

How important are the new Electronic Combustion Analyzers? – By John Gates

First there short coming is that they require a separate Smoke test with the old reliable pump. Smoke is the single most important reading we take while setting up a burner. Maybe someday the test will be incorporated into the unit but until then do not through away your spot smoke tester

Will the new units help set a burner better than my old orsat type CO₂ recorder? The answer is yes and no. If you only fire units with nice full combustion chambers the advantages of the new units will not become greatly apparent. But if you are like most of the rest of us where boilers are coming through with less and less refractory and sometimes none at all the CO indicator can be a lifesaver. Best of all you can make a change and see the results 10 seconds later.

First of all we are not talking life threatening amount of CO but if the flame licks the cold sidewall of the boiler CO is produced this CO can be greatly reduced by tightening or changing the flame shape. It is possible to get CO results in excess of 150 ppm while still showing zero smoke and acceptable CO₂ (10.5%-12%). If a boiler is allowed to run in this condition the effected area will soot up in a short period of time. I wouldn't be surprised if this was one of the causes of running saturations.

I have found that I have been able to get all units below 75 ppm and almost all below 50 ppm of CO. Units with full chamber usually run in the low 30's with my meter while boilers without any refractory run somewhat higher. This is normal due to the cold surface's surrounding the fire.

I believe that this is the only way anyone can really set up one of the newer boilers without refractory. Mainly because they have made it impossible to properly view the the flame.

My Analyzer is almost a year old and I am still learning. We will add to this article as the need arises. By the way my instrument of choice is the Bacharach Fyrite Pro. I also like the Testo instruments but decided upon Bacharach because of the outstanding efforts of their training personnel. People like Rudy Leatherman that have gone the extra mile to educate our technicians.

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