

# Well Flow Management

## Well Testing | Measurement

### Differential Pressure Recorder

**Differential pressure recorders are supplied to provide accurate, reliable measurement and recording of differential and static pressure and temperature.**

The Barton 202E differential pressure recorder measures and records system operation parameters, including gas and liquid flow rate, liquid level in a vessel, and other system variables that can be measured by differential pressure and static pressure methods.

**Differential Pressure Unit** - The 199 Differential Pressure Unit (DPU) actuates the recorders and is a dual bellows assembly enclosed within pressure housings. Movement of the bellows is transmitted through a torque tube from the DPU to the recording mechanism.

**Recording mechanism** – Consists of a linkage and pen system that permanently records data. It converts mechanical inputs from the DPU and static pressure element to transcribe lines on a revolving chart. All operative parts of the recorder mechanism are made of stainless steel for a longer field life.

**Static pressure element** - Measures static pressure from 0 to 10,000 psi. The sensor element is a bourdon tube consisting of a slightly flattened cross-section of tubing coiled into a helix or flat spiral.

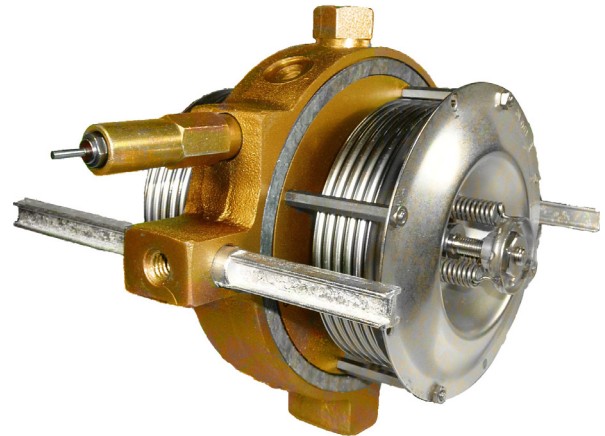
The outer end of the tubing is sealed and attached to a drive arm, which is attached to the static pressure connection tubing.

#### Applications

- Offshore and onshore well testing
- Production well testing
- Flow-back and clean-up well testing

#### Features and benefits

- Various ranges of pressure and temperature
- Rugged construction for field use
- Accurate and reliable to industry standards
- Free standing or mountable (wall and yoke)





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Technical specifications	
Case	Die-cast aluminium, black epoxy resin paint, waterproof and weather resistant; hinged door; neoprene gasket seal
DP ranges	inches w.c. (mbar) psi (bar)
	Minimum span of 0-10 (0 to 25) Maximum span of 0-100 (0 to 6.9)
Uncertainty	±0.5 % of full scale
SP accuracy % of full scale	±1.0 % of full scale
Ambient temperature limits °F (°C)	-40 to 180 (-40 to 82)

#### 199 DPU specifications

SWP psi (bar)	Housing material	Available differential pressure ranges			
		St/St bellows		Iconel bellows	
		2 1/8" (55 mm) OD psi (bar)	3 3/4" (95 mm) OD psi (bar)	2 1/8" (55 mm) OD psi (bar)	3 3/4" (95 mm) OD psi (bar)
1,000 (69)	Cast aluminium 356T6 Forged stainless steel 316	0-15 (0-1) to 0-100 (0-6.9)	0-10 (0-25) to 0-400 (0-996)	0-15 (0-1) to 0-100 (0-6.9)	0-20 (0-50) to 0-400 (0-996)
2,500 (172)	Forged steel A.I.S.I. C1018				
3,000 (207)	Forged stainless steel 316				
4,500 (310)	Forged alloy steel 4142				
6,000 (414)	Forged alloy steel 4142 Forged stainless steel 17-4 PH				
Net volume (cu. in.)	L.P. head – inches (cc)	35 (575)	30 (490)	35 (575)	30 (490)
	H.P. head – inches (cc)	31 (510)	26 (425)	31 (510)	26 (425)
Displacement (cu. in.) for full-scale travel		0.5 (8.2)	1.5 (25)	0.5 (8.2)	1.5 (25)

#### Performance specifications

Torque tube rotation (full scale DP)	8° ±10%
Torque tube material	Beryllium copper (BeCu)
Temperature limits °F (°C)	-40 to 180 (-40 to 82)
0-20" to 0-400" w.c. (0-50 mbar to 0-996 mbar)	±0.5% of full scale with appropriate linkage
0-15 to 0-100 psi (0-1 bar to 0-6.9 bar)	±0.75% of full scale with appropriate linkage
Sensitivity	0.05% of full scale DP
Repeatability	0.10% of full scale DP

Note: Other sizes, configurations and pressure ratings are available to meet most applications, for more information contact your local Expro representative or email [welltesting@expro.com](mailto:welltesting@expro.com)