

**PTB220TS / CASE**

# ***USER'S GUIDE***

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# PRODUCT DESCRIPTION

The PTB220TS and a PTB220AxB2Ax barometer (order specified) are assembled together at factory to become a Transfer/travelling standard. It is also possible to assemble the customer's existing PTB220 barometer and separately ordered wooden case (PTB220CASE); see the instructions on page 5. Please note, that there are certain requirements for the PTB220 barometer to be compatible with the case. The barometer should have the following features:

- 1, 2 or 3 pressure transducers
- class A accuracy
- local display
- RS232/485 serial interface

This guide gives the basic operating instructions of the PTB220TS. It does not, however, replace the operating manual of the PTB220 series digital barometers. For detailed operation instructions and descriptions refer to the User's Guide of the PTB220.

The PTB220TS includes the following parts

- a wooden (oak) carrying case
- wide and comfortable carrying handle
- two key locks
- a space reserved for small parts and documents in the case lid
- tilting frame where the barometer is mounted for table-top use
- incorporated sealed lead acid battery (YUASA NP0.8-12)
- power cord for recharging from car cigarette lighter socket
- DC plug for a local mains adaptor cord
- pressure connectors: for 1/8" tubing and a 5 mm connector
- 9-pin sub D-connector (male)
- 6 pin 5 mm screw-terminal bus (female)

# OPERATION

Remove the PTB220TS from the package and connect a wall adapter to recharge the battery. Switch the power on. The barometer is now ready for use. For detailed operation instructions and descriptions refer to the User's Guide of the PTB220 series digital barometers.

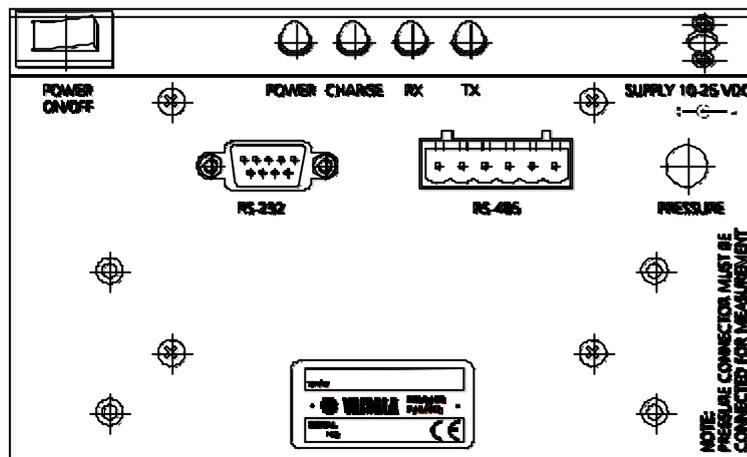
**NOTE** The pressure port is closed, if the pressure connector is detached. For measurement, the connector **MUST** be on place.

## Operating voltage

DC voltage of 10...25 VDC is required to operate the barometer. A power cord with a suitable plug-in connector is supplied with the PTB220TS for use with a local power source. It is very important to observe the polarity of the DC supply voltage.

**NOTE** Negative terminal is in the center.

If the wall adapter is used, the barometer will operate from the mains and at the same time recharge the internal lead battery of the PTB220TS. If no adapter is used the PTB220 barometer will operate using the internal lead battery.



**FIGURE 1** Back plate of the PTB220TS tilting frame

## Tilting frame

The barometer is mounted in a separate wooden case, tilting frame. It can be set to three different positions: horizontal,  $\sim 20^\circ$  and  $\sim 40^\circ$ . For a tabletop use, the tilting frame can be removed from the case by lifting upwards.

<b>NOTE</b>	The pressure connector has to be removed before closing the wooden carrying case.
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## Battery

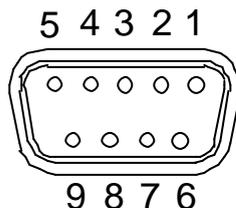
The battery gives a twelve-hour service period. The period is even longer if the back light is not used. Recharging lasts about 12 hours and is therefore typically done overnight.

Manufacturer: YUASA  
Type: NP 0.8-12

<b>NOTE</b>	To prolong the battery lifetime it is recommended to recharge the battery when not in use.
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## RS232

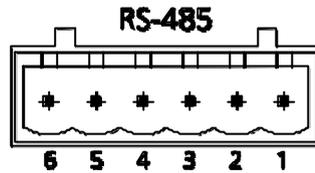
The pin assignment of the RS232 serial interface D-connector of the PTB220TS/CASE is as following:



PIN	SIGNAL
1	not used
2	TX
3	RX
4	not used
5	ground for RS 232
6	not used
7	not used
8	not used
9	not used

## RS485

The pin assignment of the RS485 serial interface connector of the PTB220TS/CASE is as following:



PIN	SIGNAL
1	not used
2	RS485 HI
3	not used
4	not used
5	RS485 LO
6	not used

## LED Indicators

There are four LED indicators in the back plate of the tilting frame. The LED indicators inform the user of operating status of the barometer.

The green **PWR** led indicates that the PTB220 barometer is switched ON.

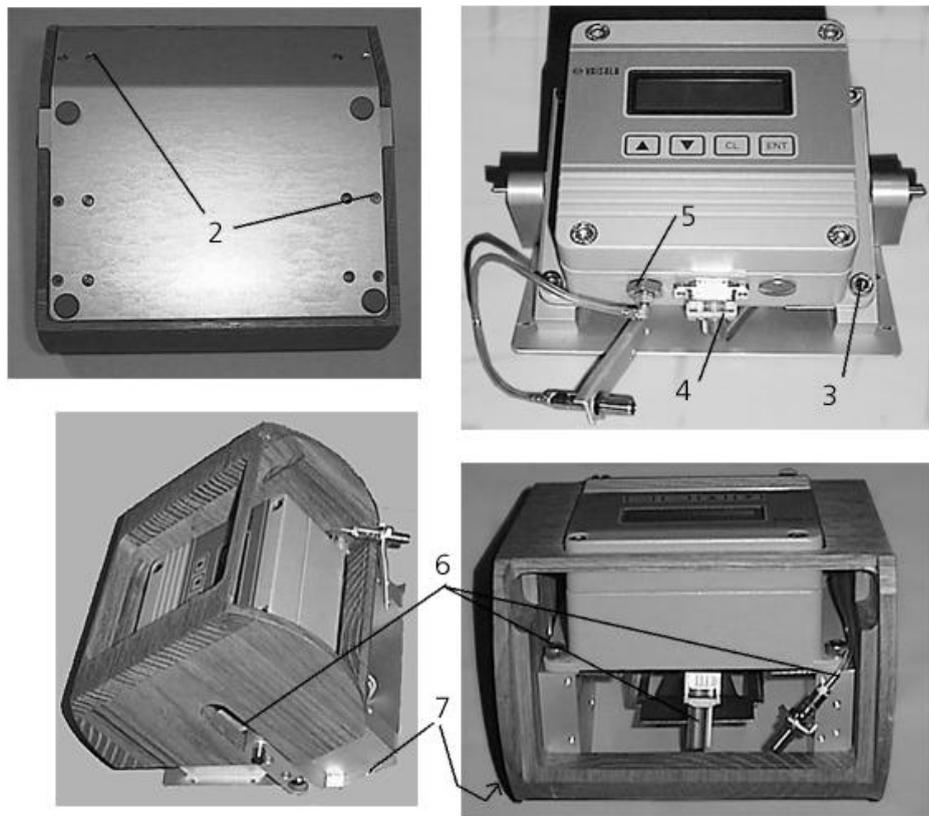
The red **BATT** led indicates that the internal lead battery is being recharged. When the battery is fully charged the led returns dark.

The yellow **TX / RX** leds indicate that there is activity in the serial line.

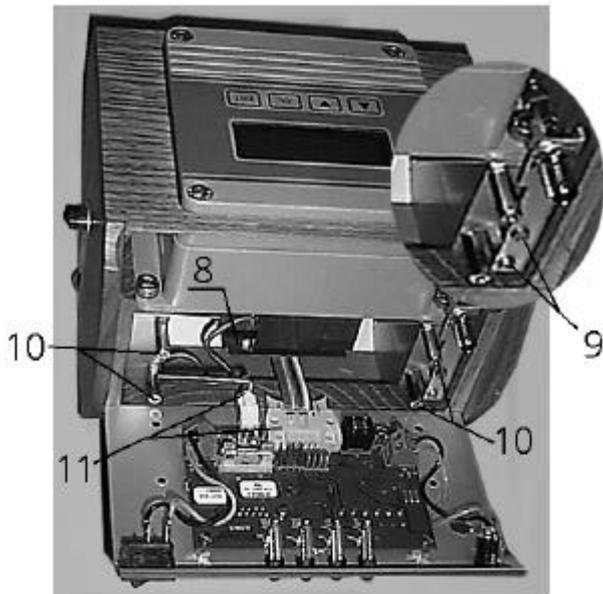
# ASSEMBLING THE CASE AND AN EXISTING BAROMETER

To assemble the existing PTB220 digital barometer and the wooden case follow the instructions below.

**NOTE!** It is recommended to remove the cover hinge of the barometer by loosening its screws. Then the cover can easily be detached after the barometer is installed into the case.



1. Remove the wooden tilting frame from the case.
2. Unscrew the base plate.
3. Attach the PTB220 onto the base with four M6x16 screws.
4. Thread the flat cable between the battery covering and the base plate. Connect the cable to D-terminal.
5. Remove the original 1/8" pressure fitting of the barometer. Then, attach the pressure tubing connector to the PTB220. It is recommended to use Loctite 572 joint paste for sealing.
6. Place the assembly into the tilting frame. Check that the flat cable and the pressure tubing come out of the back opening.
7. Attach the base with six screws.



8. Insert the battery into its covering. Place the conducting wire end to left-hand side.
9. Attach the spacers (2 pcs M3x12). Fix the support bar of the pressure port to the spacers.
10. Attach the M3x18 spacers (4 pcs).
11. Connect the flat cable and the battery conducting wires to the electronics board.
12. Fasten the back plate by using the M3x18 spacers and M3x5 screws.
13. Place the tilting frame back into the case. The barometer is now ready for use.

# TECHNICAL DATA

## Electronics

Supply voltage	10...25 VDC
Current consumption	50 mA in battery operation (display backlight on) 300mA / 10V, 130mA / 25V (recharging, battery empty) 100mA / 10V, 40mA / 25V (battery full)
Communication interfaces	RS232 full-/half-duplex RS485 half-duplex
Connectors	9-pin female sub D-connector 6 pin 5 mm screw-terminal bus

## Electromagnetic compatibility

PTB220TS/CASE with the PTB220 barometer is fully compatible according to standards:

- EN50081-1 (EN 55022 class B)
- EN50082-1 (IEC801-2:1991, IEC 1000-4-3:1995 + ENV 50204, EC 801-4:1988).

## Battery

Type	NP0.8-12 (12V / 800mAh)
Manufacturer	YUASA
Operating time	12 hours continuous use (display backlight on)
Recharging time	12 h (typical)
Fuse	1 A

## Housing

Size (W x H x D)	25 cm x 24 cm x 22 cm
Weight	7 kg (including the barometer)

## Accessories

Order code	Description
17371	AC adapter for 230 VAC with EURO plug