

ENVIRONICS TECHNICAL BULLETIN #123

Environics Model 6103

OZONE TRANSFER STANDARD / MULTI-GAS CALIBRATOR

Software Update Information

Old Revision _____ New Revision _____

This bulletin describes recent software changes and enhancements to the Model 6103. These features are covered briefly here, and are explained in more detail in the latest version of the user's manual.

Locate the revision of software previously installed in the system. The features listed above that point have been added since that revision of software. If you are upgrading software yourself, read these notes carefully. Some software updates may require re-entry of data or recalibration of certain items.

Revision	New Feature	Description
1.36-xx	Adjustable photometer averaging	The software now includes additional averaging and noise filtering capability for the photometer readings. All photometer averaging settings can be changed at any time, even while the system is generating or measuring ozone.
	Photometer Serial Data Output	Added the ability to output photometer data to Serial Port #2. This data can be logged using an external data logger or PC.
	Enhanced Analog Output	Photometer pressure is now output on analog output channel 2.
1.35-xx	Automatic Photometer Pump Control	Added automatic control of the photometer pump. Systems that originally came equipped with a front panel PUMP switch will need a minor hardware upgrade to allow the automatic control to work
	Enhanced Remote Mode	Added Remote Mode commands for flow mode, photo mode, ozone control and diagnostic information
	Analog Output range settings	Added adjustable ranges for analog output channels.
1.34-xx	Enhanced Remote Mode	Additional commands have been added to the REMOTE MODE for FLOW MODE, reading Ozone and Photometer values (such as temperature and pressure) and setting the Ozone control loop
1.33-xx	Remote Mode	Remote Mode allows the system to be operated remotely using RS232 commands.
	Powerup Mode	Powerup mode allows the system to automatically power up into the REMOTE MODE. In the event of a power failure, the system can automatically power up into Remote Mode when power is restored. This feature may be desirable for systems that operate unattended via RS232 Remote Mode commands
1.32-xx	=NOTES=	If performing a software update in the field, please be aware of the following: <ul style="list-style-type: none">• Updating the software will erase any stored CONC mode settings, and all gas PORT assignments.• Photometer calibration data will need to be re-entered. Other calibration data is not affected. See Tech Bulletin #121 for full details
	Multicomponent Cylinders	The software now supports the ability to set up cylinders which contain multiple gases. Up to 20 unique gases may be defined, with each gas assignable to any gas port. The PORTS (port setup) function has been renamed GASES (gas setup)
	Concentration Mode Enhancements	Concentration Mode now has additional VIEW capabilities. These include the ability to view Ozone Generator parameters, MFC Flow rates, and Multicomponent Gas concentrations. Also, the number of Load/Save registers has been expanded to 99, and additional error checking has been added to generate a warning "beep" when trying to operate the flow controllers outside of their range.

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Model 6103

ADDENDUM TO 6103 MANUAL

For S/W Rev 6103-1.36-xx

OVERVIEW

The 6103 software has been updated to include improved operation and enhanced features. This addendum describes the changes that have been made. Changes include:

1. Photometer data output on Serial Port #2
2. Photometer pressure output on Analog Channel #2
3. User adjustable photometer averaging with noise filtering option. Averaging can be adjusted while system is generating ozone.

PHOTOMETER DATA OUTPUT

The 6103 now has the ability to output photometer data to Serial Port #2. This data can be logged using an external data logger or PC. The data is output at 9600 baud, 8 bits, 1 stop bit, no parity.

The format of the data is:

TIME	PHOTEMP	PHOPRESS	I	I0	O3AVG (ppm)
10:53:30	24.87	15.25	835752	835749	0.0000
10:53:38	24.86	15.25	835759	835755	0.0000
10:53:46	24.86	15.25	835748	835745	0.0000

PHOTEMP is the photometer gas temperature, in degrees C

PHOPRESS is the photometer gas pressure, in PSI

I is the photometer lamp intensity, while measuring ozone

I0 is the photometer lamp intensity, while measuring reference gas

O3AVG is the average photometer ozone reading

PHOTOMETER ANALOG OUTPUT

The 6103 software has been updated to output photometer pressure on analog output channel #2.

Photometer pressure is indicated with a voltage from 0 to 2.0 volts, where 2.0 volts represent 20 PSI. The 2 volt scale of the output can be changed if desired (refer to ANALOG OUT SETUP in the User Manual).

Regardless of the output scale selected, the largest pressure that can be indicated is 20 PSI.

PHOTOMETER AVERAGING

The 6103 software now includes additional averaging and noise filtering capability. In addition, the photometer averaging settings can be changed at any time, even while the system is generating or measuring ozone.

Photometer Averaging settings

PHOTOMETER PREFS
AVERAGING = 8
NOISE FILT = 0
ACCEPT CANCEL

The AVERAGING setting determines how many photometer readings are averaged together to determine the average photometer reading. The average reading is the value that is displayed on the LCD display, as well as output on the serial port and analog output.

The averaging can be set between 1 (no averaging) and 32 (maximum).

The NOISE FILT setting determines how the system handles noisy photometer readings. Normally the Noise Filter is set to 0. However, in the event that the photometer readings are unusually noisy, turning on noise filtering will help reduce noise. The noise filter is used to eliminate a minimum and maximum reading from the average.

Setting the noise filter to 1 will eliminate 1 set of minimum/maximum readings from the average.
Setting the noise filter to 2 will eliminate 2 sets of minimum/maximum readings from the average.

Since the noise filter removes either 2 or 4 photometer readings from the average, the averaging setting must be at least 1 more than the number of readings to be filtered out.

For a Noise Filter setting of 1, Averaging must be at least 3.
For a Noise Filter setting of 2, Averaging must be at least 5.

Changing Photometer Averaging

When the system is running in the FLOW or CONCENTRATION mode, move the cursor to the OZONE row, and press VIEW, so that the PHOTO information screen is shown. Press MENU to access the photometer averaging screen.

When the system is running in the PHOTO, press MENU to access the photometer averaging screen.

The Photometer Averaging can also be changed from the READY mode. Press MENU until the "PREFS" key is displayed. Press the PREFS key, then select PHOTOMETER PREFS