

Health Status Report for T Series Instruments

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Background

A gas instrument's health is essential to ensure data obtained from it is accurate. In continuous emissions monitoring, a quality assurance (QA/QC) and maintenance plan is not only necessary, it is a requirement. While not all of these programs are identical, they do share one thing in common: collect enough information on how the gas instrument is maintained to prove the gas concentration data produced is accurate. One method for fulfilling the QA/QC requirements is to record the status of a gas instrument by obtaining various test parameters on a daily, weekly or monthly basis. These parameters can be useful in proving the gas instrument is operating properly in the event that the accuracy of the data provided by the instrument comes into question.

Introduction

The Teledyne API (TAPI) T Series gas instruments now feature NumaView™ Software with a 'Health Status Report' which supports some of the requirements of a QA/QC program. In addition, it's a helpful troubleshooting tool for the instrument technician or engineer and it can also be sent to TAPI Tech Support to further aid in troubleshooting any situation. Please consult with your management team to ensure sharing data from a regulatory instrument is allowed.

Model	Version	Serial Number	IP Address
T100	1.3.3.229	512	192.168.1.21
Parameter	Recorded Value	Acceptable Value	
Stability	23 PPB	1 PPB Max. with Zero Air	
Pressure	-1.7 inHg	2 In.Hg less than Ambient to Ambient	
Sample Flow	0.0 cc/min	650 +/- 65 CCM	
PMT Signal	-0.2 mV	-20 to 150 mV with Zero Air; 5000 mV Max. with Span Gas	
Norm PMT	4501 mV	5000 mV Max. with Span Gas	
UV Lamp	-0.2 mV	1000 to 4800 mV	
Lamp Ratio	0.00%	30 to 120%	
Stray Light	3,906.3 PPB	100 PPB Max. with Zero Air	
Dark PMT	-0.2 mV	-50 to 200 mV	
Dark Lamp	-0.1 mV	-50 to 200 mV	
Slope	1.250 PPB/mV	1.0 +/- 0.3	
Offset	25.000 mV	250 mV Max.	
HVPS	0 V	400 to 900 Volts	
RCell Temp	50.0 degC	50 +/- 1 degrees Celsius	
Box Temp	29.2 degC	Ambient + 5 degrees Celsius Max.	
PMT Temp	15.0 degC	7 +/- 2 degrees Celsius	
IZS Temp	29.1	50 +/- 1 degrees Celsius	
Ref 4096mV	4,095.8 mV	4096 +/- 2 mV	
Ref Ground	0.0 mV	0 +/- 0.5 mV	

Figure 1: T Series Health Status Report

The Health Status Report provides a snapshot of the instrument's health by recording several test functions and saving them to a .csv file that can be easily saved to a PC or printed for future reference. The test functions saved are unique to each T Series model and include acceptable limits for each value. This not only allows for a quick check to see if any parameters are out of tolerance, you can also compare these values to the final test data sheet provided with each instrument when they ship from the factory. Figure 1 above shows an example of what a typical Health Status Report looks like.

How to Get the Report

Obtaining the report is quick and easy. Start by inserting a USB memory stick into one of the front panel USB ports on the T Series instrument (See Figure 2). Then from the home screen, select <Utilities>, then <USB Utilities>, then <Report> which will take you to a screen similar to Figure 3.



Figure 2: T Series front panel USB Port

With a USB stick inserted into one of the ports on the front panel of the instrument, the 'Download' button will be highlighted. Just press the 'Download' button and you will get a 'success' message in a few seconds. You're now ready to remove the USB and store the report for later reference or send it to TAPI for advice from the instrument experts.

Utilizing the Health Status Report

The Health Status Report contains the most relevant test variables for a given model and the acceptable values for each variable. To get a quick and easy assessment of the health of the instrument, just compare the recorded value against the acceptable range to see if any variables are out of tolerance. If one variable does appear to be out of tolerance, then refer to the manual or TAPI Tech Support for information on how to troubleshoot the issue. If you are troubleshooting an issue, you can also compare the Health Status Report to the final test data sheet provided with the instrument at the time of original shipment. This data sheet contains the same test functions recorded at the time of final test at the factory, allowing for a quick check to see if any parameter is out of tolerance.

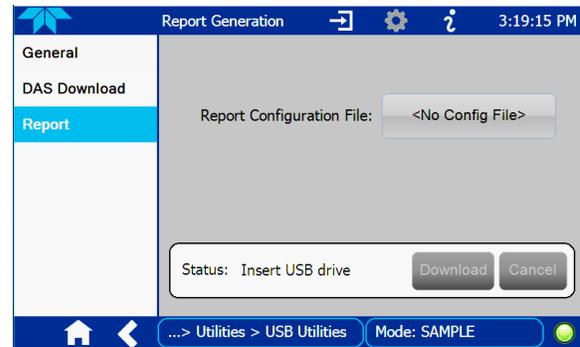


Figure 3: Health Status Report screen in NumaView™

If the purpose for downloading the report is only to fulfill the requirements of your QA/QC program, then download the report from all of the relevant T Series instruments and save them for your records. This removes the hassle of having to write the parameters down and the possibility of incorrectly recording the information.

Conclusion

The T Series Health Status Report was created to enhance the instrument's ability to support your QA/QC and maintenance program. In addition, the report is a valuable troubleshooting tool for both the user and TAPI Technical Support experts. This adds another powerful troubleshooting tool to the T Series instrument, along with the built in iDAS or internal data acquisition system, which can store up to multiple years of valuable data. To get the report, you will need a copy of the latest NumaView™ Software from the TAPI website (www.teledyne-api.com) or from TAPI Technical Support at: API-TechSupport@teledyne.com.