

TECHNICAL BULLETIN

(Revised 1/18/06)

TB02.5

DISSOLVED OXYGEN SENSOR MAINTENANCE TEST RESULTS

In the fall of 1993, the Instrument Testing Association of North America began a "Maintenance Study of Dissolved Oxygen Sensors". The final report of this study is now on the street, dated February 1997 under "Maintenance Committee Report #MAINT 97-1."

The study was broken into two parts, a preliminary survey (1993) and a field study (1995). In the preliminary survey, it was identified that their membership of 53 plants at 42 agencies throughout North America had 638 DO systems in operation, representing 13 manufacturers. Royce had 156 of those systems – far more than any other manufacturer.

In the field study, the study of most importance, conformance testing was required of each sensor as part of the normal maintenance routine. Twenty plants in 11 agencies participated in the conformance testing part of the study. The goal of this part of the study was twofold: 1. To identify the average amount of time it took to maintain each design of DO sensor; and 2. To determine the average cost required to maintain each design of DO sensor.

The results of the study are shown in the box below.

As this was a maintenance report performed for its members, ITA did not provide any conclusions, but Royce would like to make a few:

- Royce had more sensors in the study than any other manufacturer
- More than twice as many conformance tests were run on Royce sensors than any other sensor

- Royce sensors required the second lowest amount of maintenance per quarter.
- Only two manufacturers exhibited lower maintenance costs per quarter than Royce. Royce had from two to four times the sensors with 270 times the conformance tests than the lowest maintenance cost sensors, yet Royce sensors still only cost a negligible \$3.41 per quarter to maintain.

Manufacturer	No. of Sensors Conformance Tested	Actual Test Run	(Per Sensor) Ave. Maint. Hrs. Per Qtr.	(Per Sensor) Avg. Maint. \$ Per Qtr.
Capital Controls	29	--*	2.94	\$48.95
Exidyne	33	5	.5	\$1.02
Great Lakes	59	689	.6	\$10.83
Leeds & Northrup	63	--*	.1	\$2.49
Rosemount	2	10	3.0	\$41.50
Royce	120	1352	.4	\$3.41

*There is no explanation in the report as to why two manufacturer' sensors obtained conformance results, yet were not listed in the "Number of Tests" column.