DaveyTronic® SP

Davey Bickford

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Data Sheet V0921

SURFACE MINING
DIGITAL BLASTING SYSTEM / ELECTRONIC DETONATORS

PRODUCTIVITY

- The high **accuracy** and **reliability** of the **DaveyTronic® SP** detonator significantly **improves blast performance**:

  - Fragmentation and material uniformity
  - Muck pile control (excavation rate and dilution control)
  - Vibration control and repeatability

- The **Synchroblast™** and **Multiblast** modes enables **larger blasts** to further reduce downtime through less blast windows.
  You can remotely control a network of several blast drivers located at different areas of the mine to fire several blasts simultaneously from a central location.

  - Synchroblast™: up to 4500 detonators for a single blast location
  - Multiblast: up to 5 different blast locations of 1500 detonators each

SAFETY

DaveyTronic® SP is designed for complete safety throughout the blasting procedure

• Safer at detonator level

- Exclusive double capacitor: one for two-way communication with blasting equipment and one for firing
- Exclusive Smartshunt, isolating the fusehead until the firing command is received
- Excellent EMP/ESD protection

• Safer at system level

- Continuous testing procedures up to the firing command
- Electronic safety lock to authorize the firing procedure
- Pre-blast equipment coupling ensures immunity to other RF devices

SECURITY

DaveyTronic® SP features a proprietary secure encoded communication protocol for both firing line control and wireless data transmission.
The embedded RFID technology and the unique ID tracking number of each detonator complete the security features.

DESCRIPTION

The **DaveyTronic® SP** digital blasting system includes a set of three rugged types of units:

- 1 handheld remote blaster (DRB2), managing testing and firing procedure, communicating remotely with each detonator
- 2 programming units (PU), identifying and diagnostically testing each detonator on the bench and assigning the delay time
- 1 compact blast driver (DBD), wirelessly receiving the instructions from the remote blaster and providing energy to fire up to 1500 detonators per DBD

WARNING

Products described herein are potentially hazardous and must be used in accordance with applicable laws or regulatory provisions. Since Davey Bickford cannot anticipate all of the possible applications, and conditions under which this information and its products may be used, it is the responsibility of each user to review the information in the specific context of the intended application. Davey Bickford specifically disclaims all warranties, express or implied, including accuracy, non-infringement and implied warranties of merchantability or fitness for a particular purpose. Davey Bickford specifically disclaims, and will not be responsible for, any liability or damages resulting from the use or reliance of this information.

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DIGITAL BLASTING SYSTEM

1 - Remote Blaster (DRB2)
2 - Blast Driver (DBD)
3 - Programming Units (PU)
4 - RFID Tag
5 - Set of Antennas
6 - Waterproof Transport Case

OPERATIONAL CHARACTERISTICS

Detonators	Only to be used with DaveyTronic® SP Detonators
Monoblast Mode	Up to 1500 detonators
Multiblast Mode	Up to 8 DBD driven by one DRB2
Synchroblast Mode	Up to 4500 detonators in one blast
Programming	Maximum 6 PU can be associated to one DBD
Connection Modes	4 modes: One by One - Easy One by One - On Line - Easy On Line
Programming Modes	3 modes: Manual - Incremental - Automatic (blast plan on computer)
Connection of DBD to DRB2	Wired or Internal Radio Modem or External Modem*
Accessories / Wires	DaveyTronic® SP Blasting System shall only be used with authorized bus / harness / bell wire

*External modem compatibility must be checked with your Davey Bickford Technical Support

TECHNICAL CHARACTERISTICS

	Remote Blaster - DRB2	Blast Driver - DBD	Programming Unit - PU
Weight (kg / lbs)	1.8 / 4.0	1.9 / 4.2	1.2 / 2.7
Size (mm) (inches)	240 x 190 x 32 9.4'' x 7.5'' x 1.3''	185 x 185 x 55 7.3'' x 7.3'' x 2.2''	220 x 140 x 32 8.7'' x 5.5'' x 1.3''
Available Languages	English / French / Spanish / Portuguese**		
Event Recorders	Procedure history file, line data logger		/
Safety Key	Unique RFID security tag	/	/
Second Safety Firing Key	Optional	/	/
GNSS Positioning	Optional Module	/	/
Firmware Upgrade	Through USB com port		
Battery Type	Li-Ion Technology		
Battery Autonomy	4 hours - Battery level indicator	4 hours in stand-by + 1 hour in talk mode	8 hours - Battery level indicator
Charger	Input: 100-240V AC / 50-60 Hz, 2.0 A - Output: 10-12V DC - Rated current: 4 A max Charging time: 4 hours up to 4 equipment		
Ingress Protection Rating	IP 65	IP 67	IP 65
Display	5.7" backlit TFT Colour QVGA	4 LED status indicators	3.5" backlit FSTN B&W
Keyboard	14 backlit keys	/	18 backlit keys
Integrated Speaker	Vocal intructions / beeps	/	Beeps
Communication Ports	RS232 / RS485 - USB - RFID - Ethernet		USB - RFID - Ethernet
Device Capacity	1 500 detonators		1 000 detonators
Wireless Range	Up to 3000 meters, expandable with repeaters (optional DBD or other)		
Frequency	868 MHz or 923 MHz (except Europe) or 2.4 GHz		/
Operating Temperature	Operating: -20°C to +50°C / -4°F to +122°F / Battery Charging: 0°C to +40°C / +32°F to +104°F		
Storage Temperature	-40°C to +70°C / -40°F to +158°F		
Waterproof Transport Cases	1 DRB2 + 1 DBD + 2 PU: Pelicase 1520 Orange - Cardboard box: 50 x 40 x 25 cm / 19.7'' x 15.7'' x 9.8'' - 13 kg / 29 lbs 6 PU or 1 DRB2 + 3 DBD: Pelicase 1600 Orange - Cardboard box: 65 x 52 x 25 cm / 25.6'' x 20.5'' x 9.8'' - 17 kg / 37 lbs		
Certificates	Complies with European Standards CEN TS/ 13763-26 & 27 Complies with South African Standards SANS 1717-1 and ARP 1717-1 CE Mark - Certificated FCC - IC Transport Classification UN 3481, Cl9, Gr2		

** PU also available in Russian / Finnish / Swedish / Turkish

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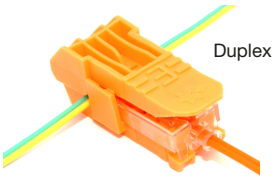
ELECTRONIC DETONATOR

Electronic Integrated Delay



Duplex Bus Connection

TECHNICAL CHARACTERISTICS

Detonator Base Charge	PETN 800mg (#8 cap strength)
Detonator Initiating Charge	Primary explosive 200mg
Detonator Shell Material	Aluminium or Copper alloy (for heavy duty environment)
Lead Wire	UGD Wire (Folded): Ø = 0.5 mm galvanized steel - Pink Polyethylene SD Wire: Ø = 0.3 mm galvanized steel - Orange Polyethylene HD / HD2 Wires: Ø = 0.5 mm coppered steel - Red Polypropylene XHD Wire: Ø = 0.5 mm coppered steel - Yellow Polypropylene XO Wire: Ø = 0.5 mm coppered steel - Red Polypropylene with Blue PVC overcoating
Connector	Polypropylene - Silicone waterproof gel - Hydrocarbon compatible
Radio Frequency Resistance	Compliant with EN13763-27 - Up to 30 V/m for 80 MHz to 2 GHz bandwidth
ESD Resistance	Compliant with EN 13763-13 (cl. II) 30kV / 3500pF

PERFORMANCES

Delay Range	From 0 to 14,000 ms - Programming increments of 1 ms
Blasting System	To be used with DaveyTronic® SP Blasting System
Communication	Two-way communication, fully testable two capacitor concept
Accessories / Bus Wire	DaveyTronic® SP Detonators shall only be used with authorized bus / harness / bell wire
Water Resistance	13 bars for 7 days (spooled) / 4 bars for 7 days (folded)
Dynamic Shock Resistance	>1,000 bars - 15,000 PSI (Al shell) / >1,400 bars - 20,000 PSI (Cu shell)
Tensile Strength	UGD wire: 168 N - 38 lbs / SD wire: 328 N - 74 lbs / HD wire: 391 N - 88 lbs / HD2 wire: 420 N - 94 lbs XHD wire: 531 N - 119 lbs /XO wire: 478 N - 107 lbs
Abrasion Resistance	Exceeds EN 13763-4 (class II)
Operating Temperature	-20°C to +45°C / -4°F to +113°F (tested to + 70°C + 158°F in hot emulsions)
Storage Temperature	-40°C to +70°C / -40°F to +158°F
Shelf Life	2 years
Certificates	Compliant with European Standards CEN TS/ 13763-26 & 27 and with Explosive Directive 2014/28/EU Certified by INERIS: CE Product Type Inspection Certificate: 0080.EXP.98.0013 Compliant with European Directive REACH 1907/2006/CE Transport Certification and Packaging UN 0513 - 1.4S

			Aluminium Shell		Copper Shell		
			UGD / SD Wire	HD Wire	UGD / SD Wire	HD Wire	XHD Wire*
Label Colour	Wire Length (m / ft)	Units / Box	Gross weight (kg / lbs)	Gross weight (kg / lbs)	Gross weight (kg / lbs)	Gross weight (kg / lbs)	Gross weight (kg / lbs)
	4 / 13 (folded)	144	11.5 / 25.4		12.5 / 27.6		
	6 / 20 (folded)	112	11.5 / 25.4		12.0 / 26.5		
	8 / 26 (folded)	96	11.0 / 24.3		11.5 / 25.4		
	10 / 33	80	7.0 / 15.4	8.0 / 17.6	7.0 / 15.4	8.5 / 18.7	
	15 / 49	72	8.0 / 17.6	9.5 / 20.9	8.0 / 17.6	10.0 / 22.0	8.2 / 18.1
	20 / 66	72	9.5 / 20.9	11.5 / 25.4	9.5 / 20.9	12.0 / 26.5	9.7 / 21.4
	25 / 82	72	11.0 / 24.3	14.0 / 30.9	11.5 / 25.4	14.5 / 32.0	
	30 / 98	64	11.5 / 25.4	14.5 / 32.0	11.5 / 25.4	15.0 / 33.1	12.1 / 26.7
	35 / 115	56	11.5 / 25.4	14.5 / 32.0	11.5 / 25.4	15.0 / 33.1	
	40 / 131	56	12.5 / 27.6	16.0 / 35.3	12.5 / 27.6	16.0 / 35.3	
	50 / 164	36	10.0 / 22.0	13.5 / 29.8	10.5 / 23.1	13.5 / 29.8	
	60 / 197	36	11.5 / 25.4	15.5 / 34.2	12.0 / 26.5	15.5 / 34.2	

Packaging Size
Folded, cardboard box: 430 x 400 x 320 mm (0.055 m^3) / 16.9” x 15.7” x 12.6” (3343 in^3)
Spooled, cardboard box: 445 x 230 x 300 mm (0.031 m^3) / 17.5” x 9.1” x 11.8” (1879 in^3)

*Except for XHD wire: 36 units / box
For other options, please contact your Davey Bickford representative.

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IMPLEMENTATION TEAMS
ENAEX MINING TECHNICAL SOLUTIONS (EMTS)

IMPLEMENTATION TEAMS: Ensuring that our DaveyTronic® SP system delivers real value

Maximizing productivity is not only about cutting-edge technology. It's also about guided, expert use of that technology with support from engineers and field experts.

Our reputation is built on measurable and tangible improvements that our customers can see and feel. That's the goal of every custom built client solution we design, and our people play the single most important role.

That's why the **DaveyTronic® SP** system always comes with high added-value implementation services:

- Providing operational advice and support
- Diagnosing customer needs on site
- Training relevant personnel in system usage
- Ensuring fit for purpose functioning equipment
- Providing on bench training and assessment
- Measuring and validating outcomes

The implementation team is made up of industry professionals in client operations, for whom safety, efficiency and the fulfillment of commitments guide their actions.

This includes local small contractors, medium sized mining companies and global mining corporations.

Enaex Mining Technical Solutions ("EMTS") is a global, specialised team of Enaex global expert engineers operating in Australia, the Americas, Africa, Asia and Europe. They range from recent graduates of advanced mining and blasting education programs to PhD holding experts with nearly 30 years in the field of blast research and engineering. All have experience with major international explosives companies and are considered experts in the blast optimization field.

They have the following passions in common:

- Supporting you in overcoming your blasting challenges
- Unlocking the total value in your production process
- Delivering maximum operational excellence and profitability
- Maintaining world-class Corporate Social Responsibility performance.

EMTS TEAMS: bringing significant expertise in optimization of underground (including tunneling) and surface drill and blast operations, covering the production of:

- Gold
- Silver
- Base metals
- Industrial minerals
- Coal
- Aggregates

By technically optimizing the blast designs, our EMTS team empowers customers with the ability to influence the outcome of every blast event. This creates immediate and long-term economic value to mining and tunneling operations throughout the world, with tangible gains in both safety and environmental ethos. The achievement of goals, productivity and business success of our partners is at the core of EMTS.

Do you want to get in touch with one of our experts?

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