PLEVA Process Box PPB

connect multiple PLEVA sensors to one microprocessor box
**PPB**

**PLEVA Process Box**

Type PPB

**FEATURES OF PPB**

- Connection of multiple PLEVA sensors to one box
- Latest state of processor technology and improved EMC protection
- Compatible mounting dimension with previous panel

**BENEFIT FOR CUSTOMER**

- Economical price for sensor package
- One process box for multiple sensors reduces installation works
- Reduced wiring and cable costs

---

**One Process Box for multiple sensors**

**Application**

Precise monitoring and control of the drying, heat-setting and heat treatment process increase productivity, saves energy and guarantees a quality finish. The reliability of the precise measurement of the relevant parameters are preconditions for constant quality in textile production.

**Design**

The new PLEVA Process box is designed to connect multiple PLEVA sensors to one micro processor box:

- up to 8 fabric/air temperature sensors TDS
- additional 1 air humidity sensor FSX
- additional 1 residual moisture sensor RR

The new process box type PPB is equipped with the latest state of processor technology and improved EMC protection. The modular electronics is easily expandable for additional sensors. The box has compatible mounting dimensions with previous panel.

---

**Fabric Temperature sensors at drying and heatsetting process**

**Type TDS ST-A • TDS ST-R**
**Type TDS HT-A • TDS HT-R**

**FEATURES OF TDS**

- Non-contact measurement of fabric / air temperature in hot environment
- Fast response time
- Not sensitive to soiling
- No calibration
- No condensation

**BENEFIT FOR CUSTOMER**

- Higher product quality
- Better reproducibility
- Increasing of productivity

---

**Application of TDS sensors**

Fabric temperature sensors are used to supervise continuous and discontinuous heat treatment process e.g., drying, heat-setting, curing, vulcanisation, shrinking, ageing and cross linking of textiles, carpet, paper, fibreboard, timber, plastics, etc.

The thermodynamic sensors type TDS are designed to be used inside a heat treatment machine (drier).

Each sensor is equipped with a stainless steel conduit between sensor and PLEVA Process Box which protects the instrument leads electromagnetically and mechanically.

**Temperature patterns in a dryer**

Temperature patterns of the product heated at different technological processes in a continuous dryer.
### Application of FSX sensor

The maintenance free exhaust humidity sensor type FSX measures the water content of the process air to control the exhaust air rate for an economic efficiency on drying process.

Loading the exhaust air most efficiently with humidity will greatly reduce the hot air volume and save energy dramatically.

The differential sensor system for air moisture measurement with two heated electrodes is fitted into a stainless steel tube with a preamplifier in the connector head.

The new sensor FSX is equipped with integrated controlled heating, improved accuracy and large measuring range.

### Optimal humidity at drying process

Circulation air loaded with humidity is a perfect energy transfer medium.

The most efficient humidity range in the dryer is between 80.130 g/kg water per kg air, corresponding to 11.18 Vol % for drying temperatures between 130 °C and 160 °C.

### Application of RR W sensor

The PLEVA measuring device type RR W measures the residual moisture over the full fabric width on two guide rollers made of stainless steel.

The sensor system RR W will be used at e.g. knitted fabric, or at surface sensitive fabrics like sanded, rai sed or high-piled fabric after stenter frame.

The measuring range of type RR W at Cotton: 3.5 .. 18 %

The measurement of synthetics or mixed fibres with synthetics is not possible with type RR W because of the high electro-statics that are produced with this type of fabric.

### Application of RR Tandem roller sensor

The residual moisture measuring device RR with tandem roller sensor is used for lower humidity values or the measurement of synthetics or mixed fibres with synthetics.

This sensor uses integrated protective devices to counter interfering electrostatic charges.

The measuring range type RR Tandem roller depends on fibre, e.g.:

- Cotton: 0.9 .. 18 %
- Synthetics: 0.1 .. 5 %
- Polyamide: 0.2 .. 10 %
- Viscose: 1.7 .. 30 %

<table>
<thead>
<tr>
<th>Versions</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RR 1.1</td>
<td>1 Tandem roller / 1 Signal</td>
</tr>
<tr>
<td>RR 3.1</td>
<td>3 Tandem rollers / 1 Signals</td>
</tr>
<tr>
<td>RR 3.3</td>
<td>3 Tandem rollers / 3 Signals</td>
</tr>
</tbody>
</table>

### Residual moisture sensors

**Type RR W • RR Tandem roller**

**FEATURES OF RR W**

- Favourable price for RR W
- Avoid marks on the fabric
- Reliable and sturdy

**FEATURES OF RR Tandem roller**

- Measurement of very low residual moisture values with RR Tandem roller
- For natural fibres and blend with synthetics
- Protected against electrostatic charges

---

**Type FSX**

**FEATURES OF FSX**

- Reliable measurement in the dryer at high temperatures
- Wide measuring range, output adjustable by keypad (0 .. 1000 g/kg)
- Requires no maintenance

**BENEFIT FOR CUSTOMER**

- Great effect in energy saving
- High product quality by constant humidity
- Short payback time
Technical Data

PLEVA Process Box PPB

Sensors maximal: 8x TDS, 1x FSX, 1x RR
Ambient temperature: max. 50 °C
Power supply: 24V DC (+/- 10%)
Power consumption: max. 45 VA
Current: max. 1.6 Amps
Communication: RS485 serial
Protocols: MODBUS, PLEVA, MININET
Analogue outputs: 8 signals 0/4 .. 20mA (with board MP1) (isolated)
Weight approx.: 10 kg

Type TDS

Sensor TDS
Ambient temperature / Measuring range 0..250°C: Type TDS ST-A • TDS ST-R
Measuring range 0..400°C: Type TDS HT-A • TDS HT-R
Accuracy measuring range: +/- 1 %
Distance to material: 20..120 mm (optimal 60mm)
Measuring area: 140 mm at 20 mm distance
300 mm at 60 mm distance
550 mm at 120 mm distance
Cable length (standard): 5 m / 7 m / 10 m
Cable length (optional): 13 m / 16 m (other on request)
Weight TDS sensor: 0.5 kg without flexible tube
Weight flexible tube: 0.3 kg per m flexible tube

Type FSX

Sensor FSX
Process air temperature: Type FSX ST: max. 250 °C
Type FSX HT: max. 600 °C
Temperature of sensor: > 700 °C
Heating-up time for sensor: approx. 20 min
Measuring range sensor: standard 0 .. 1000 g/kg
selectable on Process Box: free scaling
Ambient temperature for instrument preamplifier: max. 70 °C
Power supply: 24 V DC (+/- 10 %)
Power consumption: max. 24 VA, max. 1.0 Amps.
Weight sensor FSX ST: approx. 2.6 kg

Type RR W

Sensor RR W
Ambient temperature:
Measuring frame/roller: max. 100 °C
Electronic preamplifier box: max. 50 °C
Measuring range sensor: 3.5 .. 16 % at Cotton
0.9 .. 15 % at Textiles
0.1 .. 5 % at Synthetics
0.2 .. 9 % at Polyamide
1.7 .. 30 % at Viscose
Power supply: 24 V DC (+/- 10 %)
Power consumption: approx. 15 VA, 0.7 Amps.
Weight sensor RR W kit: approx. 1.2 kg
Weight sensor RR: approx. 1.0 kg

Type RR Tandem roller

Sensor RR Tandem roller
Ambient temperature:
Measuring frame/roller: max. 100 °C
Electronic preamplifier box: max. 50 °C
Measuring range sensor RR: 0.9 .. 15 % at Cotton
0.1 .. 5 % at Synthetics
0.2 .. 9 % at Polyamide
1.7 .. 30 % at Viscose
Power supply: 24 V DC (+/- 10 %)
Power consumption: approx. 15 VA, 0.7 Amps.
Weight sensor RR: approx. 14 kg
Weight Electronic Box RR: approx. 9 kg

Specifications are subject to alteration without notice.