

Well Flow Management

Well Testing | Separation

Horizontal Separator

The Expro horizontal separator is a skid mounted and portable pressure vessel which processes produced well effluent, breaking it down into individual phases of gas, oil and water for accurate measurement.

The separator is more efficient for oil wells, where the higher volume and surface area aid the separation process.

The vessel internals are designed to maximize the efficiency of the separation process. An inlet device deflects the effluent initiating the first stage of the separation process. A High-efficiency mist extractor and coalescing vanes are in place for reduced liquid carryover. A weir plate at the bottom of the vessel separates the liquid phases.

Oil and water volumes are accurately measured with turbine meters or Coriolis meters and the gas rate is metered by an orifice plate or Coriolis meter. Automatic controllers are fitted to allow individual adjustment of the oil and water levels in the vessel.

A separate gas controller (Back Pressure Valve) maintains back pressure in the vessel, which combined with liquid level control optimizes separation of the well fluid phases.

The unit is protected from overpressure by safety valves and rupture discs mounted directly on top of the vessel.

High level alarms and automatic shutdowns eliminate liquids spilling over into the gas flare and gas blow-by to surge tank. Expro separators are available in a selection of vessel sizes with various pressure/temperature ratings and liquid/gas throughput capacity. These range from the smaller (30") 600 psi low rate vessels to larger (48" x 20") units which are ideally suited for longer term, high rate Production Optimization projects.

Applications

- Onshore & offshore well testing
- Exploration development
- Clean-up operation
- Extended well testing
- Production, inline testing

Features and benefits

- Accurately determines oil, gas, and water volumes
- Wide range of applications
- Compact for quick installation
- Third-party certified
- Coriolis meter option available for gas and liquids
- DNV and CSC skid design for improved portability



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Technical specifications					
Vessel size (ID x L) inches x ft. (mm x m)	30 x 10 (762 x 3.048)		42 x 10 (1,067 x 3,048)		42 x 15 (1,067 x 4,572)
Working pressure psi (bar)	600 (41)		1,440 (99)		2,000 (138)
Temperature rating °F (°C)			-20 to 100 (-29 to 38)		-20 to 200 (-29 to 93)
Pressure compensation for elevated temperature psi @ °F (bar @ °C)			1,440 @ 100 (99 @ 38) 1,350 @ 200 (93 @ 93)		
Liquid capacity bpd (m³/d) ^{1.}	6,000 (953)	12,000 (1,908)	15,000 (2,386)	25,000 (3,980)	20,000 (3,180)
Gas capacity MMscfd (MM m³d) ^{1.}	40 (1.130)	60 (1.695)	92 (2.386)	115 (3.249)	150 (4.238)
Skid dimensions (L x W x H) ft. (m)	15 x 8 x 9 (4.57 x 2.44 x 2.74)	20 x 8 x 8.5 (6.1 x 2.44 x 2.6)	24.25 x 8 x 9.25 (7.4 x 2.44 x 2.82)	29.94 x 8 x 9.5 (9.13 x 2.44 x 2.9)	24.38 x 8 x 9.71 (7.4 x 2.44 x 2.96)
Weight (dry) lbs (kgs)	20,944 (9,500)	31,306 (14,200)	37,479 (17,000)	38,581 (17,500)	41,006 (18,600)

Note: Equipment is designed/certified to ASME VIII Div-1 (U Stamp) / PD5500, NACE MR-01-75, DNV 2.7-1/2.7-3, CE / PED, NORSOK standards as applicable based on the region (local) requirements.

These specifications are for guidance only, for more information contact your local Expro representative or email welltesting@expro.com

1. Separator flow rates are to be simulated /verified during the Well Test design taking into consideration all variables/flowing conditions i.e. expected rates, vessel sizing, internals, safety systems, measurement devices, pipe sizing, retention time, foaming, emulsion.