

INSTANTANEOUS & DELAY ELECTRIC DETONATORS & SEISMIC ELECTRIC DETONATORS



DESCRIPTION

Electric detonator constitutes of an aluminium shell filled with a primary and a base explosive charge. The required electrical energy for the initiation of the detonator is supplied by two plastic-insulated metal wires called “leg wires” which is soldered to a fusehead inside the detonator. In Delay electric detonators, a pyrotechnic delay element is inserted on top of the explosive charge, which provides a predetermined time delay. The delay period number of each detonator is marked on a tag attached to the leg wire.

The time delay between successive blasts improves the results of the operation greatly. Judicious usage of delay detonators achieves good fragmentation with controlled throw, enabling easy mechanical handling and providing control of ground vibration, noise and flyrock.

PRODUCT RANGE & APPLICATION

• **CDet ELECTRA (Instantaneous)**

Instantaneous Electric Detonators are used for simultaneous initiation of multiple explosive charges in a controlled manner having a wide range of applications like quarrying, opencast and non-gassy underground mining, on construction sites, for surface excavation, etc.

- CDET VECTRA SDD (Millisecond Series)**

CDET VECTRA SDD (Short Delay Detonator) have delay numbers ranging from 0 to 20 with a nominal time interval of (a) 25 milliseconds between successive delay numbers from 0 to 10 & (b) 50 milliseconds for 10 to 20.

Short Delay Series detonators are designed for use in opencast and underground mines, for driving tunnels, shaft sinking and in quarries where multishot rounds are required.

- CDET VECTRA LDD (Long Delay Series)**

CDET VECTRA LDD (Long Delay Detonator) has delay numbers ranging from 0 to 12 with a nominal time interval of 0.5 second or mixed intervals of 0.3, 0.5 and 1.0 seconds between successive delay numbers. Long Delay Series detonators are designed for use in underground mining for driving shafts and tunnels, blasting raises and shaft sinking. In many cases they are used for stopeing in metal mines, trenching and other blasting applications. The longer delay period allows sufficient rock movement before firing the consecutive shot.

TECHNICAL INFORMATION

Shell	Aluminium
Wire	Galvanized Iron / Copper
Strength	No. 8 , 8* (By Lead Plate Test)
Explosives Used	Base Charge - PETN Primary Charge - ASA Compound
Fuse Head Resistance	1.6 to 2.2 Ohms
Firing Impulse	3. 2 Milliwatt seconds per Ohm
No-Fire current	0.18 Amps applied for 300 seconds
Firing Current (Series) Firing Current (Single)	1.2 Amperes DC 0.8 Amperes DC

CDET ELECTRA / CDET VECTRA

DELAY TIMINGS REFERENCE CHART OF CDET VECTRA

Series No.	Long Delay Series		Short Delay Series
	Nominal Time (Seconds)		Nominal Time (Milliseconds)
	0.5 Second Interval	Mixed Intervals	
0	Instant	Instant	Instant
1	0.5	0.3	25
2	1.0	0.6	50
3	1.5	0.9	75
4	2.0	1.2	100
5	2.5	1.5	125
6	3.0	2.0	150
7	3.5	2.5	175
8	4.0	3.0	200
9	4.5	3.5	225
10	5.0	4.0	250
11	5.5	5.0	300
12	6.0	6.0	350
13	----	----	400
14	----	----	450
15	----	----	500
16	----	----	550
17	----	----	600
18	----	----	650
19	----	----	700
20	----	----	750

- CDET ASTRA (For seismic and short reaction time applications)**

Seismic application detonators are almost identical to instantaneous electric detonators. However, they are designed to have no appreciable time lag (< 1 ms) between the application of required current and detonation. They also give a higher output strength. CDET Astra detonators are made to withstand the severe environmental conditions associated with oil and gas exploration applications.

TECHNICAL INFORMATION

Shell	Aluminium	Fuse Head Resistance	1.0 to 1.6 Ohms
Wire	Galvanized Iron / Copper	Firing Impulse	5 Milliwatt seconds per Ohm
Leg Wire Diameter	Steel Wire 24.0 / 25.5 SWG Copper Wire 23.0 SWG	No-Fire current	0.18 Amps applied for 300 seconds
Leg Wire Resistance (Ω / Metre)	Steel Wire 0.75 to 0.85 Copper Wire 0.055 to 0.065	Firing Current	7 Amperes DC
Strength	No. 8 , 8* (By Lead Plate Test)	Reaction Time	< 1.0 millisecond
Explosives Used	Base Charge - PETN Primary Charge - ASA Compound	Stray Current Protection	0.25 Amperes applied for 300 seconds
Antistatic Protection	Provided upto 30KV & 750 Pico farads between the wires and detonator shell	Capability of withstanding high hydrostatic pressure	Yes

PRODUCT CLASSIFICATION

Technical Name	Detonators, Electric, For Blasting
Commercial Name	CDET Electra / CDET Vectra [SDD / LDD] / CDET Astra
UN No.	0030
IMDG Division / Compatibility Group	1.1B
Indian Explosives Rules Class, Division	6,3



CDET EXPLOSIVE INDUSTRIES PRIVATE LIMITED

3rd Floor, 'Chaitanyanand Heights', 78 Shivaji Nagar, Nagpur - 440010, INDIA

Phone : +91 (712) 2249121

Fax : +91 (712) 2247480

Email : connect@cdetexplosives.com

www.cdetexplosives.com

