

# TECHNICAL DATA SHEET



## Hanwha Electronic Blasting System II (HEBS II)

### Description

Hanwha Electronic Blasting System II (HEBS II) consists of:

- HiTRONIC® II Electronic Detonator
- Blaster
- Logger
- Planner (TC57)
- Harness Wire

HEBS II is designed to maximize blasting performance by utilizing advanced electronic technology. HEBS II can be handled easily and has safety & reliability features to protect against electromagnetic pulse (EMP) and stray current.

HiTRONIC® II electronic detonators are programmable and reprogrammable from 0ms to 50,000 ms in 1 ms intervals, so the system can deliver a range of timing/blasting options with high accuracy and precision.

HEBS II is suitable for use in underground, quarry and open pit environments as well as controlled blasting applications requiring timing control and accuracy.

HiTRONIC® II electronic detonators should be used with Blaster, Logger and Planner units specific to HEBS II.





### Features & Benefits

- Fully Programmable, accurate and precise electronic delay timing for maximum 50,000 ms
- Duplex type harness wire to easy connect
- Using three types (Logging, Tagging, Scanning) to read detonator ID
- Remote Firing up to 5 km (3.1 mile, Line of Sight)
- Two-way communication and testing functions; delay

time programming, connection and circuit testing

- Enhanced safety and security achieved via Planner and Logger with the ability to read unique detonator ID numbers and unique communication protocol and dual capacitors for programming and blasting
- Inherently safe with multiple inbuilt redundancies and safety mechanisms
- High portability and usability with a weight of less than 2 kg (4.4 lb) per Set (Blaster, Logger and Planner)

### Technical Data

HiTRONIC® II		
Wire Type	Standard	Heavy Duty
	Folded	Bobbin-less
Packing Method		
Length of Wire	6-12 m (20-40 ft)	6-80 m (20-260 ft)
Base/Booster Charge	PETN, #8 (820 mg, 0.029 oz)	
Primary Charge	DDNP (70 mg, 0.0025 oz)	
Shell	Material	Copper
	Dimension	φ7.5 mm X 90 mm (φ0.3 in X 3.5 in)
Barcode Type	QR code	
Programmability	1 ms	
Maximum Delay Time	50,000 ms	
Accuracy	CV 0.02%	
Spool Size	Height: 42 mm (1.7 in) Outer Diameter: 90 mm (3.5 in)	
Tensile Strength	Standard: 25 kgf (55.1 lbf) Heavy Duty: 50 kgf (110.2 lbf)	
Wire Color	Standard: Yellow Heavy Duty: Green	
Operation Temperature	-30 to +70°C (-22 to +158 °F)	
Storage Temperature	-30 to +50°C (-22 to +122 °F)	
Transport Temperature	-40 to +70°C (-40 to +158 °F)	
Water Resistance	Standard: 7 bar, 48 hrs Heavy Duty: 7 bar, 28 days	
Drop Weight Impact	EN 13763-11	
Electrostatic Discharge Resistance	Wire to wire: 2,500 pF at 30 kV Wire to shell: 2,500 pF at 30 kV	

\* Bobbin-less products are packed in PE shrinking wrap.

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### Blaster

Blaster	
Appearance	
Dimension	242 mm x 189 mm x 52 mm (9.5 in x 7.4 in x 2.1 in)
Maximum Detonator Capacity	Stand-alone mode : 3,000 detonators per blast Multiple blast mode : 21blasters, 63,000 detonators
Maximum Wireless Range without Repeater	5 km (3.1 mile), Line of Sight
Maximum Lead in Wire	2,000 m (1.24 mile)
Weight	1.45 kg (3.20 lb)
Operating Temperature	-20 to +60 °C (-4 to +140 °F)
Storage/Transport Temperature	-30 to +60 °C (-22 to +140 °F)
Charge Temperature	0 to +45 °C (+32 to +113 °F)
Battery	7,000 mAh@12.6 V, Rechargeable
Splash proof	IP65


\* Need to consult with the technician about maximum operating distance and detonator quantity

### Planner (TC57)

Planner	
Manufacturer	Zebra Technologies Corporation
Type	TC57
Appearance	
Dimension	159 mm x 75.5 mm x 18.6 mm (6.3 in x 3.0 in x 0.73 in)
Maximum	1,000 per Planner

Detonator Capacity	
Weight	249 g (8.78 oz)
Operating Temperature	-20 to +50 °C (-4 to +122 °F)
Storage/Transport Temperature	-40 to +70 °C (-40 to +158 °F)
Charge Temperature	0 to +40 °C (+32 to +104 °F)
Battery	4,300 mAh@3.6 V DC Rechargeable Li-Ion
Electrostatic Discharge Resistance	+/-15 kV Air, +/-8 kV Contact, +/-8 kV Charge body
Drop	Multiple 1.2 m (3.94 ft) to tile over concrete over -10 to +50 °C (+14 to +122 °F)
Sealing	IP68 and IP65 per applicable IEC sealing specification

### Logger

Logger	
Appearance	
Dimension	186 mm x 78.7 mm x 38.5 mm (7.3 in x 3.1 in x 1.5 in)
Maximum Detonator Capacity	500 per Logger
Maximum Lead in Wire	2,000 m (1.2 mile)
Weight	330 g (11.6 oz)
Operating Temperature	-20 to +60 °C (-4 to +140 °F)
Storage/Transport Temperature	-30 to +70 °C (-22 to +158 °F)
Charge Temperature	0 to +40 °C (+32 to +104 °F)
Battery	3,500 mAh@8.4 V, Rechargeable
Electrostatic Discharge Resistance	+/-15 kV Air, +/-8 kV Contact
Splash proof	IP65

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## Hanwha Electronic Blasting System II (HEBS II)

### Harness Wire

Harness Wire	
Appearance	
Length	250 m (825 ft) per roll / 400 m (1,300 ft) per roll
Properties	Wire - Cu $\Phi$ 0.6 mm ( $\Phi$ 0.024 in), 0.075 $\Omega$ /m (0.023 $\Omega$ /ft) Wire insulation - PE, Outer diameter 1.2 mm (0.047 in) Tensile strength - 23 kgf (50.7 lbf)

### Hazard classification

UN No.(Class / Division):	0511 (1.1B) / 0513 (1.4S)
Proper Shipping Name	DETONATORS, ELECTRONIC programmable for blasting
EmS	F-B, S-X (1.1B / 1.4S)

### Packaging

*HiTRONIC® II* electronic detonators are available in the following packaging based on one box.

Grade UN 0511 (1.1B) (472 X 302 X 135 mm, 18.6 X 11.9 X 5.3 in)					
Type	Length (m, ft)	Pcs /Box	Net Weight (kg, lb)	Gross Weight (kg, lb)	
Standard	Folded	6.0, 20	50	3.5, 7.7	4.7, 10.4
		9.0, 30	40	3.5, 7.7	4.7, 10.4
		12, 40	30	3.3, 7.3	4.5, 9.9
Heavy Duty	Bobbin-less	6.0, 20	48	4.7, 10.4	5.9, 13.0
		9.0, 30	36	4.9, 10.8	6.1, 13.4
		12, 40	30	5.2, 11.5	6.4, 14.1
		15, 50	25	5.3, 11.7	6.5, 14.3
		18, 60	23	5.8, 12.8	7.0, 15.4
		20, 65	23	6.3, 13.9	7.5, 16.5
		25, 80	20	6.7, 14.8	7.9, 17.4
		30, 100	20	8.0, 17.6	9.2, 20.3
		35, 115	16	7.4, 16.3	8.6, 19.0
40, 130	12	6.3, 13.9	7.5, 16.5		

	50, 165	7	4.5, 9.9	5.7, 12.6
	60, 200	6	4.6, 10.1	5.8, 12.8
	70, 230	6	5.4, 11.9	6.6, 14.6
	80, 260	5	5.1, 11.2	6.3, 13.9

Grade UN 0513 (1.4S) (472 X 302 X 175 mm, 18.6 X 11.9 X 6.9 in)					
Type	Length (m, ft)	Pcs /Box	Net Weight (kg, lb)	Gross Weight (kg, lb)	
Standard	Folded	6.0, 20	60	4.0, 8.8	6.6, 14.6
		9.0, 30	50	4.4, 9.7	6.8, 15.0
		12, 40	40	4.4, 9.7	6.6, 14.6
Heavy Duty	Bobbin-less	6.0, 20	42	4.1, 9.0	6.4, 14.1
		9.0, 30	36	4.9, 10.8	7.0, 15.4
		12, 40	30	5.2, 11.5	7.1, 15.7
		15, 50	30	6.3, 13.9	8.2, 18.1
		18, 60	28	7.1, 15.7	8.8, 19.4
		20, 65	28	7.7, 17.0	9.5, 20.9
		25, 80	22	7.4, 16.3	9.1, 20.1
		30, 100	18	7.2, 15.9	8.8, 19.4
		35, 115	16	7.4, 16.3	8.9, 19.6
		40, 130	14	7.3, 16.1	8.9, 19.6
		50, 165	14	9.1, 20.1	10.6, 23.4
		60, 200	12	9.3, 20.5	10.8, 23.8
		70, 230	12	10.8, 23.8	12.2, 26.9
80, 260	10	10.2, 22.5	11.7, 25.8		

### Usage Instructions

All of the *HEBS II* equipment, including Blaster, Logger, Planner and Harness Wire, must only be used with *HiTRONIC® II* electronic detonators. (Do not use this equipment with any other detonator, electric or electronic.) *HEBS II* equipment can be safely operated at temperatures ranging from -20 °C ~ +50 °C (-4 °F ~ +122 °F).

*HiTRONIC® II* electronic detonators must be handled with care, attention should be paid to protect the wire insulation during stemming and loading of the holes.

Access to and use of *HiTRONIC® II* electronic detonators should be restricted to trained and authorized personnel.

## Hanwha Electronic Blasting System II (HEBS II)

### Safety

*HiTRONIC® II* electronic detonators can be initiated by exposure to shock, impact, friction or heat.

*HEBS II* components are designed to provide a high level of safety against static electricity, stray electrical currents and radio wave transmission. *HEBS II* equipment must be kept safe from submersion in water and excessive impact.

### Storage

All ignition sources, such as matches and lighters, are strictly prohibited within minimum of 8 meters radius of the detonators.

*HiTRONIC® II* electronic detonators should be stored in a properly conditioned magazine of cool and dry atmosphere.

*HiTRONIC® II* electronic detonators must be used within 12 months after opening the packaging. Detonators that are older than five years should not be used.

Store in a secure magazine, access to products and storage should be restricted to authorized personnel.

Delay detonators should be used in order of manufacturing date as they deteriorate with age. Use oldest stored product first.

*HEBS II* devices (Blaster, Logger, and Planner) should be stored at 30 % to 50 % battery charge for long-term storage for 1 month or longer.

Be aware that when used below 0°C (+32 °F), *HEBS II* device's battery service time may be significantly reduced.

### Disposal

For disposal of explosive materials, please dispose of in accordance with relevant local and federal regulations or contact Hanwha regional technical manager for safe disposal.

### Disclaimer

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