

SVM Tariff Option board (FCTF)

DATA SHEET

- Energy and volume in two separate registers
- Power based tariff
- Flow based tariff
- Time based tariff
- Configurable tariffs



Tariff Option board (FCTF)

Calculator F4 can be equipped with a tariff option board for increased functionality. The tariff option board stores the energy and volume consumption in two separate registers. These registers may be used for debiting with different tariffs. The two registers are controlled by time, power or flow rate. The power and flow tariffs are configured with a limit value and the averaging time for power and flow respectively. The time tariff is configured with time of the day, day of the week and up to 8 holidays.

All stored tariff data is accessible via M-Bus, and consumption data can also be read on the LCD.

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Tariffs

The Tariff option board stores the energy and volume consumption in two separate registers, register 1 and register 2. Register 1 is the main register where all consumption is stored if the Tariff option board is unconfigured.

The Tariff option board is easy to configure with the Plug&Play service program. For more information, see the section "Option board configuration" below.

Register 2 is controlled by power, flow or time as follows:

Power based tariff: A predefined limit value for the power determines whether the consumption is stored in register 1 or 2. The averaging duration for the power calculation can also be set.

Flow based tariff: A predefined limit value for the flow determines whether the consumption is stored in register 1 or 2. The averaging duration for the flow calculation can also be set.

Time based tariff: A predefined time interval determines whether the consumption is stored in register 1 or 2. Time of the day, day of the week and up to 8 optional holidays can be selected. The averaging duration defines how often the tariff is updated.

Data collection

The data collection is depending on the configuration of the Tariff option board. The tariff base, for power, flow or time, is selected first. Register 2 is then controlled by:

Power and flow based tariffs:

1. Limit value for power or flow
2. Averaging duration is the sampling time for calculation of power or flow respectively

Time based tariffs:

1. Time of the day
2. Day of the week
3. Up to 8 optional holidays
4. Averaging duration is how often the tariff is updated

Averaging duration

The averaging duration controls all tariffs. It is the sampling time for power and flow calculation. An extensive averaging duration can filter rapid changes in power and flow. It also controls how often the time based tariff is updated. For example, if different tariffs are used during one day, the averaging duration should preferably be less than 1 hour.

Safety backup

The Tariff option board has a special safety feature in terms of an adjustable backup interval. At the end of each backup interval, the tariff data is stored to the EEPROM memory of the option board. The risk of losing data at the event of a power failure is thus minimized. Tariff data on the EEPROM is stored until the option board is reconfigured.

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Data Output

The Tariff option board can be read via the M-Bus or on the LCD of the F4. The data is found in sequence A, B or E depending on the selected card slot.

The following data is available via M-Bus and on the LCD:

1. Energy, Tariff 1
2. Volume Tariff 1
3. Energy Tariff 2
4. Volume Tariff 2

On M-Bus only:

5. Software version
6. Time of the day*
7. Day of the week*
8. Averaging duration
9. Limit value, power or flow **
10. Current tariff, 1 or 2
11. Start time for Tariff 2 *
12. End time for Tariff 2 *
13. Week days for Tariff 2 *
14. Holidays for Tariff 2 *

* Applicable for time based tariffs only.

** Applicable for power or flow based tariffs only.

Option board configuration

To configure the Tariff 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 order no. FT-4-adapt-kk.

The tariff base, for power, flow or time, is selected first. Then the following settings must be done:

Power and flow based tariffs:

1. Limit value: Upper limit for power or flow. Above this value the consumption is stored in Register 2.
2. Backup values every: This time interval determines how often the tariff data is stored to the EEprom of the option board.
3. Averaging duration: This is the sampling time for power and flow calculation.

Time based tariffs:

1. Backup values every: This time interval determines how often the tariff data is stored to the EEprom of the option board.
2. Averaging duration: This parameter controls how often the tariffs are updated.
3. Start of night: Time of the day when Tariff 2 begins.
4. Start of day: Time of the day when Tariff 2 ends.
5. Monday-Sunday always night: Select an entire week day for Tariff 2.
6. Day/month of holiday 1-8: Select up to 8 optional holidays for Tariff 2.

Card slots

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

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Dipswitches

The dipswitches must be correctly set for the meter to recognize the option board properly, cf. Table 1 below.

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

On – on
- off
() - on/off insignificant

Table 1, Dipswitch settings

Important! Never change the dipswitch settings when the board is installed in an F4 calculator.

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.

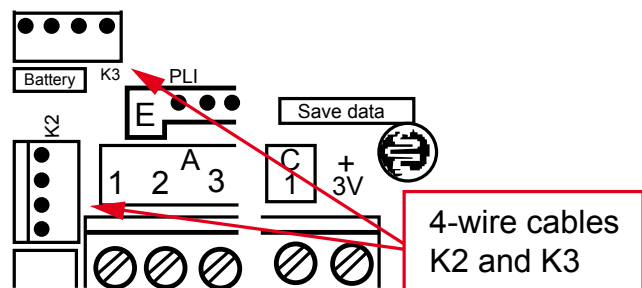


Fig 1, Connection terminal F4

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Ordering

The article number consists of the product designation, delivery options and a parameter file. To acquire the full ordering number these are combined:

Product designation: **FCTF**
 Delivery option: **ABC**
 Parameter file: **XXXXXX**

Product designation is the number of the option board, “FCTF–“ Tariff option board.

Delivery options are the logical variable that decide how the option board shall be delivered:

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

Table 2, Delivery options for FCTF

The Parameter file is the configuration string for the specific board. The file name may vary from 000000 to ZZZZZZ, and is determined by Kamstrup SVM.

Note: If parameter file “StandA” is selected, the option board will be configured with the standard parameter file “EFF001”, see below for further information.

Example: Tariff option board FCTF for F4, delivered separately, for card slot B, standard configuration. Article number: FCTF-41B-EFF001.

Standard configuration, EFF001

This board is configured for Power based tariff, with an Averaging duration of 1 hour, and a backup every day.

Article number key

Table 3 helps to acquire correct article number.

FCTF-	A	B	C	-	Parameter file*
	4			-	

Table 3, Article number for ordering

* If uncertain, choose “EFF001” or contact Kamstrup SVM.