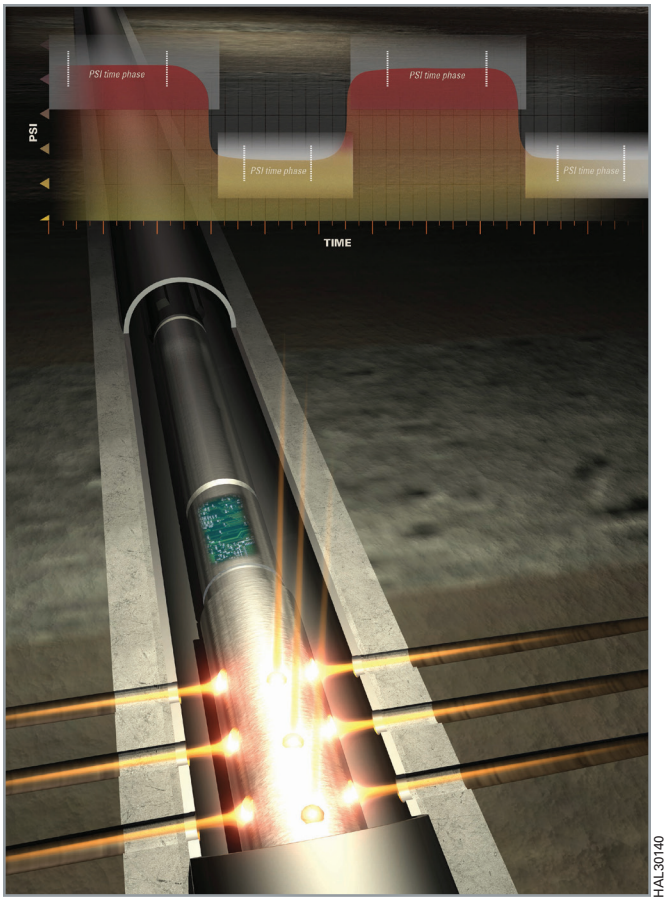
MaxFire™ Electronic Firing System

Halliburton now offers the MaxFire™ electronic firing system, an ultra-high pressure 40,000-psi (276-MPa), fully programmable electronic firing system. This unmatched technology is also capable of low pressure-cycle operation, and allows for immediate or delayed detonation.

As more challenging and complex wells are explored, this is the kind of flexibility needed for downhole, pressure-operated tools. Halliburton's MaxFire system provides a safe, precise, and adaptable firing system that can initiate a gun system through a predetermined sequence of events. The MaxFire system may be used for perforating, cutting, backoff, and setting services. With this flexibility, it can be conveyed on coiled tubing, slickline, or jointed pipe.

Providing maximum reliability, the Halliburton MaxFire system uses the top-fire RED® Detonator, an advanced explosive device used to initiate perforating guns. The design features of the top-fire RED detonator provide significantly improved safety characteristics over conventional resistorized devices. With RF-safe characteristics, this allows wellsite activities to continue uninterrupted while perforating.

With customizable programming, the MaxFire system provides the total completion procedure flexibility needed for today's challenges.



Benefits

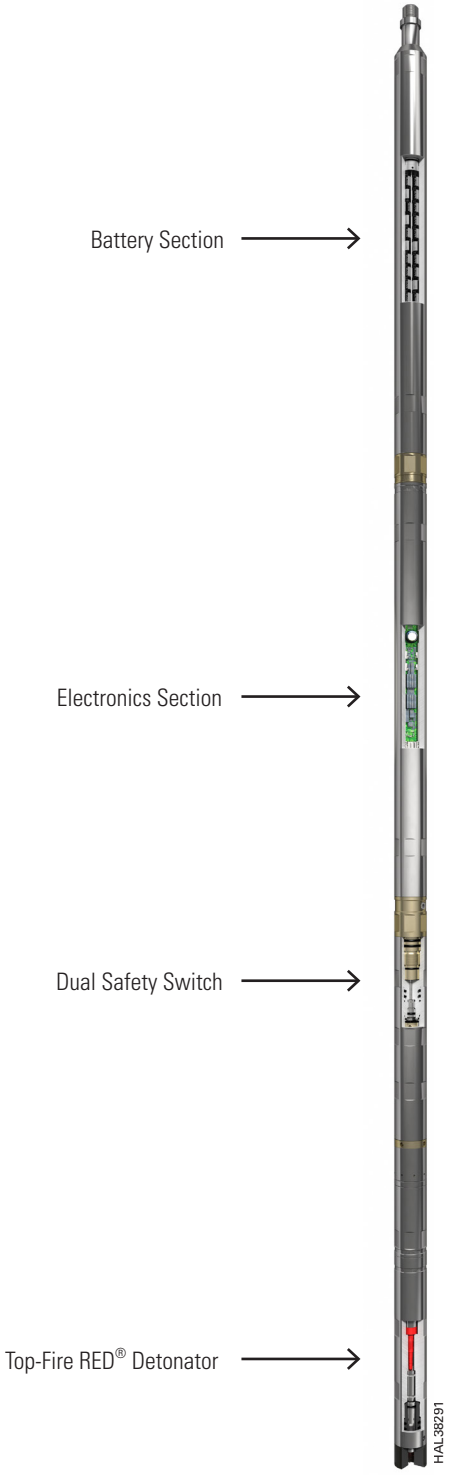
- Not affected by pressure testing or other pressure transients
- Lower actuating pressures prevent damage to lower-rated tools
- Field-programmable job timer helps reduce rig time and costs
- Customizable programming provides completion procedure flexibility
- Additional safeguards include purely mechanical pressure and temperature safety switch designed to prevent premature detonations
- Operates in ultrahigh-pressure environments
- Firing sequence can be reset or halted at any time with controlled-pressure cycles
- System records firing event for confirmation

Features

- Lithium battery design allows extended downhole use and delay times
- Transducer and housing rated at 40,000 psi (276 MPa)
- Can be deployed by coiled tubing, jointed pipe, or slickline
- Ability to delay triggering up to 30 days for complex completions
- Can be run as a standalone or backup firing head

Applications

- Ultra-deepwater or high-pressure targets
- Complex underbalanced jobs where lighter gas is used to evacuate tubing
- Extended delay completions



MaxFire™ Electronic Firing System Specifications	
Diameter	2.75 in. (69.85 mm)
Length	8.84 ft (2.69 m)
Pressure Rating	40,000 psi (276 MPa)
Temperature Rating	350°F (177°C)
Connections	15/16-10 UN Class 2A Thread (5/8-in. Sucker Rod)
Memory	16 MB (supports 30 days operation)
Sample Rate	0.25 samples per second at normal mode 10 samples per second at trigger mode and last for 2 minutes
Batteries	4 × CC cell lithium battery 0.14 V recommended
Pressure Measurement Accuracy	14 to 40,000 psi (96.53 kPa to 275.97 MPa)
Temperature Measurement Accuracy	0°F to 350°F (-18°C to 177°C) / ± 0.5% of full scale
Trigger Output Voltage	300 V to 350 V
Pressure Switch Opening Pressure	1,000 to 3,500 psi (6.90 MPa to 24.13 MPa) / ± 150 psi (1.03 MPa)
Temperature Switch Opening Temperature	140°F ± 9°F (60°C ± -3°C)
Temperature Switch Closing	135°F ± 9°F (57°C ± -3°C)
Delay Time	5 minutes up to 30 days

For more information, contact your local Halliburton Business Development Representative.

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