

PLEVA Process Box PPB

connect multiple PLEVA sensors
to one mikroprozessor box

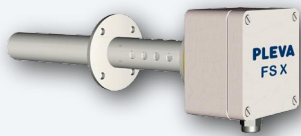
PPB



Fabric / Air temperature sensor TDS



Fabric temperature



Air humidity sensor FSX



Air humidity



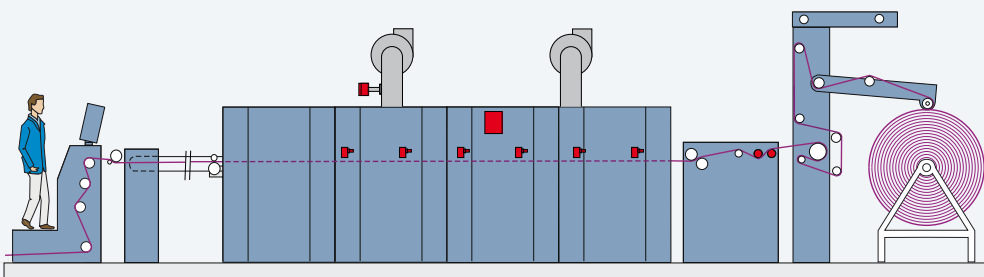
Residual moisture sensor RR



Residual moisture



PLEVA Process 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

Fabric / Air temperature sensor

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

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

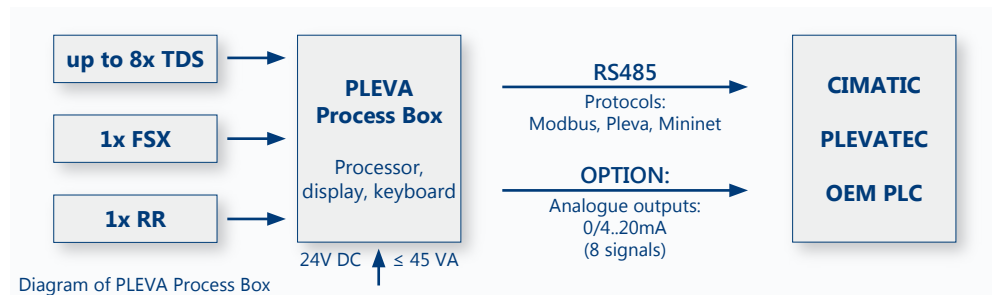
The new PLEVA Process box is designed to connect multiple PLEVA sensors to one micro processor box:

- 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.



PLEVA Process Box PPB



Fabric temperature sensors at drying and heatsetting process

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 (dryer).

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



Type TDS -A



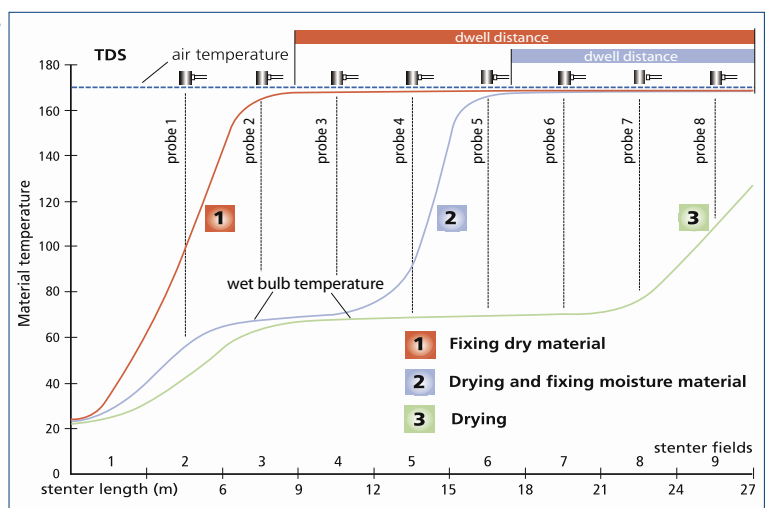
Type TDS -R

Sensor types -A (axial)
Type TDS ST-A: measuring range 0..250 °C
Type TDS HT-A: measuring range 0..400 °C

Sensor types -R (radial)
Type TDS ST-R: measuring range 0..250 °C
Type TDS HT-R: measuring range 0..400 °C

Temperature patterns in a dryer

Temperature patterns of the product heated at different technological processes in a continuous dryer.



Air humidity to minimise energy consumption

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.



Type FSX

Sensor types

Type FSX ST: Standard temperature max. 250 °C

Type FSX HT: High temperature max. 600 °C

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.

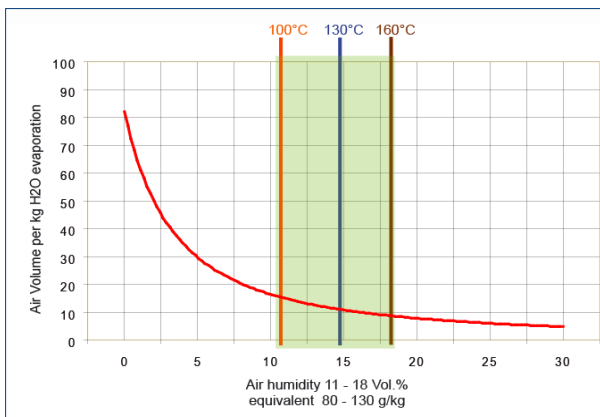


Table:
Optimal humidity at different drying temperatures

Residual moisture on drying process

Application of RR W sensor

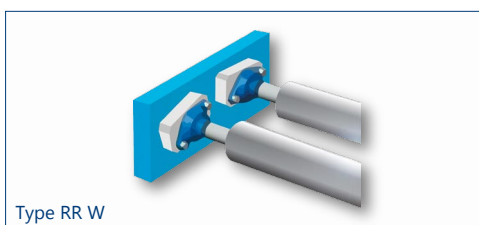
The PLEVA measuring device type RR W measures the residual moisture over the full fabric width on two guide rollers made of stainless steel.

The sensor system RR W will be used at e.g. knitted fabric, or at surface sensitive fabrics like sanded, raised 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.



Type RR W

Construction type RR W

Both metallic measuring rollers must be isolated with respect to the machine frame. Therefore both roller bearings must be mounted on isolating plates delivered by us.

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 %

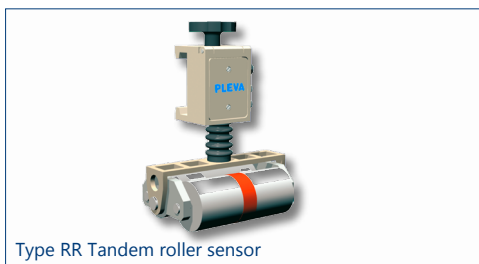
Polyamide: 0.2 .. 10 %

Viscose: 1.7 .. 30 %

Versions: RR 1.1 = 1 Tandem roller / 1 Signal

RR 3.1 = 3 Tandem rollers / 1 Signals

RR 3.3 = 3 Tandem rollers / 3 Signals



Type RR Tandem roller sensor

Construction type RR Tandem roller

Highly accurate tandem roller sensor to measure the electrical resistance on fabric. The tandem roller use a damping system for high reproducibility and accuracy.

Air humidity sensor

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

Residual moisture sensors

Type RR W • RR Tandem roller

FEATURES OF RR W

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

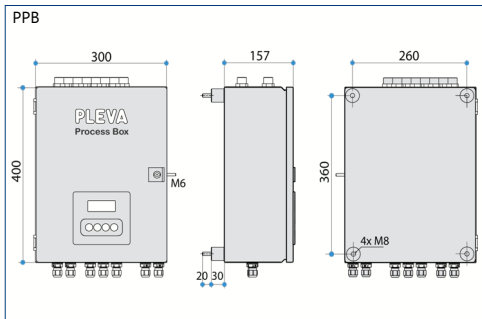
FEATURES OF RR Tandem roller

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

Technical Data

PLEVA Process Box

Type PPB

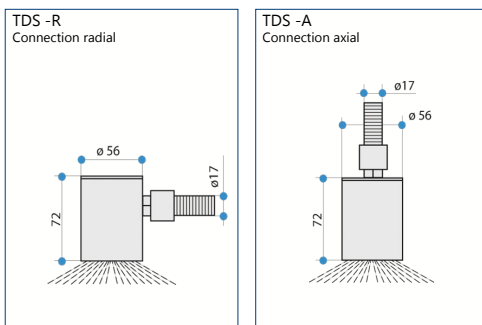


PLEVA Process Box PPB

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 (isolated)
 (with board MP1)
 Weight approx.: 10 kg

Fabric / Air temperature sensor

Type TDS

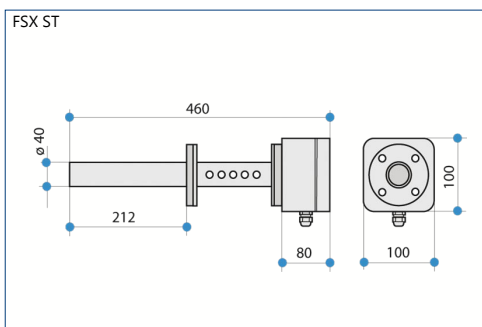


Sensor TDS

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

Air humidity sensor

Type FSX

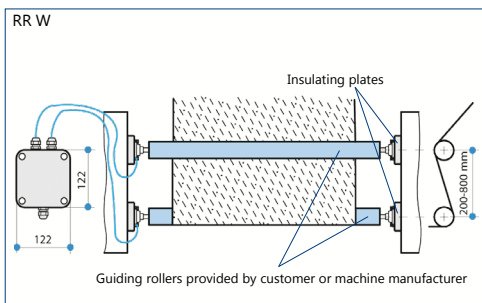


Sensor FSX

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

Residual moisture sensor

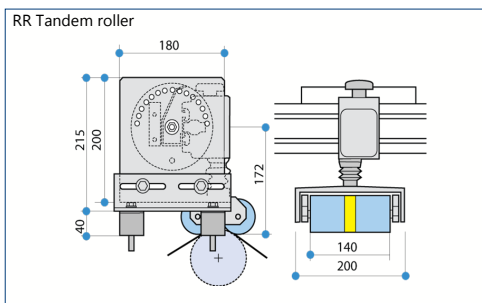
Type RR W • RR Tandem roller



Sensor RR W

Ambient temperature: max. 100 °C
 Measuring frame/roller: max. 50 °C
 Electronic preamplifier box: 0.9 .. 16 % at Cotton
 Measuring range sensor: 24 V DC (+/- 10%)
 Power supply: approx. 2.5 VA, 0.1 Amps.
 Power consumption: approx. 1.2 kg
 Weight sensor RR W kit:

Notice:
 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.



Sensor RR Tandem roller

Ambient temperature: max. 100 °C
 Measuring frame/roller: max. 50 °C
 Electronic preamplifier box: 0.9 .. 15 % at Cotton
 Measuring range sensor RR: 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 with swing out unit: approx. 14 kg
 Electronic Box RR: approx. 9 kg



PLEVA Process Box	TDS	FSX	RR
type PPB			
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4 0 0 x	4	0	0
4 1 1 x	4	1	1
6 0 0 x	6	0	0
6 1 1 x	6	1	1
8 0 0 x	8	0	0
8 1 1 x	8	1	1
OPTION OUTPUTS:			
x x x 1	= Analog output signals 0/4..20mA for each sensor isolated + Communication Bus RS485		
x x x 0	= Communication Bus RS485 (no analog outputs)		