



SVM F4

Calculator

Installation Guide

Installation guide for F4

For further information, also cf. the F4 manual

Delivery

The calculator is normally delivered in transport mode. In this mode only the system clock is active and no measurements are done. Transport mode is indicated by “no” in the upper left corner of the display. Prior to the installation the calculator must be activated, by pressing the “Push-button” in approximately 5 seconds the meter will normally go in to “INIT”-mode. In “INIT”-mode one can set the meter, see manual for further instructions. When exiting the “INIT”-mode the meter will enter “normal mode” (operating mode), the display will indicate “10” in the upper left corner.

Connections

Table 1 and Figure 1 shows how to connect the calculator.

Mounting

F4 is constructed for wall mounting.

Terminal no according to EN1434	Signal descriptor
1	High Temp. sensor *
2	High Temp. sensor *
3	Low Temp. sensor *
4	Low Temp. sensor *
5	High Temp. sensor
6	High Temp. sensor
7	Low Temp. sensor
8	Low Temp. sensor
10	Flow sensor (+)
11	Flow sensor (-)
24	M-Bus interface
25	M-Bus interface
60	SIOX **
61	SIOX **

Table 1.

* Only used with 4-Wired method

** Only when option board SIOX is installed in card slot A. Note: only A1 and A2 are connected to the SIOX – loop.

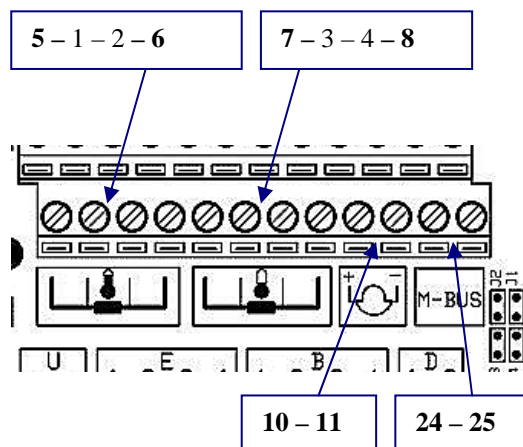


Fig 5.2, Numbering of terminal according to EN1434, (numbering from left to right).

Circuit board F4

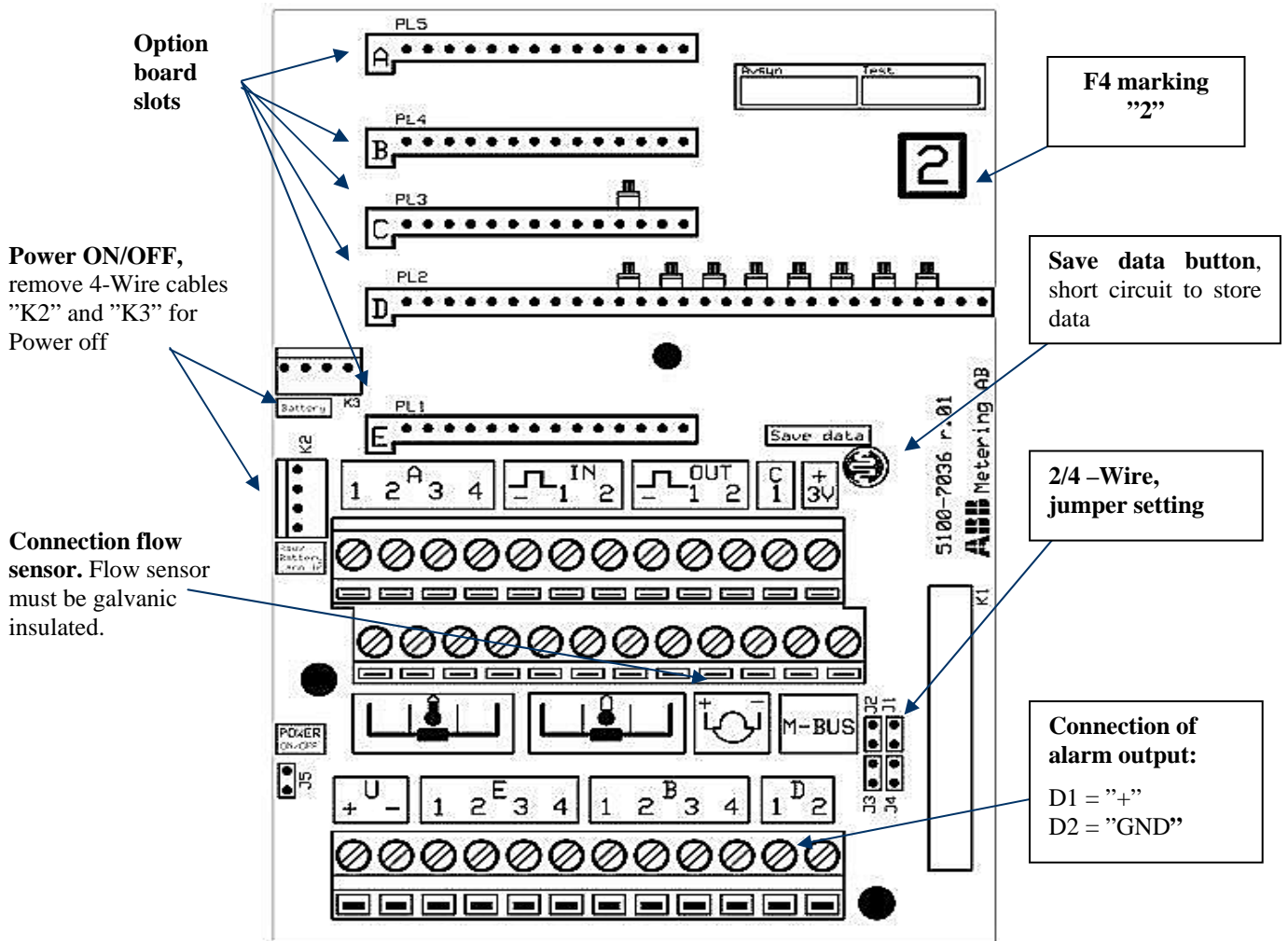


Fig. 2. Main circuit board F4

Note: When common earth can be joined by the calculator through the pulse inputs, pulse outputs, flow input, temperature these inputs/outputs must be galvanic separated. See F4 manual "Zero Sequence current" for more information.

Connection/handling

Note: Only option board marked with "2" may be installed on the F4.

Connection flow sensors, temperature sensors and M-Bus

See fig 1, mounting.

Note: The flow sensor must be galvanic isolated when using the calculator in M-Bus loop. See the F4 manual for more information.

Pulse inputs

- "IN 1" = " + " pulse input 1
- "IN 2" = " + " pulse input 2
- "IN -" = " - " for both pulse inputs.

(**Note:** jumpers are set according to markings on the main circuit board).

Pulse outputs

- "UT 1" = " + " pulse output 1
- "UT 2" = " + " pulse output 2
- "UT -" = " - " for both pulse outputs

(**Note:** jumpers are set according to markings on the main circuit board).

Alarm

Connect "+" till terminal marked "D1" and "GND" to "D2". (**Note:** jumpers are set according to markings on the main circuit board).

Save data

By short circuiting the "Save data" the meter data are stored in a safe way. (**Note:** not all option board will store it's data upon this procedure).

Power Off

Remove the cables marked "K2" and "K3".

Industrial applications

When the F4 is being used in industrial applications or elsewhere with tough EMC conditions, the following recommendations must be observed to ensure a trouble-free operation of the calculator:

- Use screened cables for the connection of temperature sensors. Connect the screen to the Kt-terminal (terminal 11) in the calculator. On the temperature sensor end the screen should be left unconnected for best results.
- Install an option board for galvanic isolation of the M-Bus (FCR2 option board).
- When applicable, use a flow sensor with galvanic isolation.

Programming



Warning: F4 may only be programmed with service program version 2.0 or higher

Connection of mains

The calculator is normally with mains supply.

Connection of mains: Line to terminal marked "L", neutral to terminal marked "N" and ground to terminal marked with "ground symbol", see also fig.3

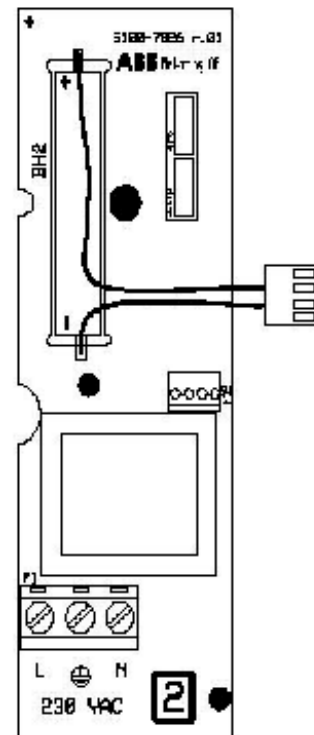


Fig. 3, Connection board mains with back-up battery

Option board handling

Extended functions can be added to the F4 meter by installing option boards.

Note: Only meters with mains power supply may be equipped with option boards. Check option board documentation for exceptions.

Note: Only option boards with the mark "2" may be used with the F4. See fig. 5.5.

Note: Only one (1) option board may be installed at the time, in order for the meter to recognize the option board.

Option board installation procedure

1. Check option board, Marking "2" and which card slot can be used for option board and check correct jumper setting on option board, see table 5.5
2. Save data, using "save key" to short circuit the "Save data button"
3. Disconnect flow sensor connections by removing one flow sensor cable connected to terminal.
4. Cut power to main circuit board, remove 4-Wire cables "K2" and "K3" connected to mains
5. Remove jumpers on slot (only if required, check with option board manual)
6. Check DIP switch settings on option board
7. Install the option board carefully, do not bend any terminal pins. (Only one option board may be installed at the time).
8. Turn power ON, by connecting 4-Wire cables "K2" and "K3".
9. Check LED "LD3" on the option board is turned off, this indicates proper installation of option board. Follow the steps 3-9 for installation of additional option boards. Note; only one (1) option board may be installed at the time.
10. Connect flow sensor

Note: The option board may only be installed in assigned slots, please consult option board documentation for further information.

Note: Option board affects battery life expectancy please check with ABB Metering or option board documentation when using a meter only powered by batteries.

DIP-Switch setting of option board

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

Table 5.5, DIP-Switch setting of option board for card slots, X – ON, " " – OFF, (X) – insignificant

Not all option boards can be combined check documentation for more information.

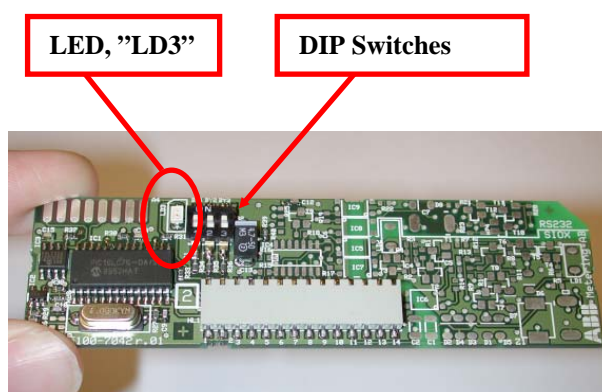


Fig. 5.1., Option board



Fig 5.2, Mark "2" for F4 Option Boards



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