



## *ExTG™ Electronic Explosion-Proof Torque Gauge System*

The Weatherford ExTG electronic explosion-proof torque gauge system provides precise measurement and control of torque applied by a power tong. It can also be used for measurement of pressure, using a 4- to 20-mA pressure transducer in place of the load cell. Programmable values can be set to automatically terminate hydraulic supply to the tong and its dump valve.

The ExTG system can record and display 0 to 999,000 ft-lb (0 to 1,355 k•Nm) of torque or pressure at 16-bit resolution, depending on the load cell or pressure transducer measuring range. The gauge accepts all 4- to 20-mA load cells and pressure transducers and can be programmed for any arm length between 7.0 and 99.9 in. (178 and 2,537 mm).

This easy-to-use system is designed to operate with all existing Weatherford power tongs as well as other manufacturers' tongs that use standard load cells; other load cells are available on request. The system is ATEX certified for worldwide use in hazardous locations and is accepted by the United States Coast Guard for operation in the U.S.



### *Applications*

- Running and pulling tubing, casing, and drillpipe strings
- Preassembly of bottomhole assemblies and downhole tools (when used with bucking units)
- Measurement and control of all power tongs for casing, tubing, and drillpipe installation
- Permanent electronic recording of critical makeup data
- Data export to external software



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### *Features, Advantages, and Benefits*

- More than 5,000 makeups or breakouts can be stored on the removable memory card, using a standard file system readable by a CompactFlash® (CF) card interface.
- Soft-selectable acceptance codes accelerate entry of special identification markers for specific downhole components or accessories.
- Two power supply options make the ExTG system compatible with virtually all power systems found on the rig: an external 115/230 V, 50/60 Hz AC power supply and battery charger; or an optional battery power system that provides a minimum of 12 hours of continuous operation while the ExTG system controls the tong dump valve.
- Software-driven power status indication provides early warning of low battery to help avoid interruption of running and pulling operations.
- The ExTG system is equipped with an internal real-time clock so that each makeup or breakout is time and date stamped to help analyze job performance and efficiency.
- The wide operating temperature range makes the ExTG system suitable for most global climates where remote drilling and workover operations occur.
- Two-millisecond dump valve reaction and 16-bit processor provide very accurate torque control, helping to achieve the best possible connection integrity.
- The ExTG system can be tong mounted for operator convenience and safety.
- The ExTG unit is protected by a shock-proof mounting.
- The high-contrast, liquid-crystal-display (LCD) screen provides excellent readability.
- Built-in software features an intuitive user interface.



CompactFlash is a registered trademark of the SanDisk Corporation.

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### *Specifications*

Torque measurement range (depending on load cell) (ft-lb, <i>N•m</i> )		0 to 999,999 <i>0 to 1,355</i>
Data resolution		16 bit, 1 ms
Handle length (software) (in., <i>mm</i> )		7.0 to 99.9 <i>178 to 2,537</i>
Minimum display refresh rate		20 Hz
Load cell, Intrinsically Safe (IS)		4 to 20 mA
Servo (dump) valve (IS)		50 mA
Maximum dump valve reaction time		2 ms
Battery pack		Hooked onto back of ExTG system, adding 3.1 in. (80 mm); changeable
Minimum battery (IS) operating time (status by software)		12 hours
AC power operation		115/230 V AC, 50/60 Hz, maximum 80 W
Battery charging		With AC supply, possible while running
		ExTG system can run directly from AC supply without battery
Storage capacity		CF card (16 MB), minimum 5,000 jt
Real-time clock		Yes
Operating temperature (humidity noncondensing) (°F, °C)		0 to 150 <i>–17 to +65</i>
ExTG system dimensions (in., <i>mm</i> )		12.6 × 9.0 × 6.3 <i>340 × 235 × 170</i>
AC power supply (in., <i>mm</i> )		10.4 × 7.8 × 10.4 <i>263 × 218 × 302</i>
Load cell	Length	Load-cell specific
	Diameter	
	Pad eyes spacing	

Protection	
ExTG system IIB T4 (ATEX)	IP64, EEx ia
Load cell IIC T4 (ATEX)	IP65, EEx ia
AC supply	IP40, nonhazardous area, output EEx ia IIB (ATEX)

Cable length	
Load cell to ExTG system (ft, m)	6.5 2.0
Dump valve to ExTG system (ft, m)	3.2 1.0
Mains cable AC supply (ft, m)	8.2 2.5
AC supply to ExTG system (ft, m)	82.0 25.0

### *Options*

- Nonstandard load cells are available on request.
- Required power supply (AC and/or battery pack complete with charger) must be specified when order is placed.
- A pressure transducer for measurement of fluid or air pressure is available.

### *Additional Information*

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