

# Graphics Viewer for

## **PTM-48A Photosynthesis Monitor™**

### **Data Viewer**

Agrograph<sup>™</sup> Data Viewer is an optional add-in program for the Terminal Emulator software which comes with the PTM-48A Photosynthesis Monitor basic software. To install this program, please run the appropriate setup from your PTM-48A CD. The Data Viewer is not a free program so make sure that you have ordered it from your supplier.

1. To open the Data Viewer, switch to the table view mode (yellow arrow 1) in the basic Terminal Emulator software. Then call Data viewer by clicking the appropriate button (red arrow 2), and select the data presentation mode in the Graph Type window. Data may be drawn in two modes: original and with hourly averaging (Exponential Moving Average – EMA). Then, click Draw button (blue arrow 3) to open the chart.

🗢 PTM-48A Photosynthesis Monitor - [test103-2]											
🐥 Project View PTM-48A ?											
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Time	CO2 Conc.	2 Conc.(	Air Flow 1, I	Abs.Humidi	Transpirati	CO2 Excha	CO2 Cor	•			
12-Feb-08 15:15	354	716	0.90	5.75	0.	2 -113.9					
12-Feb-08 15:30	374	739	0.90	5.81	0.	8 -114.0					
12-Feb-08 16:30	458	915	0.89	6.54	0.	1 -140.0					
12-Feb-08 16:45	424	851	0.89	6.48	0.	0 -130.8					
12-Feb-08 17:00	766	767	0.89	6.38	0.	2 -0.2					
12-Feb-08 17:15	723	722	0.89	6.30	0.	0 0.5					
12-Feb-08 17:45	n/a		- nla	- da	n/	a n/a					
12-Feb-08 18:00	503	Choose G	raph Type		X 0.	0 -0.6					
12-Feb-08 18:40	467				- 0.	0 -0.4					
12-Feb-08 19:20	445				- 0.	1 -0.3					
12-Feb-08 20:00	434			N I	0.	0 -0.2					
12-Feb-08 20:40	418				0.	0 0.2					
12-Feb-08 21:20	407	V	m.		0.	0 -0.5					
12-Feb-08 22:00	399				0.	0 -0.2					
12-Feb-08 22:40	396	0	riginal	EMA.	0.	0 -0.2					
12-Feb-08 23:20	394				0.	2 -0.5					
13-Feb-08 00:00	391				0.	0 -0.2					
13-Feb-08 00:40	391		xponential movir	ig average	0.	0 -0.3					
13-Feb-08 01:20	391				0.	2 -0.3					
13-Feb-08 02:00	390		Draw	Cancel	0.	1 -0.3					
13-Feb-08 02:40	388			×	0.	0 -0.5					
13-Feb-08 03:20	387		011		0.	0 -0.2					
13-Feb-08 04:00	386	387	0.91		0.	1 -0.3					
13-Feb-08 04:40	385	387	0.91	4.63	0.	0 -0.4					
13-Feb-08 05/20	385	387	0.91	4 64	n –	n -n 4					

2. The Data Viewer opens in the graph mode. The Y-axes represent measurement units of sensors available in the data table. All data are grouped according to their measurement units. For instance, leaf temperature, air temperature and soil temperature curves have the same Y-axis labeled as "C".



3. By clicking a toggle button, you may see which values are connected to every particular scale. For instance, the "C" axis relates to the data of RTH/AT (Air temperature) and CV/DP (Dew point temperature); the "ppm" axis represents CO2 concentration, both reference and in a leaf chamber, for all four leaf chambers.

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Graph 🔢 Table 📰	N / / / 🗌			
Groups: □ %RH 🔽 C 🗆	g/m3 🔽 kPa 🖵 lpm 🖵 mba	r 🔽 mg/m2*s 🔽 ppm 🔽 µmol(CO2)/	/m2*s 🔽 μmol/m2*s	
Sepsors				
	CO2 Conc.(LC) 1	CO2 Conc.(LC) 2		
	CO2 Conc.(LC) 3	CO2 Conc.(LC) 4		
	CO2 Conc.(Ref) 1	CO2 Conc.(Ref) 2		
■ 🔽	CO2 Conc.(Ref) 3	CO2 Conc.(Ref) 4		
ipm 🔳 🗖 .	Air Flow 1	Air Flow 2		
	Air Flow 3	Air Flow 4		
g/m3 🔳 🗖 .	Abs.Humidity 1	Abs.Humidity 2		
	Abs.Humidity 3	Abs.Humidity 4		
mg/m2*s 📕 🗖	Transpiration 1	Transpiration 2		
	Transpiration 3	Transpiration 4		
µmol(CO2)/m2*s 🔳 🗖	CO2 Exchange 1	🔳 🥅 CO2 Exchange 2		
	CO2 Exchange 3	CO2 Exchange 4		
µmol/m2*s 🔳 🗹	Radiation-RTH/R PAR, micromol/m2*s			
С 🔳 🗹 .	Air Temperature-RTH/AT, C	📕 🔽 Dew Point-CV/DP, C		
%RH 📕 🗖	Relative Humidity-RTH/RH, %RH		$\cup$	
mbar 🔳 🗖 :	Atmospheric Pressure-PTM/AP, mbar		8:00 16:00 0	):00 08:00
kPa 🔳 🗖	Vapour Pressure Deficit-CV/VPD, kPa		15-1	eb-us   14:00

4. By clicking a small colored button near the name of the measured value, you may choose width, color and some other characteristics of any curve in the graph.



5. Every axis has top and bottom black triangles. By pressing appropriate triangle, you may move the axes up or down. The time scale also ends with a pair of horizontal triangles which allow moving along the scale.



6. Any axis (including also the time scale) may be scaled up or down. By pressing a "zoom-in" button (red arrow), you call a zoom-in sign which may be placed at any axis to scale it up. To scale an axis down, please call a zoom-out sign by pressing a button indicated by the blue arrow.



7. Any axis and corresponding curves may be easily switched on and off by using a toolbar with checkboxes. Less number of axes allows to increase the graph pane.



8. There are two ways to recognize the data source of each curve. By pointing a curve, you open a callout with all information about the data source and the pointed value. In the example below, the callout shows that the upper curve belongs to the LT-1 leaf temperature sensor #102, and the point value is 26.7 °C at 10:24 on August 8, 2007.



9. Another way to identify the curve is to open the sensors panel with the colored buttons and appropriate sensors' names.



10. The "Table" button opens a source data table. You may choose a set of viewed values by selecting checkboxes in the appropriate toolbar.

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📈 Graph 🔢	Table	and a							
Groups:	%RH 🔽 %VWC	C R	el 🔽 dS.	/m 🔽 kPa	🗹 μm 🔽	µmol/m2*s			
Date & Time	SD-5M #101	SF-4 #130	CV/DP	LT-1 #102	BTH/AT	RTH/SMTE/ST	BTH/B PAB	BTH/BH	RTH/SMTE/WWC
07-Aug-07 11:2	24 4133	0.057	16.6	22.7	24.4	24.6	16	61.6	62.88
07-Aug-07 11:3	36 4130	-0.046	16.6	22.1	24.2	24.6	25	62.6	62.88
07-Aug-07 11:4	4132	-0.072	16.3	22.5	23.6	24.6	18	63.5	62.88
07-Aug-07 11:5	58 4131	-0.021	16.2	22.0	22.7	24.5	17	66.4	62.88
07-Aug-07 11:5	59 4133	0.021	16.0	21.8	21.6	24.5	17	70.5	62.88
07-Aug-07 12:0	0 4134	-0.032	16.0	21.7	22.2	24.5	13	68.1	62.88
07-Aug-07 12:1	2 4130	-0.025	16.0	21.3	22.1	24.4	20	68.7	62.78
07-Aug-07 12:2	24 4131	-0.005	16.3	21.5	22.6	24.4	21	67.7	62.78
07-Aug-07 12:4	13 4131	0.332	16.2	23.4	24.2	24.0	31	61.2	62.78
07-Aug-07 12:4	4 4132	0.005	16.1	24.0	23.6	24.0	35	62.8	62.88
07-Aug-07 12:4	4132	0.008	16.1	23.2	22.8	24.0	37	65.9	62.88
07-Aug-07 12:4	4132	-0.012	16.1	23.2	22.8	24.0	40	66.0	62.78
07-Aug-07 12:4	4131	-0.025	16.0	22.9	22.4	24.0	42	67.1	62.78
07-Aug-07 12:4	4131	-0.007	16.0	23.4	22.0	24.0	48	68.7	62.88
07.600.07.12.4	19 4131	0.058	16.2	23.1	21.9	24.0	51	70.1	62.78
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11. The current graph may be copied to clipboard by clicking the appropriate button, and then may be pasted to any document as a picture.



12. By clicking the "Groups" button, you may view and edit the groups which include values of the same measurement unit. In the example below, you may see that the "C" group consists of 4 sensors (or values): CV/DP (Dew point), LT-1 #102 (Leaf temperature), RTH/AT (Air temperature), and RTH/SMTE/ST (Soil Temperature).



13. The "Grid Properties" button allows to switch the grids on and off and also move the grid either to foreground or to background.



For enquires and assistance please contact the manufacturer at Phone/Fax: +373-22-550026 Mobile: +373-68888496 E-mail: info@phyto-sensor.com