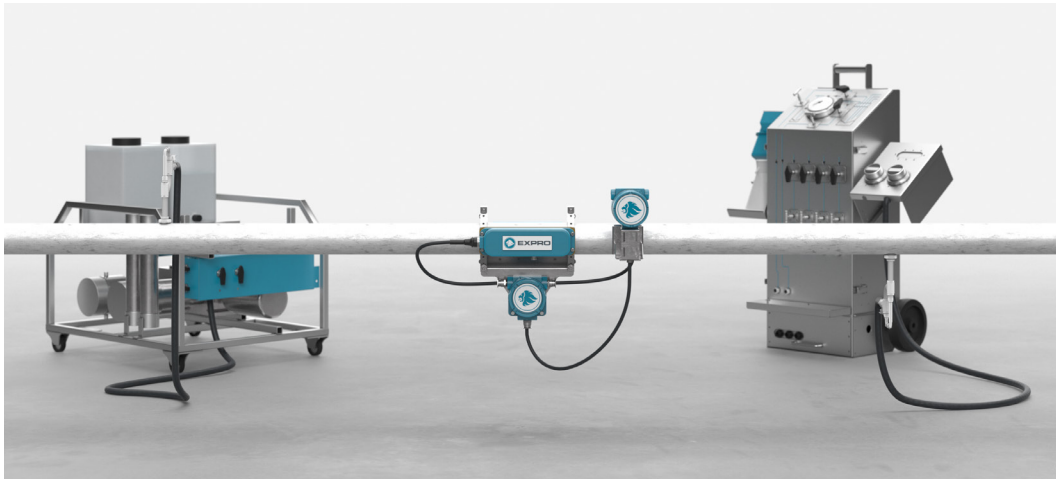


Well Flow Management

Flow Surveillance



QPulse™ is a non-intrusive portable multiphase flow surveillance solution utilizing proprietary non-intrusive Sonar technology combined with a tracer technology. This innovative solution can be deployed for production testing and monitoring across the field and allows independent flow measurement of the three phases (gas, oil, and water). QPulse™ can be retrofitted on the existing production pipeline from the wellhead and therefore prevents the need to bypass the flow or interrupt production.

The solution utilizes Expro's SONAR Flow Meter which is clamped on to the pipe, along with a tracer injection pump and Equilibrium phase sampling vessel connected to the pipe through existing NPT ports for tracer injection and multiphase sample collection. The SONAR Flow Meter measures the volumetric flow rate of the multiphase mixture at line conditions, while the tracer technology independently measures the oil and water volumetric flow rate at line and standard conditions. The measurements are transferred to a proprietary flow computer along with the line pressure and temperature measurements and basic fluid properties recorded onsite specifically density and specific gravity, used for conversion of individual flow rates (oil, gas, and water) to standard conditions.

Applications

- Monitor production performance of wells
- Production allocation in the field
- Identify underperforming wells and prioritize well intervention

Features and Benefits

- Non-intrusive solution with no process interruption or production deferral
- Independent and reliable multiphase measurement
- Portable, and easy to deploy solution that provides rapid cost-efficient data essential for field production allocation and well performance monitoring
- Non-radioactive and low carbon footprint solution

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Technical specifications		
Parameter	Specifications	Comments
Pipe diameter range	2" to 32" NPS	Enquire about other sizes
Flow velocity range	0.3 to 50 m/s (1 to 150 ft/s)	
Flow rate accuracy	+/-2% of full range reading	Whereas accuracy can be improved over reduced measurement range
Repeatability	+/-0.3%	
Sensor head	Clamp-mounted onto the existing pipe section	Sensor head requires 0.3m (1ft) of straight pipe free of fittings
Cable entries	4 x 1/2" NPT	
Operating temperature range		
Ambient temperature	-45°C to +60°C (-49°F to 140°F)	
Process temperature	-45°C to +125°C (-49°F to 257°F) 1.	
Digital outputs	Serial communications ports	RS-485, half-duplex, quantity 2
Serial communication protocol	Modbus (slave) RTU/ASCII	
Analog output	4-20mA	Requires external accessory
Ingress protection (IP) rating		
Transmitter	IP-66	Canadian, US models are Type 4X
Sensor head	IP-67	
Power requirements	18 to 35 Vdc, 12 watts	
Mounting	Pole or pipe mount	
Methods of protection	Flameproof (d) and encapsulation (mb)	
Gas groups	IIB and IIA	
	Canadian Groups C,D	
	US Groups C, D	
Hazardous area classification		
Model QEX1000F-A-AB	ATEX: Zone 1 IECEX: EPL Gb	Also suitable for ATEX Zone 2 Also suitable for IECEX EPL Gc
Model QEX1000F-A-C	Canada: Class I, Division 2	Canadian: Class I, Zone 2
Model QEX1000F-A-D		
Model QEX1000F-B-D	US: Class I, Division 2	Also US Class I, Zone 2

Note: Other sizes and configurations are available to meet most applications, for more information contact your local Expro representative or email flow.surveillance@expro.com

1. QEX1000F-B-D temperature rating: -45°C to +100°C (-49°F to +212°F)

Well Flow Management

Flow Surveillance



MultiTrace Liquid Tracer Pump

Technical specifications	
Max working pressure	206 barg
Temperature range pump head	-20/150°C
Temperature range hydraulic/gear oil	0/100°C
Ex zone	1
Power type	3 phase
Voltage	230/400 V (Δ/Y)
Current	3,4/1.9 A (Δ/Y)
Herz	50Hz (for 60Hz change motor)
Dimension	W85xH70xD70cm
Weight	130 kg
Reservoir	2 x 20 L
Liquid tracer pump	
Tracer type	Oil and water
Operational data	
Injection rate	4-14.4 L/hr

MultiTrace Mini Separator

Technical specifications	
Design P	100-345 bar
Design T	up to 110°C
Power requirements	230vac / 50hz / 230W
Material	Duplex or Inconel (Sour environment)
Weight / Dimension	110Kg / 108x55x43 cm
Certification	ex Zone II

ATEX heat traced and insulated mini-separator, thermostat controlled.
Maximum operational P&T depends also on the design of the sampling point.

Note: Ranarex or micro-GC can also be provided in addition to obtain gas SG/composition as needed, for more information contact your local Expro representative or email flow.surveillance@expro.com