

PHOTON_COM – PC SOFTWARE

User manual

Version: 1.0 08/2017 Software version: 1.5.5

madur

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Index

1.	Introduction	3
2.	Connecting to Photon	3
3.	Module Properties	4
	Program language	4
	Results ONLINE	5
6.	Templates for portable printer	6
	Data Base – Synchronisation	
	7.1. Data Base – Measurement sessions	8

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1. INTRODUCTION

Photon PC software provides PC communication with both portable and stationary Photon analysers. It supplements analyser with additional options and allows to perform service actions, like calibration with gases (available only for trained personnel)

Installation file can be found on software CD (attached with every analyser) and on madur webpage.

CONNECTING TO PHOTON 2.

Program will try to connect to Photon using the last selected COM or LAN port. Select File \rightarrow Settings.

Settings	Settings	Service Software 1.5.6, PHOTON II	- 🗆 ×
		File Module properties Results Online Printouts (Martel) Data base About	
Port Language Recording	Port Language Recording	Reconnect F8	
Available COM ports:	Available COM ports:	Settings	
Serial communication:	C Serial communication:	Service mode F6	
C LAN communication:	C LAN communication:	Transparent mode F11	
	LAN Adapter::	Quit Ctrl+Q	
	Broadcom NetLink (TM) Gigabit Ethernet	C 4 C 6 C 6 C 7	
	72QC_test10.0.0.200 711724D011 - 10.0.0.104 Find Photons	C 8.— C 9.— C 10. SensMult v.2.5 C 11.—	
		C 12.—	
<u>OK</u> 10.0.0.167 <u>C</u> lose		C 15.—	
elect proper COM port to communicate	with Photon or		
	m to find Photon analysers in your LAN network - select		
e you wish to work with from a list and co	onfirm your selection with OK button.		
oottom bar of the main window, in its left	, program informs about communication status IP address		
ected Photon, its serial number and sta		l la	
		TCP/IP: [10.0.0.200] SN: 17120009 - On Line	· · · · · · · · · · · · · · · · · · ·
P: [10.0.0.104], SN: 7117240011 – On Li	ne		

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3. MODULE PROPERTIES

Allows to view (and modify in service mode) settings and signals of a selected analyser's module. As this option is strictly for service purposes, it will not be analysed in details in this manual.

Measurements Ch1 1 694 050 uV D= .43	O ppm 16 s	Sensor type (measured gas) NO Change	Multipoint calit Calibration		NO		×
Norm. 1 626 141 uV D= 15		Sensor range	Calibration	pressure	-	997,9	[hPa]
2h2 1 685 961 uV D= -33	16 s	Range 100 pp	m Reference g		ignal		
VTC1 188 040 uV	50,61 °C 5 s	DeltaPPM	4 [ppm]	uV(Ch1)	uV(Ch2) I	uV(Norm.)	
4TC2 185 975 VV	50,78 °C 5 s	Allow Second range	0 1 1		[1	Captur
Sin1 295 076 uV	NTE caloration	Use Second range	F [0				Captur
Sin2 287 310 uV		Range 1000,9 pp	m F O				Captur
Corrections	ARW regulation	DeitaPPM	0 1 0		[Captur
or CO2 0 ppm / 10%CO2	Potentiometer	Dividen/Rounder/DP	0		[Captur
Linear E Multi	IR (main) 238	Divider			[Captur
For O2 (NO s. only)	IR (sec.) 232						Captur
0 ppm @ 10%O2	Amplitude	Rounder	TEO				Captur
or CH4 (SO2 s. only)	IR (main) 250000 Set	Rounder1	1 0				Captur
0 ppm @ 10%CH4	IR (sec.) 250000 Set						Captur
For N2O (CO s. only)		DP					Captur
For CO		Unit Do	2	tofile	Rea	d from file	1
0 ppm @ 1000ppm CO			Enter hypot	NUMBER OF STREET	0.0	difectory	-
	1600 Set DAC	Manufacturing data		Protocol Grocol		ia renator y	-
Prescaler (1 by default)	9 Set (Hz)	Serial no 434440976	-9	prt.	Read	cal points	
1 - CH4 [%] DP+2	128 Set Width	22-08-2017	Exponential	арргох. 👻	CN	INRATE	
Zeroing	1 16V			essente li se ne	_		_
ZeroShift 0 ppm Zeroing	Heating adjustment	Update CRC	Results stor	age		Stop	
Zero gas 0 ppm Retoove zero	Temp Dryft	1-point Correction	1			Close	1

Calibration window (view mode) of NO sensor

4. PROGRAM LANGUAGE

- 1. From main menu, select: File \rightarrow Settings.
- 2. Select the second tab: Language
- 3. From drop-down menu select your language
- 4. Close Settings window

madur can share language files for translation in order to prepare your language version – please contact our sales team: sales@madur.com

Initial heating Min. heat. time T min Max. heat. time 44 min	Serial Number 71 17120009	Channel 1 (Main pump) Pesired 0 1 Is 100	Channel 5 (Valve	
Optimal selection C Keep given temperature: 49,11		Channel 2 (Main heater) F Remote Desired 0 Is 3607	Channel 6 (Fan2)	esired 0 +
Overheat temp.		Channel 3 (Secondary pump) ^{[**} Remote Desired 0 Is 0	Channel 7 ()	esired 0
Current work mode phase ⁽²⁾ NoMaster ⁽²⁾ Heating ⁽²⁾ BeforeStandb		Channel 4 (Fan1)	Channel 8 ()	esired 0
Versition Standay Man purp Freely Keep Low earling Keep Low earling Keep Homai setting Keep Homai setting Keep Homai setting Keep Exposed Set 4 Keep eccommoded Set 4 Keep eccommoded Set 4 Keep eccommoded Set 4 Keep eccommoded Set 4 Keep Exposed	500 1330 160 80 95 110	KTT 80 [s/C] DT o MmH Default	Normal III III III III III IIII IIII IIII I	8 (0-16) 16 (0-16) 7,70 (0-100*0 1,80 (0-100*0 11,00 (0-100*0 11255 [s]
Measured Tair 29,82 Flow Tint 49,11 Tcomp	102.0	33393633 ·····	3607 BasePowerCounte 3607 OverHeatCorrects 0 TargetTintCorr	
Time VOC		DCorrection TargetTint 4	0 UnderHeatingOnS 9,11	tert -288.00
since reaching desired temp. 0 since zeroing 255 Save		27.04.2017	Refresh	Sere
and found 1 and 700.		Zeco (II dest)	for callentian	Cyclic

Calibration window (view mode) of analyser' CPU

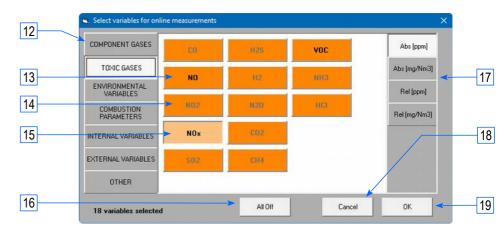
ort Language	Recording	
Available Lang	uages	
Language	English (GB)	

5. RESULTS ONLINE

Photon All program allows to view results measured by analyser on PC, in a real time and store them directly to hard drive as CSV file.

- 1. Results: number, time and selected variables
- 2. Current location of folder where CSV files are stored
- 3. Start / stop online readings
- 4. Time until the next result will be displayed (and stored)
- 5. Status info
- 6. Enable (red button) / Disable (grey) storing results to CSV file
- Selection of variables (sensors and calculated values) that will be presented online and stored to CSV file.
- 8. Name of the currently processed CSV file. File is stored in folder (2)
- 9. Interval between online readings (adjustable in range 5÷600sec)
- 10. Button to select storage folder (2)
- 11. Button to close window.

3 14/03/07 20.92 86 0 0 9.9 997.7 28.00 50.96 27.7 4 14/03.12 20.32 85 0 0 8.4 997.7 28.00 50.96 27.7 5 14/03.12 20.32 85 0 0 8.4 997.7 28.00 50.96 27.7 6 14/03.22 20.32 85 0 0 8.5 997.7 28.00 50.96 27.7 7 14/03.22 20.32 85 0 0 8.1 997.7 28.00 50.96 27.7 9 14/03.37 20.32 85 0 0 8.1 997.7 28.00 50.96 27.7 10 14/03.42 20.92 85 0 0 11.3 997.7 28.00 50.96 27.7 11 14/03.42 20.92 85 <th>$\begin{array}{ c c c c c c c c c c c c c c c c c c c$</th> <th>H</th> <th>▶ #</th> <th>Time</th> <th>02</th> <th>CO</th> <th>S02</th> <th>N02</th> <th>Pdif</th> <th>Pabs</th> <th>Tamb</th> <th>Tgas</th> <th>Tint</th> <th>Tau</th>	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	H	▶ #	Time	02	CO	S02	N02	Pdif	Pabs	Tamb	Tgas	Tint	Tau
4 1403:12 20.92 85 0 0 8.4 997.7 28.00 50.96 27.7 5 1403:17 20.32 85 0 0 8.2 997.7 28.00 50.96 27.7 6 1400:22 20.32 85 0 0 8.2 997.7 28.00 50.95 27.7 7 1403:27 20.92 85 0 0 7.3 997.7 28.00 50.95 27.7 9 1403:32 20.92 85 0 0 8.1 997.7 28.00 50.95 27.7 9 1403:32 20.92 85 0 0 19.9 997.7 28.00 50.95 27.7 10 1403:47 20.92 85 0 0 11.3 997.7 28.00 50.95 27.7 12 1403:57 20.91 85	4 14:03:12 20.92 85 0 0 8.4 997.7 28.00 50.96 27.9 5 14:03:17 20.92 85 0 0 8.2 997.7 28.00 50.96 27.9 6 14:03:22 20.92 85 0 0 8.5 997.7 28.00 50.96 27.9 7 14:03:22 20.92 85 0 0 7.3 997.7 28.00 50.96 27.9 8 14:03:32 20.92 85 0 0 8.1 997.7 28.00 50.96 27.9 9 114:03:42 20.92 85 0 0 9.9 997.7 28.00 50.96 27.9 10 14:03:42 20.92 85 0 0 11.3 997.7 28.00 50.96 27.9 11 14:03:42 20.92 85 0 0 11.1 997.7 28.00 50.96 27.9 </td <td></td> <td></td> <td>hh:mm:ss</td> <td>%</td> <td>ppm</td> <td>ppm</td> <td>ppm</td> <td>Pa</td> <td>hPA</td> <td>*C</td> <td>°C</td> <td>*C</td> <td>*C</td>			hh:mm:ss	%	ppm	ppm	ppm	Pa	hPA	*C	°C	*C	*C
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- User can select which variables (measured by analyser's sensors, calculated values) will be

presented on PC screen and stored in CSV file.

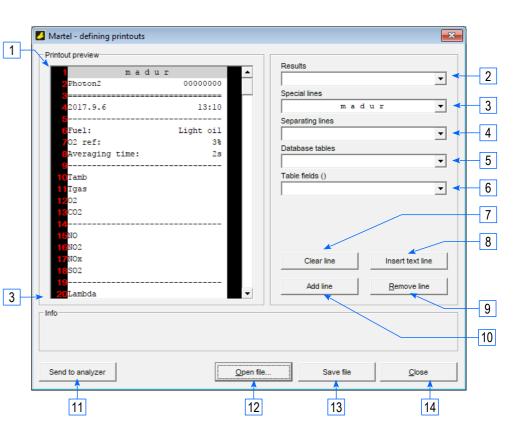
The structure of variables is same as in Photon gas analyser.

- 12. Variables divided into different blocks
- 13. Available (e.g. connected analayser is equipped with this sensor) but not selected variable
- 14. Unavailable variable
- 15. Selected variable
- 16. Cancel all selected variables (clear all selections)
- 17. "Unit switch". It is possible to monitor and store e.g. NO in ppm and NOx in mg/m3
- 18. Cancel all changes and exit
- 19. Accept changes and exit

6. TEMPLATES FOR PORTABLE PRINTER

One of optional accessories for Photon analyser is Martel portable printer. User can define how the printout will look like. It is possible to define many printout templates, transfer them to the analyser and select them according to needs directly in the analyser. The length of printout is limited to XX lines.

- 1. Template preview
- Results variables measured by sensors or calculated values Drop-down list contains all possible variables (independently on analyser's configuration), therefore if analyser does not measure / calculate a variable from template, result will be replaced with dashes ('----')
- 3. Special lines predefined informations, like time and date of measurement, device name and serial number, etc.
- 4. Separating lines allow to divide printout into sections
- 5. Database tables allows to select variable from analyser's database, e.g. fuel parameters, company data
- 6. Table fields fields available in the base selected in (5), e.g. CO_{2max} parameter characteristic for the selected fuel, name and address of user's company, etc.
- 7. Clear line (make it blank)
- 8. Insert text line allows to enter user defined text
- 9. Remove selected line
- 10. Insert a new line <u>below</u> the selected one (in example to the right it will create new line #4)
- 11. Send currently created template directly to connected analyyer (template name: FromPC.tmp)
- 12. Open template from a file
- 13. Save current template to a file
- 14. Close window



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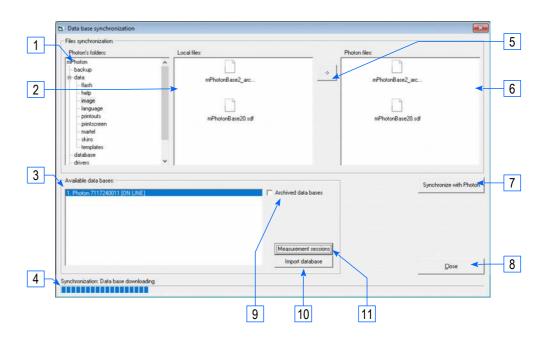
User manual

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7. DATA BASE – SYNCHRONISATION

Photon Com program allows to back-up all important data from Photon analyser to user's PC. Program also allows to send files from PC' hard disk to analyser's memory.

- 1. Tree-structure of folders (both in Photon analyser and on PC)
- 2. List of files located in a selected folder (1) on PC
- 3. List of databases stored in PC (default folder: C:\Users\Public\Documents\madur\PhotonAll\)
- 4. Synchronisation progress bar
- 5. Synchronisation buttons allow to send selected file from PC to analyser or inversely
- 6. List of files located in a selected folder (1) in analyser
- 7. Synchronise data with currently connected device
- 8. Close window
- 9. Show database backups (sdf files) created in Photon manually (these files are stored in different folders)
- 10. Import database add entry (folders and files) with content of a selected sdf file
- 11. Data Base Measurement sessions please see chapter 7.1 for more details



7.1. Data Base – Measurement sessions

After data synchronisation, it is possible to export measured data to a csv file from PC using window "Data Base \rightarrow Measurement sessions"

- 1. List of available measurement sessions
- 2. Detailed information about selected session (name = date and time of session, name of user who took measurements, fuel parameters, etc.
- 3. View of stored results results in a view are exported to csv. View and therefore csv outcome can be modified with (4. Export options)
- 4. Export options
 - Export all data if checked, csv file will store all possible variables (including those not installed in specific analyser results replaced with dashes "---")
 - Export calculated results includes calculated values like stack loss, efficiency, etc.
 - Set averaging time
 - Refresh refresh the View (3)
 - Export to *.CSV file export to csv file to a user specified folder.
- 5. Close window

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