



SOFTWARE  
**EasyComm**  
(Code 775 044)

**USER'S MANUAL**  
(Code M 981 357/00 - A)

# EasyComm

## INDEX

1. Introduction.....	Page 2
2. EasyComm contents .....	Page 2
3. Main features.....	Page 2
4. Installation.....	Page 3
4.1. System requirements .....	Page 3
4.2. Protection key .....	Page 3
5. EasyComm operation mode .....	Page 4
5.1. Ports.....	Page 4
5.1.1. Add.....	Page 4
⇒ Adding a port .....	Page 4
⇒ Adding a peripheral.....	Page 4
5.1.2. Test.....	Page 5
5.1.3. Print.....	Page 6
5.1.4. Quit.....	Page 6
5.2. Peripherals.....	Page 6
5.3. Automatic reading menu.....	Page 6
⇒ Automatic reading.....	Page 6
⇒ Automatic reading test .....	Page 6
5.4. Help.....	Page 7
A. Unknown peripheral .....	Page 9
B. LM-24 energy meter centralisation unit .....	Page 11
C. CVM-M & CVM-M-HAR.....	Page 17
D. CVMk & CVMk-4C.....	Page 22
E. CVM-BD.....	Page 35
F. Computer 14d-144.....	Page 45
G. CVM 96 and CVM 96 SP.....	Page 50
H. DH96 AC, DH96 DC, DH96 CPM, DH96 CT, DH96 FT.....	Page 58



## **1. Introduction.**

Welcome to EasyComm, the basic software for users of CVM power meters as well as all available peripherals. EasyComm is designed for running under Microsoft Windows 95, 98 or NT environment. EasyComm offers many features that will help you to obtain an easy communication to a CIRCUTOR peripheral network in order to perform a complete management of any electrical network.

You can easily configure, add, remove and read peripherals.

## **2. EasyComm contents.**

EasyComm software is factory delivered in a package consisting of:

-  5 3.5" high-density diskettes containing the EasyComm program.
-  User's manual.

## **3. Features.**

EasyComm provides a set of personalised tools for each type of peripheral which guarantee a simple programming and operation procedures.

Easycomm main features are:

- Possibility of building a network of CIRCUTOR peripherals to control the electrical network. Different types of peripherals (LM-24, CVM-M, CVM-M-HAR CVM power meters, CVM-BD,...) can be added.
- It permits the user to configure the program to take regular readings of the values of the peripherals.
- Network is easy to handle.
- It checks that the peripherals are working properly.
- EasyComm test utility will indicate which peripherals are properly working.
- There is an option for printing out the configuration of the network of peripherals connected to EasyComm, indicating their main features.
- Possibility of simulating peripherals.

#### **4. Installation.**

Before installing EasyComm assure that your system has the minimum requirements for the program to work properly.

IMPORTANT : If you have an old EasyComm installed on your computer, uninstall it and remove its directory before installing this new Easycomm.

Proceed as follows to install EasyComm:

- Run SETUP.EXE, which you will find in the first installation diskette.
- Choose the Directory where you wish to install EasyComm. The directory may have 8 letters at most (valid for MS-DOS).
- Remove the diskettes from the computer and keep them in a safe place, since you will need them for other possible installations.

#### **4.1 System requirements.**

- ◆ IBM/PC or compatible computer, with 75Mhz Pentium CPU or higher.
- ◆ Windows 95, Windows 98 or Windows NT.
- ◆ 16 MB RAM Memory.
- ◆ 3.5 diskette drive (indispensable).
- ◆ VGA colour monitor.
- ◆ Mouse.
- ◆ Smart converter. (Ref. 770208)

The above indicated configuration is flexible, any enhancement to the computer configuration will increase performance.

#### **4.2 Protection.**

Hooked to this manual you will find a label containing an authorisation number necessary to run EasyComm. This number is unique and you must have it in hand when making consultations or asking for upgrades.

The first time you run EasyComm you will be asked to enter this number. If you enter a wrong code or simply cancel this screen, program will run in demo mode. When you are in demo mode, peripherals can be only simulated.

## **5 EasyComm operation mode.**

This section explains in detail how to use the different options of the program's menus.

To begin with, we shall explain the basic operations involved in handling the program.

- ◆ Select: place the mouse over the required icon and click the left button.
- ◆ If you click the icon, a menu will appear, depending on whether it corresponds to a port or a peripheral.
- ◆ The options activated on the port and peripheral menus depend on whether a port or peripheral is selected.

This menu provides access to a series of options related to the communications ports.

### **5.1 Ports.**

This menu allows to select options related to communications ports.

#### **5.1.1 Add.**

This option allows the user to add communications ports or peripherals to the network. There are two options on this menu:

##### **➤ Add Port**

This option is always active and indicates which ports are available to EasyComm on your computer. Click the port and EasyComm will start to use it. Port icon can be normal (port is available) or crossed out (port is not available).

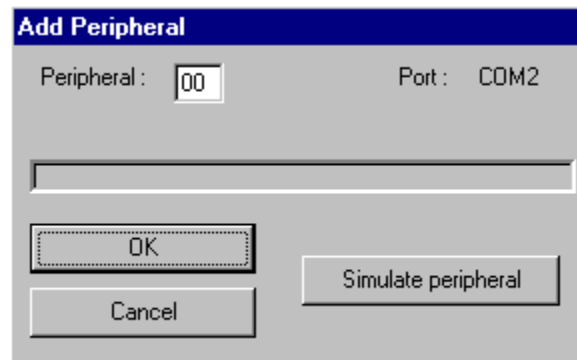
A port occupied by EasyComm will be released once you quit the program. When you run the program again, if the port has no peripheral connected to it, the port will not be occupied by EasyComm.

##### **➤ Add Peripheral.**

This is only active if a communications port has been selected. This option is also active from the serial port icon.

From here you may add a peripheral to any port you wish (Fig.1). EasyComm will prompt you for the peripheral number you want to search with. This process may take some minutes since the program searches for the peripheral on all frequencies and with all possible variations with bits per character, stop bits and parity.

There is also the option of simulating a peripheral. This option will place a peripheral on the network providing a working example, simulating the values given. These values have no effect and if you change the configurations of this peripheral they will neither be stored nor taken into consideration.



**Fig. 1**

### **5.1.2 Test.**

There are two test options. EasyComm takes a few seconds to carry out these tests.

Depending on the result obtained, the peripherals will have a different icon:

- Normal Icon -> Last test OK
- Crossed out Icon -> Last test wrong.
- Question mark Icon -> Simulated peripheral.

There are two test types:

#### **➤ Test All.**

Tests all EasyComm ports and peripherals. Indicates whether they are working properly or not.

#### **➤ Test port.**

Tests all the peripherals on the selected port.

### **5.1.3 Print.**

Generates hard copy of a list of all the peripherals connected to EasyComm. This list gives the following information:

- Port: Indicates the port the peripheral is connected to.

- Peripheral: Indicates the number that identifies the Peripheral on the network.
- Type: Indicates type of Peripheral. CVM-M, LM-24...
- Version: Inside version of the Peripheral.

#### **5.1.4 Quit.**

Exits the EasyComm program.

Note: When you exit EasyComm all the communication ports used become available.

#### **5.2 Peripherals.**

This option may only be chosen if you have selected a Peripheral. The menu displayed will depend on the Peripheral selected. This menu can also be accessed clicking the right mouse button over the Peripheral selected.

#### **5.3 Automatic Reading Menu.**

This menu carries out two operations.

##### **➤ Automatic Reading.**

This option is for EasyComm to take readings from the different peripherals for which automatic reading mode is activated, at intervals programmed by the user.

This operation can be minimised to work while the user is working on things outside the EasyComm programming.

##### **➤ Automatic Reading Test.**

Displays what peripherals have the automatic reading mode activated or deactivated, or if they do not have this property.

Click a Peripheral to activate or deactivate the automatic reading mode for this peripheral.

Note: This option only works on peripherals which have this property.

#### **5.4 Help.**

This is the help for EasyComm.

➤ **Help.**

Indicates how EasyComm and its peripherals work, in simplified fashion.

➤ **About...**

Indicates the version of EasyComm that is currently installed. (Fig.2)



**Fig. 2**

➤ **System Information**

Shows the version of all available peripherals in Easycomm.

➤ **Register**

Allows to fill in a register card to, afterwards, print it and send it back to CIRCUTOR S.A. technical department. If you register you can receive technical support.

➤ **Language**



Allows to change program language. Available options are : Spanish, English, Deutsch, Cesky and Française. When language is changed you must restart Easycomm.

# Unknown Peripheral

INDEX

1. Introduction.....	Page 9
2. Operation of unknown peripherals .....	Page 10

2.1. Setup .....	Page 10
2.2. Removing a peripheral .....	Page 10

## **1. Introduction**

An unknown peripheral is a non-EasyComm-implemented peripheral.

In this addendum we shall explain the only operation that may be conducted with an unknown peripheral.

The icon that identifies the unknown peripheral is:



Different icons can be:

- A black question mark: Its operation has not been check up.
- A green question mark: Last test resulted OK.
- A red question mark: Last test resulted wrong.
- A yellow question mark: Simulated unknown peripheral

## **2. Operation of unknown peripherals.**

You may access this peripheral's working menu when an unknown peripheral is selected in EasyComm. The peripherals option of EasyComm becomes active. This menu can also be accessed by clicking the right mouse button on the icon of the unknown peripheral selected.

The options available for this peripheral are setup and remove.

### **2.1 Setup.**

This option, and since the peripheral is unknown, only allows the user to identify this peripheral. No communication may be changed (Fig. 3).

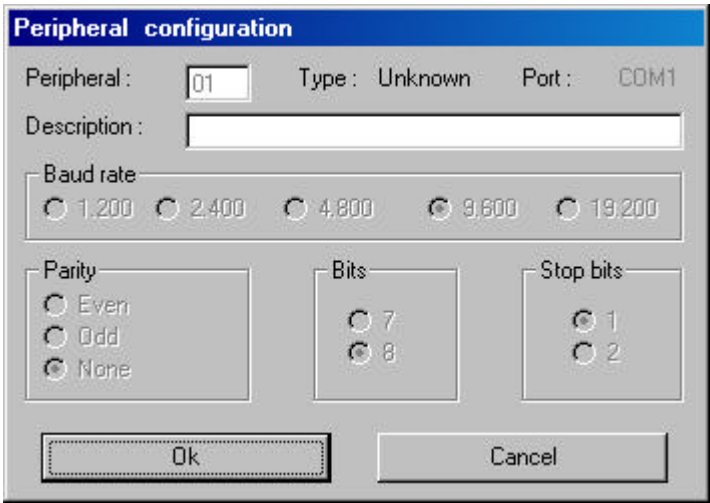


Fig. 3

**2.2 Delete peripheral.**

Removes the unknown peripheral from the EasyComm network.

# Energy meter centralisation unit LM-24

INDEX
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1. Introduction.....	Page 11
2. LM-24 operation .....	Page 12
2.1. Setup .....	Page 12
2.1.1. Communications.....	Page 12

2.1.2. Energy meters.....	Page 13
2.1.3. Automatic reading.....	Page 14
2.2. Display.....	Page 15
2.3. Energy meter value reset.....	Page 16
2.4. Removing a peripheral.....	Page 16

## **1. Introduction**

In this addendum we shall explain the basic operations that can be made with EasyComm on a LM-24 peripheral.



The icon that identifies the LM-24 is: **LM-24**

Different icons can be:

- Normal Icon : Last test OK.
- Crossed out Icon : Last test wrong.
- Question mark icon : Simulated LM-24 peripheral

In certain operations EasyComm will ask you for a password to avoid any unwanted modification might be done. This password is **9999**.

## **2. LM-24 operation.**

The working menu of the centralisation unit may be accessed when an LM-24 is selected in EasyComm. The EasyComm peripherals option will become active. This menu can also be accessed by clicking the right mouse button on the icon of the LM-24 selected.

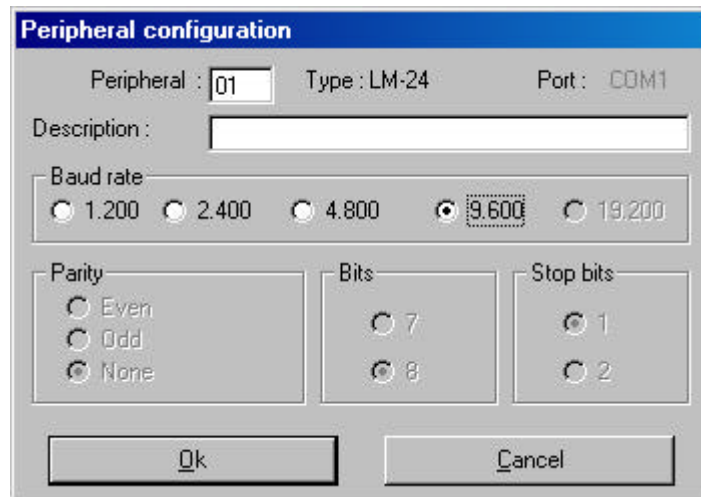
Options available for the LM-24 are configuration, display data in real time, removing the LM-24 and reset energy meter values.

### **2.1 Setup.**

This option permits the user to modify the LM-24 parameters, such as communication parameters, energy meters, enabling LM-24 automatic data reading utility.

### **2.1.1 Communications.**

We can here give a name to the LM-24, change the peripheral number and modify the communication baud rate (Fig.4).

A screenshot of a 'Peripheral configuration' dialog box. The title bar is blue with the text 'Peripheral configuration'. Inside the dialog, there are three fields at the top: 'Peripheral : 01', 'Type : LM-24', and 'Port : COM1'. Below these is a 'Description :' label followed by an empty text box. The 'Baud rate' section has five radio buttons: 1.200, 2.400, 4.800, 9.600 (which is selected and has a dotted border), and 19.200. Below the baud rate are three sections: 'Parity' with radio buttons for Even, Odd, and None (selected); 'Bits' with radio buttons for 7 and 8 (selected); and 'Stop bits' with radio buttons for 1 (selected) and 2. At the bottom are 'Ok' and 'Cancel' buttons.

**Fig. 4**

The peripheral number can be any number between 1 and 99 as long as there is no peripheral with the same number in the same port.

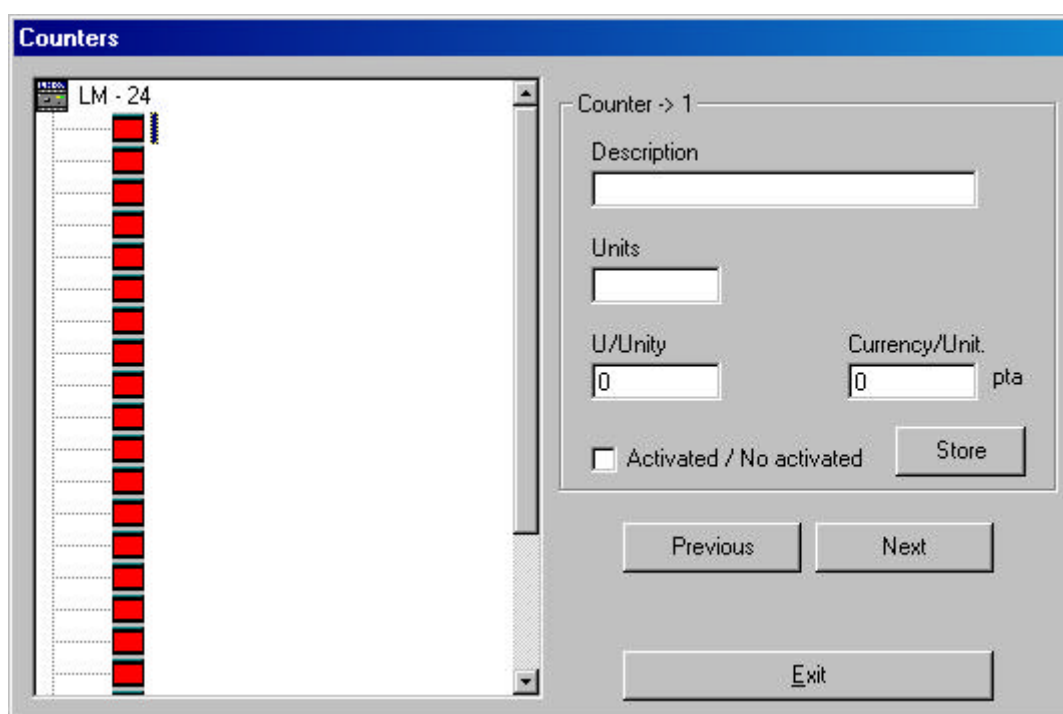
Only communication baud rate can be changed in the communication parameters. The other parameters are fixed.

These parameters are:

- No parity
- 8 bits per character
- 1 stop bit.

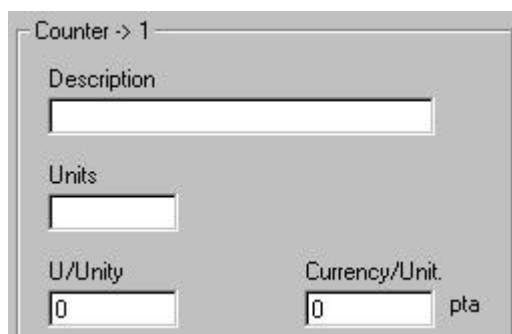
### **2.1.2 Counters.**

A screen (Fig.5) will appear in the energy meter setup. On this screen we can indicate which meter is active. We can here indicate which energy meters are active. To enable or disable any energy meter just click the box ☒ and press Store.



**Fig. 5**

On the right side of this screen (Fig. 6) you can define the multiplier factor to apply to the pulses to get the real reading, reading units, and price per pulse (in the country currency).

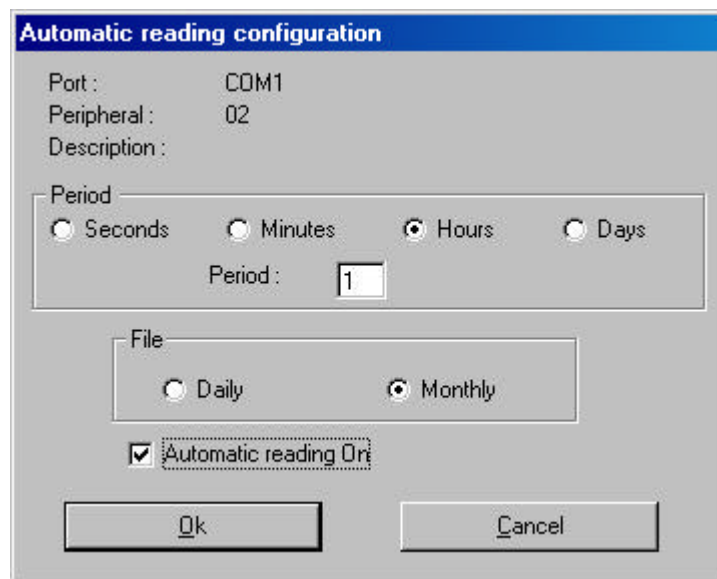


**Fig. 6**

Note: Typed data is only valid from EasyComm and is saved in the LM-24 setup file.

### **2.1.3 Automatic reading.**

To set the LM-24 for automatic reading mode (Fig.7)




**Fig. 7**

You may also choose other parameters if automatic reading is selected:

- Time to elapse between readings.
- Whether you want a daily or monthly file.

## **2.2 Display.**

Takes the reading of the LM-24 meter selected in real time. There is also the option of saving the values being read or print selected ones  1 (Fig.8).

**Display**

	Pulses	Read	Price pta
<input checked="" type="checkbox"/> 1 -	16	0	0,00
<input type="checkbox"/> 2 -	21	0	0,00
<input checked="" type="checkbox"/> 3 -	18	0	0,00
<input checked="" type="checkbox"/> 4 -	20	0	0,00
<input type="checkbox"/> 5 -	12	0	0,00
<input checked="" type="checkbox"/> 6 -	13	0	0,00
<input type="checkbox"/> 7 -			
<input type="checkbox"/> 8 -			
<input type="checkbox"/> 9 -			
<input type="checkbox"/> 10 -			
<input type="checkbox"/> 11 -			
<input type="checkbox"/> 12 -			
<input type="checkbox"/> 13 -			
<input type="checkbox"/> 14 -			
<input type="checkbox"/> 15 -			
<input type="checkbox"/> 16 -			
<input type="checkbox"/> 17 -			
<input type="checkbox"/> 18 -			
<input type="checkbox"/> 19 -			
<input type="checkbox"/> 20 -			
<input type="checkbox"/> 21 -			
<input type="checkbox"/> 22 -			
<input type="checkbox"/> 23 -			
<input type="checkbox"/> 24 -			
<input type="checkbox"/> All counters			

COM

Port : COM1  
Peripheral : 02  
Type : LM-24

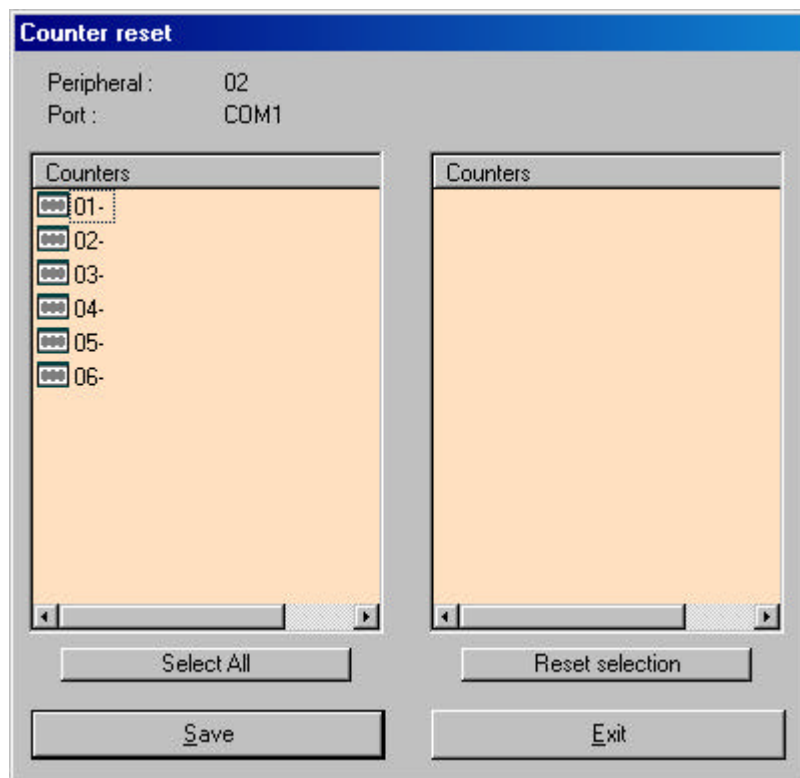
**Fig. 8**

Note: Only the readings from the meters that have been activated in the energy meter setup will be displayed.

### **2.3 Counter reset.**

Use this option to reset to zero energy meter values (Fig. 9)





**Fig. 9**

Select the meters to be reset and then press **Save**. All the meters will be reset. If an error occurs during the process a message will appear telling the user in which meter the error took place.

#### **2.4 Delete peripheral.**

Removes the selected LM-24 from the EasyComm network.

## **CVM-M & CVM-M-HAR**

## INDEX

1. Introduction.....	Page 17
2. CVM-M & CVM-M-HAR operation .....	Page 17
2.1. Setup.....	Page 18
2.1.1. Communications.....	Page 18
2.1.2. CVM-M.....	Page 19
2.1.3. CVT file .....	Page 20
2.1.4. Automatic reading.....	Page 20
2.2. Files.....	Page 21
2.3. Removing a peripheral.....	Page 21

### **1. Introduction**

In this addendum, we shall explain the basic operations that may be carried out with EasyComm on a CVM-M and a CVM-M-HAR.

The icon that identifies the CVM-M and CVM-M-HAR is:



Different icons can be:

- Normal Icon : Last test OK.
- Crossed out Icon : Last test wrong.
- Question mark icon : Simulated CVM-M peripheral

In certain operations EasyComm will ask you for a password to avoid any unwanted modification might be done. This password is **9999**.

### **2. CVM-M & CVM-M-HAR operation.**

The basic operation of the whole program is independent of whether we are working with a CVM-M or a CVM-M-HAR. We shall refer to both as CVM-M.

The peripheral working menu can be accessed when EasyComm has a CVM-M selected. The peripherals option of EasyComm will become active. This menu can also be accessed by clicking the right mouse button on the selected CVM-M.

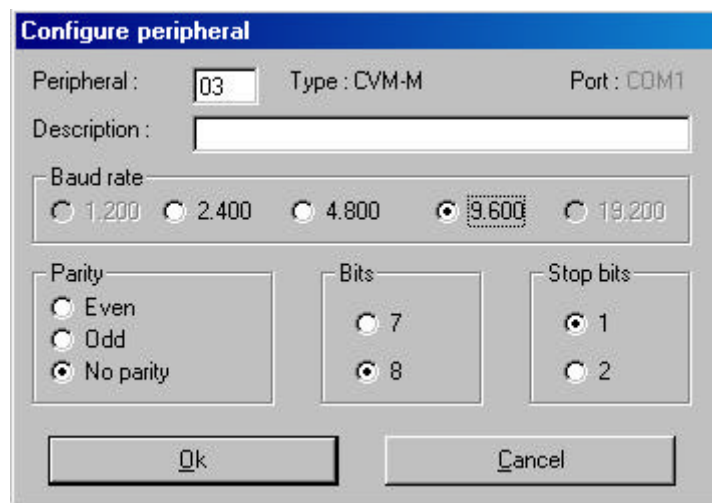
The options available for the CVM-M are configuration, working with files and removing the CVM-M.

## **2.1 Setup.**

This option permits the user to modify the CVM-M parameters, such as communication parameters, configuration of the CVT file that is stored in the CVM-M, enabling CVM-M automatic data reading utility.

### **2.1.1 Communications.**

We can here give a name to the CVM-M, change the peripheral number and modify the communication parameters (Fig.10).



**Fig. 10**

The peripheral number can be any number between 1 and 99 as long as there is no peripheral with the same number in the same port.

All communication parameters may be changed in this peripheral.

### **2.1.2 CVM-M.**

A screen (Fig.11) will appear in the CVM-M setup. On this screen we can modify main data recording characteristics of the CVM-M. The user can set the data recording period (in seconds) and the trigger parameters.

**Program CVM-M**

Storing period (sec.): 900

Trigger  
Trigger parameter : VN

Values  
Maximum : 250  
Minimum : 200

Channel A/D/1  
Zero : 0  
Full scale : 250

Date  
On : 22/11/99 11:20:10  
Off : 22/11/99 11:20:10

Channel A/D/2  
Zero : 10  
Full scale : 360

CVM-COM  
Number of rings

CVM-M-HAR  
CVM-HAR number:  
Nominal voltage:  
Period : 0  
Value :

Save Exit

**Fig. 11**

Note: In case of a peripheral CVM-M-HAR, the number of the CVM-HAR the peripheral is connected to, the period and the rated voltage value can also be user-defined.

### **2.1.3 CVT file.**

When selecting this option the setup screen of the file to be stored by the CVM-M is shown up. (Fig. 12). We can here choose CVM or CVT type files.

Parameters	Instant.				Maximum				Minimum			
	L1	L2	L3	III	L1	L2	L3	III	L1	L2	L3	III
Phase-Neutral Voltage	■											
Phase-Phase Voltage												
Current	■											
Active Power	■											
Inductive Power						■						
Capacitive Power												
Power Factor	■				■	■						
Negative Active Power												
Negative Inductive Power												
Negative Capacitive Power												
Negative Power Factor												
Frequency	■	■	■	■								
Apparent Power												
DC1												
DC2												

Energy	Counter		
	1	2	3
Active		■	
Inductive			
Capacitive		■	
Negative Active		■	
Negative Inductive			
Negative Capacitive			
Energy with decimals?	No		

File: ☒ \*CVM ☐ \*CVT

File name:

**Fig. 12**

Whether a file CVM is chosen, no parameter can be modify since these are fixed and pre-set.

Whether a file CVT is chosen, then parameters to be stored in the file can be selected. Just click the box and this turns to blue.

#### **2.1.4 Automatic reading.**

To set the LM-24 for automatic reading mode (Fig. 13).

Port : COM1  
Peripheral : 03  
Description :

Period  
Days :

☒ Automatic reading on

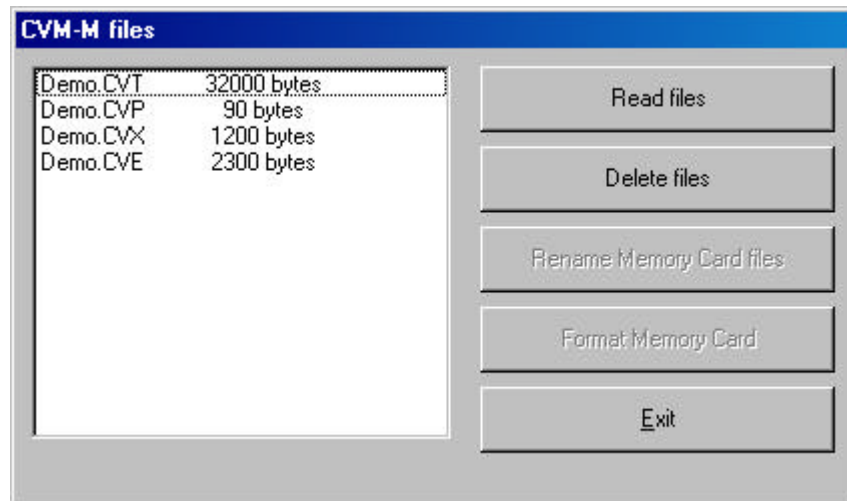
**Fig. 13**

Indicate here the period between two CVM-M readings. Whenever a reading is taken an no error occurs, the memory of the CVM-M is erased.

Files are saved in a directory that refers to this peripheral. All data read from the CVM-M is added to the already existing data, therefore increasing the file size.

## **2.2 Files.**

Use this option to perform manual reading operations on the CVM-M and the memory card that can be inserted into it (Fig. 14).



**Fig. 14**

Whether no memory card is inserted into, then only available operations are to read and delete data from the CVM-M. Whether a memory card is inserted into, then the user can also format and rename files.

Choose a file to perform read, delete and rename operations over it.

## **2.3 Removing a peripheral.**

Removes selected CVM-M from the EasyComm network.

# CVMk-2C, CVMk-4C & CVMk-HAR

## INDEX

1. Introduction.....	Page 22
2. CVMk-2C, CVMk-4C & CVMk-HAR operation.....	Page 22
2.1. Setup.....	Page 23
2.1.1. Communications.....	Page 23
2.1.2. CVMk.....	Page 24
2.1.3. Cards.....	Page 25
2.1.4. Module alarms.....	Page 30
2.1.5. Automatic reading .....	Page 30
2.2. Display.....	Page 31
2.2.1. CVMk.....	Page 31
2.2.2. Cards.....	Page 32
2.2.3. Harmonics.....	Page 33
2.3. Removing a peripheral.....	Page 34

## **1. Introduction**

In this addendum, we shall explain the basic operations that may be carried out with EasyComm on a CVMk-2C, CVMk-4C and a CVMk-HAR.



The icon that identifies the CVMk-2C ,CVMk-4C and CVMk-HAR is:

Different icons can be:

- Normal Icon : Last test OK.
- Crossed out Icon : Last test wrong.
- Question mark icon : Simulated CVMk peripheral

In certain operations EasyComm will ask you for a password to avoid any unwanted modification might be done. This password is **9999**.

## **2. CVMk-2C, CVMk-4C and CVMk-HAR operation.**

The basic operation of the whole program is independent of whether we are working with a CVMk-2C, a CVMk-4C or a CVMk-HAR. We shall refer to all of them as CVMk.

The peripheral working menu can be accessed when EasyComm has a CVMk selected. The peripherals option of EasyComm will become active. This menu can also be accessed by clicking the right mouse button on the selected CVMk.

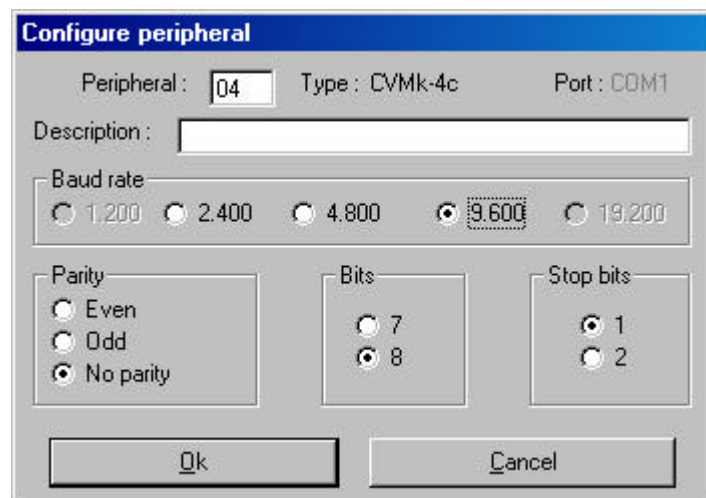
The options available for the CVMk configuration, working with files and removing the CVMk.

### **2.1 Setup.**

This option permits the user to modify the CVMk parameters. Depending of the inserted module into the peripheral, the module setup will be variable. Communication setup is similar for all CVMk.

#### **2.1.1 Communications.**

We can here give a name to the CVMk, change the peripheral number and modify the communication parameters (Fig. 15).



**Fig. 15**

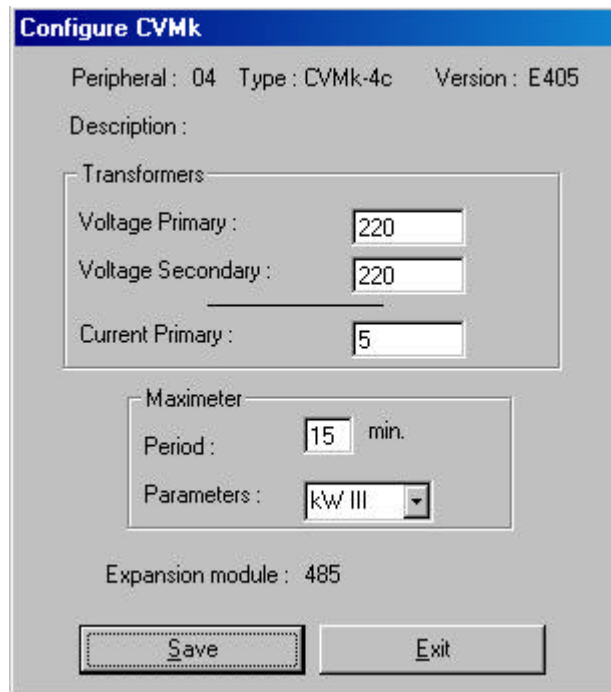
The peripheral number can be any number between 1 and 99 as long as there is no CVMk with the same number in the same port.

All communication parameters may be changed in this peripheral.



### **2.1.2 CVMk.**

A screen (Fig.16) will appear in the CVMk setup. We read here information about the peripheral number, the CVMk type and the possible description given to the CVMk.



**Configure CVMk**

Peripheral : 04    Type : CVMk-4c    Version : E405

Description :

Transformers

Voltage Primary : 220

Voltage Secondary : 220

Current Primary : 5

Maximeter

Period : 15 min.

Parameters : kW III

Expansion module : 485

Save    Exit

**Fig. 16**

Main CVMk features can here be modified, such as the voltage and current transformer ratio setting, the recording period for the power demand utility (in seconds) and the parameter whose demand is controlled (kWIII, kVAIII, AavIII). The expansion module or card inserted into the CVMk is also shown up.

### **2.1.3 Cards.**

Diverse types of cards are user-available. The setup screen will be defined by the expansion module inserted, since different parameters are to be set for each module type.

- **Cards : 485 & 232.**

No configuration option is available since these are only use for communication actions.

- **Cards : ER-485 ER-232 & RED.**

Initial values of energy meters can be here set. For a 4 quadrant meter, initial values of negative energies can also be set.

**RED configuration**

Energy module  
 Date : 22/11/1999 Time : 11:50:49

Initial energy values

Active :	<input type="text" value="0"/>
Inductive :	<input type="text" value="0"/>
Capacitive :	<input type="text" value="0"/>
<hr/>	
Negative active :	<input type="text" value="0"/>
Negative Inductive :	<input type="text" value="0"/>
Negative capacitive :	<input type="text" value="0"/>

Output/Relay

☐ Delete energy

☐ Delete Power Demand (Md)

**Fig. 17**

- **RED-MAX card.**

Partial values of energy meters for three tariffs can be here. For a 4 quadrant meter, initial values of negative energies can also be set.

Use also this option to set the time discrimination system. (Fig. 18).

**Red-Max Configuration**

Energy module  
 Date : 22/11/1999 Time : 11:53:11

Initial energy values

Tariff 1	Tariff 2	Tariff 3
Active : <input type="text" value="0"/>	Active : <input type="text" value="0"/>	Active : <input type="text" value="0"/>
Inductive : <input type="text" value="0"/>	Inductive : <input type="text" value="0"/>	Inductive : <input type="text" value="0"/>
Capacitive : <input type="text" value="0"/>	Capacitive : <input type="text" value="0"/>	Capacitive : <input type="text" value="0"/>
<hr/>		
Negative active : <input type="text" value="0"/>	Negative active : <input type="text" value="0"/>	Negative active : <input type="text" value="0"/>
Negative Inductive : <input type="text" value="0"/>	Negative Inductive : <input type="text" value="0"/>	Negative Inductive : <input type="text" value="0"/>
Negative capacitive : <input type="text" value="0"/>	Negative capacitive : <input type="text" value="0"/>	Negative capacitive : <input type="text" value="0"/>

Red Max

☐ External tariff selection

☒ External synchronisation power demand period

☐ Delete energy

☐ Delete Power Demand (Md)

**Fig. 18**

To disable the operation with the external tariff discrimination system, click *Tariff configuration* button, and manually set the calendar. (Fig. 19).

Click *Configuration* button (Fig. 19), to show a screen that permits to define the different types of days up (Fig. 20).

Select the tariff just clicking it. To set billing periods, click a time, and with a second click define the end of this period, so all within times are set at this tariff.

**Calendar tariff selection**

Day type  
 ==>

Year:

July							August							September						
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
			1	2	3	4						1			1	2	3	4	5	
5	6	7	8	9	10	11	2	3	4	5	6	7	8	6	7	8	9	10	11	12
12	13	14	15	16	17	18	9	10	11	12	13	14	15	13	14	15	16	17	18	19
19	20	21	22	23	24	25	16	17	18	19	20	21	22	20	21	22	23	24	25	26
26	27	28	29	30	31		23	24	25	26	27	28	29	27	28	29	30			
							30	31												

October							November							December						
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2	3	1	2	3	4	5	6	7			1	2	3	4	5
4	5	6	7	8	9	10	8	9	10	11	12	13	14	6	7	8	9	10	11	12
11	12	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	16	17	18	19
18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26
25	26	27	28	29	30	31	29	30						27	28	29	30	31		

Configuration on Disk:

**Fig. 19**

**Time configuration**

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>																									
<span style="background-color: cyan; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>																									
<span style="background-color: red; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>																									
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>																									
<span style="background-color: green; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>																									
<span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>																									
<span style="background-color: magenta; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>																									

Ok Cancel

=====> Tariff 1  
Tariff 2  
Tariff 3

**Fig. 20**

Once all billing periods are set, the calendar must be defined (Fig. 19). Select a day type and then mark the days corresponding to this type.

You can also here to save the tariff setup or to read an already saved setup.

- **RED-420-1 card.**

Set here RED-420-1 card parameters (Fig. 21).

**Output/Relay**

Output 1		Output 2	
Parameter :	V1	Parameter :	
Zero :	0	Zero :	
Full Scale :	500	Full Scale :	
Output Type :	4-20 mA	Output Type :	4-20 mA

Relay 1		Relay 2	
Parameters :		Parameters :	
Pulses :		Pulses :	
Maximum :		Maximum :	
Minimum :		Minimum :	
Delay :		Delay :	

Save      Exit

**Fig. 21**

The 4-20 mA output is defined for a CVMk parameter. Setup options are:

- Parameter: A CVMk parameter.
- Zero: offset value for the output at 0 mA (or 4 mA)
- Full scale: full scale value for the output at 20 mA.
- Output type: Choice between a 0-20 mA or a 4-20 mA output.

- **RED-C2 card**

Set here RED-C2 card parameters (Fig. 22).

The screenshot shows a software window titled "Output/Relay". It contains four main configuration panels arranged in a 2x2 grid. The top row contains "Output 1" and "Output 2", each with fields for "Parameter", "Zero", "Full Scale", and "Output Type". The bottom row contains "Relay 1" and "Relay 2", each with fields for "Parameters", "Pulses", "Maximum", "Minimum", and "Delay". The "Relay 1" panel has the following values: Parameters: V1, Pulses: (empty), Maximum: 2500, Minimum: 2000, Delay: 10. The "Relay 2" panel has: Parameters: kWh, Pulses: 100, Maximum: (empty), Minimum: (empty), Delay: (empty). At the bottom of the window are two buttons labeled "Save" and "Exit".

**Fig. 22**

The RED-C2 card provides two external outputs that can be independently set as an alarm or a pulse output.

Whether the output is set as an alarm, four parameters can be user-defined:

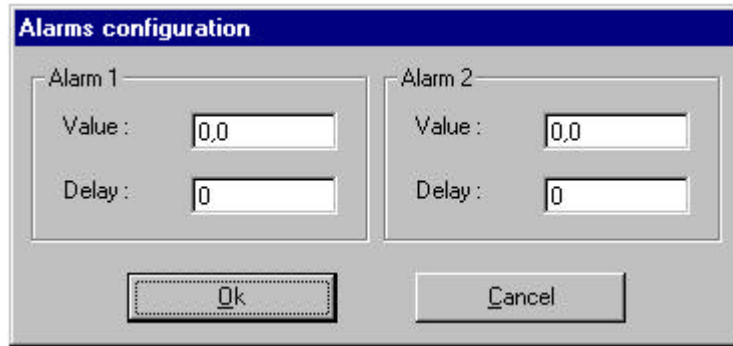
- Parameters: CVMk parameter to be controlled.
- Minimum: Alarm minimum value, i.e., the alarm will trip whether the value measured by the CVMk is below this minimum value.
- Maximum: Alarm maximum value, i.e., the alarm will trip whether the value measured by the CVMk is over this minimum value.
- Delay: Period (in seconds) that the alarm condition must be happening to trip the alarm.

Whether the output is set as a pulse, two parameters can be user-defined:

- Parameters: CVMk parameter to be controlled.
- Pulse: energy/pulse ratio.

#### **2.1.4 Module alarms (only CVMk-HAR)**

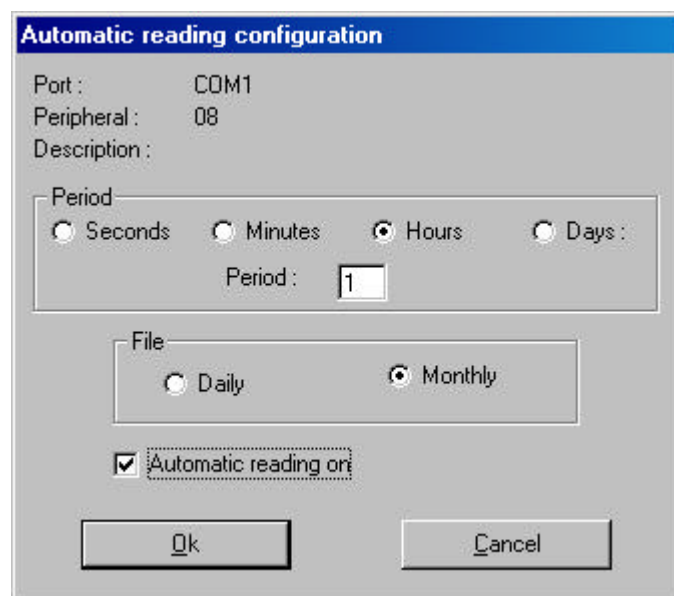
Here we can define the maximum THD value allowed and the time that the alarm will be activated if this value is overtaken.



The 'Alarms configuration' dialog box features a blue title bar. It contains two sections, 'Alarm 1' and 'Alarm 2', each with a 'Value' text box (containing '0,0') and a 'Delay' text box (containing '0'). At the bottom, there are 'Ok' and 'Cancel' buttons.

### **2.1.5 Automatic reading**

To set the CVMk for automatic reading mode (Fig. 23).



The 'Automatic reading configuration' dialog box has a blue title bar. It displays 'Port : COM1', 'Peripheral : 08', and 'Description :'. Below this is a 'Period' section with radio buttons for 'Seconds', 'Minutes', 'Hours' (selected), and 'Days', followed by a 'Period : 1' text box. A 'File' section contains radio buttons for 'Daily' and 'Monthly' (selected). At the bottom, there is a checked checkbox for 'Automatic reading on' and 'Ok' and 'Cancel' buttons.

**Fig. 23**

Indicate here the period between two CVMk readings, and choose between a daily or monthly file.

Files are saved in a directory referred to this peripheral.

## **2.2 Display.**

Use this option for a real-time visualisation of CVMk measurements.

### 2.2.1 CVMk.

Real-time visualisation of values of all CVMk parameters (Fig. 24).

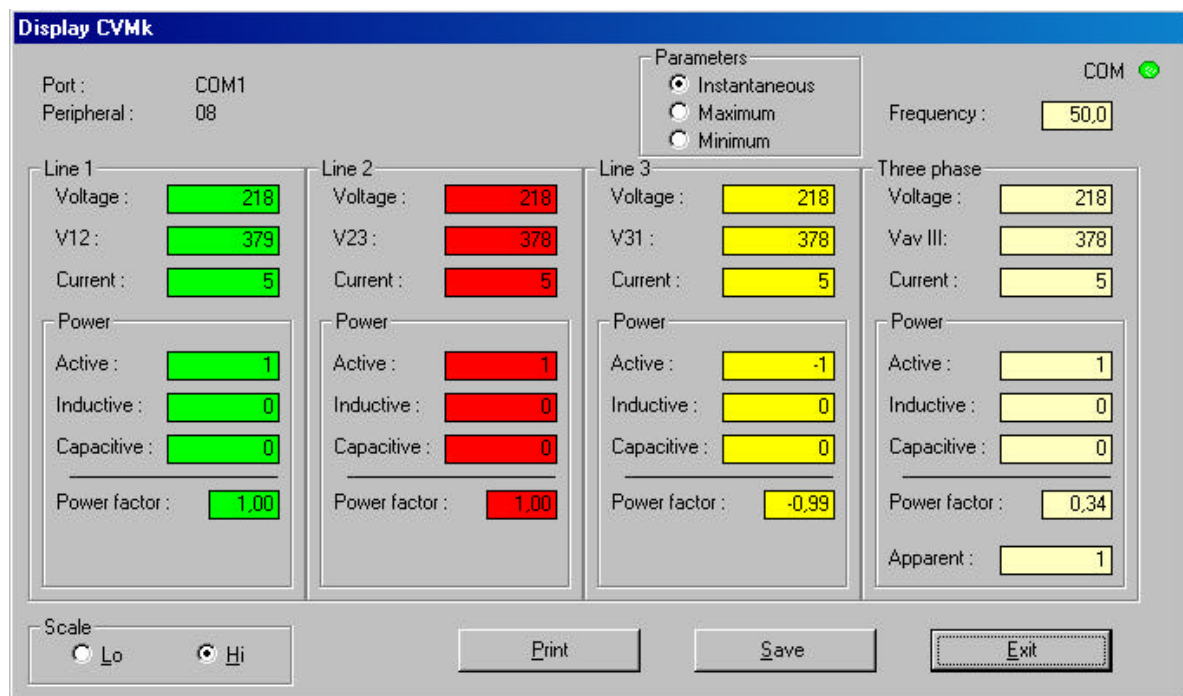
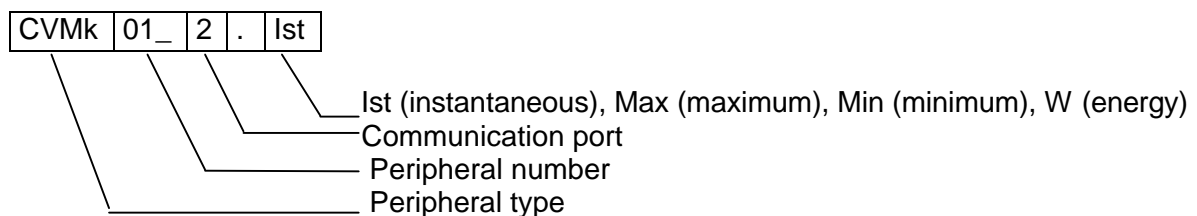


Fig. 24

As said, real-time values measured by the meter are shown. The user can select the visualisation of either instantaneous, maximum or minimum values. Click Save button to stored values shown at that moment in a file with the following format:



### 2.2.2 Cards.

Visualisation of data from different cards available to be inserted into a CVMk.



- **485 & 232 cards.**

None visualisation available.

- **Cards : ER-485, ER-232, RED, RED-420-1 & RED-C2.**

This visualisation screen is common for above mentioned cards (Fig. 25).

The screenshot shows a software window titled "Display". At the top, it indicates "Port: 1" and "Peripheral: 08" with a green status icon. The main content is divided into three sections: "Energy counters", "Power demand", and "Scale".

**Energy counters:**

Positive energy	
Active	434
Inductive	0
Capacitive	34

Negative energy	
Active	0
Inductive	0
Capacitive	0

**Power demand:**

Date	21/10/1999 13:48:58
Maximum	72
Last period maximum	0

**Scale:**

☐ Lo  
☒ Hi

At the bottom right, there are three buttons: "Print", "Data save", and "Exit".

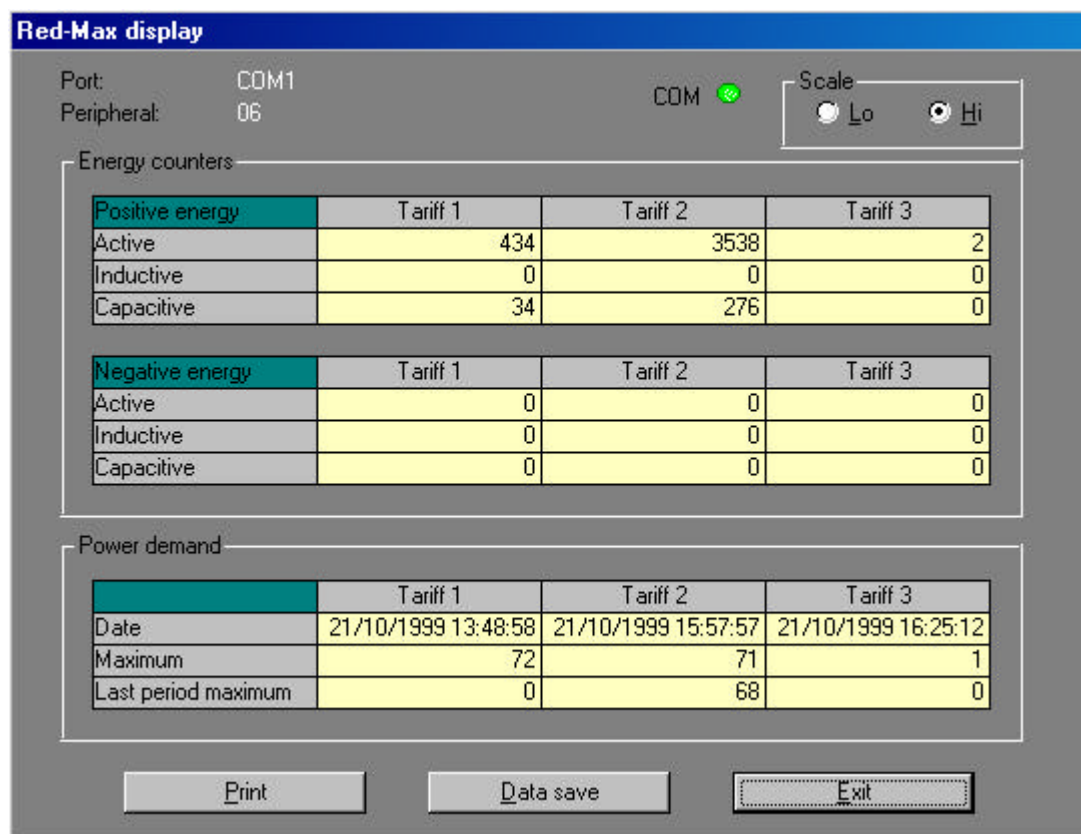
**Fig. 25**

Real-time visualisation of energy meters and the demand controller. For a CVMk-4C positive and negative energies are shown.

Click *Data save* button to store values in a file with a similar format that for the instantaneous values, ... (see previous section).

- **RED-MAX card.**

Visualisation of RED-MAX card values (Fig. 26).

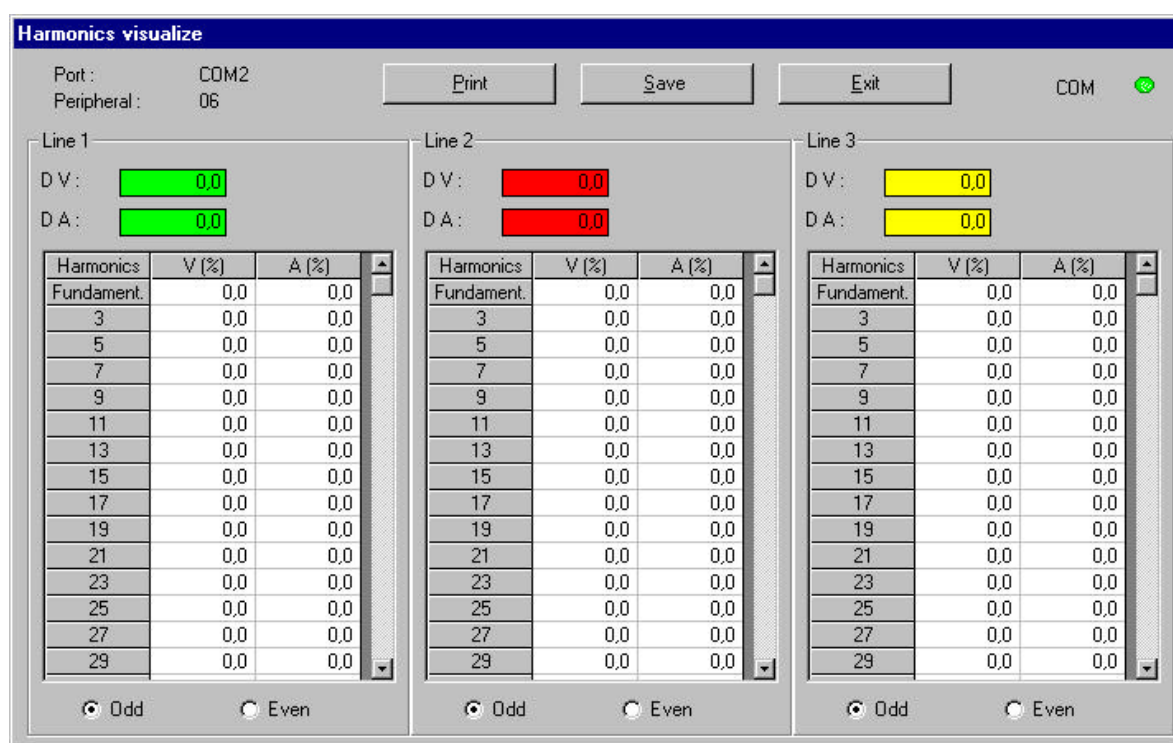


**Fig. 26**

Energy meters for the three available tariffs as well as the demand meter for each tariff are displayed. For the CVMk-4C, negative energy meters will be also enabled.

### **2.2.3 Harmonics (only CVMk-HAR)**

Here we can visualize CVMk-HAR's harmonic values.



### 2.3 Remove peripheral

Removes the selected CVMk-2C or CVMk-4C from the EasyComm network.

# CVM-BD, CVM-BD-H y CVM-BD-M

## INDEX

1. Introduction.....	Page 35
2. CVM-BD operation .....	Page 36
2.1.Setup.....	Page 37
2.1.1. Communications.....	Page 37
2.2.1. CVM-BD.....	Page 38
2.2.2. Modules.....	Page 39
2.2.3. Automatic reading .....	Page 43
2.2.Display.....	Page 44
2.2.1. CVM-BD.....	Page 44
2.2.2. Energies and demand control.....	Page 44
2.3.Removing a peripheral.....	Page 44

## **1. Introduction**

In this addendum, we shall explain the basic operations that may be carried out with EasyComm on a CVM-BD.



The icon that identifies the CVM-BD is:

Different icons can be:

- Normal Icon : Last test OK.
- Crossed out Icon : Last test wrong.
- Question mark icon : Simulated CVM-BD peripheral

In certain operations EasyComm will ask you for a password to avoid any unwanted modification might be done. This password is **9999**.

## **2. CVM-BD operation.**

The basic operation of the whole program is independent of whether we are working with a CVM-BD, a CVM-BD-H or a CVM-BD-M. We shall refer to both as CVM-BD.

The peripheral working menu can be accessed when EasyComm has a CVM-BD selected. The peripherals option of EasyComm will become active. This menu can also be accessed by clicking the right mouse button on the selected CVM-BD.

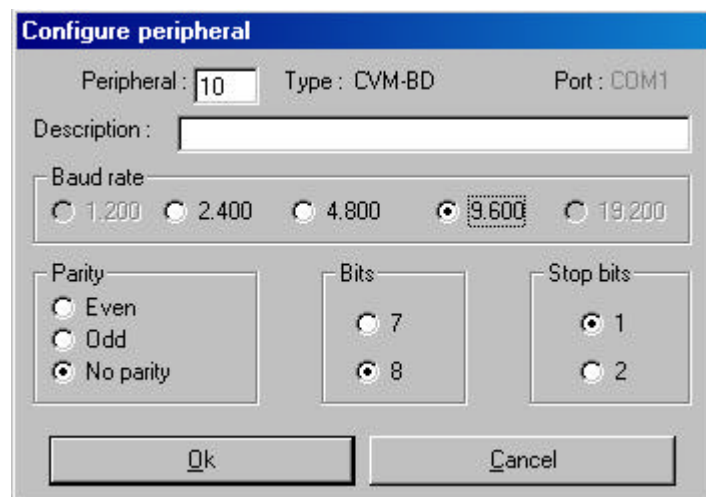
The options available for the CVM-BD are configuration, working with files and removing the CVM-BD.

## **2.1 Setup.**

This option permits the user to modify the CVM-BD parameters. Depending of the CVM-BD type the peripheral setup will be variable. Communication setup is similar for all CVM-BD.

### **2.1.1 Communications.**

We can here give a name to the CVM-BD, change the peripheral number and modify the communication parameters (Fig. 27).



**Fig. 27**

The peripheral number can be any number between 1 and 99 as long as there is no CVM-BD with the same number in the same port..

All communication parameters may be changed in this peripheral.

### **2.1.2 CVM-BD.**

A screen (Fig.28) will appear in the CVM-BD setup. We read here information about the peripheral number, the CVM-BD type, the peripheral version, and the possible description given to the CVM-BD.

**Configure CVM-BD**

Peripheral : 10    Type : CVM-BD    Version : B403

Description :

Transformers

Voltage Primary : 220

Voltage Secondary : 220

Current Primary : 5

Maximeter

Period : 15 min.

Parameters : kW III

Expansion module : RED-MAX

Save    Exit

**Fig. 28**

Main CVM-BD features can here be modified, such as the voltage and current transformer ratio setting, the recording period for the power demand utility (in seconds) and the parameter whose demand is controlled (kWIII, kVAIII, AavIII). The CVM-BD type being set is also shown.

### **2.1.3 Modules.**

Diverse types of CVM-BD are user-available. The setup screen will be defined by the CVM-BD type being set, since different parameters are to be set for each CVM-BD type.

Note: All CVM-BD types including RED utility, are already provided with the three tariff module. The RED-MAX module setup is common for all CVM-BD.

- **RED module.**

Initial values of energy meters can be here set. For a 4 quadrant meter, version “B4—“, initial values of negative energies can also be set.

**Red-Max Configuration**

Energy module

Date : 23/11/1999 Time : 09:33:58

Initial energy values

Tariff 1		Tariff 2		Tariff 3	
Active :	0	Active :	0	Active :	0
Inductive :	0	Inductive :	0	Inductive :	0
Capacitive :	0	Capacitive :	0	Capacitive :	0
Negative active :	0	Negative active :	0	Negative active :	0
Negative Inductive :	0	Negative Inductive :	0	Negative Inductive :	0
Negative capacitive :	0	Negative capacitive :	0	Negative capacitive :	0

Red Max

☐ External tariff selection

☒ External synchronisation power demand period

Tariff configuration

☐ Delete energy

☐ Delete Power Demand (Md)

Save Exit

**Fig. 29**

The tariff module setup is similar that for the CVMk, but options referred to the external tariff discrimination system and the synchronisation with the utility demand meter are not available.

- **RED-420 module.**

Set here CVM-BD RED-420 parameters. (Fig. 30).

**Output/Relay**

Output 1		Output 2	
Parameter :	V1	Parameter :	kW1
Zero :	0	Zero :	0
Full Scale :	500	Full Scale :	1000
Output Type :	4-20 mA	Output Type :	0-20 mA

Relay 1		Relay 2	
Parameters :		Parameters :	
Pulses :		Pulses :	
Maximum :		Maximum :	
Minimum :		Minimum :	
Delay :		Delay :	

Save      Exit

**Fig. 30**

The 4-20 mA output is defined for a CVM-BD parameter. Setup options are:

- Parameter: A CVM-BD parameter.
- Zero: offset value for the output at 0 mA (or 4 mA)
- Full scale: full scale value for the output at 20 mA.
- Output type: Choice between a 0-20 mA or a 4-20 mA output.

- **RED-C2 module.**

Set here CVM-BD RED-C2 parameters. (Fig. 31).



The screenshot shows a software window titled "Output/Relay". It contains four main configuration panels arranged in a 2x2 grid. The top row contains "Output 1" and "Output 2", each with fields for "Parameter", "Zero", "Full Scale", and "Output Type". The bottom row contains "Relay 1" and "Relay 2", each with fields for "Parameters", "Pulses", "Maximum", "Minimum", and "Delay". At the bottom of the window are two buttons labeled "Save" and "Exit".

Section	Field	Value
Output 1	Parameter	[Empty]
	Zero	[Empty]
	Full Scale	[Empty]
	Output Type	[Empty]
Output 2	Parameter	[Empty]
	Zero	[Empty]
	Full Scale	[Empty]
	Output Type	[Empty]
Relay 1	Parameters	V1
	Pulses	[Empty]
	Maximum	2500
	Minimum	2000
	Delay	10
Relay 2	Parameters	kWh
	Pulses	100
	Maximum	[Empty]
	Minimum	[Empty]
	Delay	[Empty]

**Fig. 31**

The CVM-BD RED-C2 provides two external outputs that can be independently set as an alarm or a pulse output.

Whether the output is set as an alarm, four parameters can be user-defined:

- Parameters: CVM-BD RED-C2 parameter to be controlled.
- Minimum: Alarm minimum value, i.e., the alarm will trip whether the value measured by the CVM-BD RED-C2 is below this minimum value.
- Maximum: Alarm maximum value, i.e., the alarm will trip whether the value measured by the CVM-BD RED-C2 is over this minimum value.
- Delay: Period (in seconds) that the alarm condition must be happening to trip the alarm.

Whether the output is set as a pulse, two parameters can be user-defined:

- Parameters: CVM-BD RED-C2 parameter to be controlled.
- Pulse: energy/pulse ratio.

- **RED-C420 module.**

Set here CVM-BD RED-C420 parameters. (Fig. 32).

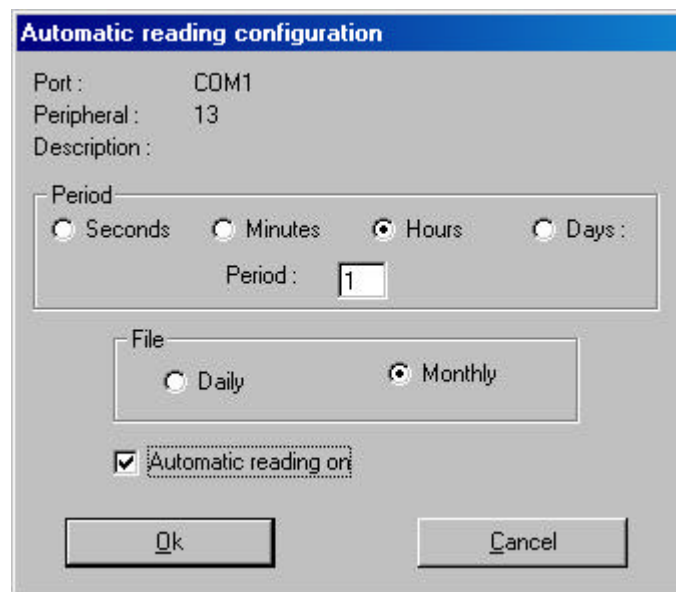
Output/Relay	
<b>Output 1</b> Parameter : <input type="text" value="V1"/> Zero : <input type="text" value="0"/> Full Scale : <input type="text" value="500"/> Output Type : <input type="text" value="4-20 mA"/>	
<b>Output 2</b> Parameter : <input type="text"/> Zero : <input type="text"/> Full Scale : <input type="text"/> Output Type : <input type="text" value="4-20 mA"/>	
<b>Relay 1</b> Parameters : <input type="text"/> Pulses : <input type="text"/> Maximum : <input type="text"/> Minimum : <input type="text"/> Delay : <input type="text"/>	
<b>Relay 2</b> Parameters : <input type="text" value="kWh"/> Pulses : <input type="text" value="100"/> Maximum : <input type="text"/> Minimum : <input type="text"/> Delay : <input type="text"/>	
<input type="button" value="Save"/> <input type="button" value="Exit"/>	

**Fig. 32**

The CVM-BD RED-C420 provides an external output (set as an alarm or a pulse) and analog output (See RED-420 & RED-C2 modules).

#### **2.1.4 Automatic reading**

To set the CVM-BD for automatic reading mode (Fig. 33).



**Automatic reading configuration**

Port : CDM1  
Peripheral : 13  
Description :

Period  
☐ Seconds   ☐ Minutes   ☒ Hours   ☐ Days :  
 Period :

File  
☐ Daily   ☒ Monthly

☒ Automatic reading on

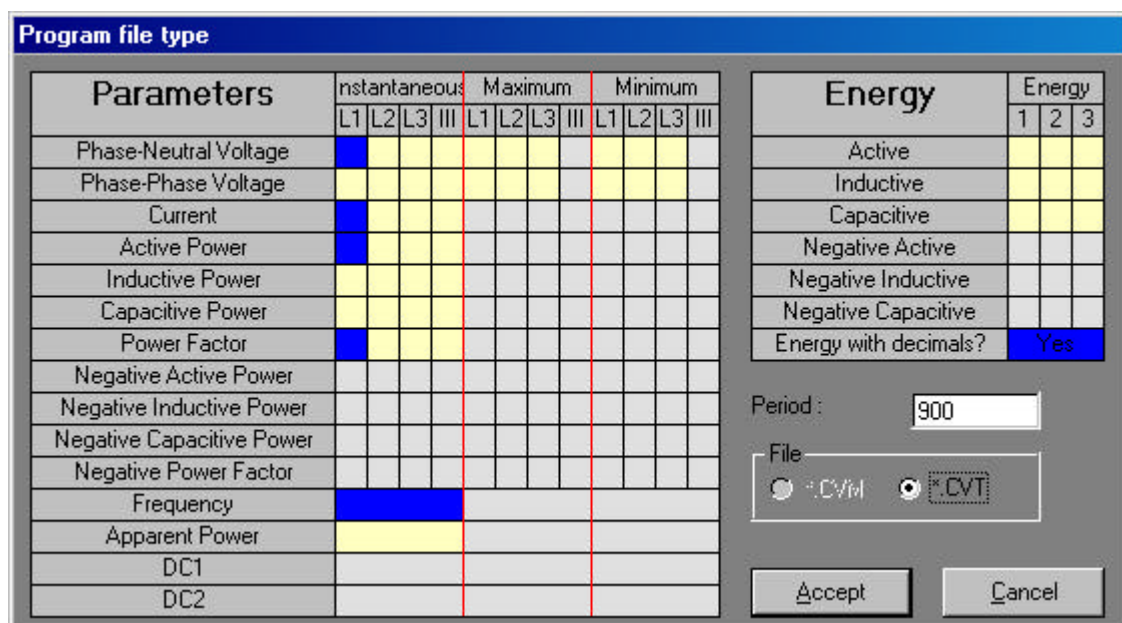
**Fig. 33**

Indicate here the period between two CVM-BD readings, and choose between a daily or monthly file.

Files are saved in a directory referred to this peripheral.

### **2.1.5 CVT File (only CVM-BD-M)**

When selecting this option a setup screen appears (fig.34) to set up CVM-BD-M saving file. We can only select CVT files type.



**Program file type**

Parameters	Instantaneous				Maximum				Minimum			
	L1	L2	L3	III	L1	L2	L3	III	L1	L2	L3	III
Phase-Neutral Voltage	■											
Phase-Phase Voltage												
Current	■											
Active Power	■											
Inductive Power												
Capacitive Power												
Power Factor	■											
Negative Active Power												
Negative Inductive Power												
Negative Capacitive Power												
Negative Power Factor												
Frequency	■											
Apparent Power	■											
DC1												
DC2												

Energy	Energy		
	1	2	3
Active			
Inductive			
Capacitive			
Negative Active			
Negative Inductive			
Negative Capacitive			
Energy with decimals?	■ Yes		

Period :

File  
☐ :CVM   ☒ :CVT

**Fig. 34**

## **2.2 Display.**

Use this option for a real-time visualisation of CVM-BD measurements.

### **2.2.1 CVM-BD.**

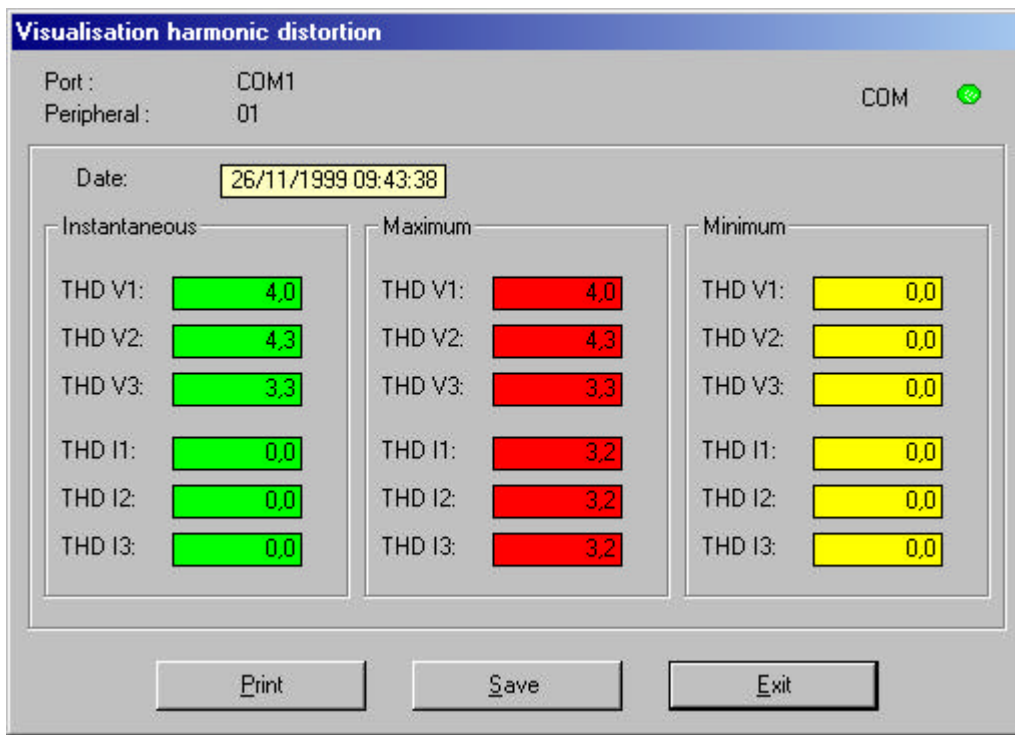
Visualisation mode is similar that for the CVMk. (See section CVMk-2C &CVMk-4C).

### **2.2.2 Energy & demand control.**

Visualisation mode is similar that for the CVMk. (See section CVMk-2C &CVMk-4C).

### **2.2.3 THD Values (only CVM-BD-H)**

Visualizes harmonic distortion values (fig.35).



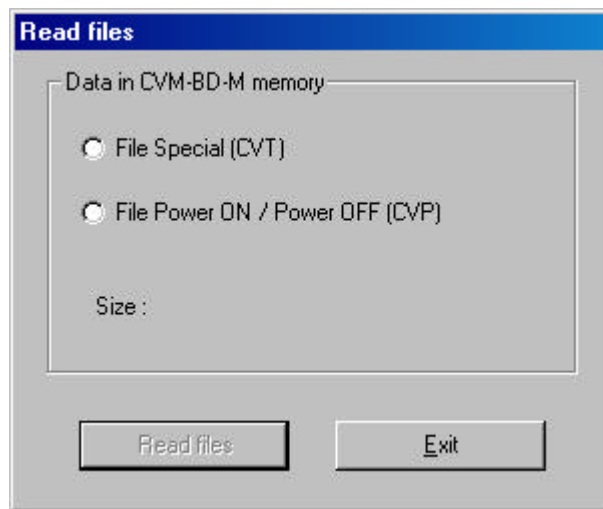
**Fig. 35**

## **2.3 Remove peripheral**

Removes selected CVM-BD from the EasyComm network.

## **2.4 CVM-BD-M Files**

Allows to take info from a CVM-BD-M memory.



We choose file type to be saved in our PC (CVT or CVP) and then we press *Read files*. The file will be transferred to the PC.

# Computer 14d-144

INDEX
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1. Introduction.....	Page 45
2. CVM-BD operation .....	Page 46
2.1. Setup.....	Page 46
2.1.1. Communications.....	Page 46
2.1.2. Automatic reading .....	Page 47
2.2. Display.....	Page 47
2.2.1. Computer 14d-144.....	Page 47
2.3. Removing a peripheral.....	Page 49

## **1. Introduction**

In this addendum, we shall explain the basic operations that may be carried out with EasyComm on a Computer 14d-144.



The icon that identifies the Computer 14d-144 is:

Different icons can be:

- Normal Icon : Last test OK.
- Crossed out Icon : Last test wrong.
- Question mark icon : Simulated Computer 14d-144 peripheral

In certain operations EasyComm will ask you for a password to avoid any unwanted modification might be done. This password is **9999**.

## **2. Computer 14d-144 operation.**

The peripheral working menu can be accessed when EasyComm has a Computer 14d-144 selected. The peripherals option of EasyComm will become active. This menu can also be accessed by clicking the right mouse button on the selected Computer 14d-144.

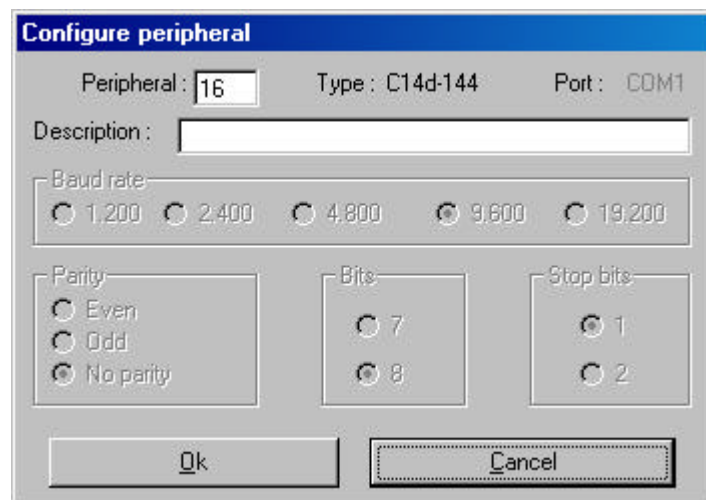
The options available for the Computer 14d-144 are configuration, working with files and removing the Computer 14d-144.

## **2.1 Setup.**

This option permits the user to modify the Computer 14d-144 parameters. Depending of the Computer 14d-144 type the peripheral setup will be variable. Communication setup is similar for all Computer 14d-144.

### **2.1.1 Communications.**

We are only allowed to change peripheral's description (Fig. 27).



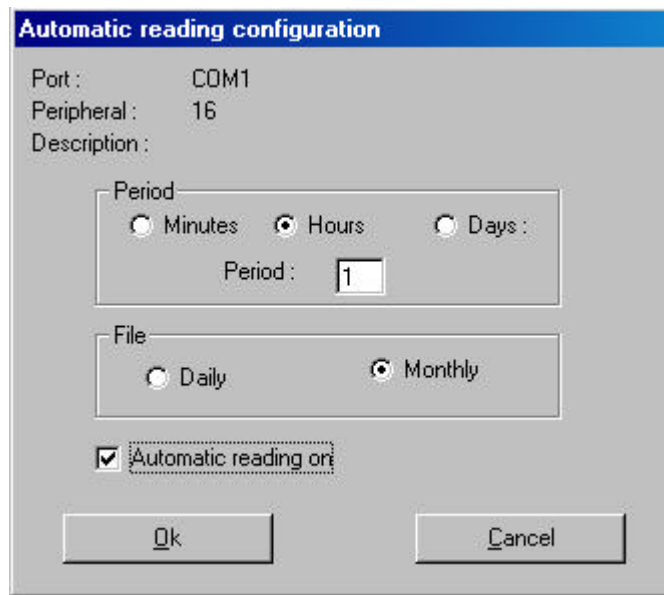
**Fig. 34**

When simulating a Computer 14d-144 we can also change its peripheral number. The peripheral number can be any number between 1 and 255 as long as there is no other peripheral with the same number in the same port..

No communication parameters may be changed in this peripheral.

### **2.1.2 Automatic reading**

To set the Computer 14d-144 in automatic reading mode (Fig. 33).



**Fig. 35**

Indicate here the period between two Computer 14d-144 readings, and choose between a daily or monthly file.  
Files are saved in a directory referred to this peripheral.

## **2.2 Display.**

Use this option for a real-time visualisation of Computer 14d-144 measurements like :  $\cos \phi$ , effective current, distortion percentage, activated relays, etc.

### **2.2.1 Computer 14d-144.**

Visualizes all Computer 14d-144 parameters in real-time (Fig.36).



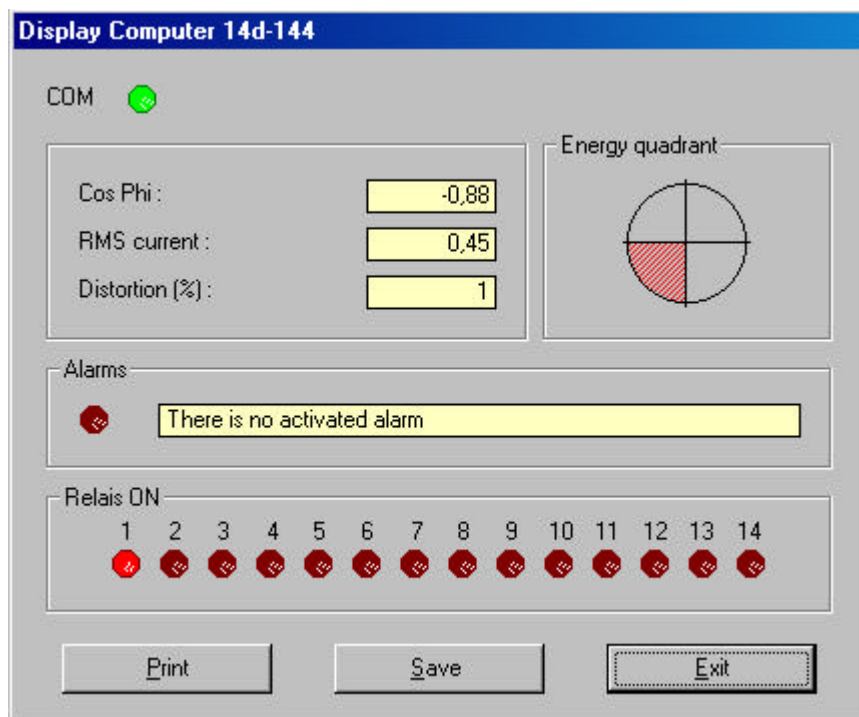
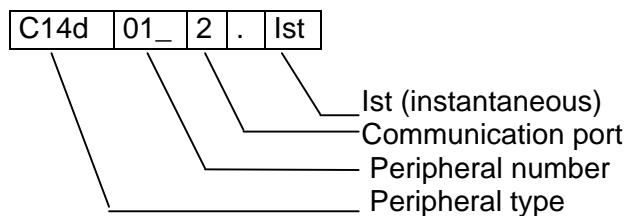
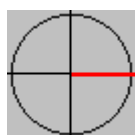


Fig. 36

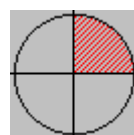
Visualisation option shows all data being measured in real-time. Save button stores instant data in a file with this structure :



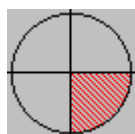
Energy quadrant meaning:



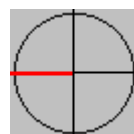
(0) Wasted energy & Cos fi = 1 (0°)



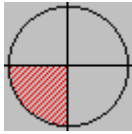
(1) Inductive system. Wasted energy



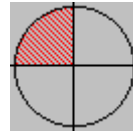
(2) Capacitive System. Wasted energy



(4) Generated energy & Cos fi = 1 (180°)



(5) Capacitive System. Generated energy



(6) Inductive system. Generated energy

ASCII file saved values meaning:

Date/Time	Measured data date & time
Cos fi	Cos fi read.
Ie	Efficient current read.
d %	Distortion percentage.
Energy	Energy quadrant (see energy quadrant Meaning).
Alarm	Type of alarm activated.
	(0) No alarm activated
	(1) Compensation alarm (-CE)
	(2) Overcurrent alarm (-AE)
	(4) Distortion alarm (-dE)
	(8) Set-up error alarm
	(10) Expansion card communication alarm
	(20) Reference voltage error alarm
Relais-1 ... Relais 14	Shows relay's status (On/Off).

### **2.3 Remove peripheral**

Removes selected Computer 14d-144 from the EasyComm network.

# CVM 96 and CVM 96 SP

## INDEX

1. Introduction.....	Page 50
2. CVM 96 operation .....	Page 51
2.1. Setup.....	Page 51
2.1.1. Communications.....	Page 51
2.1.2. CVM-BD.....	Page 52
2.1.3. RED-C2 Module.....	Page 52
2.1.4. Automatic reading .....	Page 53
2.2. Display.....	Page 54
2.2.1. CVM 96.....	Page 54
2.2.2. Energies and demand control.....	Page 56
2.2.3. THD Values.....	Page 57
2.3. Removing a peripheral.....	Page 57

## **1. Introduction**

In this addendum, we shall explain the basic operations that may be carried out with EasyComm on a CVM 96.



The icon that identifies the CVM 96 is:

Different icons can be:

- Normal Icon : Last test OK.
- Crossed out Icon : Last test wrong.
- Question mark icon : Simulated CVM 96 peripheral

In certain operations EasyComm will ask you for a password to avoid any unwanted modification might be done. This password is **9999**.

## **2. CVM 96 operation.**

The basic operation of the whole program is independent of whether we are working with a CVM 96 or a CVM-96 SP. We shall refer to both as CVM 96.

The peripheral working menu can be accessed when EasyComm has a CVM 96 selected. The peripherals option of EasyComm will become active. This menu can also be accessed by clicking the right mouse button on the selected CVM 96.

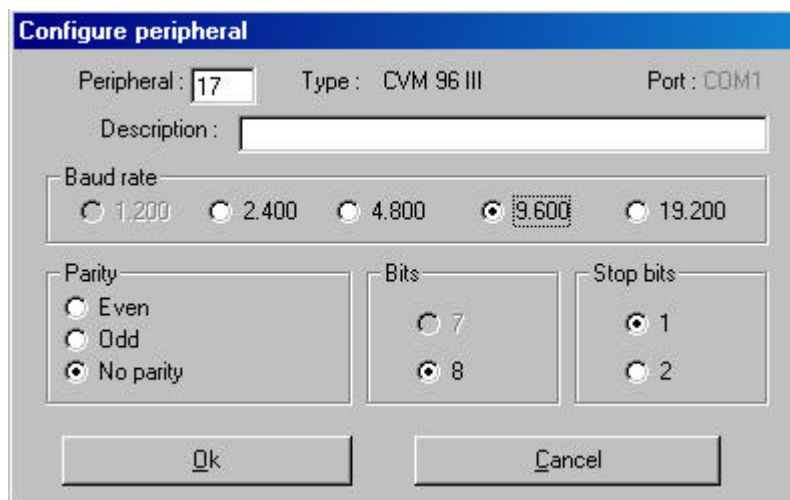
The options available for the CVM 96 are configuration, working with files and removing the CVM 96.

## **2.1 Setup.**

This option permits the user to modify the CVM 96 parameters. Depending of the CVM 96 type the peripheral setup will be variable. Communication setup is similar for all CVM 96.

### **2.1.1 Communications.**

We can here give a name to the CVM 96, change the peripheral number and modify communication parameters (Fig. 36).



**Fig. 36**

The peripheral number can be any number between 1 and 255 as long as there is no other peripheral with the same number in the same port..

All communication parameters may be changed in this peripheral.

### **2.1.2 CVM 96.**

A screen (Fig.37) will appear in the CVM 96 setup. We read here information about the peripheral number, the CVM 96 type, the peripheral version, and the possible description given to the CVM 96.

**Configure CVM 96**

Peripheral : 17      Type : CVM 96 III

Description :

Transformers

Current Primary : 5

Harmonics

☒ Thd      ☐ Distortion

Maximeter

Period :      min.

Parameters : No

Expansion module : RED-C2

Save      Exit

**Fig. 37**

Main CVM 96 features can here be modified, such as the voltage and current transformer ratio setting, the recording period for the power demand utility (in seconds) and the parameter whose demand is controlled (kWIII, kVAIII, AavIII). The CVM 96 type being set is also shown.

### **2.1.3 RED-C2 Module.**

Set here CVM 96 RED-C2 parameters. (Fig. 38).

**Output/Relay**

Relay 1	Relay 2
Parameters : V1	Parameters : kWh
Pulses :	Pulses : 10
Maximum : 250	Maximum : 0
Minimum : 200	Minimum : 0
Delay : 10	Delay : 0

☐ Delete energy      ☐ Delete Power Demand (Md)

**Save**      **Exit**

**Fig. 38**

The CVM 96 RED-C2 provides two external outputs that can be independently set as an alarm or a pulse output.

Whether the output is set as an alarm, four parameters can be user-defined:

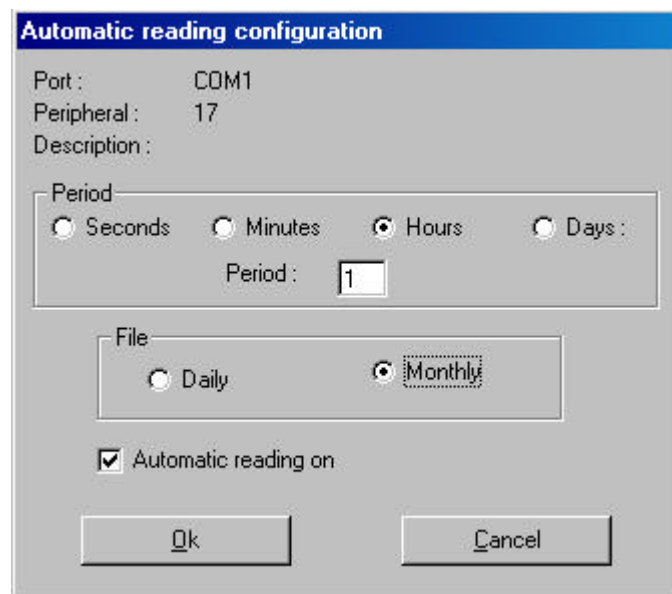
- Parameters: CVM 96 RED-C2 parameter to be controlled.
- Minimum: Alarm minimum value, i.e., the alarm will trip whether the value measured by the CVM 96 RED-C2 is below this minimum value.
- Maximum: Alarm maximum value, i.e., the alarm will trip whether the value measured by the CVM 96 RED-C2 is over this minimum value.
- Delay: Period (in seconds) that the alarm condition must be happening to trip the alarm.

Whether the output is set as a pulse, two parameters can be user-defined:

- Parameters: CVM 96 RED-C2 parameter to be controlled.
- Pulse: energy/pulse ratio.

#### **2.1.4 Automatic reading**

To set the CVM 96 in automatic reading mode (Fig. 39).



**Fig. 39**

Indicate here the period between two CVM 96 readings, and choose between a daily or monthly file.

Files are saved in a directory referred to this peripheral.

## **2.2 Display.**

Use this option for a real-time visualisation of CVM 96 measurements.

### **2.2.1 CVM 96.**

Visualizes all CVM 96 parameter values in real-time (Fig.24).

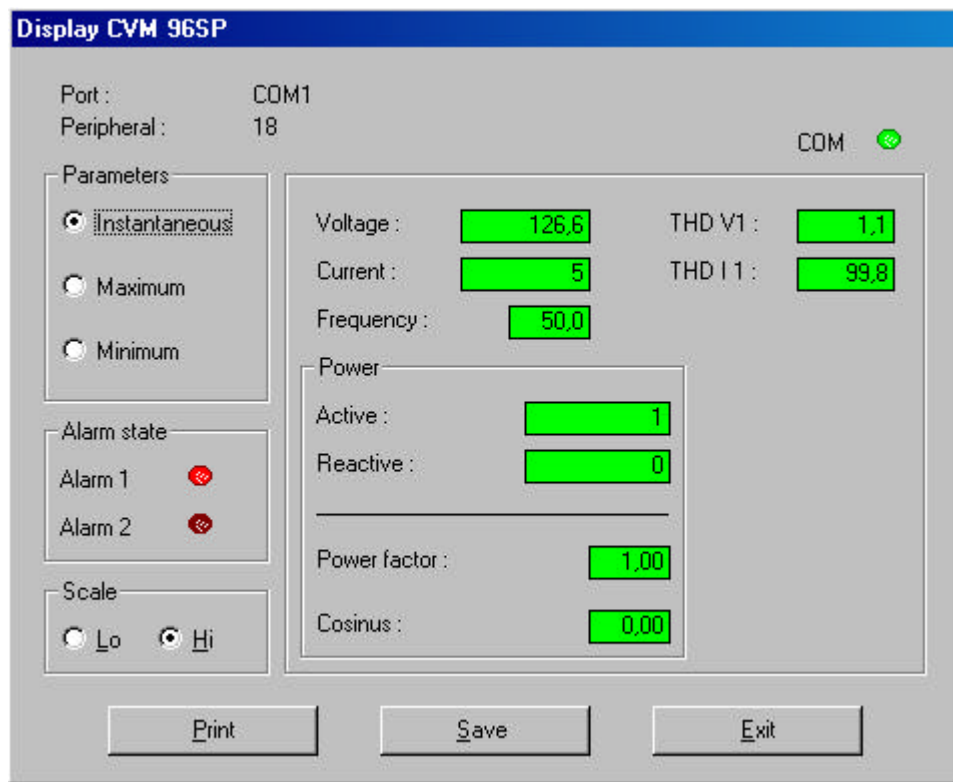
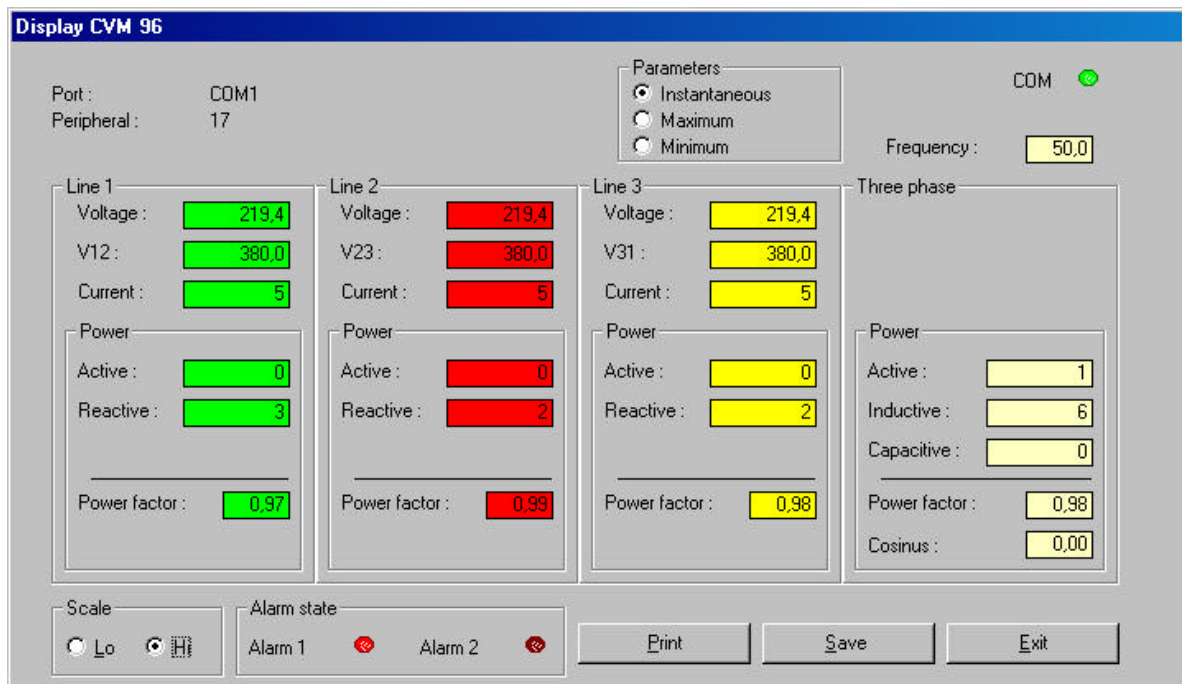
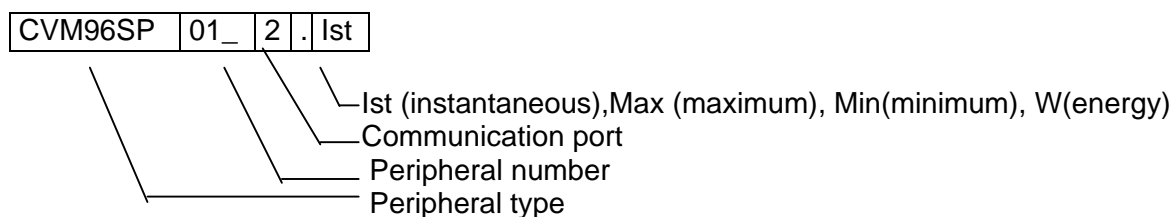
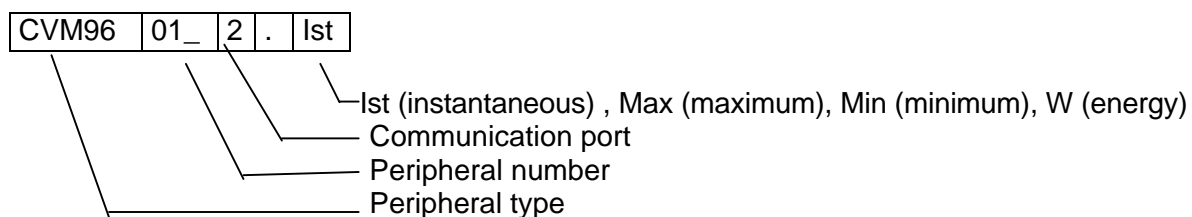


Fig. 24

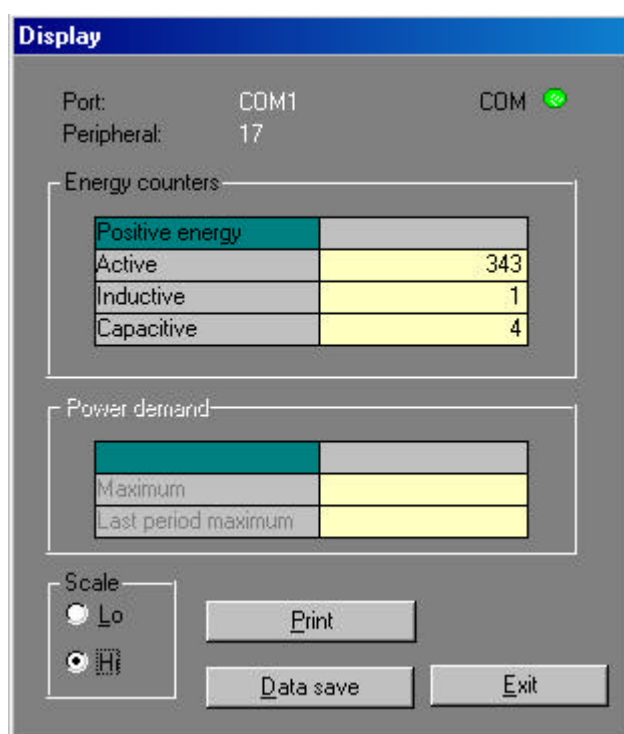
Visualisation option shows all data being measured in real-time. Save button stores instant data in a file with this structure :





### **2.2.2 Energy & demand control.**

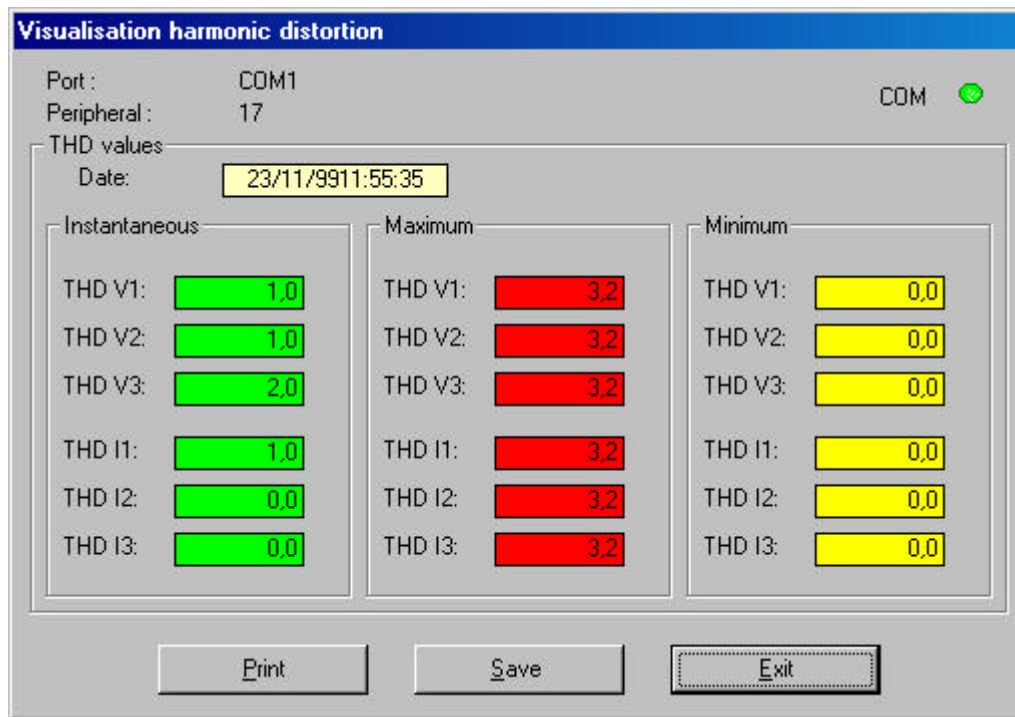
Visualizes maximeter and energy counters in real-time. Save button stores data in a file with the same structure as an instant file (see previous chapter) (fig.42).



**Fig. 42**

### **2.2.3 THD Values.**

Visualizes harmonic distortion values (fig.35).



**Fig. 35**

### **2.3 Remove peripheral**

Removes selected CVM 96 from the EasyComm network.

# DH96 AC, DH96 DC, DH96 CPM, DH96 CT, DH96 FT

## INDEX

1. Introduction.....	Page 58
2. CVM-BD operation .....	Page 59
2.1. Setup.....	Page 59
2.1.1. Communications.....	Page 59
2.1.2. Setup Units.....	Page 60
2.1.3. Reset Variables.....	Page 60
2.1.4. Automatic reading .....	Page 60
2.2. Display.....	Page 61
2.2.1. DH96.....	Page 61
2.3. Removing a peripheral.....	Page 64

## **1. Introduction**

In this addendum, we shall explain the basic operations that may be carried out with EasyComm on a DH96.



The icon that identifies the DH96 is:

Different icons can be:

- Normal Icon : Last test OK.
- Crossed out Icon : Last test wrong.
- Question mark icon : Simulated DH96 peripheral

In certain operations EasyComm will ask you for a password to avoid any unwanted modification might be done. This password is **9999**.

## **2. DH96 operation.**

The basic operation of the whole program is independent of whether we are working with a DH96 AC, a DH96 DC, a DH96 CPM, a DH96 CT or a DH96 FT. We shall refer to both as DH96.

The peripheral working menu can be accessed when EasyComm has a DH96 selected. The peripherals option of EasyComm will become active. This menu can also be accessed by clicking the right mouse button on the selected DH96.

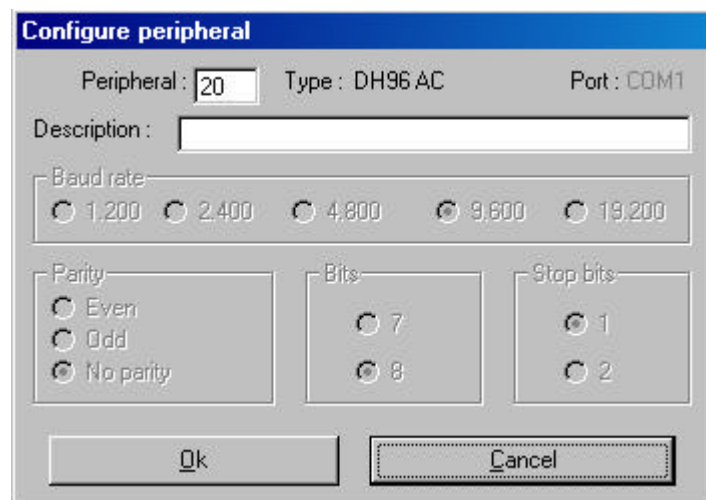
The options available for the DH96 are configuration, working with files and removing the DH96.

## **2.1 Setup.**

This option permits the user to modify the DH96 parameters. Depending of the DH96 type the peripheral setup will be variable. Communication setup is similar for all DH96.

### **2.1.1 Communications.**

We can here give a name to the DH96, and change the peripheral number (Fig. 27).



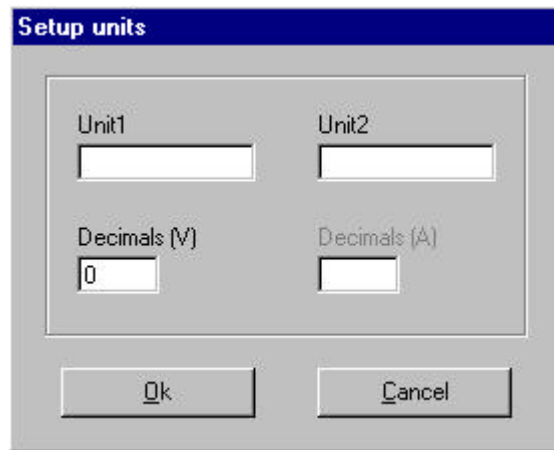
**Fig. 27**

The peripheral number can be any number between 1 and 255 as long as there is no other peripheral with the same number in the same port..

No communication parameters may be changed in this peripheral.

### **2.1.2 Setup Units.**

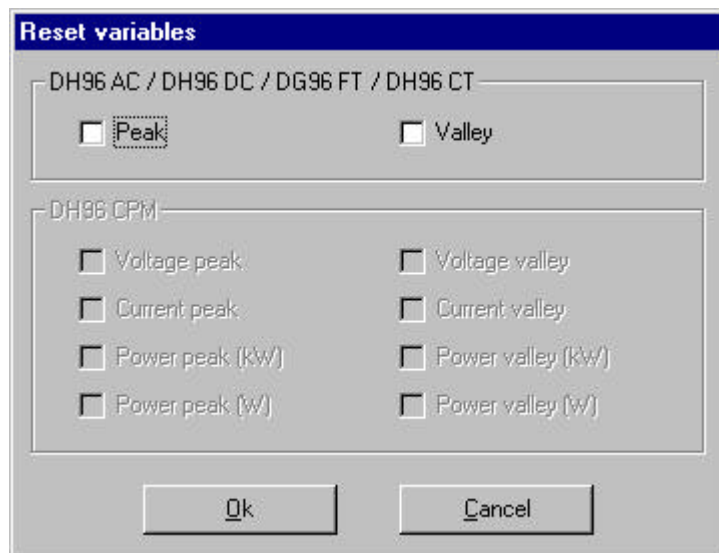
Allows to configure the measuring units that we are going to use.



**Fig. 40**

### **2.1.3 Reset variables**

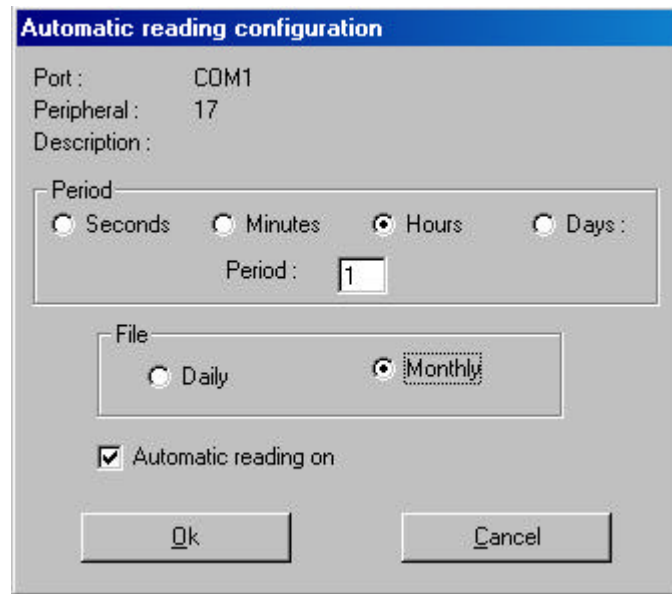
Here we can reset peak and valley values. If we are using a CPM DH96 we will be able to reset some other values (fig.40).



**Fig. 40**

### **2.1.4 Automatic reading**

To set the DH96 in automatic reading mode (Fig. 33).



**Fig. 33**

Indicate here the period between two DH96 readings, and choose between a daily or monthly file.

Files are saved in a directory referred to this peripheral.

## **2.2 Display.**

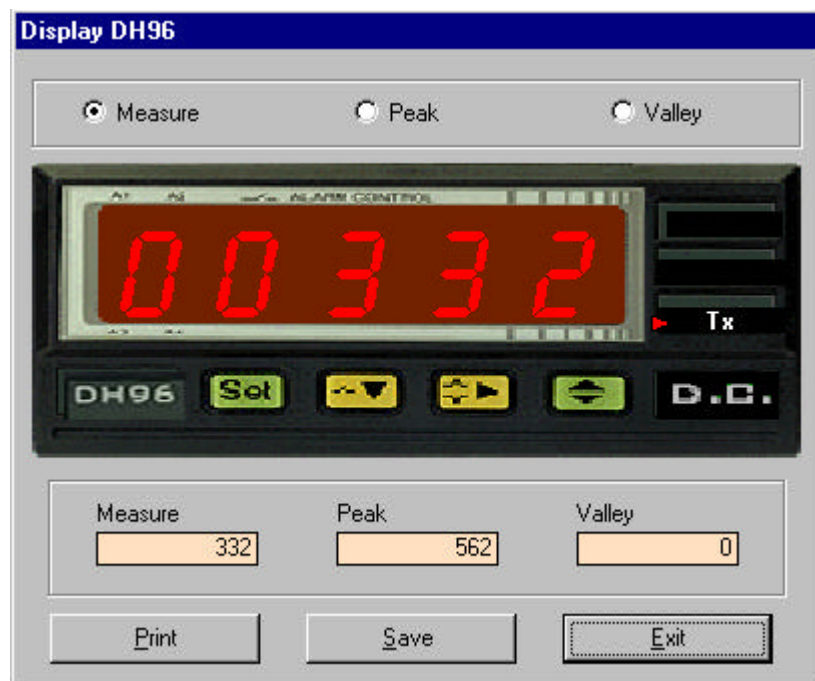
Use this option for a real-time visualisation of DH96 measurements.

### **2.2.1 DH96.**

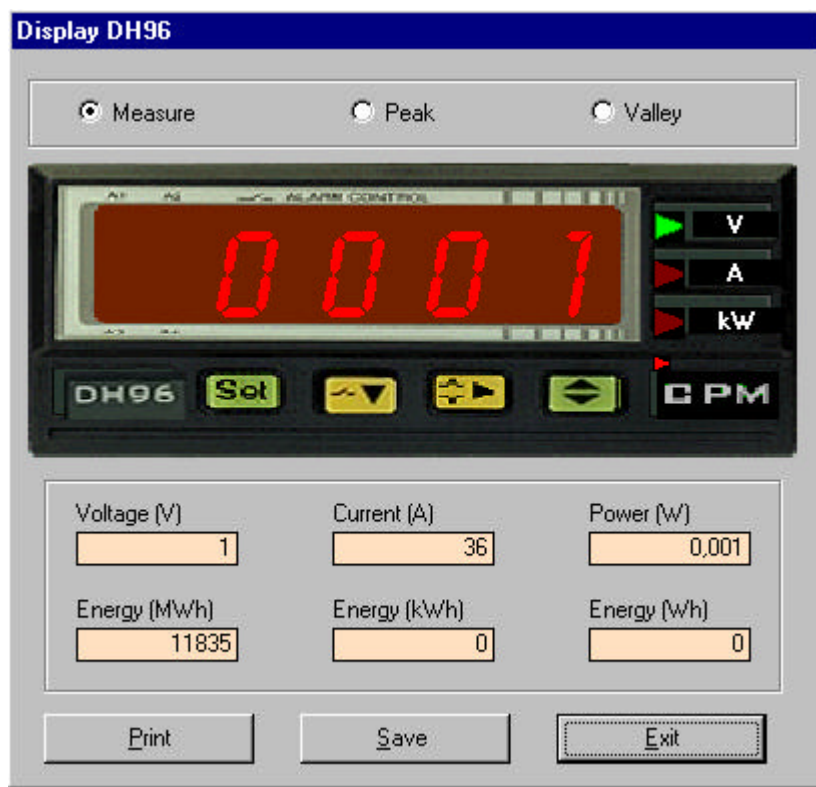
Depending on DH96 version, this option may show different covers :



DH96 AC



DH96 DC

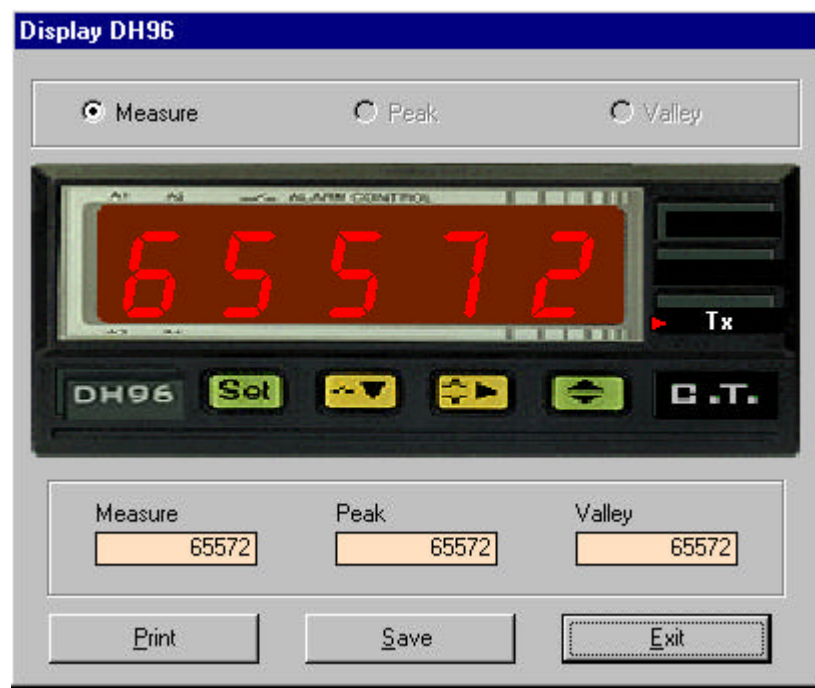


**DH96 CPM**



**DH96 FT**





DH96 CT

### **2.3 Remove peripheral**

Removes selected CVM 96 from the EasyComm network.

## **Notes**

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