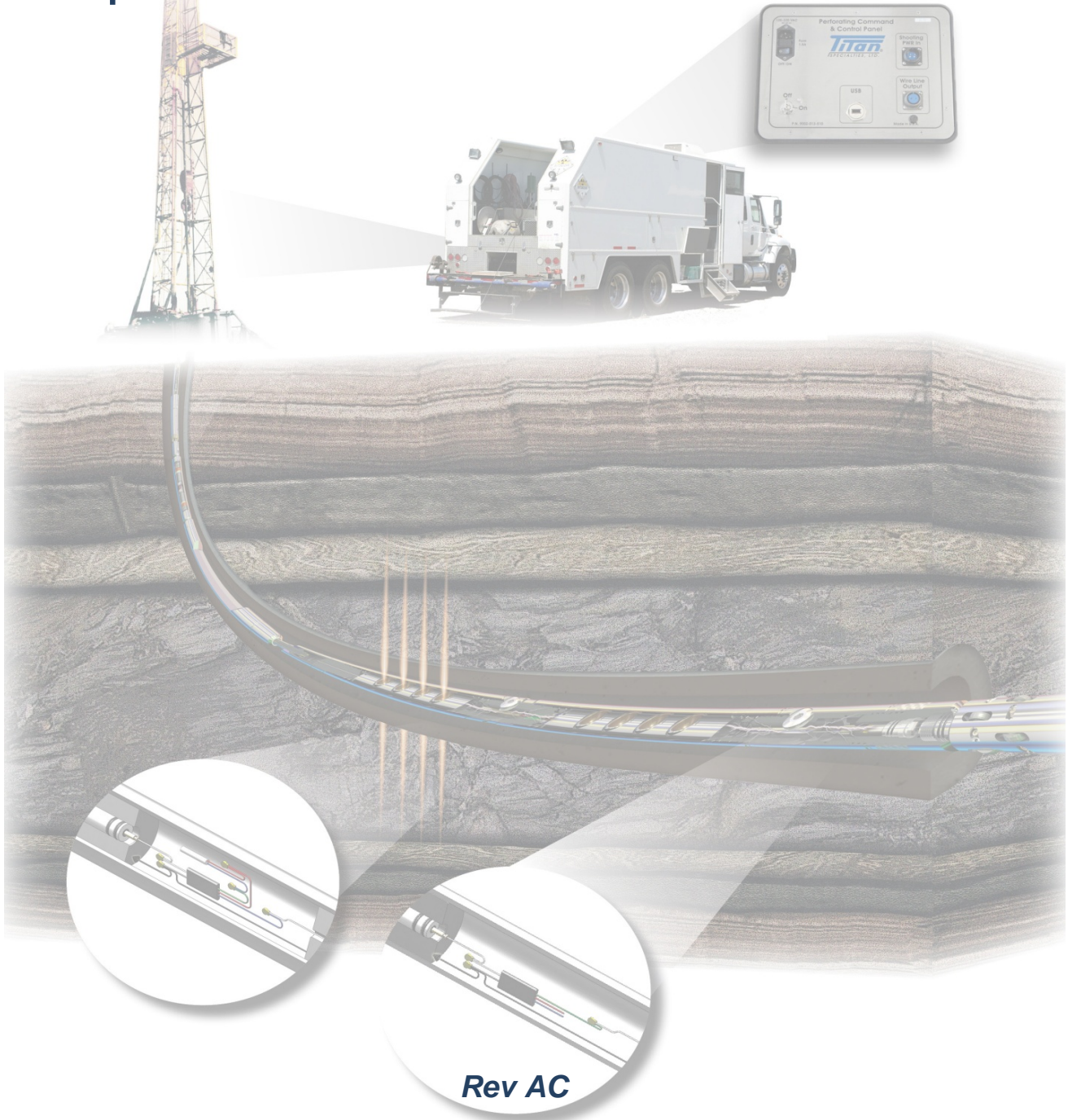


# ControlFire<sup>®</sup>

Specification – 9002-013-120-1.8



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# Titan ControlFire® Perforating Switch Specification

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# Titan ControlFire® Perforating Switch Specification

## 1.0 ControlFire® Perforating Switch Specifications

### 1.1 Environmental Rating

Description	Rating
<b>Operating Temperature Range</b>	-20 °F (-29 °C) to 347 °F (175 °C)
<b>Non-powered Maximum Temperature</b>	-58 °F (-50 °C) to 392 °F (200 °C)
<b>Max Thermal Change</b>	9°F (5 °C) / Minute
<b>Mechanical Shock Compliance</b>	Compliant to all hollow carrier gun systems
<b>Vibration (3 axis)</b>	50 g RMS @ Sweep Frequency 50-1000 Hz

### 1.2 Basic Electrical Specification

Description	Rating
<b>Operating Voltage Range</b>	-5 VDC to -550 VDC
<b>Operating Current– Standby</b>	1mA
<b>Communication Current</b>	10mA at Surface    30mA Downhole

### 1.3 Downhole Electrical Specification

Description		Rating	Time
<b>Maximum Voltage Rating</b>	Forward	550V	15 sec
	Reverse	550V	30 sec
<b>Maximum Firing Current</b>	Forward (Nominal )	1A	12 sec
	Forward (Maximum )	1.5A	5 sec
<b>Transient Voltage</b>	Forward	600V	NA
	Reverse	600V	
<b>Maximum Switches in a Gun String</b>		40	
All ratings at 175C			
All detonators are fired using negative voltage			

### 1.4 Compatibility

Description	Rating
<b>Detonators – Hot Wire</b>	50 ohms or higher (single or double resistor types)
<b>Igniters – Setting Tools</b>	50 ohms or higher
<b>RF Safe Detonators</b>	PX-1/EBW, RED (all versions)

The product will work with All Detonators.

### 2.0 ControlFire® Perforating Switch Features

- Totally expendable; no downhole modules to maintain
- Can be installed through a 13/16" Port Hole Plug
- RP 67 compatible surface check
- Safely checks communication and wiring integrity before RIH
- RP 67 compatible cable connection
  - Allows more efficient wellsite operations
- Reduced misruns
  - Allows misfired guns to be skipped over
- Indicated gun firing
- State Controller assures compliance to a predetermined path of operation
- Up/Down Communication provides surface with status for every command sequence
- Compatible with all Titan Gamma Guns and CCL's
- Operator selectable firing periods
  - 12 seconds for shooting detonators
  - 30 seconds for shooting igniters
- Compatible with most commercial Shooting Power Supplies
  - Up to -550VDC Maximum
  - All detonators are fired using negative shooting power
- Fast Communications enable operator to complete jobs efficiently.

# Titan ControlFire® Perforating Switch Specification

## 3.0 Mechanical Specification

