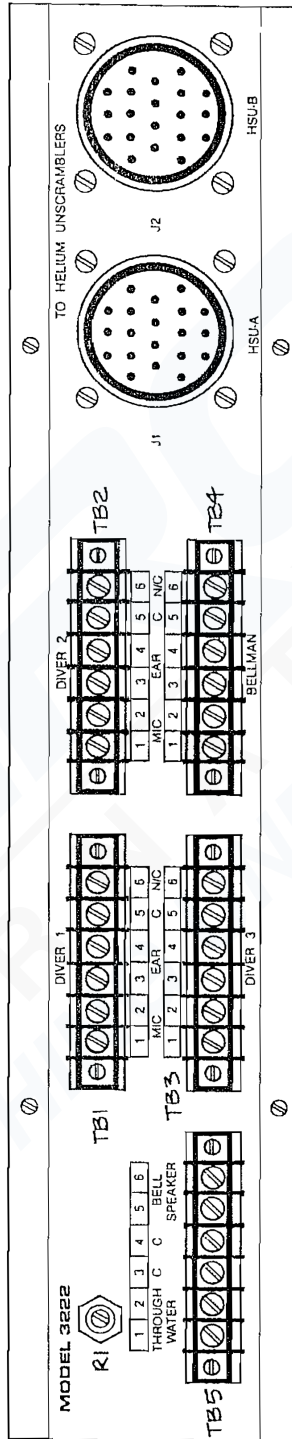
6 DRAWINGS

The reference numbers shown on the parts identifier drawings correspond to the parts lists listed in the parts lists section.

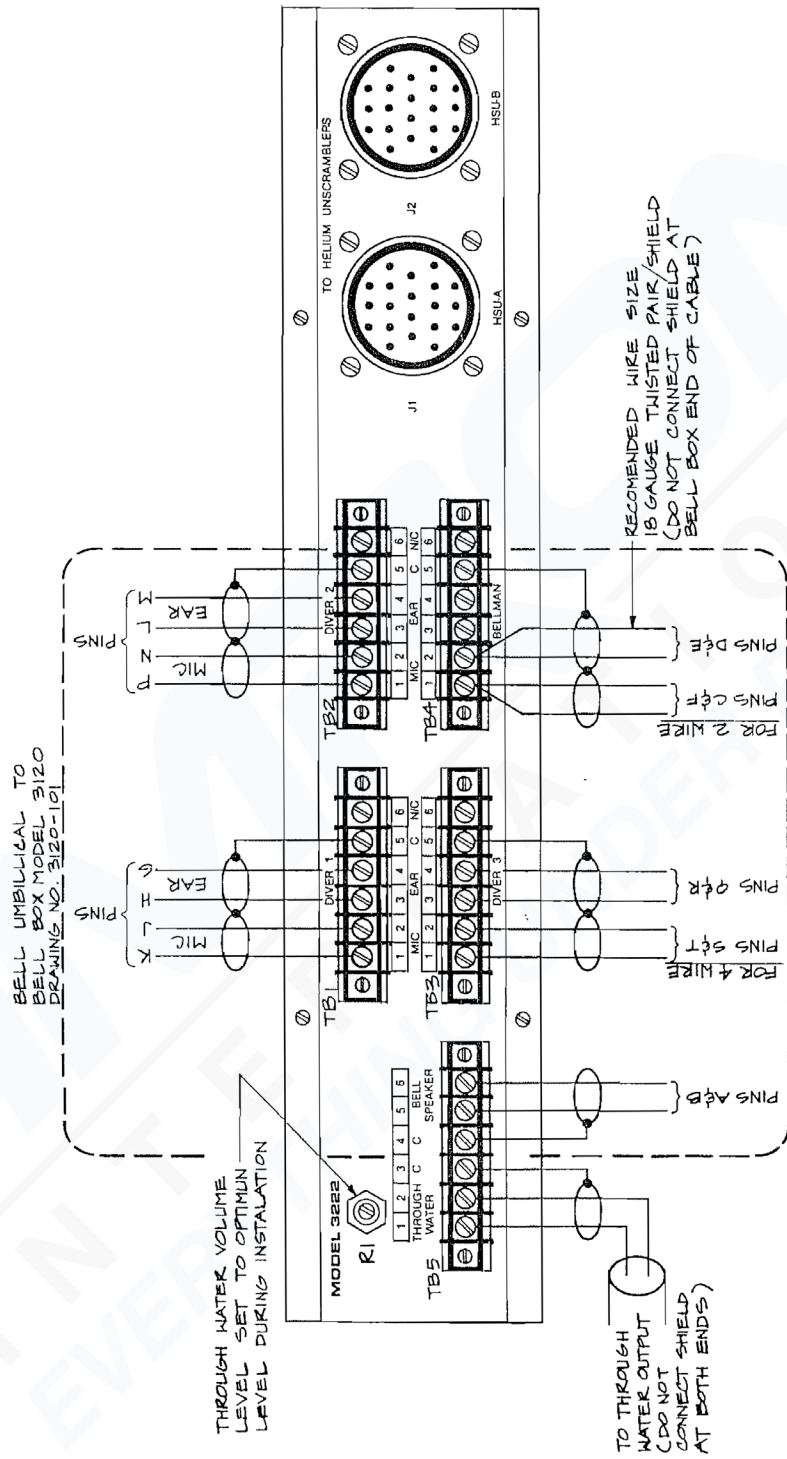
6.1 COMPONENT IDENTIFIER



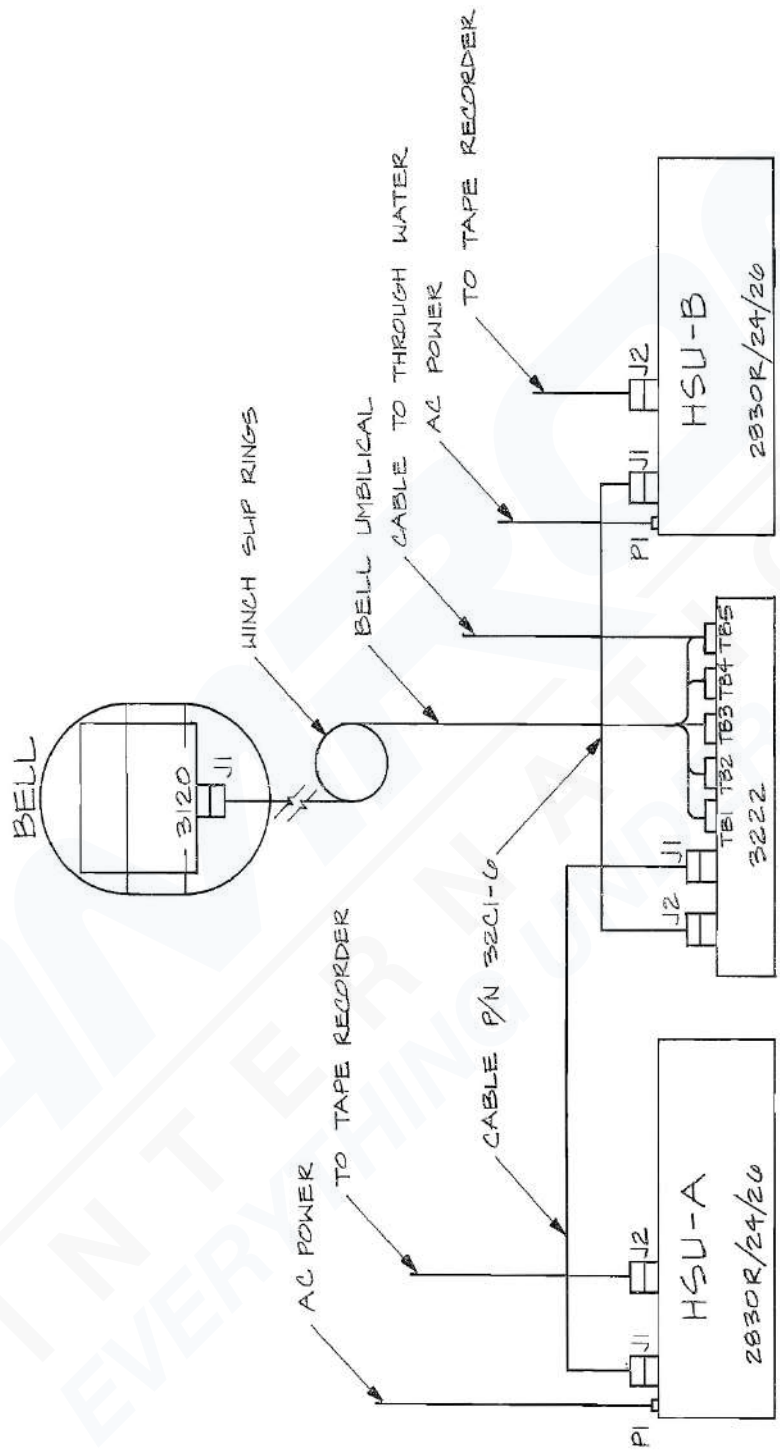
6.2 BACK PANEL



6.3 WIRING CONNECTIONS



6.4 SYSTEM IDENTIFIER



7 PARTS LISTS

The parts lists include both mechanical and electrical parts. The following information will be useful in interpreting data which is not self-explanatory.

REVISIONS

The parts lists in this manual are for the current model of diver communicator as of the printing date.

To Order Replacement Parts Contact:

Amron International, Inc.
1380 Aspen Way, Vista, California, 92081 U.S.A.
Telephone: (760) 208-6500 Fax: (760) 599-3857
Email: sales@amronintl.com
Web: www.amronintl.com

When ordering replacement parts, you should give as much information as possible to enable us to supply the correct part. This information should include the part number, description, reference designator, value, radio model number, and serial number. Failure to provide sufficient information may hinder our ability to fill your parts orders promptly and correctly.

7.1 PARTS IDENTIFIER

REF	PART NO.	DESCRIPTION
J1, J2	MS-3102A-28-16S	MS CONN BULKHEAD20 PIN FEMALE
NS	MS-3106A-28-16P	MS CONN CABLE20 PIN M
NS	3222-001	PANEL FRONT BELL CRP
NS	MS-3057-16A	MS CABLE CLAMP 24/28 SHELLS
NS	MS-3420-16	BUSHING FOR PN MS-3057-16A
NS	3222-005	CHASSIS WRAP AROUND BELL CRP
NS	3222-006	PANEL SUB-FRONT
S1 - S7	SW-403	SWITCH TOGGLE 4PDT ON/OFF/ON
S8	SW-208	SWITCH TOGGLE DPDT-MOMENTARY
TB1 - TB5	A201306-NL	TERMINAL BLOCK 6-1 TERM FDTHR
NS	2825R-002	LID RACK MOUNT TOP AND BOTTOM
J5	1498-107	JACK; BANANA YELLOW
J3	1498-102	JACK; BANANA RED
J4	1498-103	JACK; BANANA BLACK
R1	91A1AB24B15	POTENTIOMETER 10K LINEAR
NS	29SJ250-10K	RESISTOR 10K OHMS 5% 1/4W
NS	6-32X3/8SSPHP	SCREW 6-32 3/8IN SS PH PHILL
NS	6NUTSSL	NUT LOCKING 6-32 S/S
NS	10-32X1/2SSPHP	SCREW 10-32X 1/2IN SS PH PL
NS	10NUTSS	NUT 10-32 S/S
NS	8-32X3/8SSPHP	SCREW 8-32 3/8IN SS PH PHILL
NS	42TM003	TRANSFORMER 1200 OHM/8 OHM
NS	2405-28	MICROPHONE PUSH TO TALK
NS	10ISW	WASHER NO 10 INTERNAL STAR SS
NS	8ISW	WASHER NO 8 INTERNAL STAR S/S
NS	M-2786	NUT A/B POTS P/N 34602
NS	6-32X1/4SSPHP	SCREW 6-32X1/4IN SS PH PHILL
NS	3500	CABLE TIE NYLON 3/32" X 4"
NS	5-6/18-22	TERMINAL RING NO 6 18-22AWG
NS	6ISW	WASHER NO 6 INTERNAL STAR SS
NS	3/8ISW	WASHER; 3/8 INTERNAL STAR

* NS = Not Shown

8 LIMITED WARRANTY AND SERVICE POLICY

Amron International, Inc.

LIMITED WARRANTY & SERVICE POLICY

LIMITED WARRANTY

AMRON INTERNATIONAL, INC., (Amron) warrants that its manufactured products are free from defects in material and workmanship under normal use and service for a period of one year from date of shipment as described in Amron's literature covering this product. Oxygen Treatment Hoods and accessories are excluded and limited to 90 days. Amron's obligation under this warranty is limited to the repair or replacement, at Amron's option, of defective material. This warranty shall not cover defects which are the result of misuse, negligence, accident, repair or alterations.

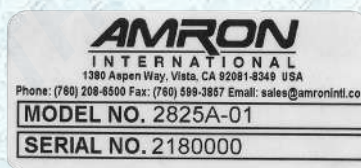
SERVICE POLICY

For technical assistance or to request a repair, please complete one of the following:

- *Amron Communicator Repair* : <https://www.amronintl.com/communicator-repair-form>
- *Repair Request* (all other products): <https://www.amronintl.com/repair-form>
- Call (760) 208-6500, Monday – Friday, 8 a.m. to 5 p.m. PST.

Both MODEL NO. and SERIAL NO. are required fields to be entered on the *Amron Communicator Repair Request* form and can be found on the products identification label as shown below.

“Sample” Product Identification Label



Do not return any product without obtaining a RMR (Return Materials Request). Detailed return instructions will be provided at the time of request.

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