

TarCom 01 datalogger for Tarom system, manager Installation and operation manual

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TarCom 01 datalogger

1. Applications

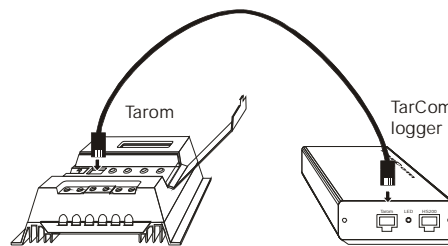
The TarCom is used as datalogger and PC interface for all Tarom and PowerTarom systemmanagers. It stores up to 8000 data sets with all the systemparameters as voltage, currents, state of charge and system status. Additionally you can use the analog input of the TarCom to trace for example radiation data. The alarm output switches exactly at the limits predefined by the user. All necessary cables and the comfortable PC software for windows are included. The TarCom installation is just plug and play.

2. Installation

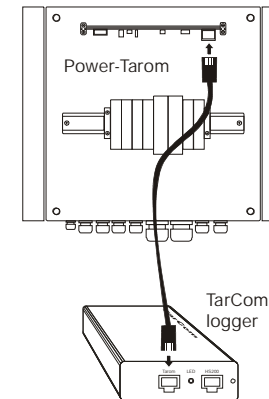
a. preparations

You need a Tarom regulator with a software version of 12.21 or higher. Note that all Taroms produced 2001 or earlier are not able to work together with this logger ! Make sure that the transmit option has been set to "PC": Press button "menu" once, then press button "up" and "menu" simultaneously. "option transmit" appears. Press ok to change the transmit mode. Select "PC" with the "up" key and press "OK".

b. cabling



Connecting the TarCom logger with the Tarom235/245/430

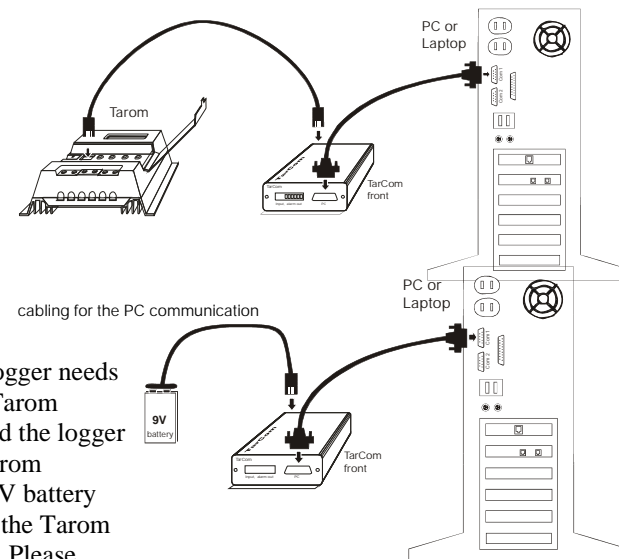


connecting the TarCom logger with the PowerTarom

Connect the TarCom-Logger with the Tarom-Regulator via the attached patch cable. The green LED at the logger will blink once every minute to indicate the correct data transfer from the Tarom regulator.

c. PC-connection

To check or modify the actual data logging parameters of the TarCom use the included serial cable to connect the logger to the PC or laptop. You can either connect to the serial interface COM1 or COM2 of the PC.



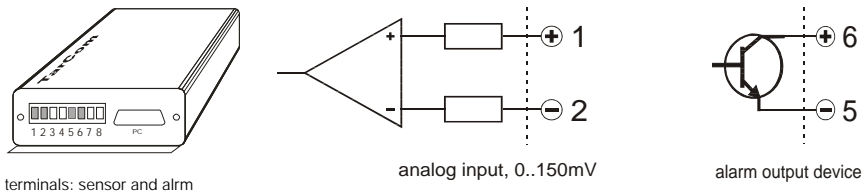
PC communication without the Tarom regulator

During PC connection the logger needs the power supply from the Tarom regulator. If you want to read the logger independently from your Tarom regulator please connect a 9V battery with the attached adapter to the Tarom socket instead of the Tarom. Please make sure to use the right time settings

if you load the stored logger data to the PC. See check box logger time.

d. terminals

The sensor input and alarm output terminals are on the green plug as indicated.



The high impedance analog input can be used to attach a radiation sensor to the data logger. Any voltage source from 0 .. 150 mV can be logged together with the Tarom regulator data. The input range is calibrated in our factory but you can readjust these range via the PC program under menu options/calibration.

The alarm relays inside the TarCom is realised by a transistor with the collector on terminal 6 (+) and the emitter on terminal 5 (-). The transistor is able to switch maximal 50V and 50 mA.

The alarm switches only when the TarCom logger receives data from the Tarom regulator (ca. each minute). The minimum alarm time is so one minute.

3. PC-program

a. installation

The program setup for **TarCom** for windows is done from the included Diskette. The program runs under windows 95/98/NT/2000/XP. The installation is completely automatic, just double click on the setup icon in the diskette directory. To start the program double click the TarCom icon on your desktop. Use the menu file/interface/automatic to connect the TarCom program with the logger. Pressing the F1 key any time will help you by using this software.



b. overview

TarCom for windows offers you a lot of features to get most of your data logger. Choose menu help/contents to get the first help screen. Use all the links to read more about these topics:

- configure the data storage parameters
- configure the alarm settings
- read, edit and visualize the data from the TarCom datalogger
- store all the logger data on the hard drive or on a diskette

- export the data to an excel sheet
- continuously display the system data on the PC in an extra window

c. data table

All collected data from the logger is displayed in a table. These data sets can be stored to a file, exported to an EXCEL sheet or visualized in a chart (see below). To reduce the shown data you can reduce the displayed amount of sets by calculating averaged values over a chosen period of time.

To find the minimum or maximum values of each column all sets can be sorted in an ascending or descending order. After selecting subsets of rows you can copy them to the clipboard or delete them.

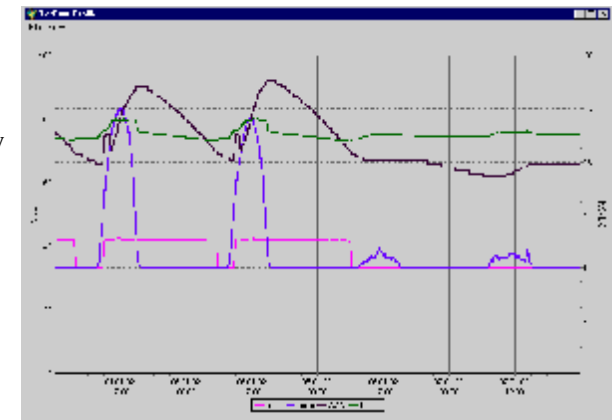
Time	I1	I2	V1	V2	SOC	Status
2001-12-22 11:10:00	0.00	0.00	0.00	0.00	0.00	0.00
2001-12-22 11:10:01	0.00	0.00	0.00	0.00	0.00	0.00
2001-12-22 11:10:02	0.00	0.00	0.00	0.00	0.00	0.00
2001-12-22 11:10:03	0.00	0.00	0.00	0.00	0.00	0.00
2001-12-22 11:10:04	0.00	0.00	0.00	0.00	0.00	0.00
2001-12-22 11:10:05	0.00	0.00	0.00	0.00	0.00	0.00
2001-12-22 11:10:06	0.00	0.00	0.00	0.00	0.00	0.00
2001-12-22 11:10:07	0.00	0.00	0.00	0.00	0.00	0.00
2001-12-22 11:10:08	0.00	0.00	0.00	0.00	0.00	0.00
2001-12-22 11:10:09	0.00	0.00	0.00	0.00	0.00	0.00
2001-12-22 11:10:10	0.00	0.00	0.00	0.00	0.00	0.00

Data table

d. charts

To visualize all your collected data the program offers a powerful charting possibility. Displays the actual data table in a line chart. You can modify the chart in several ways:

- resize the whole chart window
- switch on or off every serie: the 4 currents, 2 voltages, SOC and status information. See menu view/ view lines.
- you can shift the time axis by clicking the right mouse button and pull it in any direction.
- you can zoom in by clicking the left mouse button on the top left and pulling to the bottom right point of the zooming rectangle. Unzoom by drawing a rectangle down to up or with the view menu unzoom.



data visualization

- click with the left mouse button on a colored line: the data table of the main window shows you the corresponding data set.
- you can copy the chart to the clipboard, in a file or print it.
- the scaling can be modified by the user or automatic, see view/scaling

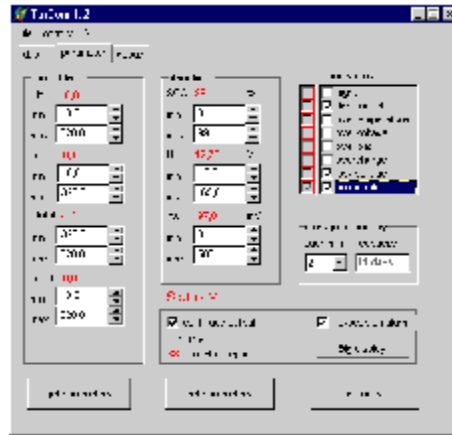
e. logging parameters

Please check after the installation whether you have predefined the right time between single data storage (logging frequency) and the limits for alarm signalisation.

To check the actual parameter setting of the TarCom logger click on the get logger parameters button.

The default parameters button proposes you a set of predefined limits and parameters. If you want to get the modified values active do not forget to press the set logger parameters button to transmit them into the logger.

For demonstration use you can switch on the direct output option. In this mode all the Tarom data will be transmitted directly to the PC. This will happen every minute. The internal data logging is not stopped in this mode.



parameter settings

4. Operation

a. data collection

The logger records all important system parameters and an additional analog input available for the user. Recorded data:

system parameter	range	resolution
relative time	0. 255 min	1 sec
total charge current	0 .. +320A	0.1A
load current	0 .. +320A	0.1A
battery current	-320 .. +320A	0.1A
solar module current	0 .. +320A	0.1A
state of charge	0 .. 99%	1 %
battery voltage	8 .. 65.5V	0.01V
status flags	Night, load Disconnect, over-Temperature, Over-voltage, Low voltage, over-Current load, no Module	on/off
analog input	0 .. 150mV	0.1mV

After connection to the Tarom regulator the logger starts to collect data. The Tarom

sends each minute the actual system values to the logger. Depending on the defined logging frequency all values collected during one period are used to calculate the average which will be stored. Only the status flags (night, overload ..) will not be averaged. If they occur at least once during the collecting period they will stay on until the end of this period.

Recording frequency	logging capacity
2 min	11 days
4 min	22 days
8 min	1.5 month
16 min	3 months
32 min	6 months
64 min	1 year
128 min	2 years
256 min	4 years

If all 8176 data sets are completely used, the TarCom logger overwrites the oldest data again (circular storage). With this method you have always the newest data of the actual logging period available.

b. alarm programming

The TarCom logger checks every minute whether the system parameters are within the alarm limits predefined by the user. Via the PC program all possible ranges are as follows:

parameter	possible range
Load current	min/max: -320A .. +320A
Charge current	min/max: -320A .. +320A
Battery current	min/max: -320A .. +320A
Module current	min/max: -320A .. +320A
Battery voltage	min/max: 8V .. 65V
SOC, state of charge	min/max: 0..99%
analog input	min/max: 0 .. 150mV
Status flags: night, load disconnected, low/over voltage, over load, over temperature, over current module, no module.	to be checked or ignored

If one or more of this parameter is outside the given ranges the alarm contact will be

closed. If one or more of the status flags is on and the user checked the equivalent box the alarm will be set, too. If you are observing the actual system data with the direct output option on the PC will display the alarm message, too.

If you want to check only one value you have to set the limits for all other parameters to the min/max value.

Example: You want to be alarmed if the voltage runs under 11 Volt or over 15 Volt.

Open in the TarCom program the parameter page and set the voltage range to this values, set all current values to min. -320 and max +320A, set the SOC min/max to 0/99, the analog input min/max to 0/5000 and disable all status checkboxes. Store the parameters to the logger.

5. Warranty

The manufacturer will remove all construction and material faults that occur during the warranty time of two years and that do not impair the proper functioning of the device. Guarantee is effected by either rectification or replacement This does not include the costs involved in exchanging, dispatching or re-installing. Any further claims against the manufacturer arising from this obligation, particularly compensation claims due to losses in sales, reimbursement payments as well as indirect damages are excluded if not forced by law.

6. Technical data

system voltages via Tarom regulator	12, 24, 36, 48VV
min./max. battery voltage	8 V / 65V
logging rate, averaged values	2, 4, 8, 16 .. 256 min
memory size	8176 data sets
own consumption	8 mA
sensor input	0 ..150 mV
max. current alarm relais	50mA, 50V
ambient temperature	-15...+50°C
protection	IP 22
case	aluminium
dimensions, weight	130 x 80 x 30 mm, 150 g

TarCom01 complete shipment list:

- TarCom01 data logger
- patch cable (black)
- serial cable (grey)
- battery (9V) cable
- plug for terminals 1..8 (green)
- diskette with software
- manual (this item)