



# ***KMnO4 3000***

## **On-Line Potassium Permanganate Measurement Instrument**



### **ACCURATE ON-LINE MEASUREMENT!**

Our unique optical design even compensates for much of the turbidimetric interference associated with photometric measurement. The automatic cleaning system ensures a minimum of operator maintenance.

The ***KMnO4 3000*** offers measurement to the nearest 0.1 ppm, Nema 4X enclosure, 4-20 mA output and automatic cleaning.

The ***KMnO4 3000*** On-line Potassium Permanganate system from HOWILL INSTRUMENTS provides continuous readout and signal to help ensure proper feed rate of potassium permanganate for finished water applications. Continuous measurement allows changes in treatment to be implemented more readily for improved quality of the finished water. Simple operation with 2-point calibration reduces the risk of pink water complaints.

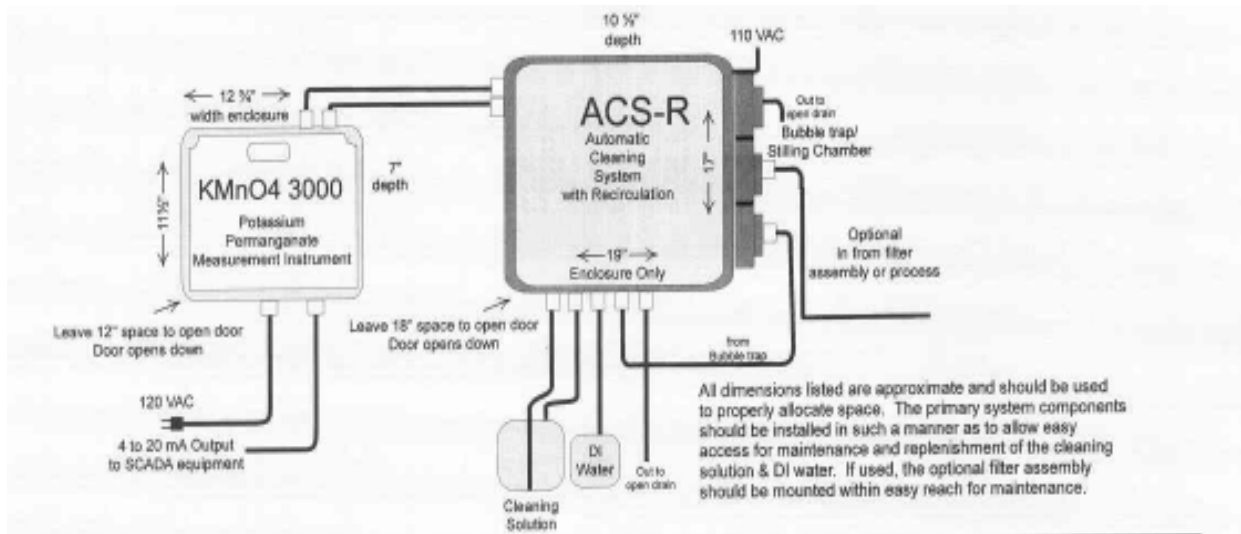
Best of all the measurements obtained using the ***KMnO4 3000*** are more accurate and repeatable than any other system available. The longer path length (10 cm) employed by the ***KMnO4 3000*** ensures greater accuracy and repeatability at the critical low end of the scale.



- FEATURES:**
- **Continuous Measurement!**
  - **0.1 ppm Resolution!**
  - **Simple 2-point calibration!**
  - **Automatic Cleaning System!**
  - **4-20 mA output!**
  - **Easy operation!**
  - **Range 0 - 19.9 ppm!**
  - **Quick disconnect fittings!**
  - **Compensate for turbidity!**

<b>Specifications</b>	
<b>Range:</b>	0 - 19.9 ppm KMnO4
<b>Resolution:</b>	0.1 ppm
<b>Accuracy:</b>	± 1 ppm (0 - 5 ppm) ± 5 ppm (5 - 19.9 ppm)
<b>Calibration:</b>	KMnO4 Standard Solution user selectable 5 - 20 ppm
<b>Temperature:</b>	0 - 50 degrees C Operating Temperature
<b>Response Time:</b>	Dependent upon flow (at 100 ml/minute response is approximately 30 seconds)
<b>Lamp Life:</b>	Approximately 15,000 hours
<b>Path Length:</b>	10-cm measuring path
<b>Power:</b>	115 or 230 VAC required for both the <b>KMnO4 3000</b> and the ACS-R (Call for other voltages)
<b>Analog Output:</b>	4 - 20 mA output (user selectable 0 - 5, 0 - 10, or 0 - 20 ppm)
<b>Output Calibration:</b>	4 - 20 mA output features a switch selectable constant current capability of 4 mA and 20 mA to facilitate calibration of external devices.
<b>Display:</b>	3 1/2 Digit LED
<b>Wavelengths:</b>	Specific wavelength for KMnO4 measurement plus a reference wavelength which compensates for turbidity and lamp loss. Reference wavelength also provides improved stability.
<b>Auto Cleaning:</b>	ACS-R for KMnO4 3000 includes a timer, valves & pump. Provides cleaning solution recirculation followed by DI water rinse.
<b>Sample connectors:</b>	Quick disconnect with automatic shut-off. Use 1/4" ID tubing.
<b>Enclosure:</b>	Nema 4X for <b>KMnO4 3000</b> , outdoor enclosure for ACS-R.
<b>Flow rate:</b>	Minimum required 50 ml/minute, maximum 250 ml/minute.

### Recommended Connection/Installation



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