



# General Troubleshooting Matrix

	Permeate Flow	Salt Passage	Differential Pressure	Issue	Cause	Corrective Measure
<b>After Start-Up</b>	↑	↑	-	O-ring leak	Improper installation	Replace o-ring
	↑	↑	-	Leaking permeate tube	Damage during loading / start-up	Replace element / install soft-starting motors
	↑	↑	-	Membrane leak	Excessive permeate backpressure or abrasion	Replace element, improve prefiltration, improve downstream design
<b>Process Upset</b>	↑	↑	-	Oxidation damage	Free chlorine, ozone, KMnO <sub>4</sub>	Replace element, fine-tune upstream neutralization
	↓	↓	-	Compaction or intrusion	Exposure to high temperature and pressure	Seek out new element design, avoid temperature / pressure excursions
	-	↑	-	Cracked fiberglass	Water hammer	Replace element / install soft-starting motors
<b>During Operation</b>	↓	-	↑	Biofouling	Upstream contamination or insufficient pretreatment	Clean or disinfect. Check upstream processes and remove biological source
	↓	↑	↑	Colloidal fouling	Insufficient pretreatment	Clean and improve pretreatment
	↓	-	-	Organic fouling	Organic matter, oil or cationic polymer in feed	Clean and improve pretreatment
	↓	↑	↑	Scaling	Insufficient pretreatment	Clean and improve pretreatment or antiscalant dosage

↑ Increase   ↓ Decrease   - No Change   ↑/↓ Primary Symptom