## **E**★STAR Seismic Detonators

PRODUCT INFORMATION BROCHURE

E★STAR Seismic electronic detonators have been designed to provide the precise control necessary to produce the most accurate and consistent seismic record. The E★STAR Seismic detonator may be programmed in 1-millisecond increments from one (1) millisecond up to twenty (20) seconds. using the dedicated DLG 1600-100-S Logger. Unique serial number for each E★STAR Seismic detonator provides "Cradle to Grave" traceability.

#### **ADVANTAGES**

- 750 mg PETN base charge far exceeds the standard #8 strength detonator.
- Industry's most user-friendly and rugged electronic seismic detonator.
- Designed to fire pattern shots up to ten detonators simultaneously.
- Legwire HDPE insulation for added protection from current leakage. 0.8 mm diameter copper wire (#20 AWG).
- Advanced pre-fire diagnostics coupled to the communication protocol.



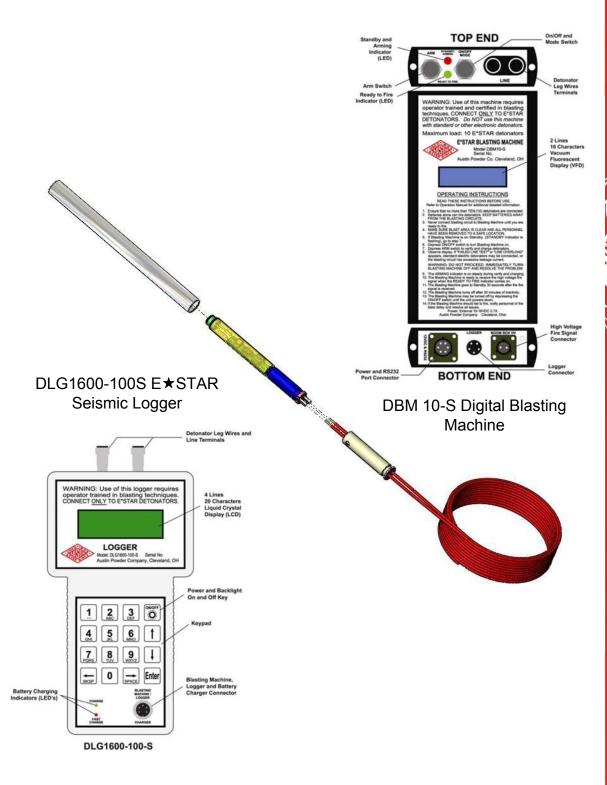
#### **PROPERTIES**

E\*STAR Seismic detonators contain a capacitor, a logic and timing circuit, and pyrotechnic ignition system manufactured by Austin Powder to provide a complete unit. When the capacitor is charged by the DBM 10-S Digital Blasting Machine, the internal capacitor provides the energy that initiates the "bridge wire" and subsequently detonates the base charge.



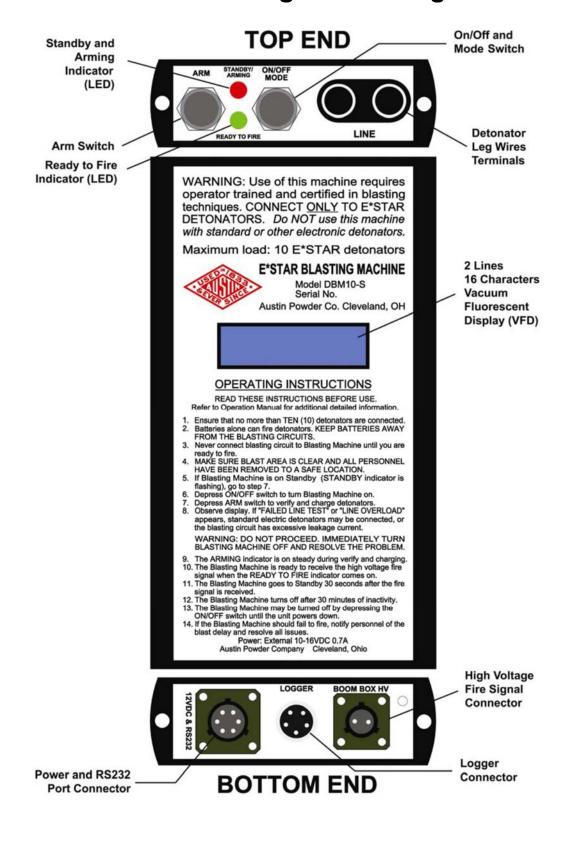


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# E★STAR DBM 10-S Digital Blasting Machine

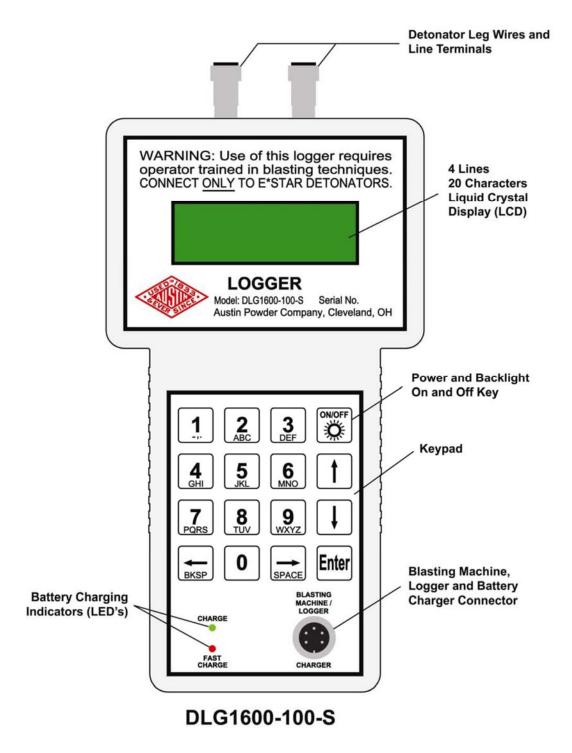




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# E★STAR DLG 1600-100-S Seismic Logger







### E★STAR Seismic Detonators

#### REQUIRED EQUIPMENT

The use of this system requires specific training in all components. This training is in addition to the normal, required training that all blasters and blasting personnel have received.

Only equipment specifically designed for use with Austin Powder E★STAR Seismic detonators is permitted. The currently approved equipment is a DLG 1600-100-S logger and a DBM 10-S Digital Blasting Machine\* manufactured by Dan-Mar Co., Inc. An "operators" manual is to be available at all times when using this equipment.

\*Warning: The DBM 10-S Digital Blasting Machine is designed for use only with E★STAR Seismic detonators. Do Not attempt to use this blasting machine with any other detonator. The misuse of this blasting machine with standard electric detonators may result in instantaneous detonator initiation.

#### STANDARD PACKAGING DETAILS

	E	<b>★STAR Seis</b> m	ic Detonator	Packaging	
Length		Case Wt		Case Count	Wire
[ft]	[m]	[lb]	[kg]	Case Count	Configuration
25	7.6	21.52	9.77	70	Fast 8
35	10.7	24.76	11.24	60	Fast 8
45	13.7	26.03	11.82	50	Fast 8
55	16.8	25.34	11.51	40	Fast 8
65	19.8	34.12	15.49	45	Spooled
85	25.9	42.94	19.50	45	Spooled
100	30.5	49.56	22.50	45	Spooled
120	36.6	27.91	12.67	20	Spooled
140	42.7	31.83	14.45	20	Spooled
160	18.8	35.75	16.23	20	Spooled
180	54.9	39.67	18.01	20	Spooled
200	61.0	43.59	19.79	20	Spooled
220	67.1	47.51	21.57	15	Spooled
240	73.2	51.43	23.35	15	Spooled

#### STANDARD TECHNICAL DESCRIPTION

Electronic programmable detonators

#### STORAGE

Store in accordance with all applicable local, state, provincial and federal laws.

#### SHELF LIFE

For optimum accuracy, use within five years from date of manufacture under good storage conditions.

#### TRANSPORTATION DATA **UN CLASSIFICATION**

Shipping Name: Detonators, Electric

Class & Division: 1.4B ID Number: UN 0255

#### **US DOT REFERENCE NUMBER**

EX-0103067

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