TRIO

safe simple reliable

Explosion proof, microprocessor driven blasting machines for "gassy" mines

EKA MD™ SERIES

EKA MD series are microprocessor driven blasting machines, primarily intended for use in "gassy" mines.

Description

The EKA MD series are Ex-proof electronic blasting machines, driven by military approved microprocessor for ultimate level of safety, battery saving and simplicity of use. The primary purpose of EKA MD blasting machines is blasting in underground coal mines and tunneling.

Firing ability

Depending of the needs and the requirements of the end–user, EKA MD blasting machines can be produced to fire up more than 230 electric blasting caps (EBC) type A (Class I), or up to 213 EBCs type B (Class II).

The pack of standard, fresh alkaline batteries provides up to 2000 charging cycles.

Safety

A self–test feature makes costly testing equipment and time consuming inspection procedures unnecessary.

Charging and firing is done by magnetic sensors without any mechanical or moving parts, thus enabling a reliable and long-lasting operating age. The device will not fire until fully charged to the designated voltage. The firing impulse cut–off time is less than 4 ms and can be pre-programmed in steps of 1 us.

The body of the machine is screwed with special tamper–resistant screws, ensuring that it will be closed trough all the operation period and that the battery changes can take place only in the service area.

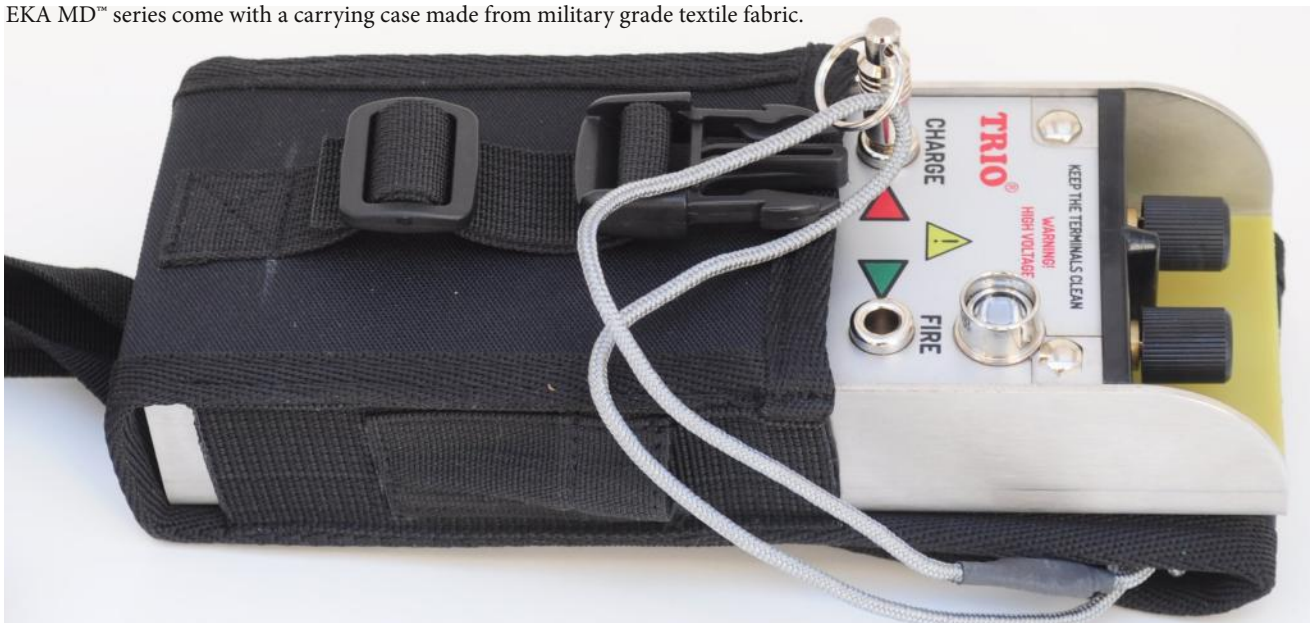
The operating parameters of the blasting machine are continuously monitored through operating cycle by microprocessor. If any parameter is found to misbehave during the operating cycle, the blasting machine will automatically de-energize and shut down, signaling the malfunction. Furthermore, if the magnetic key is accidentally left in the "Charge" slot for more than 30 s or if the voltage drop is more than 50 V after the charging, the blasting machine will automatically de-energize and shut down. Otherwise, it will automatically recharge itself to the desired voltage immediately before firing.

The built-in "Battery low" indication ensures that the batteries are replaced in timely manner (before entering the pit).

General purpose:

- **Underground coal mining**
- **Tunneling**

EKA MD™ series come with a carrying case made from military grade textile fabric.



Mechanical protection

The machine case is extremely tough and is made from stainless steel, which makes the electronic circuitry: water, vapor, dust and tamper resistant, and gives an extremely high level of mechanical protection. The electronic components are casted in a monolithic block using a special compound, resistant to water, moisture, lyes, acids and all types of chemicals.

EKA MD series technical characteristics

MODEL	Voltage min. (V)	Capacity (μF)	Energy min. (J)	Firing ability[1]					
				Type A detonator[2]			Type B detonator[3]		
				EBCs	Rmax(Ω)	Ief (A)[4]	EBCs	Rmax(Ω)	Ief (A)[4]
EKA MD 400	400-430	23,5	1,88	130	255	>1,2	80	80	>2,5
EKA MD 600	600-630	11,0	1,98	178	350	>1,2	92	90	>2,5
EKA MD 650/23	650-680	23,5	4,96	225	440	>1,2	179	170	>2,5
EKA MD 650/50	650-680	50,0	10,56	238	460	>1,2	213	200	>2,5

Weight	1,7 kg
Size	217 x 80 x 46 mm
Charge time	< 10 s
Operation temp. Ta	-20 to +40 °C
Operation temp. Tamb [5]	-10 to +40 °C
Storage temp.	-40 to +70 °C
Power source [6]	9 V
Inner resistance	10 Ω
Cut-off time	< 4 ms
Ex protection [7]	I M2 Ex e ib mb I Mb
Ingress protection	IP 54

1) the number of detonators in single series, with 2x3 m copper leg wires and approximately 10 Ω (2 x 75 m) of 0,6 mm copper mining cable, calculated with 15% of safety factor
2) also called S-type or Class I detonator: trigger impulse K=3 mJ/Ω, trigger current (in series) I = 1,2 A
3) also called I-type or Class II detonator: trigger impulse K=16 mJ/Ω, trigger current (in series) I = 2,5 A
4) the effective firing current at limit resistance Rmax
5) in potentially explosive atmosphere (Ex - zone)
6) a pack of 6 x AA size 1,5 V alkaline batteries
7) in accordance with EN 60079–0, EN 60079–7, EN 60079–11 and EN 60079–18

The EKA MD™ series are certified in accordance to ATEX directive: Equipment and protective systems intended for use in potentially explosive atmospheres; and fully comply to the requrements of the EN 13763-26: Definitions, methods, and requirements for devices and accessories for reliable and safe function of detonators and relays.


EC DECLARATION OF CONFORMITY

CE

Blasting Machine for Electric Mining Detonators

Model EKA MD


The EKA MD™ blasting machins can only be opened with the use of a tamper-resistant screwdriver, which is included.

A special buckles allow for easy carrying of the device around the belt or on shoulder in a way that one does not need to remove the device from the case during use.

If you have any questions, or need further information, please contact us:
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