



Technical specification	Autor: Ing. Vladimír Povolný	Date: 10. August 2004
--------------------------------	---------------------------------	--------------------------

Terminal FOTEL

Modular conception of terminal FOTEL enables to configure the device to required number of measured voltages. Modules are connected by BUS and can be mounted to DIN rail.

Module FOTEL-TB

Module FOTEL-TB is basic module of the terminal. It ensures the following functions:

- Connection of GPS receiver
- Voltage supply
- Serial communication
- Connection of three measured inputs.



Technical parameters:

- | | |
|-----------------------------------|------------------|
| ▪ dimensions | 90 x 99 x 115 mm |
| ▪ operating temperature | -10 až 45 °C |
| ▪ serial interface | RS232 |
| ▪ transfer rate | 1200 - 19200 bps |
| ▪ protection | IP20 |
| ▪ max. number of modules FOTEL-TE | 7 |
| ▪ max. number of modules FOTEL-TN | 2 |

Measuring inputs:

- | | |
|------------------------------------|----------------|
| ▪ max. effective voltage | 120 V |
| ▪ min. effective voltage | 45 V |
| ▪ input protection (each terminal) | fuse 100 mA, F |
| ▪ voltage rating input - input | 4 kV ef. |
| ▪ voltage rating input - output | 2,5 kV ef |

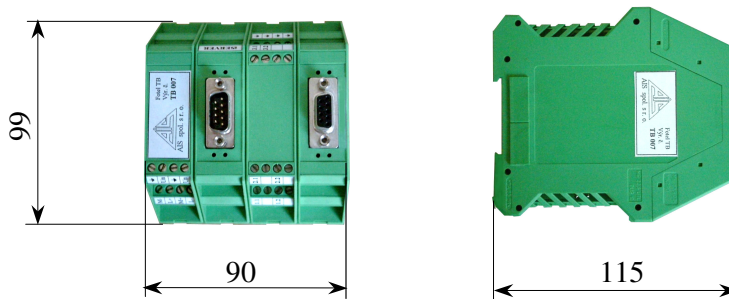
Input terminals:

terminal	
1.1	measured voltage 1
1.2	measured voltage 1
2.1	measured voltage 2
2.2	measured voltage 2
3.1	measured voltage 3
3.2	measured voltage 3
PE	Shielding

Power supply:

Power supply in FOTEL-TB module supplies the module, external devices (communication converters) and max. 2 modules FOTEL-TE.

- max. input voltage (terminals Un,Un) 60 V, AC, DC
- min input voltage (terminals Un,Un) 24 V, AC, DC
- input protection fuse 1600 mA, S
- output protection elektronik
- input/ output voltage rating 4 kV
- power 10 W
- voltage for external devices (terminals +M,-M) 12 V/150 mA
- voltage for external devices (terminals +L,-L) 5 V/ 150 mA



Communication interface:

The module FOTEL-TB contains two serial ports. Port RS232 (connector K2) is used for communication with central station (server FOTEL) or can be used as service port. Port RS422 (connector K1) is used for connection to GPS receiver.

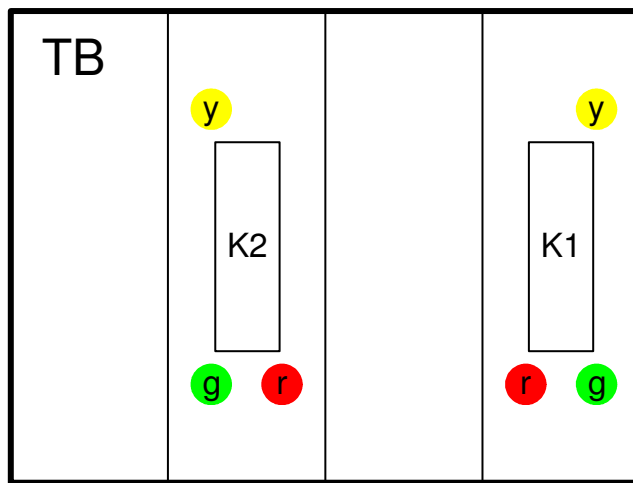
Connector Canon DB9/M, interface RS232 (K2):

Signal	Pin
RxD	2
TxD	3
GND	5
CTS	8
RTS	7

Connector Canon DB9/f, interface RS422 (K1):

Signal	Pin
Tx+	1
Tx-	2
M_EPOCH+	3
M_EPOCH-	7
Rx+	5
Rx-	4
Vgps	6
GNDgps	8,9

Front panel LEDs of FOTEL-TB module:



Fotel TB – K2

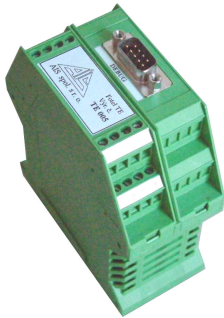
- y – yellow - operation
- g – green - serial communication, data request received
- r – red - serial communication, data sent

Fotel TB – K1

- y – yellow - second pulses
- r – red - GSM data request
- g – green - GSM data reception

Module FOTEL-TE

Module FOTEL-TE expands measured voltages by 3.



Technical parameters:

- dimensions 46 x 99 x 115 mm
- operating temperature -10 až 45 °C
- protection IP20

Measuring inputs:

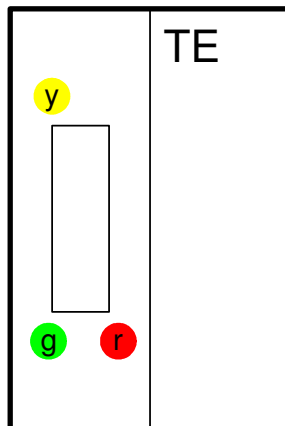
- max. effective voltage 120 V
- min. effective voltage 45 V
- input protection (each terminal) fuse 100 mA, F
- voltage rating input - input 4 kV ef.
- voltage rating input - output 2,5 kV ef

Input terminals:

terminal	
1.1	measured voltage 1
1.2	measured voltage 1
2.1	measured voltage 2
2.2	measured voltage 2
3.1	measured voltage 3
3.2	measured voltage 3
PE	Shielding

The module contains one service serial port.

Front panel LEDs:



- y – yellow - operation
- g – green - service purpose
- r – red - service purpose

Module FOTEL-TN

Module FOTEL-TN for power supply has to be used if entire number of terminal modules exceeds 3. The module can supply another three modules.



Technical parameters:

▪ dimensions	23 x 99 x 115 mm
▪ max. input voltage (terminals Un,Un)	60 V, AC, DC
▪ min. input voltage (terminals Un,Un)	24 V, AC, DC
▪ input protection	fuse 1600 mA, S
▪ output protection	elektronic
▪ input/ output voltage rating	4 kV
▪ power	10 W
▪ voltage for external devices (terminals +M,-M)	12 V/150 mA
▪ voltage for external devices (terminals +L,-L)	5 V/ 150 mA