

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 & 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 location blast.
- Multiblast: up to 5 different blast locations of 1500 detonators each.

SAFETY

DaveyTronic® 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 fuse head 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 hand held remote blaster (DRB), managing testing & 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), communication wirelessly the instructions from the remote blaster and providing designed energy to fire up to 1500 detonators per DBD.





- 1 - Remote Blaster (DRB2)
- 2 - Blast Driver (DBD)
- 3 - Programming Units (PU)
- 4 - RFID Tag
- 5 - Set of Antennas
- 6 - Spider Charger
- 7 - 12V Charger
- 8 - Waterproof Transport Case

OPERATIONAL CHARACTERISTICS

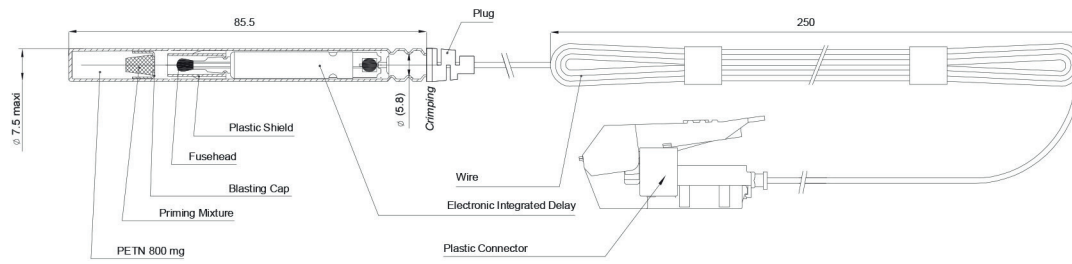
Detonators	Only to be used with DaveyTronic® SP Detonators.
Monoblast Mode	Up to 1500 detonators
Multiblast Mode	Maximum 5 DBD driven by one DRB2 (additional DBD in option)
Synchroblast Mode	Up to 4500 detonators in one shot (additional DBD in option)
Programming	Maximum 3 PU can be associated to one DBD
Connection Modes	4 modes: One by One - Easy One by One - On Line - Easy On Line
Programming Modes	3 modes: Manual - Incremental - Automatic (fire plan on computer)
Connection of DBD to DRB2	Wire or External Modem or Internal Radio Modem
Accessories / Wires	SP Blasting System shall only be used with authorised BUS / Harness / Bell wire

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	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		
Autonomy of the Battery	4 hours - Battery level indicator	4h of stand-by + 1h in talk mode	8 hours - Battery level indicator
Charger	Input: 100 – 240 VAC / 50/60 Hz, 2.0 A - Output: 10-12 VDC - Rated current: 4A max Charging time: 4 hours up to 4 equipments		
Ingress Protection Rating	IP 65	IP 65	IP 65
Display	5.7" TFT Colour QVGA with back lighting	LEDs	3.5" FSTN B&W with back lighting
Keyboard	14 back lighted keys	/	18 back lighted keys
Integrated Speaker	Vocal instructions / beeps	/	Beeps
Communication Ports	RS232 / RS 485 - USB RFID - ETHERNET	RS232 / RS 485 - USB RFID - ETHERNET	USB - RFID ETHERNET
Device Capacity	1 500 detonators	1 500 detonators	1 000 detonators
Wireless Range	Up to 3000 metres, expandable with repeaters (optional DBD or other)		
Frequency	2.4 GHz or 923 MHz (not for Europe)		
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	Pelican 1520 Orange - 50x40x25 cm / 19.7"x15.7"x9.8" - 13 kg / 29 lbs : 1 DRB2 + 1 DBD + 2 PU Pelican 1600 Orange - 65x52x25 cm / 25.6"x20.5"x9.8" - 17 kg / 37 lbs : 6 PU or 1 DRB2 + 3 DBD		
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 - C-Tick Transport Classification UN 3481, C19, Gr2		

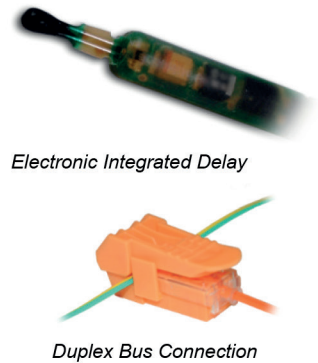
* : External modem compatibility must be checked with Davey Bickford Technical Support

Surface mining
Electronic Detonator



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	HD Wire: Ø=0.5mm steel - Red Polypropylene STD Wire: Ø=0.3mm steel - Orange Polyethylene Folded Wire: Ø=0.5mm steel - Pink Polyethylene Xo wire
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 step 1 ms
Blasting System	To be used with DaveyTronic® Blasting System
Communication	Two way communication, fully testable two capacitors concept.
Accessories / Bus / Wire	SP Detonators shall only be used with authorized BUS / Harness / Bell wire
Water Tightness	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	HD wire: 430 N – 95 lbs / STD wire: 320 N - 72 lbs / Folded wire: 180 N – 40 lbs
Abrasion Resistance	Overpasses 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/UE Certified by INERIS : EC Inspection Certificate of Type: 0080.EXP.98.0013 Compliant with European Directive REACH 1907/2006/EC Transport Certification and Packaging UN 0456 - 1.4S



			Aluminium cap		Copper cap	
			STD wire	HD wire	STD wire	HD 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
	4 / 13 folded	144	9.0 / 19.8	/	9.0 / 19.8	/
	6 / 20 folded or spooled	112	10.0 / 22.0	/	10.0 / 22.0	/
	8 / 26 folded or spooled	96	10.0 / 22.0	/	10.0 / 22.0	/
	10 / 33 folded or spooled	96	12.0 / 26.4	/	/	/
	10 / 33 spooled	80	7.0 / 15.4	8.0 / 17.6	7.0 / 15.4	8.0 / 17.6
	15 / 49 spooled	72	8.0 / 17.6	10.0 / 22.0	8.5 / 18.8	10.0 / 22.0
	20 / 65 spooled	72	9.5 / 20.9	12.0 / 26.4	10.0 / 22.0	12.5 / 27.5
	25 / 82 spooled	72	11.0 / 24.2	14.0 / 30.8	11.5 / 25.3	14.5 / 31.9
	30 / 98 spooled	64	11.5 / 25.3	14.5 / 31.9	11.5 / 25.3	15.0 / 33.0
	35 / 115 spooled	56	11.5 / 25.3	14.5 / 31.9	11.5 / 25.3	15.0 / 33.0
	40 / 131 spooled	56	12.5 / 27.5	16.0 / 35.2	12.5 / 27.5	16.0 / 35.2
	60 / 197 spooled	20	8.0 / 17.6	9.5 / 20.9	8.0 / 17.6	10.0 / 22.0
	80 / 262 spooled	16	8.0 / 17.6	10.0 / 22.0	8.0 / 17.6	10.0 / 22.0
	100 / 330 spooled	16	9.5 / 20.9	12.0 / 26.4	9.5 / 20.9	/
Packaging Size		On spool, cardboard box: 45 x 23 x 30 cm (0.031m³) / 17.7" x 9.0" x 11.8" (1880 in³) Folded, cardboard box: 43 x 40 x 32 cm (0.055m³) / 16.9" x 15.8" x 12.6" (3365 in³)				