

## ERNA-4

### Hand Cranked Blasting Machine with Line Tester



ERNA-4 is a medium energy blasting machine that comes with a built-in three point line tester. It uses a hand generator and the operator does not need an external power supply or batteries. The blasting machine is portable, compact and lightweight, and can easily be operated by a single person.

The integrated line tester verifies the line's integrity and uses 3 two color LEDs that correspond to the 3 detonator classes, and indicate to the user that his or her chosen detonators can be fired. For safety reasons, the line tester current is limited to 1mA.

ERNA-4 includes output pulse tail cutting to limit the impulse to 4ms and quench the remaining capacitor charge. These safety features are necessary to eliminate potential secondary explosions of the flammable dust generated during the blast.

The device comes in an aluminum enclosure and includes ON-OFF/L-test switch, terminals for connecting the electric detonator line, 3 color LED for line testing and a crank handle for capacitor charging. Both sides of the panel include READY LEDs to indicate the capacitor charge state.

ERNA-4 is rated IP65 under the international IEC 60529 standard and is splash and dust proof.

#### ERNA-4 Features and Benefits:

- Medium energy blasting machine
- Built-in line tester with selectable Class 1, 2 or 3 line resistance settings
- 3 two color LEDs for line resistance
- Short 4ms output pulse

Parameter	Units	Value
Maximum permitted line resistance for different detonator classes	$\Omega$	500 (Class 1, AFC 1.0A, AFI 3mJ/ $\Omega$ ) 205 (Class 2, AFC 1.5A, AFI 16mJ/ $\Omega$ ) 50 (Class 3, AFC 3.5A, AFI 140mJ/ $\Omega$ )
Firing voltage	V	560
Firing energy	J	12.8
Firing impulse duration	ms	4
Capacitor charging	turns	11 - 12 crank turns
Capacitor nominal value	$\mu$ F	82
Capacity (2,5 $\Omega$ , Class 1 detonators)	caps	200
Line resistance testing	Yes/No	3 separate LEDs for Class 1,2,3 detonators
Maximum line testing current	mA	1
Power supply		Hand cranked
Protection level		IP65
Operating temperature	$^{\circ}$ C	-25 to + 55, at 100% relative humidity
Weight	kg	0.78
Dimensions	mm	142 x 125 x 45