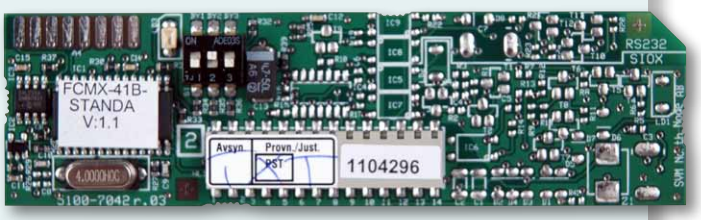
SVM Peak values option board (FCMX)

DATA SHEET

- **Minimum and maximum value log**
- **Power and flow**
- **Supply, return and differential temperatures**
- **Selectable averaging period**
- **Selectable historical period**



Peak values option board (FCMX)

Calculator F4 can be equipped with a peak values option board for increased functionality. The peak option board logs selected parameters over an adjustable time period, also called the historical period. Minimum and maximum values are calculated for an adjustable averaging period. With these two time bases the user can easily control how the peak values are calculated.

For example, if the historical period is set to 1 day, and the averaging period to 1 hour, the hour with the highest and the lowest consumption will be logged each day.

The averaging period must always be significantly shorter than the historical period.

Kamstrup

Tullgatan 5 · SE-371 39 Karlskrona · Tel: +46 455 33 19 00 · Fax: +46 455 33 19 01 · karlskrona@kamstrup.se · www.kamstrup.se

SVM Peak values option board (FCMX)

DATA SHEET

Peak values

The Peak values option board can log minimum and/or maximum values for the following parameters:

- Low temperature
- High temperature
- Temperature difference
- Power
- Flow

The peak values are calculated by comparing a series of averages with a short time base, called the averaging period. The averaging period can be set by using the "Plug & Play service utility".

Data collection

The data is collected via the internal bus in the meter, and the read-out frequency may affect the battery life of the meter. How often these values are read varies:

Temperature values are read after each temperature measurement. Frequent measurement of temperatures also provides frequent updates of the peak values. Also cf. the F4 manual.

Power and Flow values are read at the end of each averaging period. A short averaging period also provides frequent updates of the peak values.

Historical peak periods and averaging period

The Peak values option board can store up to 128 historical periods, depending on how many parameters that are logged:

No of parameters	Historical periods
10	54
9	58
8	64
7	72
6	81
5	92
4	108
1-3	128

The length of the historical period is set with a number (1-255) with any of the following time bases: minutes, hours, days, months or years.

The averaging period is also set with a number (1-255) and with any of the following time bases: minutes, hours, days, months or years.

Note: The averaging period must always be significantly shorter than the historical period.

Example: The historical period is set to 7 with days as time base, and the averaging period is set to 1 with hours as time base. The meter will log hourly peak consumption values every week for the selected parameters.

SVM Peak values option board (FCMX)

DATA SHEET

Card Slots

The Peak values option board should be installed in card slots B or E. If no extra communication output is required, also slot A may be used.

Power failure, safety backup

The Peak values option board has a special safety feature in terms of an adjustable backup interval. The backup function is used preferably when the historical period is long. At the end of each backup interval, the pending peak values are stored to the EEprom memory of the option board. After an eventual power failure the stored pending values are loaded and the peak value calculation continues based on these values. Values that are not stored when a power failure occurs are lost. Historical peak values are however always stored until the board is reconfigured.

Data Output

The peak value data can be read via the M-Bus or on the LCD. The order of the telegrams and their contents is as follows:

First Telegram (contains the current values and some miscellaneous information):

- Averaging period[2]
- Historical period[2]
- Current date and time[2]
- Max Power
- Min Power
- Max Flow
- Min Flow
- Max High Temp.
- Min High Temp.
- Max Low Temp.
- Min Low Temp.
- Max Temp. Diff.
- Min Temp. Diff.

[2] Only available on M-Bus, not on LCD.

Successive Telegrams (each telegram contains the values from one historical peak period):

- Date & Time of storage
- Max Power
- Min Power
- Max Flow
- Min Flow
- Max High Temp.
- Min High Temp.
- Max Low Temp.
- Min Low Temp.
- Max Temp. Diff.
- Min Temp. Diff.

Note 1: Only the values logged are available on the display and on the M-Bus.

Note 2: The Date & Time of a historical period denotes the time when the period ended, i.e. when it was saved to memory.

Note 3: The historical peak periods are displayed in chronological order (from the most recent to oldest), as long as a new period is not saved during the reading phase. In this case the last period (i.e. the newest) is displayed in the last telegram.

Dipswitches

Option boards must be set correctly so that the meter can recognize the board correctly, see below:

Slot	BY 1	BY 2	BY 3
A	On		
B		On	
E	On		On
Service	( )	On	On

On – on
- off
( ) - on/off has no effect

Table 1, dipswitch settings on option board

Important! Never change the dipswitches setting during power on.

Configuring Peak values board

To configure the option board it must be set in service mode, cf. Table 1. Then connect the service adapter and use the "Plug & Play configuration utility" to configure the board. The service adapter and the Plug & Play configuration utility are included in the service kit for F4 with ordering no. FT-4-adapt-kk.

Installation

NOTE: Cut the power from mains and battery before installation to avoid damaging the meter or the option board.

NOTE: Disconnect any flow sensor connected to the meter, see below for more information.

NOTE: Install only one card at a time.

Recommended installation procedure:

1. Save data by short circuiting the "Save data" circuit.
2. Disconnect the flow sensor by removing at least one of the flow sensor cables.
3. Cut the power by disconnecting the four-pole connectors K2 and K3, cf. Fig.1.
4. Check that DIP switches are correctly set for the selected card slot and install the option board into the slot. The component side shall be turned towards the terminals. Align the chambered end of the board with the right side of the calculator box. Ensure that all pins on the option board are properly connected.
5. Turn power on, reconnect the four-pole connectors.'K3' (battery) first and then "K2" (RawV).
6. Check that the board is properly installed; the LED "LD3" first blinks and is then turned off.
7. If another board is being installed, repeat steps 3-6.
8. Reconnect the flow sensor.

Installation

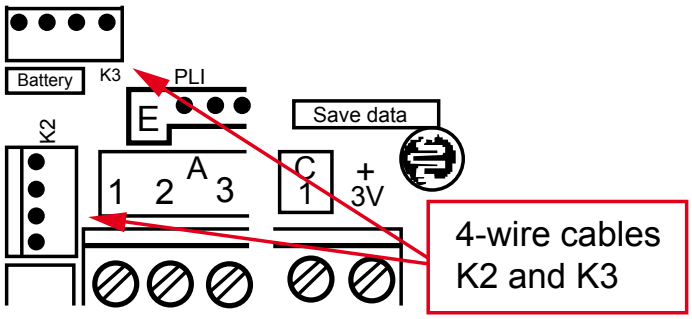


Fig. 1, Connection terminal F4

Ordering

The full article number consists of product designation, delivery options and parameter file. To get the full article number you combine these numbers with a dash "-"

Product designation: **FCMX**

Delivery options: **ABC**

Parameter file No.: **XXXXXX**

Product designation is the number of the option board, "FCMX–" Peak Values board.

Delivery options is the logical variable that decides how the option board shall be delivered:

FCMX	A	B	C
Option board for F4	4		
Board delivered separately		1	
Board mounted inside meter		4	
Board slot A			A
Board slot B			B
Board slot E			E

Table 2, Delivery options for FCMX

The Parameter file is the programming number of the specific board, This number may vary from "000000" to "ZZZZZZ" and is provided by Kamstrup SVM.

Note: The standard parameter file is "StandA".

Example: The Peak values option board for F4, delivered separately, for card slot "B", with standard configuration. Article number: FCMX-41B-StandA.

Standard configuration
Standard configuration means that the Peak values option board logs all 10 parameters; that is minimum and maximum values for power, flow, return and supply temperatures and the temperature difference. The averaging period is 1 hour and the historical period is 1 day. The maximum number of periods that can be stored is 54. When the memory is full the oldest historical period is replaced.

Article number key

Table 3 helps to acquire correct article number.

FCMX-	A	B	C	–	Programming*
	4			–	

Table 3, Variable number for ordering

*) If uncertain, always choose StandA.