



E★Star[®] Seismic Detonators

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Electronic Programmable Detonators

DESCRIPTION

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 1 millisecond to 10 seconds using the dedicated DLG 1600-100-S Logger. Unique serial number for each E★Star Seismic detonator provides “Cradle to Grave” traceability.

BENEFITS

- 750 mg PETN base charge far exceeds the standard #8 strength detonator.
- Industries 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.



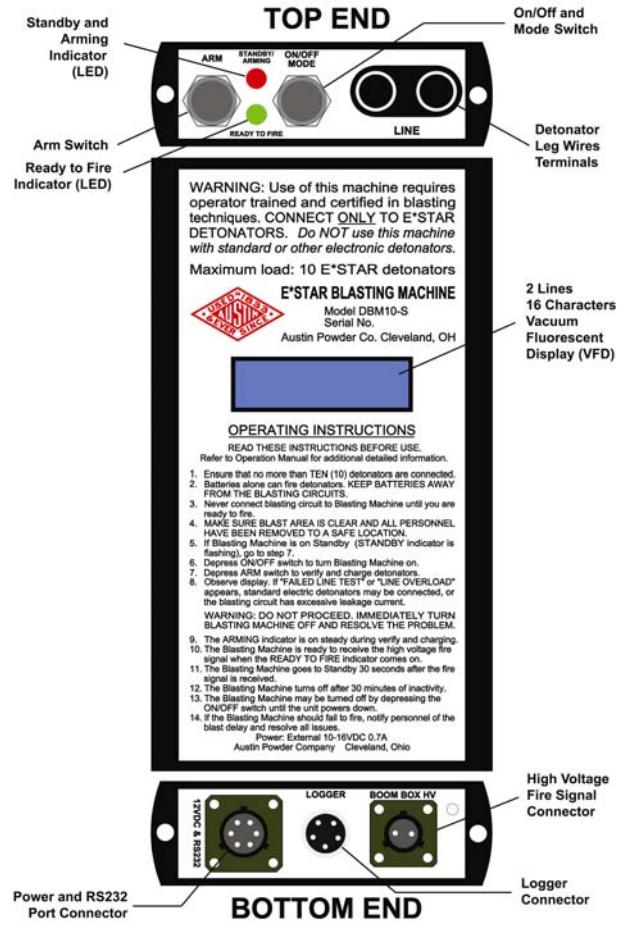
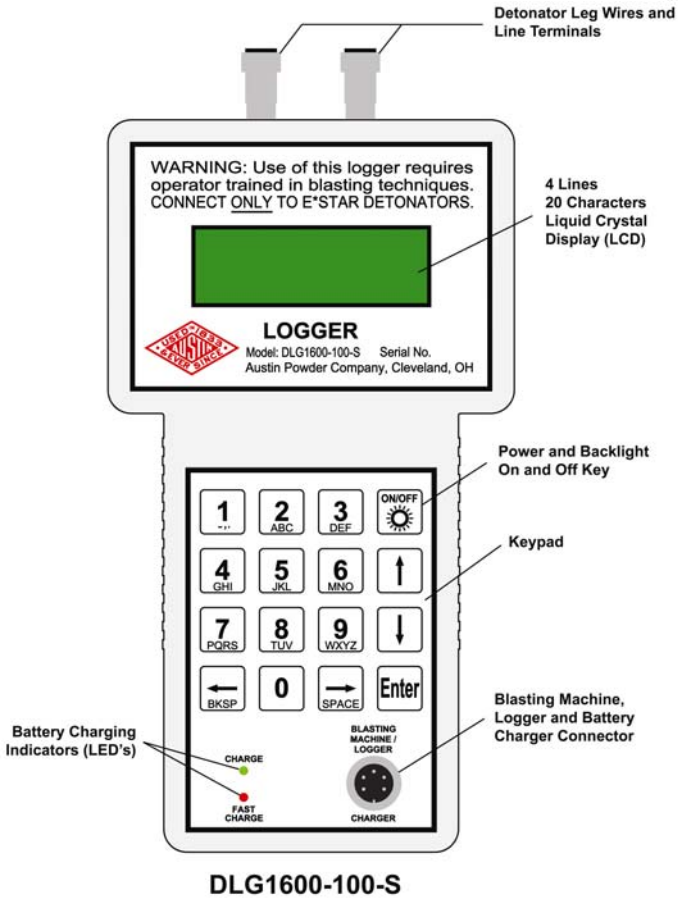
E★Star Seismic Detonators contain a capacitor, a logic and timing circuit, and pyrotechnic ignition system manufactured by Austin Star Detonator. This electronic ignition module is integrated with Austin Powders' detonator technology to provide a complete unit. When the capacitor is charged by the DBM 10-S Digital Blasting Machine, the internal capacitor provides the energy that initiates the “bridge wire” and subsequently detonates the base charge.



E★Star Seismic Detonators



DLG1600-100S E★Star Seismic Logger

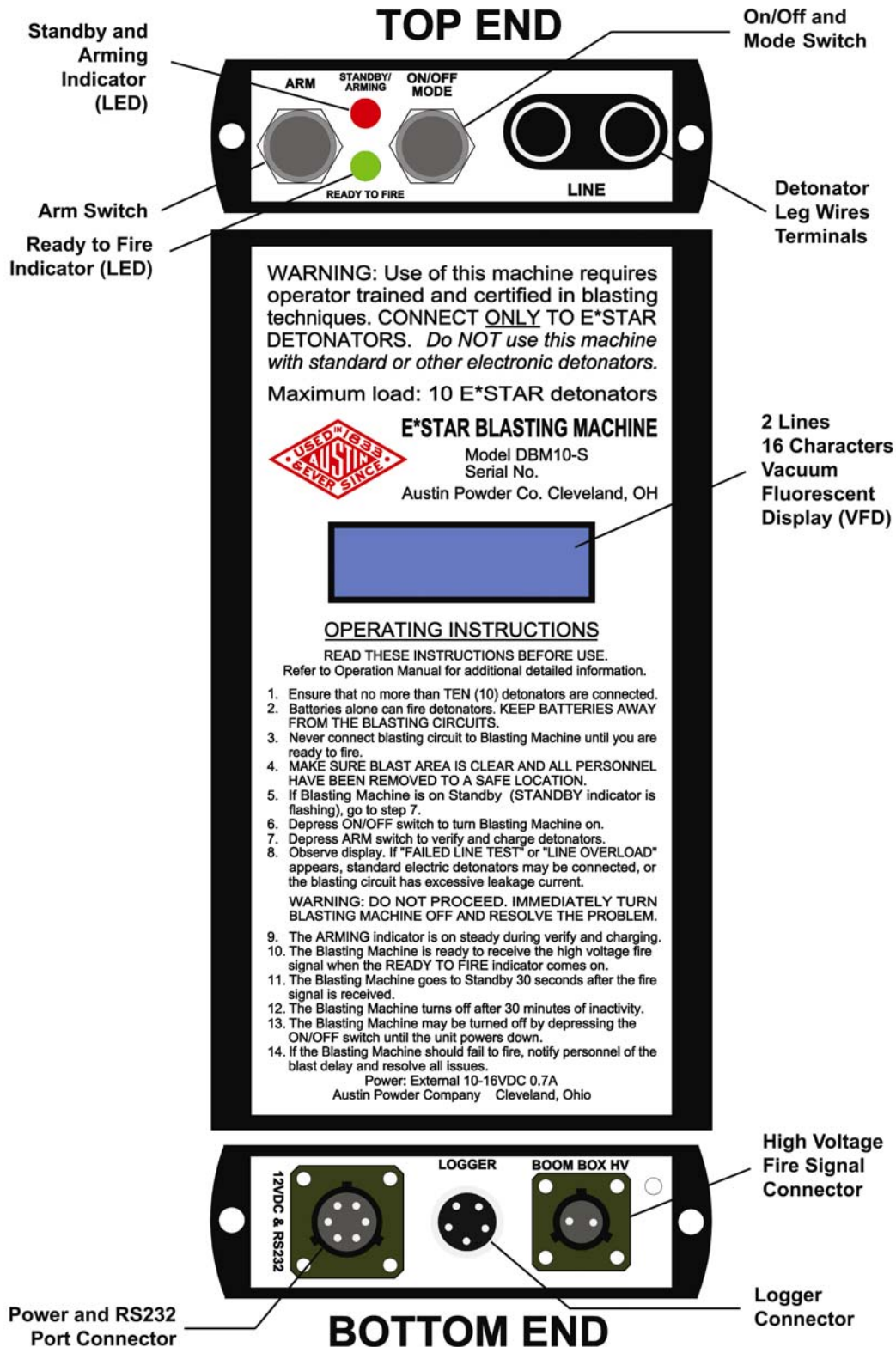


DBM 10-S Digital Blasting Machine



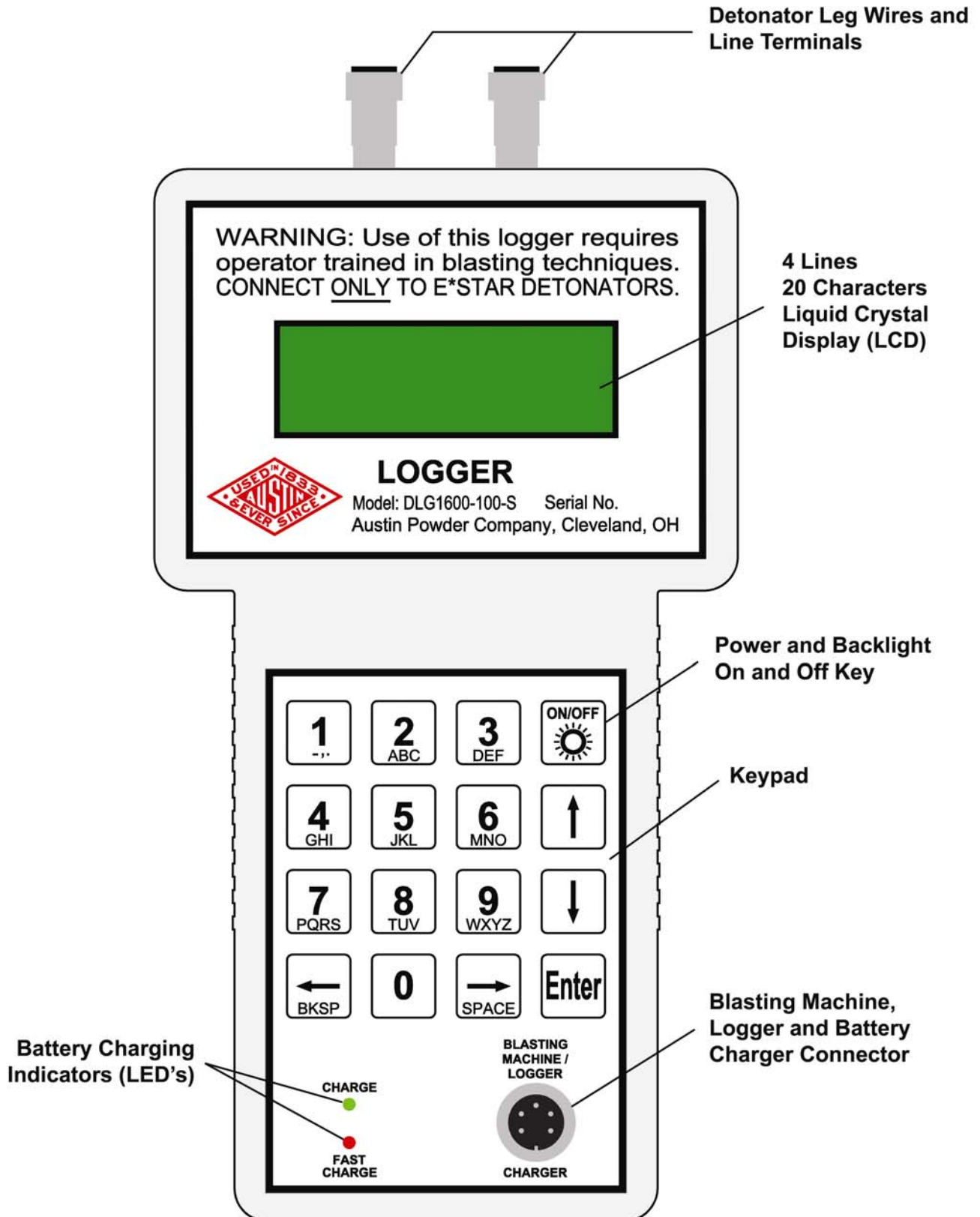


E★Star DBM 10-S DIGITAL BLASTING MACHINE





E★Star DLG 1600-100-S SEISMIC LOGGER



E★Star Seismic Detonators

E★Star Seismic 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 DBM10-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 DBM10-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.

| Electro★Star Packaging US | | | | | | | | | | | |
|---------------------------|------|--------------------|----------------------|-------|------------------|-------|--------------|------|----------------------------|--------------|--|
| Length | | Wire Configuration | Quantity per Product | | Gross Weight per | | | | Net Explosive Quantity per | | |
| | | | Shipping Box | | Sub-Pack Case | | Shipping Box | | Small Case | Shipping Box | |
| [ft] | [m] | | Inner | Outer | Kg | Lbs | Kg | Lbs | gr | gr | |
| 35 | 10.6 | Fast 8 | N / A | 10 | N / A | N / A | 2.2 | 4.9 | N / A | 10 | |
| 55 | 16.7 | Spool | 5 | 40 | 1.5 | 3.3 | 12.0 | 26.4 | 5 | 40 | |
| 75 | 22.9 | Spool | 5 | 40 | 2.0 | 4.3 | 16.9 | 37.2 | 5 | 40 | |
| 80 | 24.4 | Spool | 5 | 40 | 2.1 | 4.6 | 17.9 | 39.5 | 5 | 40 | |
| 85 | 25.9 | Spool | 5 | 40 | 2.3 | 5.1 | 18.7 | 41.2 | 5 | 40 | |
| 100 | 30.5 | Spool | 5 | 40 | 2.5 | 5.5 | 21.3 | 47.0 | 5 | 40 | |
| 120 | 36.6 | Spool | 5 | 40 | 2.8 | 6.2 | 22.7 | 50.0 | 5 | 40 | |
| 140 | 42.4 | Spool | 5 | 20 | 3.7 | 8.0 | 14.6 | 32.2 | 5 | 20 | |
| 160 | 48.8 | Spool | 5 | 20 | 3.8 | 8.4 | 16.3 | 36.0 | 5 | 20 | |
| 165 | 50.0 | Spool | 5 | 20 | 4.2 | 9.2 | 16.7 | 36.8 | 5 | 20 | |
| 200 | 60.0 | Spool | 5 | 20 | 4.3 | 9.4 | 18.5 | 40.0 | 5 | 20 | |



For more information and service locations in your area, please contact Austin Powder Company’s headquarters:

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Cleveland, Ohio, USA 44122

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Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE

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

SHELF LIFE

Use within five years from date of manufacture under good storage conditions.

UN CLASSIFICATION

Shipping Name: Detonators, Electric
Class & Division: 1.4B
ID Number: UN 0255

DOT REFERENCE NUMBER

EX-2014030694
EX-2012060770

Disclaimer of Warranties and Limitations of Liabilities

“Products described in this bulletin are sold by Austin Powder Company without warranty; express, implied or statutory or as to MERCHANTABILITY, except as expressly stated in Austin Powder’s straight bill of lading. Under no circumstances shall seller be liable for loss of anticipated profits, consequential damages or incidental damages.”