

# ScaleSense

Real-Time Ion-Specific Sensor for Saline Waters



## Robust and Always on

- Configurable for calcium ( $\text{Ca}^+$ ), barium ( $\text{Ba}^{2+}$ ) or sulfate ( $\text{SO}_4^{2-}$ ) ions
- Sensing available via an alternate method for silica ( $\text{SiO}_2$ )
- Real-time measurement for optimizing your process, reducing risk and minimizing operational and maintenance demand
- Robust, simple, cost-effective, and automated. Easy to clean and use compared to existing spectrophotometer methods
- Optimized for saline waters in which other sensors (e.g. colorimetric) do not function
- Corrosion-resistant construction for high salinity water
- High pH (0–14) and temperature (5–80°C) tolerance
- Commodity reagents



## Why ScaleSense Instead of Other Optical Sensors?

ScaleSense was developed to operate on the most challenging flows (e.g. high-TDS range), in which other sensors do not function effectively. Existing real-time sensors perform well for cleaner water, but failed to meet our needs for industrial saline waters—so we developed our own.

Parameter	Titration	Manual Colorimetric	Auto-Colorimetric	ScaleSense-BETA
Real-Time Digital Feedback	Offline	Offline	Real-time	Real-time
Resolution/Uncertainty ( $\pm\%$ )	~0.1–1	0.1–1	2	~2–5%*
Temperature ( $^{\circ}\text{C}$ )	-5–100	0–40	5–50	-5–80
Testing Volume (mL)	~1–100	~2–50	continuous	continuous
Testing Rate (mL/min)	static	static	100–500	Up to 300
Analysis cycle time (mins)	~5	~2–100	~7	~5
High TDS operation	×	×	Not Accurate	✓

## Applications

- Reverse osmosis: real-time scaling ion control to maximize recovery while protecting membranes
- Cooling tower blowdown minimization: reduce freshwater withdrawal on a scale-limited tower
- Barium, sulfate precipitation and chemical softening process control: ensure your phys-chem process is meeting treatment goals for  $\text{Ca}^+$ ,  $\text{Ba}^{2+}$ ,  $\text{SO}_4^{2-}$ ,  $\text{SiO}_2$
- Oil & gas: sulfate monitoring, protect disposal wells, maximise nanofiltration recovery in enhanced oil recovery (EOR)

### ScaleSense-BETA Operation

Electrical Supply	120 VAC, 10 A
Weight	250 lbs 113 kg
Dimensions	0.53×0.76×2.03 m 21"×30"×80"