



# **Televend T1PRO – Hardware Specification**

VERSION 1.0

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# 1 Device description

Product:	Vending Telemetry Apparatus
Type/Model:	TIPRO
Version:	2.1
Trademark:	TELEVEND
Manufacturer:	INTIS Ltd. for trading engineering and services, Bani 73a, HR-10010 Zagreb, Croatia

## 2 Overview

TIPRO is used for the purpose of telemetry in professional HORECA (hotel-restaurant-coffee) machines which serve drinks like coffee, tee, water, beer, wine, juice etc. It is powered from PSU power supply unit of HORECA machine or from its own PSU power supply unit, it is connected to various sensors of the machine-like flowmeters, valves and temperature sensors, and communicates with cloud-server via mobile 2G/3G/4G network. TIPRO also provides connectivity for Bluetooth devices.

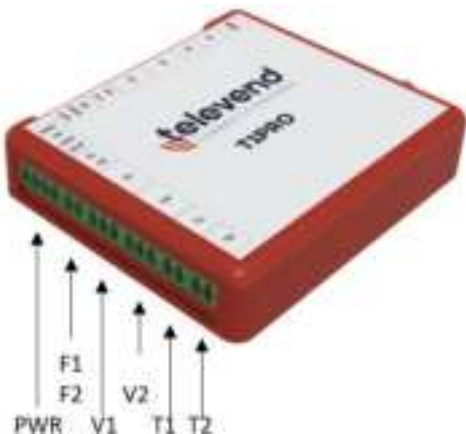
## 3 Specifications

### 3.1 General specifications


Dimensions:	99mm x 88mm x 21mm
Weight:	200g
Cellular Technology:	2G/3G/4G
Power Supply DC:	10V – 15V
Power consumption:	8W
Antenna:	SMA connector for Cellular Internal Chip antenna for Bluetooth LE
Antenna gain:	Cellular: 1.5dBi / 3.5dBi/-6.3dBi, Bluetooth: 0.5dBi
Modulation:	FDD, TDD, GFSK
Crystal frequency:	16 MHz

## 3.2 Connectors

### 3.2.1 Front side view connectors:

 <p>Diagram showing the front side view of the televend T1PRO device. The connectors are labeled: PWR, F1, F2, V1, V2, T1, and T2.</p>	<p>PWR – DC power supply, protective PE ground, OUT digital output</p> <p>F1, F2 – digital inputs F1 and F2, for flowmeters</p> <p>V1 – digital input, for valve</p> <p>V2 – digital input, for valve</p> <p>T1 – analog input, for temperature</p> <p>T2 – analog input, for temperature</p>
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### 3.2.2 Side side view connectors:

 <p>Diagram showing the side side view of the televend T1PRO device. The connectors are labeled: T4, T3, V4, V3, F3, F4, and F5.</p>	<p>T4 – analog input, for temperature</p> <p>T3 – analog input, for temperature</p> <p>V4 – digital input, for valve</p> <p>V3 – digital input, for valve</p> <p>F3F4 – digital inputs F3 and F4, for flowmeters</p> <p>F5 – digital input with power supply for flowmeter</p>
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### 3.2.3 Back side view connectors:

 <p>Diagram showing the back side view of the televend T1PRO device. The connectors are labeled: ANT and SERV.</p>	<p>ANT – 2G/3G/4G antenna</p> <p>SERV – for internal service use only</p>
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## 4 Communication

### 4.1 External Hall sensor

- Four Digital Hall sensor port with 3.3V signal input
- 3.3V/50mA power supply for sensor

### 4.2 External Temperature sensor

- Four 1-Wire Temperature sensor port
- TTL/CMOS communication level

### 4.3 External Flow sensor

- Four pulse input Flow sensor port
- 0V – 42V signal input
- Without power supply
- One pulse input Flow sensor port with power supply
- 0V – 3.3V signal input
- Power supply for Flow sensor from device input supply
- 50mA output current

### 4.4 Cellular (2G/3G/4G)

- 2G GSM: 850/900/1800/1900MHz
- 3G UMTS: B1/B2/B4/B5/B6/B9
- LTE-TDD: B38, B40, B41
- LTE-FDD: B1, B2, B3, B4, B5, B7, B8, B12, B13, B18, B19, B20, B26, B28, B66
- Data transfer GPRS, EDGE, UMTS, HSDPA, HSUPA
- Output power:
- GSM 850/900MHz +33dBm, Class 4
- GSM 1800/1900MHz +30dBm, Class 1
- UMTS +24dBm, Class 3
- LTE +23dBm, Class 3
- Antenna SMA connector, no galvanic isolation
- Aux/diversity LTE CAT4 antenna SMA connector, no galvanic isolation

## 4.5 Bluetooth

- Bluetooth BLE Low Energy 2400MHz
- Internal antenna
- Antenna Gain: 0.5 dBi
- Sensitivity: -93dBm
- Modulation: Other than FHSS

## 5 Electrical Characteristics

TIPRO need external 12VDC Power supply

### 5.1 DC input

#### 5.1.1 Voltage ratings DC power supply

Input voltage [DC]: 10V to 15V

Max peak voltage: 18V

#### 5.1.2 Current rating DC power supply

Continuous idle current: 250mA

Up to 5ms pulsed operation: 670mA

### 5.2 Power supply protection

#### 5.2.1 DC power supply protection

Overvoltage and overcurrent protection must be assured externally by PSU

##### 5.2.1.1 Voltage protection DC power supply

- Overvoltage protection must be assured by PSU
- Protection against reverse DC up to -50V
- Protection against erroneous AC connection up to max positive/negative peak voltages +15V/-15V

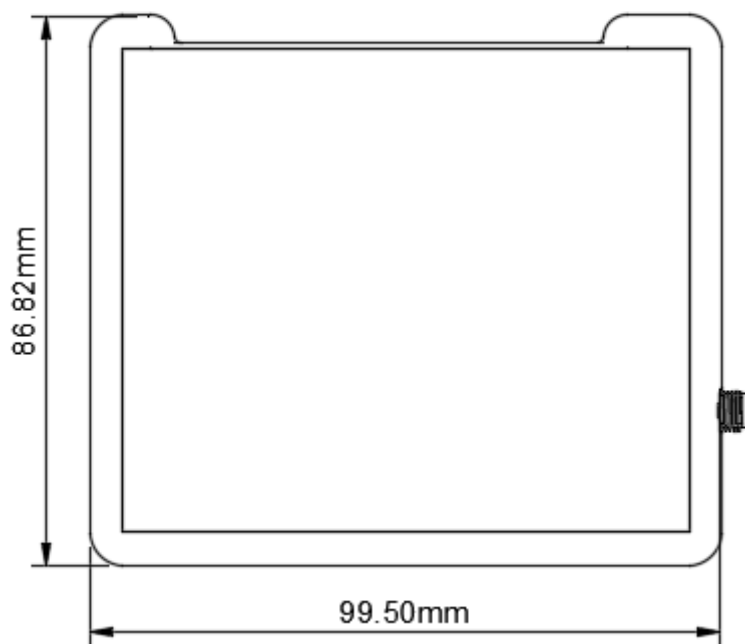
##### 5.2.1.2 Current protection DC power supply

- Overcurrent protection for DC input must be assured externally by PSU

## 6 Operational Ratings

Temperature range in vending machine:	-20°C to +55°C
Humidity in vending machine:	Up to 95% RH non-condensing

## 7 Dimension



## 8 FCC statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.