

# Rheos-X Flowmeter Instrumentation

Provides permanent and continuous serial measurement of volumetric phase flow rates

## Applications

- Real-time monitoring of in-situ and standard flow rates
- Allocation of zonal and commingled production in multizone intelligent completions
- Production optimization using inflow control valves (ICV) and inflow control devices (ICD)
- Real-time identification and localization of production or injection anomalies
- Reduction of surface well tests and surface facilities
- Offshore platform, subsea, land, and remote locations
- Determination of well productivity index

## Features

- Serial monitoring of multiple flowmeters
- Passive optical-sensing bidirectional flow monitoring
- Functions with the OmniWell® production and reservoir monitoring system instrumentation
- Direct fiber-in-umbilical connection for subsea installation

## Benefits

- Reduces the cost and complexity for multizone and pad-level applications
- Enables cross-flow detection in multizone completions and service changes from producer to injector (or vice versa) with no change to the flowmeter or instrumentation
- Supports integrated pressure and temperature monitoring from the OmniWell production and reservoir monitoring system
- Enables subsea installation distances up to 100 miles (160 kilometers)



## Tool Description

The Weatherford Rheos-X flowmeter instrumentation system, part of the nPhase™ flow measurement solution family, provides permanent and continuous serial measurement of volumetric phase flow rates. Used with Rheos™ in-well optical flowmeters, the Rheos-X system monitors multiple flowmeters through an optical switch. The bidirectional flow capabilities of the in-well flowmeters enable the Rheos-X system to measure injection, production, and cross-flow rates with the same well configuration.

## Options

- System configuration depends on the selected flowmeter design.
- The acoustic-tolerant version is optimal for intelligent wells with ICVs.
- The high-sensitivity version is optimal for quieter wells without ICVs.
- The OmniWell production and reservoir monitoring system supports up to 50 flowmeter channels.



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## Specifications

### General

Flowmeter monitoring capability	Up to 50
Operating temperature range	41° to 104°F (5° to 40°C)
Update rate	90 seconds per measurement
Storage capacity	Network attached storage (NAS) with RAID functionality
Units of measure	Si (metric), Imperial, custom

### Electrical Power

Voltage	90 to 132 Vac or 180 to 264 Vac
Frequency, single phase	47 to 63 Hz
Power consumption, typical	1.2A @ 115 Vac (138 VA) 0.6A @ 230 Vac (138 VA) 60W
Power consumption, maximum	2.0A @ 90 Vac

### Physical

Dimensions	16.75 in. x 7 in. x 20 in. (42 mm x 178 mm x 508 mm)
Electro-optic module (EOM) weight	23.75 lb (10.77 kg)
Power supply weight	13.2 lb (5.99 kg)

### Environmental

Storage temperature range	-4 to 149°F (-20 to 65°C)
Relative humidity	10 to 90%, noncondensing
Operational vibration	1 g peak, 5 Hz to 100 Hz, 0.1 oct/min 90 minutes per axis, 3 axes
Operational shock	10 g and 20 g, 11 ms, half-sine shock ± 3 shocks per direction, 3 axes
Transportation vibration	3.0 G <sub>rms</sub> , random NAVMAT P9492
Certification	IEC 61000, EN 61000

