DEIF

-power in control

CE

DESCRIPTION OF OPTION

SD Datalog Interface for Energy and Power meters AEM and APM

- Technical reference

DEIF A/S · Frisenborgvej 33 · DK-7800 Skive
Tel.: +45 9614 9614 · Fax: +45 9614 9615
info@deif.com · www.deif.com

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Table of contents

1. About this document

This chapter includes general user information about this handbook concerning the general purpose, the intended users and the overall contents and structure.

General purpose

This document describes the usage of the SD Datalog interface used along with a DEIF Energy meter or Power meter.

Intended users

The document is mainly intended for the person responsible for the unit parameter setup and installation. In most cases, this would be a panel builder designer. Naturally, other users might also find useful information here.

Contents/overall structure

The document is divided into chapters and in order to make the structure of the document simple and easy to use, each chapter will begin from the top of a new page. The following will outline the contents of each of the chapters.

About this document

This first chapter includes general information about this handbook as a document. It deals with the general purpose and the intended users of the document. Furthermore, it outlines the overall contents and structure of the document.

Warnings and legal information

The second chapter includes information about general legal issues and safety precautions relevant in the handling of DEIF products. Furthermore, this chapter will introduce the note and warning symbols, which will be used throughout the handbook.

First part

The first part of this document describes the usage, wiring and technical data of the SD Datalog interface.

Second part

The second part of this document describes the setup and software for the SD Datalog interface.

2. Warnings and legal information

This chapter includes important information about general legal issues relevant in the handling of DEIF products. Furthermore, some overall safety precautions will be introduced and recommended. Finally, the highlighted notes and warnings, which will be used throughout this handbook, are presented.

Legal information and responsibility

DEIF takes no responsibility for installation of the product. If there is any doubt about how to install or operate the product, the company responsible for the installation or the operation must be contacted.

The units are not to be opened by unauthorised personnel. If opened anyway, the warranty will be lost.

Electrostatic discharge awareness

Sufficient care must be taken to protect the terminals against static discharges during the installation. Once the unit is installed and connected, these precautions are no longer necessary.

Safety issues

Installing the unit implies work with dangerous currents and voltages. Therefore, the installation should only be carried out by authorised personnel who understand the risks involved in working with live electrical equipment.

Be aware of the hazardous live currents and voltages. Do not touch any AC measurement or supply inputs as this could lead to injury or death.

Definitions

Throughout this document a number of notes and warnings will be presented. To ensure that these are noticed, they will be highlighted in order to separate them from the general text.

Notes

The notes provide general information which will be helpful for the reader to bear in mind.

Warnings

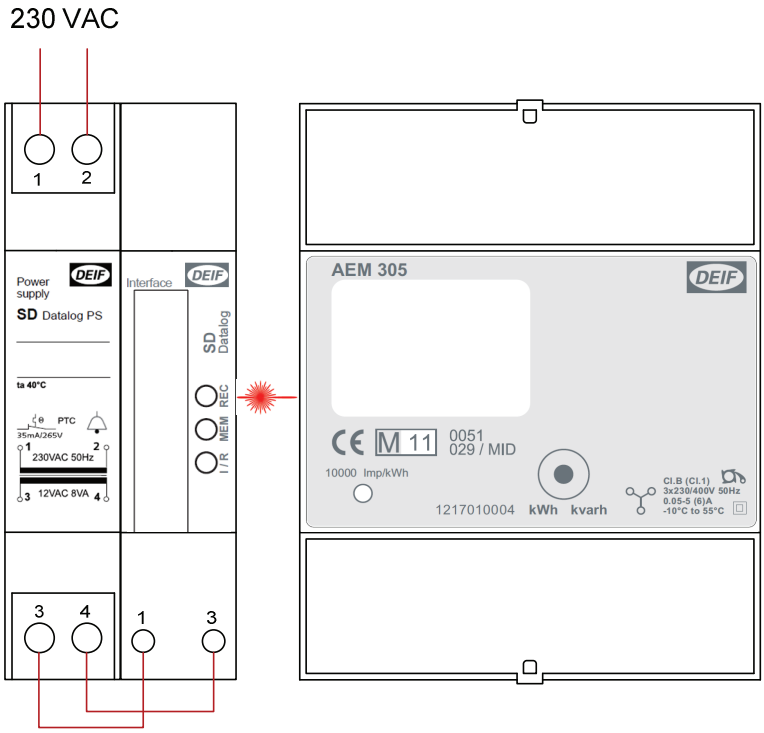
The warnings indicate a potentially dangerous situation which could result in death, personal injury or damaged equipment, if certain guidelines are not followed.

3. Preface

Description of system

This manual describes the use of the **SD Datalog interface.**

The following layout indicates an example of the use of the interface.

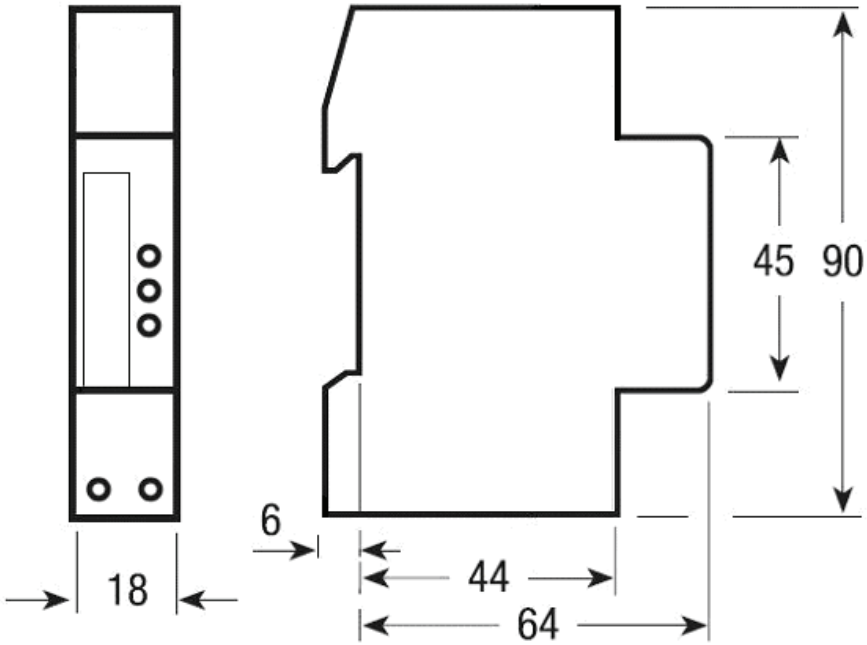


Software

The enclosed 2 GB SD-Card memory contains the **SD-Card programme:** This is software for Microsoft Windows ® and used for configuring the recording parameters of the communication interface.

When another SD card is used, it is very important to apply the correct folder structure in the root of the SD card.
Create a folder named "SDCARD" and move the SD Datalog SW into the folder. Configuration is now possible, and the card is ready for logging.
If SW is lost, it can be downloaded at www.deif.com.

4. Dimensions



5. Technical data

Data in compliance with IEC 60950, EN 61000-6-2, EN 61000-6-3 and EN 61000-4-2

General characteristics			
- Housing	DIN 43880	DIN	1 interface
- Mounting	EN 60715	35 mm	DIN rail
- Depth		mm	70
Power supply			
- Voltage rating		VAC	12 … 24
		VDC	12 … 24
- Frequency range		Hz	45 …65
Operating features			
- SD-Card memory			1 to 8 Gigabytes
- Suitable for both single-phase and three-phase energy meters			yes
Interface to measuring instrument			
- HW interface	optical IR	n°	2 (Tx, Rx)
- SW protocol		-	Proprietary
Safety acc. to EN 60950			
- Degree pollution			2
- Overvoltage category			II
- Working voltage		V	12 … 24
- Clearance		mm	≥ 1.5
- Creepage distance	in equipment	mm	≥ 2.1
- Test voltage	impulse (1,2/50μs) peek value	kV	2.5
	50 Hz 1 min.	kV	1.35
- Housing material flame resistance	UL 94	class	V0
Connection terminals			
- Type cage	screw head Z +/-	POZIDRIV	PZ0
- Terminal capacity	solid wire min. (max.)	mm^2	0.15 (2,5)
	stranded wire with sleeve min. (max.)	mm^2	0.15 (4)
Environmental condition			
- Operating temperature		˚C	-10 … +55
- Limit temperature of storage		°C	-25 ... +70
- Relative humidity		%	≤ 80
- Vibrations	Sinusoidal vibration amplitude at 50 Hz	mm	± 0.25
- Protection class	acc. to IEC 60950		II
- Degree of protection	housing when mounted in front		IP20

6. Configurations

SD cards supported:	1-2-4-8 GB
Recording rate:	30 seconds, 1-2-5-10-30 minutes, 1-2-4-8-24 hours
Connectable meters:	Single-phase and three-phase (AEM xxx or APM xxx).

7. Frontal panel

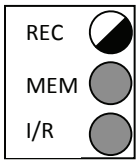
Three green LEDs notify the communication state, the recording state and the SD-Card state:

= LED blinking

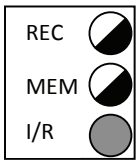
= LED on

= LED off

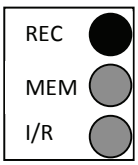
= LED irrelevant



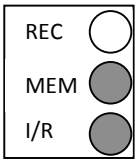
The recording will start within 8 seconds.



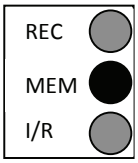
The SD card is full.



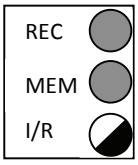
The recording has started -> don't pull the SD card.



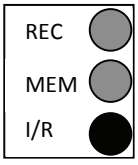
It is allowed to pull the SD card.



Less than 25% of memory is available.



The IR communication with meter is active.



No IR communication with meter.

8. Maximum number of records

For each gigabyte (GB), it is possible to store approximately a minimum 1.250.000 records in case the whole set of data is selected. You can save more records in case you select less data to log. The storage time depends on the rate recording.

Example of SD-Card of 1 GB

Rate	**Minimum time**
30 seconds	1 year and 69 days
1 minute	2 years and 138 days
2 minutes	4 years and 276 days
5 minutes	11 years and 325 days
10 minutes	23 years and 286 days
30 minutes	71 years and 127 days
1 hour	142 years and 253 days
2 hours	285 years and 142 days
4 hours	570 years and 283 days
8 hours	1141 years and 202 days
24 hours	3424 years and 240 days

With an SD-Card of 8 GB, multiply by 8 all times.

9. File storage and folders

To facilitate the import file, the size of the file generated is limited to 1.34 MB. When the file SDCARD.CSV reaches this size is automatically saved to a file SDxxxxxx.CSV, where the "xxxxxx" name is calculated through an algorithm that has as parameters the date and the time of creation, so that the files are unique.
The file SDCARD.CSV is in the folder EXCELTAB that may contain up to 100 files; once filled, this folder is stored under the name EXxxxxxx and the determination of the "xxxxxx" uses the same algorithm used for saving files.

The maximum number of files in different SDCard is:
SDCard 1 GB: 600 files (6 folders)
SDCard 2 GB: 1300 files (13 folders)
SDCard 4 GB: 2700 files (27 folders)
SDCard 8 GB: 5500 files (55 folders)

10. Software

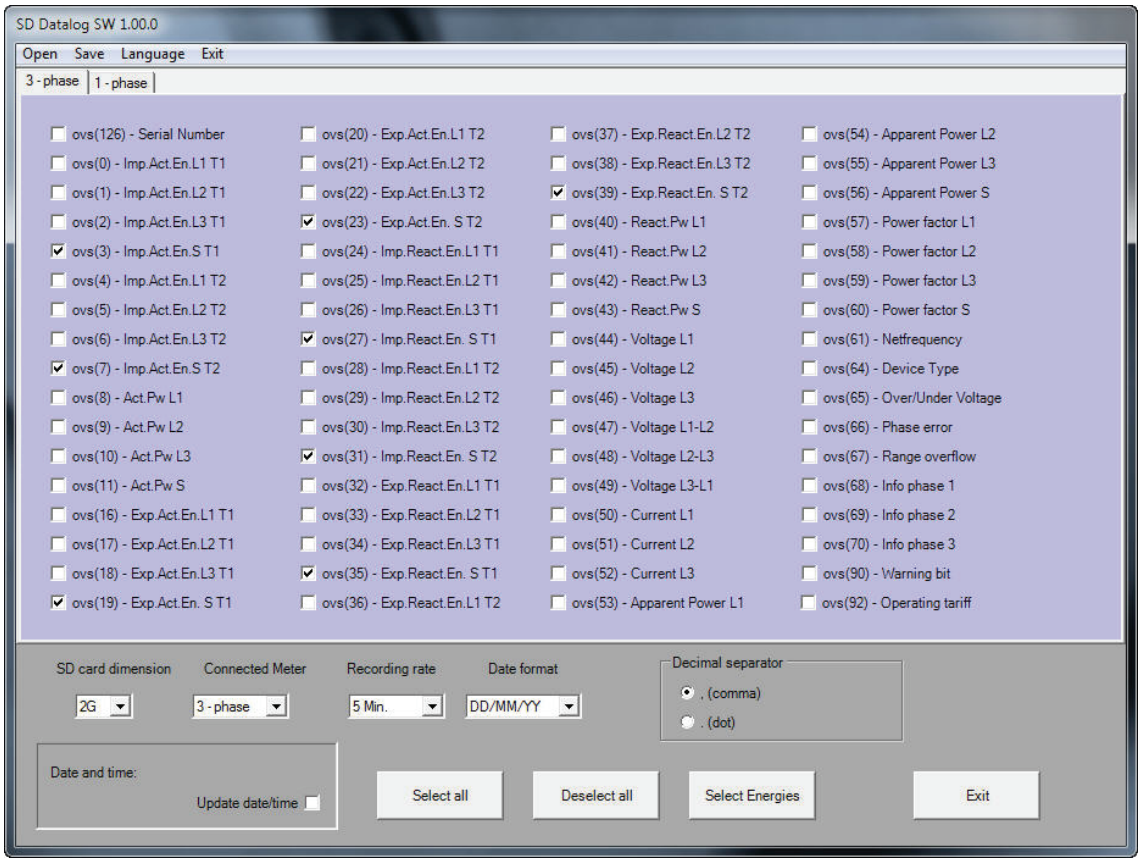
Introduction

The SD Card software is a simple application, designed to create or to modify the file “profile.dat”.

Functions

Two sections can be chosen on the main window:

- **3 - phase**

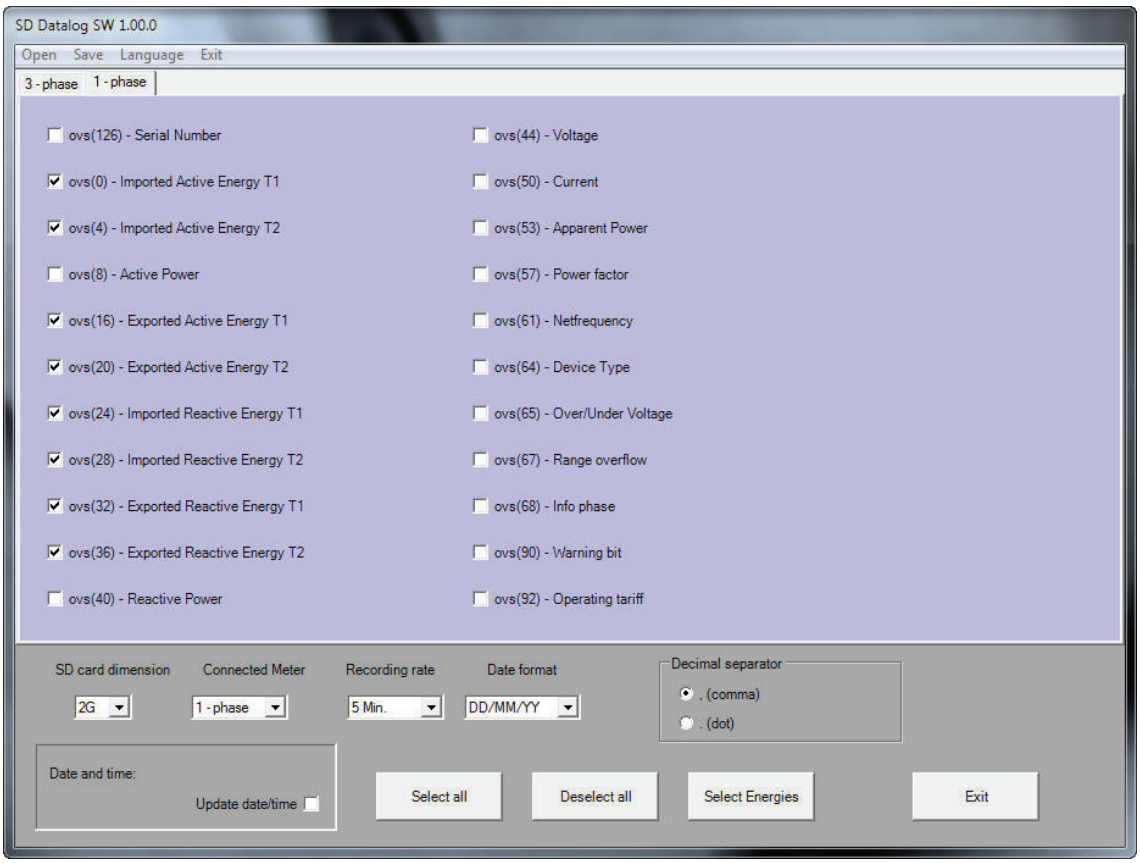


The “3 – phase” section shows the list of available values when the device is connected to a three-phase energy meter or a three-phase power meter.

The values that have T1 or T2 suffix refers to parameters relating to Tariff 1 or to Tariff 2.

The values that have L1 or L2 or L3 or S suffix refers Phase1, Phase 2, Phase 3 or to three phases values.

- **1-phase**



The “1-phase” section shows the list of available values when the device is connected to a single-phase meter.

The values that have T1 or T2 suffix refers to Tariff 1 or to Tariff 2.

Parameters

- **SD card dimension**

  Select the size of the card used.

  The available values are:

  1GB = 1 Gigabyte (Default)

  2GB = 2 Gigabyte

  4GB = 4 Gigabyte

  8GB = 8 Gigabyte

- **Connected Meter**

  Select the meter connected to the interface.

  The available values are:

  3 – phase = Three phase meter (Default)

  1 – phase = Single phase meter

- **Recording rate**

  Select the recording interval.

  The available values are: 30 seconds, 1-2-5 (Default)-10-30 minutes, 1-2-4-8-24 hours

- **Date format**

  Select the format of the recorded date.

  The available values are: DD/MM/YY (Default), DD.MM.YY, MM/DD/YY and MM.DD.YY.

- **Decimal separator**

  Select the decimal separator of the recorded number.

  The available values are: “, (comma)” (Default) and “. (dot)”

- **Update date time**

  If this box is checked, the program creates a file that updates the internal clock of the interface (based on PC time).

Commands

- **Select all**

  Use this command in order to select all boxes.

- **Deselect all**

  Use this command in order to deselect all boxes.

- **Select Energies**

  Use this command in order to select all the energy boxes.

- **EXIT**

  Use this command in order to close the programme.

Menu

- **Open**

  This menu item opens a ".dat" file selected by the user.
- **Save**

  This menu item saves the file Profile.dat into the current directory.
- **Language**

  Use its three sub-item in order to change the application language.

  The sub-items are: English, Italiano and Deutsch.
- **Exit**

  Use this menu item in order to close the program.