Display units and electronic interfaces

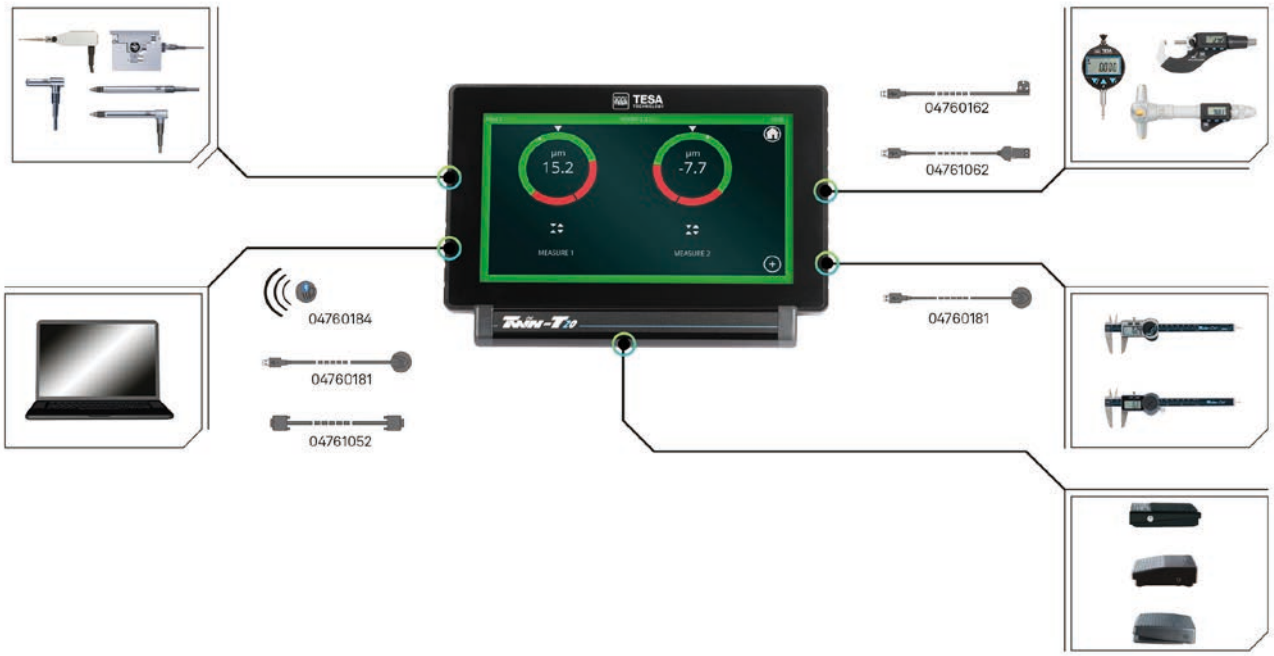
TESA
TECHNOLOGY

TESA displays units: precision for all your applications

The display units are designed to show a reliable measurement value, usually from inductive TESA probes, for quick control of parts both in production workshops and quality assurance laboratories.

Our range meets the needs of portable measurement for the verification of alignments or run-outs close to the installation and also stationary measurement benches.

Of course, our display units also incorporate connectivity features to store, collect and analyse data for optimal traceability.



The TESATRONIC range, a solution for every need:

TWIN-T10, TWIN-T20, TWIN-T20 nano, TWIN-T40, TT80

Display unit with battery (TWIN-T10)

Display unit with power supply (TWIN-T20)

TWIN-T10 digital display unit

• DISPLAY
- Large, high-contrast screen for clear and immediate reading
- Retractable feet
- Back mounting

• USE
- Light and portable
- Robust for use in any kind of conditions, even the most extreme ones

• AUTONOMY
- Powered by standard AA batteries only
- Low consumption allows a long autonomy

• FUNCTIONS
- Metric or imperial unit
- Identification of values out of tolerance
- Storage of MAX, MIN or MAX-MIN values during dynamic measurement
- Combines analogue display and analogue indication
- Zeroing of the display facilitating measurements by comparison
- Special ZOOM display allowing a more detailed visualization of the analogue scale to facilitate precise adjustment
- Up to 7 measuring ranges or automatic switching according to the measured value

04430013

Standard	DIN 32876
Input(s)	1 probe input
Max. perm. errors	At 20°C and relative humidity of ≤ 50 %: analogue display: 1% ± 0,1 µm Digital display: 1% ± 0,1 µm
Material	Resistant synthetic material
Dimensions	Housing: 100 x 170 x 38 mm Screen: 70 x 62 mm Digit: 10 x 5 mm
Degree of protection	IP63
Weight	500 g
Power supply	4 AA batteries
Data output(s)	TLC
Units	mm / in
Particular characte-ristic(s)	At 20°C and relative humidity of ≤ 50 %: Zero drift and signal amplification: ≤ 0,005 %/° C Display frequency limit with respect to input signal: 10 Hz
Response time	At 20°C and relative humidity of ≤ 50 %: Response time ≤ 100 ms Digital display hold ≥ 100 ms
Included in delivery	TWIN-T10 display unit 4 AA batteries Instruction manual including declaration of confor-mity

Display units

Part number	Designation
04430013	TWIN-T10 display

Accessories

Part number	Designation
04981001	DATA-DIRECT software
04981002	STAT-EXPRESS software
DATA-VIEWER	Free data acquisition software
01460008	Back with central lug, Ø 40 mm
04768000	Handswitch, Jack, 1,8 m
04768001	Footswitch, Jack, 1,8 m
04760181	TLC-USB cable, 2 m
04760182	TLC-DIGIMATIC cable, 2 m
04760183	TLC-BLE Bluetooth® emitter + USB dongle receiver + 1,5 m extension cable set
04760184	TLC-BLE Bluetooth® emitter
04760185	USB receiver + 1,5 m extension cable

Measuring ranges, analogue and numerical interval

Measuring range µm	Analogue interval µm	Numerical interval µm	Measuring range in	Analogue interval in	Numerical interval in
±5000	1	0,1	±250/1000	.010/1000	.005/1000
±2000	1	0,1	±100/1000	.010/1000	.005/1000
±500	1	0,1	±25/1000	.010/1000	.005/1000
±200	1	0,1	±10/1000	.010/1000	.005/1000
±50	0,1	0,1	±2.5/1000	.005/1000	.005/1000
±20	0,1	0,1	±1.0/1000	.005/1000	.005/1000
±5	0,1	0,1	±0.25/1000	.005/1000	.005/1000

TWIN-T20 digital display unit

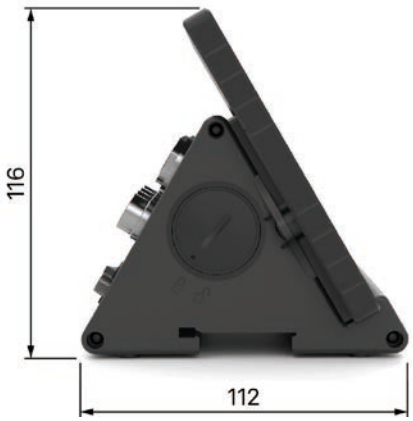
• USE
- Robust, for laboratory and workshop use
- Compatible with a wide range of probes and measuring devices
- Large colour screen for comfortable reading in dark environments
- Black background display for excellent contrast
- Refined interface for easy handling without confusion
- 4 different display styles
- Touch screen

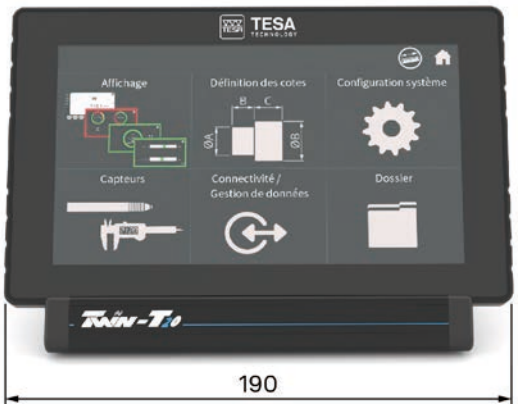
• FUNCTIONS
- One or two measurement values displayed
- Static or dynamic measurements
- Intuitive measurement setting
- 8 tolerance classes available

04430014

Standard	DIN 32876
Input(s)	2 inductive probe inputs 2 digital probe inputs 2 USB measuring device inputs
Max. perm. errors	At 20°C, relative humidity of ≤ 50 %, with fictive probes: Digital display: ±(0,2 % measured value + 0,3 µm)
Material	Housing: aluminium
Dimensions	Housing: 112 x 190 x 119 mm Screen: 155 x 87 mm
Degree of protection	Front side: IP65
Weight	1,74 kg
Power supply	100 ÷ 240 V, 50 ÷ 60 Hz, 0,6 A
Data output(s)	TLC, RS232
Units	mm / in
Particular characteristic(s)	At 20°C and relative humidity of ≤ 50 %: Zero drift ≤ 0,15 µm / °C
Sampling frequency	6500 Hz
Included in delivery	TWIN-T20 display unit Power supply + EU, UK, US and CH cables Self-test report Calibration certificate Quick start manual including a declaration of conformity

Display units





Part number	Designation
04430014	TWIN-T20 display

Accessories

Part number	Designation
04981001	DATA-DIRECT software
04981002	STAT-EXPRESS software
DATA-VIEWER	Free data acquisition software
04460016	TWIN-T20 power supply + UE, UK, US and CH cables
04460013	Stylus + holder
04460017	Screen
04460019	Socket
04768000	Handswitch, Jack, 1,8 m
04768001	Footswitch, Jack, 1,8 m
04761071	Footswitch, USB, 2 m
04760181	TLC-USB cable, 2 m
04760182	TLC-DIGIMATIC cable, 2 m
04760183	TLC-BLE Bluetooth® emitter + USB dongle receiver + 1,5 m extension cable set
04760184	TLC-BLE Bluetooth® emitter
04760185	USB receiver + 1,5 m extension cable
04761062	Opto-RS232 to USB cable, duplex, 2 m
04760151	USB A to USB B cable, 1,8 m
04761063	Sub-D 9p/m to USB cable, 2 m

Measuring ranges, analogue and numerical interval

Measuring range µm	Analogue interval µm	Numerical interval µm	Measuring range in	Analogue interval in	Numerical interval in
±5000	200	0,1	±.2	.01	.0001
±2000	100	0,1	±.1	.005	.0001
±500	20	0,1	±.02	.001	.0001
±200	10	0,1	±.01	.0005	.0001
±50	2	0,1	±.002	.0001	.0001
±20	1	0,1	±.001	.00005	.0001
±5	0,2	0,1	±.0002	.00001	.0001

TWIN-T20 nano digital display unit

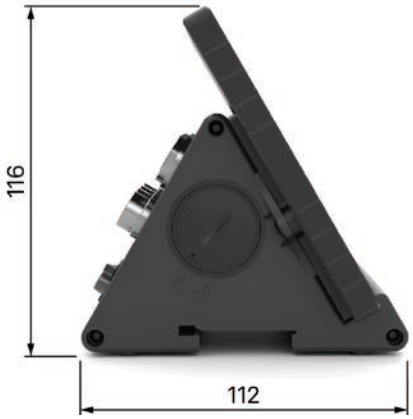
• USE
- Robust, for laboratory and workshop use
- Compatible with all Heidenhain probes type 1 Vpp and 11 µApp
- Large colour screen for comfortable reading in dark environments
- Black background display for excellent contrast
- Refined interface for easy handling without confusion
- 4 different display styles
- Touch screen

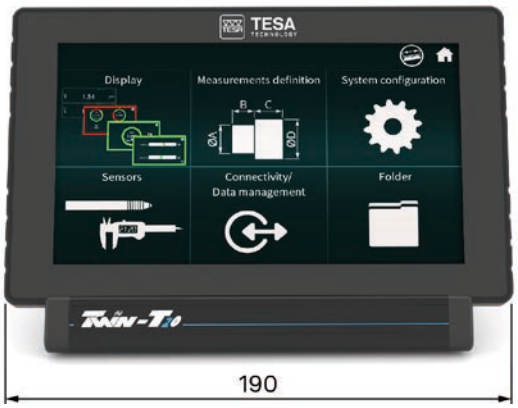
• FUNCTIONS
- One or two measurement values displayed
- Static or dynamic measurements
- Intuitive measurement setting
- Classification of the values

04430020

Standard	DIN 32876
Input(s)	2 incremental Heidenhain probe inputs 2 USB measuring device inputs
Max. perm. errors	Depending on the connected probe
Material	Housing: aluminium
Dimensions	Housing: 112 x 190 x 119 mm Screen: 155 x 87 mm
Degree of protection	Front side: IP65
Weight	1,2 kg
Power supply	100 ÷ 240 V, 50 ÷ 60 Hz, 0,6 A
Data output(s)	TLC, RS232, USB HID
Units	mm / in
Particular characteristic(s)	At 20°C and relative humidity of ≤ 50 %: Zero drift ≤ 0,15 µm / °C
Sampling frequency	260 kHz
Included in delivery	TWIN-T20 nano display unit Power supply + EU, UK, US and CH cables Self-test report Quick start manual including a declaration of conformity

Display units





Part number	Designation
04430020	TWIN-T20 nano display

Accessories

Part number	Designation
04981001	DATA-DIRECT software
04981002	STAT-EXPRESS software
DATA-VIEWER	Free data acquisition software
04460016	TWIN-T20 power supply + UE, UK, US and CH cables
04460013	Stylus + holder
04460017	Screen
04768000	Handswitch, Jack, 1,8 m
04768001	Footswitch, Jack, 1,8 m
04761071	Footswitch, USB, 2 m
04760181	TLC-USB cable, 2 m
04760182	TLC-DIGIMATIC cable, 2 m
04760183	TLC-BLE Bluetooth® emitter + USB dongle receiver + 1,5 m extension cable set
04760184	TLC-BLE Bluetooth® emitter
04760185	USB receiver + 1,5 m extension cable
04761062	Opto-RS232 to USB cable, duplex, 2 m
04761063	Sub-D 9p/m to USB cable, 2 m
04760151	USB A to USB B cable, 1,8 m

TWIN-T40 digital display unit

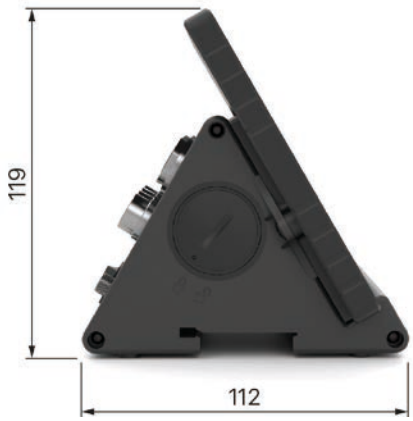
• USE
- Robust, for laboratory and workshop use
- Compatible with a wide range of probes and measuring devices
- Large colour screen for comfortable reading in dark environments
- Black background display for excellent contrast
- Refined interface for easy handling without confusion
- 4 different display styles
- Touch screen

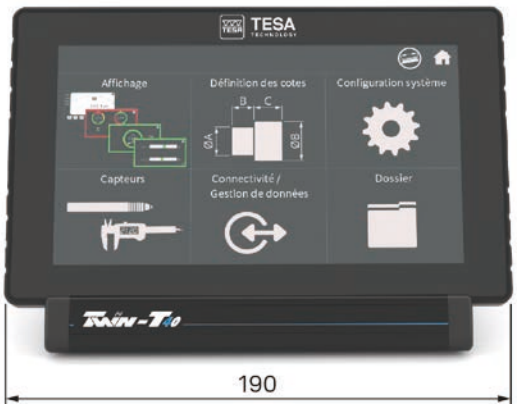
• FUNCTIONS
- One or two measurement values displayed
- Static or dynamic measurements
- Intuitive measurement setting
- 16 tolerance classes available
- Mathematical functions for simultaneous calculation of multiple probes (flatness)

04430015

Standard	DIN 32876
Input(s)	4 inductive probe inputs 4 USB measuring device inputs
Max. perm. errors	At 20°C, relative humidity of ≤ 50 %, with fictive probes: Digital display: ± (0,2 % measured value + 0,3 µm)
Material	Housing: aluminium
Dimensions	Housing: 112 x 190 x 119 mm Screen: 155 x 87 mm
Degree of protection	Front side: IP65
Weight	1,74 kg
Power supply	100 ÷ 240 V, 50 ÷ 60 Hz, 0,6 A
Data output(s)	TLC, RS232
Units	mm / in
Particular characteristic(s)	At 20°C and relative humidity of ≤ 50 %: Zero drift ≤ 0,15 µm / °C
Sampling frequency	6500 Hz
Included in delivery	TWIN-T40 display unit Power supply + EU, UK, US and CH cables Self-test report Calibration certificate

Display units





Part number	Designation
04430015	TWIN-T40 display

Accessories

Part number	Designation
04768000	Handswitch, Jack, 1,8 m
04981001	DATA-DIRECT software
04981002	STAT-EXPRESS software
DATA-VIEWER	Free data acquisition software
04460016	TWIN-T20 power supply + UE, UK, US and CH cables
04460013	Stylus + holder
04460020	Socket
04460017	Screen
04768001	Footswitch, Jack, 1,8 m
04761071	Footswitch, USB, 2 m
04760181	TLC-USB cable, 2 m
04760182	TLC-DIGIMATIC cable, 2 m
04760183	TLC-BLE Bluetooth® emitter + USB dongle receiver + 1,5 m extension cable set
04760184	TLC-BLE Bluetooth® emitter
04760185	USB receiver + 1,5 m extension cable
04761062	Opto-RS232 to USB cable, duplex, 2 m
04760151	USB A to USB B cable, 1,8 m
04761063	Sub-D 9p/m to USB cable, 2 m

Set probe + TWIN-T10 display unit

04430013P1 and 04430013P2

Input(s)	1 probe input
Max. perm. errors	TWIN-T10 at 20°C and relative humidity of ≤ 50 %: Analogue display: 1% Digital display: 1 %
Material	Resistant synthetic material (TWIN-T10)
Dimensions	TWIN-T10: Housing: 100 x 170 x 38 mm Screen: 70 x 62 mm Digit: 10 x 5 mm
Degree of protection	TWIN-T10: IP63
Power supply	4 AA batteries
Data output(s)	TWIN-T10: TLC
Units	mm / in
Particular characteristic(s)	TWIN-T10 at 20°C and relative humidity of ≤ 50 %: Zero drift and signal amplification: ≤ 0,005 %/° C Display frequency limit with respect to input signal: 10 Hz
Response time	TWIN-T10 at 20°C and relative humidity of ≤ 50 %: Response time ≤ 100 ms Digital display hold ≥ 100 ms
Included in delivery	TWIN-T10 + batteries Probe GT31 or GT22 Magnetic holder UJ15 Instruction manual including declaration of conformity

Sets of probe and display unit

Part number	Designation
04430013P1	TESA µ-FINDER set with GT31 lever probe
04430013P2	TESA µ-FINDER set with GT22 axial probe

Accessories

Part number	Designation
04981001	DATA-DIRECT software
04981002	STAT-EXPRESS software
DATA-VIEWER	Free data acquisition software
01460008	Back with central lug, Ø 40 mm
03210802	GT31 probe
04768000	Handswitch, Jack, 1,8 m
04768001	Footswitch, Jack, 1,8 m
04760181	TLC-USB cable, 2 m
04760182	TLC-DIGIMATIC cable, 2 m
04760183	TLC-BLE Bluetooth® emitter + USB dongle receiver + 1,5 m extension cable set
04760184	TLC-BLE Bluetooth® emitter
04760185	USB receiver + 1,5 m extension cable

Dummy probes

The reference probes, also called ‘dummy probes’, are resistance dividers. Each probe simulates a given length very accurately. Reference probes are connected to the instrument instead of standard probes for checking or calibrating electronic devices that can be connected to TESA inductive probes.

Dimensions	Ø 18 x 118 mm
Degree of protection	IP40
Weight	≈ 45 g
Particular characteristic(s)	Input impedance: 970 ± 50 Ω (13 kHz) or 2150 ± 50 Ω (0 µm normal) Phase (13 kHz): 71 ± 2° Input resistance: 100 ± 5 Ω Output impedance (13 kHz): 1000 ± 2 Ω Phase (13 kHz): 0,2° Dummy probe (half-bridge), sensitivity 73.75 mV/V/mm Suitable for instruments characterized as follows: Frequency: 13 ± 0,65 kHz Voltage: 3 ± 0,015 Vrms (2 symmetrical voltages of 1,5 Vrms) Output and input impedance: ≤ 0,2 Ω and 2000 Ω, resp.
Included in delivery	Measurement report

Part number	Designation
S41078077	Dummy probe, ± 0 µm
S41078079	Dummy probe, ± 3 µm
S41078231	Dummy probe, ± 5 µm
S41078081	Dummy probe, ± 10 µm
S41078228	Dummy probe, ± 100 µm
S41078230	Dummy probe, ± 190 µm
S41078087	Dummy probe, ± 300 µm
S41078332	Dummy probe, ± 500 µm
S41078751	Dummy probe, ± 1000 µm
S41078752	Dummy probe, ± 1900 µm
S41077249	Set of 3 dummy probes, ± 0 µm, ± 100 µm, ± 1000 µm
S41078654	Set of 2 dummy probes, ± 190 µm, ± 1900 µm

BPX interface

• FUNCTIONS
- Direct connection to the computer's USB port
- 'Stand Alone' operational mode
- Modularity: possibility to connect multiple BPX units together to increase the number of probes used
- High immunity to environmental disturbances, whether of electrical origin or caused by solid or liquid contaminants

• SOFTWARE
- TIS interface software included with BPX delivery
- Tolerance indication capabilities
- Simple functions +A, -A, +A+B, +A-B
- Export of values to a .csv file

BPX interface, front and back faces

Max. perm. errors	At 20°C and relative humidity of ≤ 50 % Digital output: ± (0,05 + 0,15 % of the measuring range)
Material	Housing: aluminium
Dimensions	55 x 172 x 155 mm
Degree of protection	IP40
Weight	1 kg
Data output(s)	3x USB 2.0
Particular characteristic(s)	At 20°C and relative humidity of ≤ 50 %: Zero drift: ≤0,05 %/°C Sensitivity drift: ≤0,05 %/°C Acquisition time: 10 ms (between two consecutive measurements), 1 ms (timing window) Time data transfer of digital serial output (USB): depends on the operating system of the computer
Power supply	115 ÷ 230 V, 50 ÷ 60 Hz

Part number	Designation
05030010	BPX44 interface

M4P-3 interface

• USE
- Connection to PC possible via A/D converter
- Connectable to a programmable controller
- Easy and quick integration on DIN rail
- Interfaces can be connected to each other (up to 10 interfaces) with a common power supply

• FUNCTIONS
- analogue signal output (in V/mm)
- The interface converts the signal from the probe into a DC voltage via an electronic circuit optimised for fast measurements.
- Gain of 1V/mm (standard) or 2,5, 5 or 10 V/mm (via adjustment)

04130323

Max. perm. errors	Gain = 1: ± (1% measured value + 1 µm) Gain > 1: ± (1,5% measured value + 1 µm)
Dimensions	75 x 155 x 40 mm
Degree of protection	IP40
Weight	400 g
Data output(s)	Sub-D 9p/f
Particular characteristic(s)	Gain: 1 V/mm (standard), 2,5 V/mm, 5 V/mm, 10 V/mm
Operating temperature	0 ÷ 40 °C
Input(s)	4 probe inputs
Fixing	On 35 x 7,5 mm DIN rail

Part number	Designation
04130323	M4P-3 interface

Accessories

Part number	Designation
04760153	M4P-3 power supply + UE, UK, US and CH adaptors
03160016	Power cable, UE, 2 m
03160015	Power cable, CH, 2 m
03160017	Power cable, without plug, 2 m