

# VX-P820/P870 Series

## P25 VHF/UHF Portable Radios

### SPECIFICATION SHEET

### Smallest Submersible P25 Portable Radio

Includes APCO P25 interoperability combined with more advanced features not typically found in a radio of this size. Designed to perform in the most demanding and critical conditions, the VX-P820/P870 series gives you maximum radio performance for less in size and less in total cost of ownership.

#### P25 Digital Mode Capabilities

**Expanded Signaling:** Supports selective calling, Talk Group IDs (TGID), Network Access Codes, Individual ID lists and Paging Group lists for flexible communications.

**Secure Communication (optional):** Options available to support both Advanced Encryption Standard (AES) and Data Encryption Standard (DES) as required by APCO Project 25. Additionally, multiple encryption keys can be stored in the radio.

**Mixed Mode:** Seamlessly switch between analog to P25 digital mode on each channel based on call type received and on programming for transmit.

**Enhanced Voice Quality:** Featuring the AMBE+2™ Vocoder, get exceptional voice quality in both digital P25 and narrow-band modes of operation.

**Connectivity Assurance:** The RSSI warning emits an audible alert when the receive signal strength drops to a level not suitable for reliable communications.

#### Long-Lasting Power for Responsiveness

For maximum performance, the VX-P820/P870 series offers a choice of Li-Ion battery power up to 3000 mAh for up to 21 hours of battery life (per specifications).

#### Loud Audio for Noisy Environments

With 700 mW audio output, be assured of hearing critical information you need in most situations.

#### Intrinsically Safe

The VX-P820/P870 Series is available in intrinsically safe options that meet the SGS requirements of ANSI/UL913 6th Edition for Class I, Division I, Groups A-D, Class II, Groups E-G; and Class III for use in hazardous locations.

#### When Safety Counts – Never Be Alone

The VX-P820/P870 Series has Emergency notification that will switch to a designated channel and send an emergency alert. The radios also include Remote Listen which turns the radio on remotely if needed to check out what is happening near the radio.



#### The Vertex Standard Difference

Our number one goal is achieving superior customer satisfaction by delivering products and services that exceed your expectations. Vertex Standard radios are built to last and are backed by an industry-leading 3 year warranty – another great reason to choose Vertex Standard. Ask your Dealer for more details.



## Additional Features

- 512 Channel capacity (VX-P829/P824/P879/P874)
- 16 Channel capacity (VX-P821/P871)
- 12-Character alphanumeric display (VX-829/824/879/874)
- Wide band coverage
- Field programmable (VX-P829/P879)
- Seven programmable keys (VX-P829/P824/P879/P874)
- Three programmable keys (VX-P821/P871)
- Scan options: Priority, Dual Watch, Follow-me, Follow-me Dual Watch, Talk Around
- User set mode (VX-P829/P824/P879/P874)
- Direct channel recall (VX-P829/P824/P879/P874)

## P25 Digital Mode Only

- Caller ID display (VX-P829/P824/P879/P874)
- BCLO and TOT

## Analog Mode Only

- RX/TX Battery power save
- DTMF ANI
- 2-Tone Encode and multiple 2-tone Decode
- CTCSS/DCS Encode and Decode
- Lone Worker
- BCLO/BTLO and TOT
- Auto-Range Transpond System (ARTS™)
- Compander
- Audio pitch control
- User selectable tone (VX-P829/P824/P879/P874)
- MDC1200® Encode (PTT ID, Emergency ID)
- 7-color LED (2-tone mode)
- Radio-to-radio cloning

## Accessories

- MH-50D7A: Public Safety speaker mic w/toggle
- MH-66A7A: Submersible noise cancelling speaker mic
- MH-66B7A: Submersible speaker mic w/PF key & toggle
- VH-121: 3-Wire mini lapel microphone surveillance kit
- VH-131: 2-Wire earpiece, palm mic. with PTT
- VH-111: Over-the-head dual-muff headset
- VH-115L: Behind-the-head headset w/boom mic.
- VH-215L: Over-the-head single-muff headset
- FNB-V92LI: 3000 mAh Li-Ion battery
- FNB-V92LIIS: 3000 mAh Intrinsically safe Li-Ion battery
- FNB-V87LI: 2000 mAh Li-Ion battery
- FNB-V86LI: 1150 mAh Li-Ion battery
- FBA-34: Alkaline battery case (holds 6 AA batteries)
- VAC-920: Desktop rapid charger
- VAC-6920: 6-Unit rapid charger
- VCM-2: Vehicular charger kit
- LCC-820S: Leather case w/swivel belt clip
- CLIP-17B: Swivel belt clip

## VX-P820/P870 Series Specifications

	VHF	UHF
<b>General Specification</b>		
Frequency Range	134 – 174 MHz	380 – 450 MHz 400 – 470 MHz 450 – 512 MHz
Number of Channels and Groups	512 and 32 Groups (VX-P829/P824/P879/P874) 16 and 1 Group (VX-P821/P871)	
Power Supply Voltage	7.4V DC ± 20%	
Channel Spacing	12.5 / 20 / 25 kHz	
PLL Steps	1.25 / 2.5 / 5 / 6.25 kHz	5 / 6.25 kHz
Battery Life (5-5-90 duty)	21 hrs (16 hrs w/o saver)	19.6 hours (15.1 hrs w/o saver)
3000 mAh FNB-V92LI	14 hrs (10.6 hrs w/o saver)	13.1 hrs (10.1 hrs w/o saver)
2000 mAh FNB-V87LI		
IP Rating	IP 57 (VX-P820 series) / IP 68 (VX-P870 series)	
Operating Temperature Range	-22° F to +140° F (-30° C to +60° C)	
Frequency Stability	±2.5 ppm	
Dimension (H x W x D)	3.8 x 2.3 x 1.5 inches (96.5 x 57.5 x 37.5 mm) (w/FNB-V86LI)	
Weight (Approx.)	10.9 oz (310 g) (w/FNB-V86LI, Antenna and Belt Clip)	
<b>Receiver Specification:</b> measured by TIA/EIA-603, TIA-102 CAAA (Digital)		
Sensitivity 12dB SINAD	0.25 µV	0.32 µV
Digital 5% BER	0.25 µV	0.32 µV
Digital 1% BER	0.35 µV	0.40 µV
Adjacent Channel Selectivity (W/N)	75 / 70 dB	
Intermodulation	75 / 70 dB	
Hum and Noise	48 / 42 dB	
Audio Output	700 mW @ 16 Ohms 5% THD	
<b>Transmitter Specification:</b> measured by TIA/EIA-603, TIA-102 CAAA (Digital)		
Output Power	5 / 2.5 / 1 / 0.25 W	
Modulation	Analog: 16K0F3E, 11K0F3E Digital: 8K10F1D / 8K10F1E	
Spurious Emissions	70 dB	
FM Hum and Noise (W/N)	46 / 40 dB	
Audio Distortion	< 3% @ 1 kHz	

## Applicable MIL-STD

Standard	MIL 810C Methods/ Procedures	MIL 810D Methods/ Procedures	MIL 810E Methods/ Procedures	MIL 810F Methods/ Procedures
Low Pressure	500.1	500.2	500.3	500.4
High Temperature	501.1/Procedure I, II	501.2/Procedure I, II	501.3/Procedure I, II	501.4/Procedure I, II
Low Temperature	502.1/Procedure I, II	502.2/Procedure I, II	502.3/Procedure I, II	502.4/Procedure I, II
Temperature Shock	-	-	-	503.4/Procedure I
Solar Radiation	505.1/Procedure I	505.2/Procedure I Cat. A I	505.3/Procedure II, Cat. A I	505.4/Procedure I, II Cat. A I
Rain	506.1/Procedure I	506.2/Procedure I	506.3/Procedure I, II	506.4/Procedure I
Humidity	507.1/Procedure I, II	507.2/Procedure II, III	507.3/Procedure II, III	-
Salt Fog	509.1/Procedure I	509.2/Procedure I	509.3/Procedure I	509.4/Procedure I
Dust	-	510.2/Procedure I	510.3/Procedure I	510.4/Procedure I, III
Immersion (VX-P870 series)	512.1/Procedure I	512.2/Procedure I	512.3/Procedure I	512.4/Procedure I
Vibration	514.2/ Procedure VIII, X	514.3/Procedure I Cat. 10	514.4/Procedure I Cat. 10	514.5/Procedure I Cat. 20, 24
Shock	516.2/Procedure I	516.3/Procedure I	516.4/Procedure I	516.5/Procedure I

Specifications are subject to change without notice or obligation.

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