

## TESA UP Software Programme for Value Processing

Suitable for both TESA gauge block comparators UPD and UPC as well as for comparators from other manufacturers.

- Choice of 10 languages.
- On-line processing of length and temperature values as transferred.
- Measurement cycles and result outputs according to EN ISO 3650.
- Flexible architecture for optimum adaptation to specific User's needs.
- Possible entry of limit values and accuracy grades peculiar to Users.
- Surveillance of value dispersion or value drift throughout length and temperature measurements.
- Automatic execution of all relevant corrections. The programme makes allowances for actual sizes of the reference standards, flattening due to different materials used (steel, tungsten carbide, ceramic), compensation of temperature variations with reference to 20°C according to the varying coefficients of linear expansion – as typical examples.
- Assignment of gauge blocks to their relevant grade.
- Possible storage of gauge block set related data.
- Inch or metric value processing.
- Calibration certificate in various versions.



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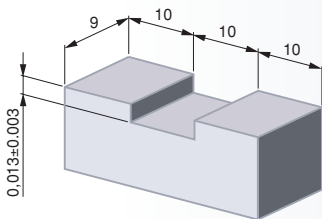


TESA UP software programme for gauge block calibration

Running under WINDOWS 98, 2000, NT, XP

Software package including:

1 CD-ROM plus 1 protective Hard-key



## Gauge Blocks for the Calibration of Comparators

To calibrate both TESA gauge block comparators UPD and UPC, we recommend the use of the pairs of gauge blocks detailed hereafter. The 9-piece set listed on page K-15 is additionally required for calibrating TESA UPD.

### Set Composition Including 6 Pairs of Gauge Blocks

Each pair is in full compliance with:

- EAL-G21 – Calibration of Gauge Block Comparators – European cooperation for Accreditation of Laboratories
- DKD-R 4-1 – Guidelines of the German Calibration Service (DKD) for the calibration of gauge block comparators.



µm

Set of 6 pairs of gauge blocks for calibrating each comparator

Set composition as listed in the chart opposite. Supplied with:

S59110152	Calibration certificate issued by the Physikalisch Technische Bundesanstalt (PTB)	± 0,015
S59110489	Calibration certificate issued by a laboratory accredited by the German calibration service (DKD)	± 0,030

Full tungsten carbide set also available on request



Pairs

Nominal length

N°	A mm	B mm
1	0,5	0,5
2	1,0	1,005
3	1,0	1,01
4	4,0	4,0
5	100,0	100,0
6	6,0	6,0*

\* Special bridge-shaped gauge blocks (see drawing) used for establishing the measuring deviations of lower probe B.



EN ISO 3650



Metric/Inch units

Minimum profile requirements for the computer needed to run the TESA UP software programme



Personal Computer

- Configuration without heat source to avoid disturbing the ambient temperature at the measurement spot.
- Operating system: Windows 98, 2000, NT or XP
- Processor: 650 MHz
- 1 Hard disc (6 GB)
- RAM capacity: 64 MB
- CD-ROM drive (24x)
- RS 232 serial port  
1 for length values  
1 for temperature values
- Centronics standard parallel port



EN ISO 3650



Special high-alloy steel,

wear resistant and stable. Exception: 6 mm special carbide gauge blocks.



Class K



The given expanded uncertainty

$k = 3$  refers to the difference of central length of both gauge blocks A and B forming the pairs 1 to 5 as well as to the deviations  $f_1$  and  $f_2$  from the central length of gauge blocks forming both pairs 2 and 3. No need to calibrate those of pair No. 6.



Wooden case



Identification number



PTB or DKD calibration certificate



EN ISO 3650

Special high-alloy steel, wear resistant and stable

Grade K

Expanded uncertainty  $k = 2$   
is valid for the given one

Wooden case

Identification number

For calibration certificates, see opposite



Temperature Sensors

PT 100 platinum resistances, 4-wire type

Temperature Device

Multi-channel precision thermometer equipped with a switch for the measuring points

4-wire measuring method with continuous value acquisition over connected sensors. PT100 linearisation according to EN 60751.

0,001 °C

RS 232 or IEEE 488

115 ±10% Vac or 230 ±10% Vac. For 50 and 60 Hz

EN 61010, EN 50081, EN 50082 EN 55011

Additional technical data listed on page K-8

## Additional Gauge Block Set for the Calibration of TESA UPD

To achieve the lowest uncertainty of measurement, we recommend the use of reference standards of grade K, which are measured directly by interferometry and come along with a calibration certificate. And this, irrespective of any other requirement such as the ambient conditions.



µm

### 9-piece gauge set for the calibration of TESA UPD

Set composition as listed in table opposite. Supplied with:

<b>S59300103</b>	Calibration certificate issued by the laboratory of a national institute of metrology Metas (Switzerland)	$\pm(0,02+0,2 \cdot L)$ µm L in m	Measuring method: direct interferometry
<b>S59300107</b>	PTB (Germany)		
<b>S59300104</b>	Calibration certificate issued by a laboratory officially accredited SCS	$\pm(0,05+0,5 \cdot L)$ µm L in m	Measuring method: by comparison



Set Composition (mm)  
1 5 10 15 20 25 50 75 100



Steel



Accuracy grade K

Other set compositions or carbide gauge blocks also available on request.

## TESA UPT Temperature Devices



05930011

### TESA UPT temperature device for TESA Gauge Block Comparators

Fully calibrated for the measuring ranges from 19°C up to 24°C with a numerical interval to 0,001 °C. Supplied with a calibration certificate issued by the Swiss Calibration Service (SCS). Uncertainty of measurement achieved during calibration  $U = \pm 0,03^\circ\text{C}$ .

Consisting of:

05960018

1 Set of 4 temperature sensors

PT100 platinum resistances giving exceptional long-term stability while drifts are kept to a minimum over years of use.

This set includes the following sensors:

- 1 Temperature sensor with clamp R for reference gauge blocks having nominal lengths from about 14 mm, No. 05960009.
- 1 Temperature sensor with clamp P for gauge blocks to be calibrated having nominal lengths from about 14 mm, No. 05960008
- 2 Temperature sensors to be mounted on the measuring stand or the table.  
3 g8 PT100 diameter, 10 mm long. Order number for 1 item: 05960010.

05960038

1 Measuring unit for temperature

Precision thermometer including a switch for the measuring points.

With use of the PT 100 platinum resistances, provides 4 measuring channels with a 0,001 °C numerical interval. RS 232 or IEEE 488 data output. 115 or 230 Vac for 50 or 60 Hz.

05960012

1 Adapter. Allows up to 4 temperature sensors to be connected.

05960011

1 Connecting cable

For adapter No 05960012 to measuring unit No 05960038.

05960026

### Connecting cable

For serial data transfer from temperature device to computer, 9-pin/m and 9-pin/f connector.

