



ROTHENBUHLER ENGINEERING

HOME OF THE *Talkie Tooter!*

1670 Remote Firing Device



1670 Controller



1670 Dual Output Remote – 1 Watt

Highlights:

- Up to 8 Remotes
- Electric and Shock Tube Outputs
- Surface Mines OR Underground via Leaky Feeder
- Two-Way Status Communication
- Up to 5 Mile Range
- Unique System ID Codes
- Safety Poll[®] Communications Check
- Electronic Keys
- External Programming and Option Port
- Remote Battery Status Check
- 4 Hour Battery Re-charge
- Emergency shutdown
- Tag Board Check Compatible
- Vibration & Shock Mounted Electronics

THE 1670 REMOTE FIRING DEVICE (RFD) is an intelligent and discrete 2-way radio controlled remote blast initiation system. The radio system's signal is digitally encoded (addressed). The latest microprocessor and message encoding/validation technology has been combined to provide a **SAFE, RELIABLE** and **ACCURATE** Remote Firing Device. Rothenbuhler Engineering engineered this system using over 15 years of military and commercial RFD experience.

The **1670 RFD** has the capability to initiate non-electric shock tube, as well as standard electric blasting caps. The system can be used repeatedly throughout an operation and will give an "answer back" or confirmed status of all **or** any one of the Remotes. The Remotes can be held in the standby (not armed) mode for 12+ hours and still maintain the energy to initiate the shot. The 1670 RFD includes redundant internal safety circuitry and a timed automatic disarming feature. If the Remotes do not receive a properly addressed firing signal within 2 minutes of being armed, the system will automatically return to the disarmed state.

RUGGED – All system cases are watertight and have a vent for pressure equalization. The electronics have been specially mounted to help prevent damage from shock and vibration from blasting, transportation and mishandling.

SYSTEM VERSATILITY – The 1670 RFD has a versatility and reliability not before seen in initiation systems. The unique design of the Rothenbuhler RFD offers the versatility of commanding 1 to 8 Remotes with a single Controller. The Remotes can be individually selected, armed, fired and interrogated for status via the keypad on the Controller.

NON-ELECTRIC – this Remote offers greater power for better range using shock tube.



1670 Non-Electric Remote – 5 Watt

MODEL 1670 REMOTE FIRING DEVICE

STANDARD FEATURES & FUNCTIONS

ALL UNITS

Low battery & unit status indications
EMI shielded, shock mounted, solid state circuitry
Watertight cases
Long-life rechargeable NiMH batteries – 4 hr. charge
Programmable for leaky feeder & repeaters

SYSTEM BASICS

Controller, 1 to 8 Remotes, Antennas,
Battery chargers, Shock Tube tips
Electronic Keys

CONTROLLER

Interactive keypad
Polls for and displays status of all Remotes
Transmit and confirmation indicators
Controls up to 8 Remotes

REMOTE

Spring loaded terminal posts
0 Voltage on posts until "Fire"
Uses replaceable 200 shot spark tip &
standard 1/8" shock tube

GENERAL

Carrier Frequency	VHF – 148 to 174 MHz	Operating Temperature	-30°C to +60°C**
	Other frequencies may be available as custom order		-22°F to +140°F
FCC	Type Accepted		<freq diff 1300 Hz (+ 650)>
			**Optimum battery range 0°C to 50°C

CONTROLLER

Frequency Stability	± 5 ppm VHF
	± 3 ppm UHF
Modulation	11K0F3D (AFSK)
Transmit Power	1 – 5 Watts
Operating Voltage	12 VDC
Transmission Range	1 – 5 miles**
Receiver Sensitivity	12 dB SINAD:<0.45uV
Size (in)	10W x 12D x 4.5H
Size (cm)	25.5W x 30.5D x 11.5H
Weight	6.5 lbs.
Weight	3.0 kg
Case	Waterproof Pelican 1200
Color	Yellow
Battery Pack	Rechargeable NiMH
Battery Life	
Standby	12+ hours
Complete Recharge	4 hours
Current Draw	
Standby	135 mA
Transmitting	1 – 2 Amps

BATTERY CHARGER

50/60 Hz 90–132 / 180-264 VAC auto switching
Max. current draw 4.5 A @ 120 VAC or 2.2 A @ 240 VAC
Typical charge time 100 minutes + 180 minutes for discharge cycle if selected

REMOTE

Frequency Stability	± 5 ppm VHF
	± 3 ppm UHF
Modulation	11K0F3D (AFSK)
Transmit Power	1 – 5 Watts
Operating Voltage	12 VDC
Transmission Range	1 – 5 miles**
Receiver Sensitivity	12 dB SINAD:<0.45uV
Size (in)	10W x 12D x 4.5H
Size (cm)	25.5W x 30.5D x 11.5H
Weight	7.25 lbs.
Weight	3.3 kg
Case	Waterproof Pelican 1200
Color	Orange
Battery Pack	Rechargeable NiMH
Battery Life	
Standby	12+ hours
Complete Recharge	4 hours
Current Draw	
Standby	100 mA
Transmitting	1 – 2 Amps
Fire Output (Electric)	27 Volts (1.2 joules)
Fire Output (Non-electric)	2.5 kV (0.625 joules)

*** Line-of-sight. Typical transmission range based on power level, frequency, terrain, and local interference.*

WARRANTY

The 1670 Remote Firing Device is guaranteed for 2 years (batteries - 1 year, spark tips excluded) against defects in workmanship and materials. If the equipment should fail during this period, we will repair it at our factory or at the nearest authorized service facility. Warranty service on this equipment must be performed only by an authorized dealer. Unauthorized service procedures or parts will void and cancel your warranty, and may cause radio equipment to fail, resulting in accidents and/or personal injury. This is a limited warranty and is given in place of legally implied warranties of merchantability and fitness for a particular purpose. Our liability is expressly limited to the cost of repair or replacement of the RFD under this guarantee, and does not extend to additional or consequential damages resulting from the operation of equipment.



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