

DOWNHOLE ELECTRIC CUTTING TOOL (DECT)

The DECT is a pipe severing tool that meets industry demands for reliable, high precision equipment with controllable cut depth to cut tubulars cleanly without using dangerous chemicals or explosives.

Features

- Cutting Range: 3.5" - 7 5/8" pipe, up to 1" wall thickness
- Materials: cuts low and high alloy steels, including Inconel, 13 Cr, and 25 Cr
- Operating Efficiency: over 100 cuts executed by GE personnel over the last five years with 94% operating efficiency
- Well Conditions: can cut in all well conditions – gas, brine, drilling mud etc. – from vertical to horizontal inclinations
- Can cut pipe in both tension and compression
- Specialist Applications: can be used for specialist precision cuts, such as releasing packers



| / Specifications | DECT001 | DECT002 |
|-------------------------------------|-------------------------------|----------------------------------|
| Pipe size (OD) | 3 ½" to 6" (89-152 mm) | 4 ½" to 7 5/8" (114-194 mm) |
| Maximum Wall Thickness | 0.75; 1.0" (19; 25.4 mm) | 0.875" (22.2 mm) |
| Tool OD | 2.75"; 3.25" (70 mm; 82.6 mm) | 3.625"; 4.7" (92.1 mm; 119.4 mm) |
| Cut Point (from bottom of the tool) | 3" (76 mm) | |
| Temperature rating | 300 F (150C) | |
| Pressure rating | 15,000 psi (103.4 MPa) | 20,000 psi (137.9 MPa) |
| Tool String length | 16'-25' (4.88-7.62 m) | |
| Tool String Weight | 170-240 lb (77-109 kg) | |
| Surface Power Supply | 1000 V DC/2A | |

ADRESSABLE DOWNHOLE RELEASE (ADR) and PANEL (ADRP)

Description

The Addressable Downhole Release tool unlatches the tools below it, leaving behind a standard external fishing neck for subsequent retrieval. The ADR is recommended whenever there is a risk that wireline tools or guns may become stuck downhole. Typical applications include wireline interventions in deviated wells, ballistic operations, and operations in gas wells (where the coefficient of friction is typically high). The Addressable Downhole Release separates into two pieces on the command of the surface panel. A maximum of four individually addressed ADR tools can be run per tool string and operated from a single dedicated control panel. For example, one ADR could be run above a tractor while a second ADR could be run between the tractor and the passenger equipment below. A full wellsite function check includes unlatching the tool before the job. In order to reset the tool, the two sections are simply pushed together and re-latched.

Features:

- Standard 1 3/8" fishing, neck, designed for easy retrieval
- Full pre-job function check (latch/unlatch) recommended at wellsite
- Ability to run multiple ADR tools per downhole string
- Robust telemetry suitable for both long and short wirelines
- Three-stage controlled release process monitored in real-time
- Tools above ADR continue to function after release
- Design incorporates fail-safe logic to prevent accidental release
- Qualified for shock and vibration
- Feed-through conductor rated for high voltages and currents
- Compatible with Addressable Downhole Switch (ADS)



| / Specifications | Downhole tool |
|------------------|-----------------------------|
| Field joint | 1 3/10 in UN 12 tpi GO ends |
| Tool diameter | 2 1/8 in. (53.98 mm) |

| | |
|-------------------------------|--|
| Tool makeup length | 25.4 in. (645 mm) |
| Tool shipping length | 27.3 in. (693 mm) |
| Weight | 19.6 lb (8.89 kg) |
| Operating temperature | -20 C to +177 C (-4 to 350 F) |
| Working pressure | 20,000 psi (137.9 MPa) |
| Vibration qualification | 5 g (15 to 500 Hz), 20 sweeps |
| Shock qualification | 1000 g 0.5 ms (half-sine) |
| Fishing head diameter | 1.374 in. (34.90 mm) |
| Fishing load post-separation | 20,000 lbf (88,964 N) |
| Fishing load pre-separation | 10,000 lbf (44,482 N) |
| Time for release operation | 4 minutes |
| Time to reconnect | 4 minutes |
| Log out of hole after release | Yes |
| Throughwire max.voltage | +1600 to -1000V DC continuous |
| Throughwire max.current | 12A DC continuous |
| Operating Voltage | -50 to -90 V DC nominal |
| Tool current | 62 mA |
| Multi-tool capability | 4 x ADR |
| Status reporting | Continuous tool status reporting to surface module |
| Materials | Corrosion resistant throughout |
| Surface Panel | |
| Size | 350 x 295x 150 mm (LxWxH) |
| Weight | 12.1 lb (5.5 kg) |
| Mains voltage | 110 or 230V AC, 50 to 60 Hz |
| Supply current | 1A |
| Vibration qualification | 5 g (15 to 500 Hz), 20 sweeps |
| Shock qualification | 25 g for 11 ms (half-sine) |

ADRESSABLE DOWNHOLE SWITCH (ADS) and PANEL (ADRP)

Description

The ADS is a downhole safety switch offering reliable protection on hazardous ballistic operations. The ADS satisfy API RP67 for tractor conveyed explosives. The Addressable Downhole Switch (ADS) electrically connects or isolates the tool string beneath it, as instructed by the surface panel (ADSP). It provides a barrier to the accidental application of power to any tool located beneath it, and it can be integrated into a variety of tool string configurations. The ADS is suitable for hazardous operations such as multi-party operations where the wireline cable may be passed between various service providers during an operation, or where high-power devices, such as wireline tractors, are used to convey explosives. The ADS tool responds only to the coded signal from the surface panel (ADSP). When the command is sent, the mechanical isolating switch physically travels more than half an inch to connect or disconnect the electrical feed-through. The ADSP controls and monitors the position of the downhole switch in real-time, so the position of the switch is always measured, rather than assumed. In the standard configuration, both tractor and shooting power are routed downhole via the ADSP. The safety design in the ADSP prevents these power sources from being applied accidentally.

Features:

- Electro-mechanical downhole safety switch
- Tolerant of short circuits below the bottom sub to comply with API RP67 2nd Edition
- Validated by an independent test agency
- CE certified and qualified for shock and vibration
- Enables tractor-conveyed ballistic operations
- Isolator switch position monitored in real-time
- Compatible with EBW, EFI and Red Det type detonators



| / Specifications | ADS002 | ADS003 |
|------------------------------|--------------------------------------|--------------------|
| Field joint | GO (type A) | Sondex |
| Temperature rating | 350F (177C) | |
| Pressure rating | 15,000 psi (103.4 MPa) | |
| Tensile strength | 10,000 lb | |
| Tool diameter | 2 1/8 in. (54 mm) | |
| Tool make-up length | 26.50 in. (673 mm) | 25.75 in. (654 mm) |
| Tool weight | 17.6 lb (8 kg) | |
| Current consumption | 20 mA (motor off) 60mA (motor on) | |
| Operating voltage | -50 V to -90V DC nominal | |
| Withstand voltage (max) | +1500V to -1000V DC | |
| Through voltage (max) | +/-1000V DC | |
| Through current | 6A | |
| Vibration qualification | 5 g (15 to 500 Hz), 20 sweeps | |
| Shock qualification | 1000 g 0.5 ms (half-sine) | |
| Materials | Corrosion resistant throughout | |
| Compatible Detonators | EBW, EFI, Red Det | |
| Surface Panel ADSP001 | | |
| Size | 19 in. 2U rock mount, 250 mm deep | |
| Weight | 11 lb (5 kg) | |
| Mains voltage | 110 or 230V AC, 50 to 60 Hz | |
| Supply current | Less than 1A at 110V AC | |
| Vibration qualification | 5 g (15 to 500 Hz), 20 sweeps | |
| Shock qualification | 25 g for 11 ms (half-sine) | |