

TP 3M // Multifunction // -35...255 °C





Type	Highlights
TP 3M165E.2i	<ul style="list-style-type: none"> • Patented control technology - time saving up to 50% • Four functions in one calibrator (Dry block / Micro calibration bath / Infrared / Surface) • Large calibration volume for simultaneous calibration of numerous DUTs • Fastest stabilisation times on the market • Patented touchscreen function • Optionally with stainless steel housing (pharmaceutical and food version) • Measuring instrument with two channels and best accuracy on the market • DUT management with barcode scanner (accessories)

Technical data				
Type	TP 3M165E.2		TP 3M255E	
Temperature range*	-35...165 °C -25...150 °C (surface calibration)		RT...255 °C RT...200 °C (surface calibration)	
Calibration volume	Ø 60 x 170 mm			
Dry block Air Shield Insert	Ext. Reference sensor			
Display accuracy	±0.099 °C**			
Stability	±<0.001...0.005 °C			
Temperature distribution				
→ Axial	±0.060 °C			
→ Radial	±0.010 °C			
Influence of load	±0.010 °C			
Homogeneous temperature zone	Bottom 40 mm of the sleeve			
Dry Block	Ext. Reference sensor	Int. Reference sensor	Ext. Reference sensor	Int. Reference sensor
Display accuracy	±0.2 °C	±0.3 °C	±0.3 °C	±0.3 °C
Temperature stability	±0.005 °C	±0.010 °C	±0.05 °C	±0.05 °C
Homogeneous temperature zone	Bottom 40 mm of the sleeve			

* At ambient temperature 20 °C / 68 °F

** Extended measurement uncertainty according to DAkkS-DKD-R 5-4

Micro calibration bath	Ext. Reference sensor	Int. Reference sensor	Ext. Reference sensor	Int. Reference sensor
Display accuracy	±0.137 °C**	±0.1 °C	±0.2 °C	±0.2 °C
Temperature stability	±0.005 °C	±0.010 °C	±0.05 °C	±0.05 °C
Temperature distribution → Axial → Radial	±0.075 °C ±0.050 °C			
Influence of load	±0.050 °C			
Homogeneous temperature zone	Bottom 40 mm of the sleeve			
Infrared calibration	Ext. Reference sensor	Int. Reference sensor	Ext. Reference sensor	Int. Reference sensor
Display accuracy	±0.5 °C	±0.5 °C	±0.5 °C	±0.5 °C
Temperature stability	±0.020 °C	±0.020 °C	±0.05 °C	±0.05 °C
Emission factor	1			
Surface calibration	Ext. Reference sensor		Ext. Reference sensor	
Display accuracy	±1 °C		±1 °C	
Temperature stability	±0.150 °C		±0.2 °C	

General data		
Type	TP 3M165E.2i	TP 3M255E
Stabilisation time (with external reference) → to ±0.05°C → to ±0.005°C	From 1 min From 5 min	
Heating time → RT...Tmax-10 °C → RT...Tmax → Tmin...Tmax-10 °C → Tmin...Tmax	27 min 31 min 34 min 36 min	15 min 17 min
Cooling time → Tmax...RT+10 °C → RT...Tmin+10 °C → RT...Tmin	17 min 35 min 47 min	50 min
Resolution	0.1/0.01/0.001 °C	
Hysteresis → int. Ref. → ext. Ref.	±0.25 °C ±0.025 °C	±0.25 °C ±0.025 °C
Temperature units	°C / °F / K (selectable)	
Control sensor	internal / external (selectable)	internal / external (selectable)
Interface	Ethernet, 3 x USB	
Dimensions → Width → Height → Depth	210 mm 380 + 50 mm 300 mm	210 mm 330 + 50 mm 300 mm
Weight	Approx. 13 kg	Approx. 8.5 kg
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 375 W	Approx. 1000 W
Adjustable temperature range	-50...165 °C	0...255 °C
Display	Brilliant color touchscreen (7 inches), multi panel safety glass	
Approvals		
		

** Extended measurement uncertainty according to DAkkS-DKD-R 5-4

TP 3M // Integrated measuring instrument

Technical data	
Optional for temperature calibrator	TP 3M165E.2i*
DUT inputs - Resistance thermometer	
Number of channels	2
Connection	4x 4 mm safety socket per channel
Connection type	2-, 3-, 4-wire technology
Resistance range	
→ Pt100	0...400 Ω
→ Pt1000	0...4000 Ω
Accuracy	
→ Pt100	±0.03 °C
→ Pt1000	±0.06 °C
DUT inputs - Thermocouple	
Number of channels	2
Connection	2x thermocouple socket (Mini)
Measuring range	-10...100 mV
Accuracy cold junction	±0.3 °C
Accuracy	
→ Type K	±0.08 °C
→ Type J	±0.07 °C
→ Type N	±0.13 °C
→ Type E	±0.06 °C
→ Type T	±0.09 °C
→ Type R	±0.78 °C
→ Type S	±0.73 °C
Standard signal input (Current)	
Number of channels	1
Connection	4 mm safety socket
Measuring range	0...24 mA
Accuracy	0.01 % full scale
Standard signal input (Voltage)	
Number of channels	1
Connection	4 mm safety socket
Measuring range	0...12 VDC
Accuracy	0.01 % full scale
Switch test	
Number of channels	2
Transmitter supply	
Output current	Max. 24 mA
Output voltage	24 VDC

* See order code

TP 3M // Multifunction // -35...255 °C

To order a complete calibrator, you need three order numbers:

- 1. Calibrator type

EP3M	xx	x	x	xxxxxx
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- 2. Linearisation

EPLIK	xx	x	xx	x
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- 3. Adapter sleeve / insert

EZxxxxxxxxxxxx

In addition, depending on your individual calibration requirements, you can order additional adapter sleeves, necessary certificates and other accessories.

Order code									
1. Calibrator type									
Temperature range	Function	Block [mm]	Power supply	Type					
-35...165 °C	Multifunction	Ø 60 x 170	110...240 V	TP 3M165E.2	EP3M	16	2	6015U3	
RT...255 °C	Multifunction	Ø 60 x 170	110...240 V	TP 3M255E.2	EP3M	25	2	6015U3	
Integrated measuring instrument									
Without					0				
With					I				
Example order number calibrator					EP3M	16	I	2	6015U3

Order code										
2. Linearisation										
With linearisation					EPLIK					
Function										
Dry block (Air Shield Insert)*					AS					
Dry block					DB					
Dry block (for aseptics)**					SD					
Micro calibration bath (direct)					LI					
Micro calibration bath (with tub insert)					TI					
Infrared					IR					
Surface*					SU					
Reference sensor										
Internal					I					
External					E					
Medium										
None (AS, DB, IR, SU)									00	
Water (2...95 °C)									01	
Silicone oil 10 cSt (-35...155 °C)									10	
Silicone oil 20 cSt (7...220 °C)									20	
Silicone oil 50 cSt (50...270 °C)									50	
Test points										
Standard									0	
Customised									K	
Example order number linearisation					EPLIK	AS	I	00	0	

* Only with external reference sensor
 ** Only with W043P410400G3002 as external reference sensor

Order code				
3. Adapter sleeve / Calibration insert				
Bore holes [mm]	Function	Block [mm]	Material	Order number
1x Ø 3.5, 1x Ø 6.5, 1x Ø 8.5, 1x Ø 10.5	Dry block	Ø 60 x 170	Aluminium	EZ16360C04AL05
2x Ø 3.5, 2x Ø 4.5, 2x Ø 6.5, 2x Ø 8.5, 2x 10.5		Ø 60 x 170	Aluminium	EZ16360D10AL85
3x Ø 3.5, 3x Ø 6.5, 3x Ø 8.5, 3x 10.5		Ø 60 x 170	Aluminium	EZ16360D12AL86
2x Ø 3.5, 1x Ø 4.5, 1x Ø 5.0, 1x 5.5, 1x Ø 6.5, 1x Ø 8.5, 1x Ø 9.0, 1x Ø 9.5, 1x Ø 10.5		Ø 60 x 170	Aluminium	EZ16360D10AL87
Without bore holes		Ø 60 x 170	Aluminium	EZ16360000AL00
Tub insert	Bath	Ø 60 x 170		EZTPMBEK000000
Black body sleeve	Infrared	Ø 60 x 170		EZ15060B03AL41IR
Adapter sleeve for surface temperature sensors	Surface	Ø 60 x 170	Aluminium	EZ20460B03AL050F
Adapter sleeve for sensors with aseptic connections	Aseptic Probe	Ø 60 x 170	Aluminium	EZ17160C02AL59
Air Shield Insert (ASI) without bore holes	Dry block	Ø 60 x 170	Aluminium	EZ16360000AL00F
Air Shield Insert (ASI) incl. one bore hole by choice	Dry block (ASI)	Ø 60 x 170	Aluminium	Please indicate bore holes in your order
Insert incl. one bore hole by choice	Dry block	Ø 60 x 170	Aluminium	
Every additional bore hole	Dry block	Ø 60 x 170	Aluminium	
Example order number adapter sleeve / insert				EZ16360C04AL05

Order code	
4. Calibration certificate - Select your certificates as required***	
SIKA Works calibration certificate for first function	EKTPWP1FKT
SIKA Works calibration certificate for second function	EKTPWP2FKT
SIKA Works calibration certificate for third function	EKTPWP3FKT
SIKA Works calibration certificate for fourth function	EKTPWP4FKT
DAkKS calibration certificate for first function	EKTPDAKKS1FKT
DAkKS calibration certificate for second function	EKTPDAKKS2FKT
DAkKS calibration certificate for third function	EKTPDAKKS3FKT
DAkKS calibration certificate for fourth function	EKTPDAKKS4FKT
Additional test point DAkKS calibration certificate	EKTPDAKKSZUSP
SIKA Works calibration certificate int. measuring instrument (Pt100, Type K)	EKTPWPMI1
SIKA Works calibration certificate int. measuring instrument (Pt100, Pt1000 Type K, Type J)	EKTPWPMI2
SIKA Works calibration certificate int. measuring instrument (Pt100, Type K, mA, V)	EKTPWPMI3
SIKA Works calibration certificate int. measuring instrument (Pt100, Pt1000 Type K, Type J, mA, V)	EKTPWPMI4
SIKA Works calibration certificate complete (Pt 500, Pt1000, Type J/N/E/T/R/S, mA, V)	EKTPWPMIZUS
SIKA Works calibration certificate complete (Pt100, Pt 500, Pt1000, Type K/J/N/E/T/R/S, mA, V)	EKTPWPMIKOMPL
DAkKS calibration certificate int. measuring instrument (Pt100, Type K)	EKTPDAKKSMI1
DAkKS calibration certificate int. measuring instrument (Pt100, Pt1000 Type K, Type J)	EKTPDAKKSMI2
DAkKS calibration certificate int. measuring instrument (Pt100, Type K, mA, V)	EKTPDAKKSMI3
DAkKS calibration certificate int. measuring instrument (Pt100, Pt1000 Type K, Type J, mA, V)	EKTPDAKKSMI4
DAkKS calibration certificate each additional measuring input of your choice (Pt 500, Pt1000, Type J/N/E/T/R/S, mA, V)	EKTPDAKKSMIZUS
DAkKS calibration certificate complete (Pt100, Pt 500, Pt1000, Type K/J/N/E/T/R/S, mA, V)	EKTPDAKKSKOMPL

*** Each calibrator comes with a standard test certificate..

Order code		
5. Accessories		Order number
Transport case	For type	
Without trolley attachment frame	TP 3M165E.2	EZTPKOFFER005
	TP 3M255E.2	EZTPKOFFER003
With trolley attachment frame	TP 3M165E.2	EZTPKOFFER005TG
	TP 3M255E.2	EZTPKOFFER003TG
More accessories		
External reference sensor TF 255-3-300 (-55...255 °C)	TP Premium complete	W033P413000GX002
External reference sensor TF 255-3-300 (-55...255 °C), 90° angle	TP Premium complete	W033P413000GX0WI
Ext. reference sensor as cable sensor	Function EPLIKSDE000	W043P410400G3002
Tripod	TP 3M165E.2i, TP 3M255E.2	EZTPMSG00000000
Calibration liquid (Silicone oil), 50cSt	TP 3M165E.2i, TP 3M255E.2	EZSÖ0500000000
Calibration liquid (Silicone oil), 20cSt	TP 3M165E.2i, TP 3M255E.2	EZSÖ0200000000
Calibration liquid (Silicone oil), 10cSt	TP 3M165E.2i, TP 3M255E.2	EZSÖ0100000000
Calibration liquid (Silicone oil), 5cSt	TP 3M165E.2i, TP 3M255E.2	EZSÖ0050000000
Network switch	TP Premium complete	XE2103
Barcode scanner	TP Premium complete	XE2102
W-LAN router	TP Premium complete	XE2101
DUT sensor for demo purposes (Pt100 3-wire)	For int. measuring instrument	WMQMP310200500003
Bore divider for 3 x Ø 3 mm probes from Ø 9 mm bore hole	For Air Shield insert	XE2194
Spare part spring for Air Shield Insert	For Air Shield insert	XE2267
Instruction to the temperature calibrator by SIKA field service	TP Premium complete	EKTPEINWEISUNG
Packaging for calibrator return (for example for recalibration) *	TP Premium complete	098V



* Please indicate the calibrator model when ordering.

Overview of SIKA temperature calibrators

Our series: Basic. Solid. Premium.

- **Dry block calibrators** of the **TP Basic** series impress with their **uncomplicated operation** and **high cost-effectiveness**. They are particularly suitable for use on ships or in industrial applications.
- Equipped with a **PC interface**, the **dry block calibrators** and **calibration baths** of the **TP Solid** series cover a wide temperature range with high accuracy.
- For the highest demands on accuracy and flexibility: The dry-block and multi-function temperature calibrators of the **TP Premium** series represent the pinnacle of our technical development. Equipped with an **integrated touch screen**, a **PC interface**, an **external reference sensor** and **integrated measuring instrument**, this series offers **extreme accuracies** for **all calibration tasks**.

Temperature range (RT=Room temperature)	Function	Accuracy	Features	Block dimensions [Ø mm x depth mm]	Type	
-55 °C ... 200 °C -67 °F ... 392 °F	Dry block	±0.4 °C	±0.72 °F	TP Basic	28 x 150	TP 17200
	Dry block	±0.2 °C	±0.36 °F	TP Solid	28 x 150	TP 17200S
	Dry block	±0.2 °C	±0.36 °F	TP Premium	28 x 150	TP 37200E.2
-35 °C ... 155 °C -31 °F ... 311 °F	Calibration bath	±0.1 °C	±0.18 °F	TP Solid	60 x 170	TP M165S
-35 °C ... 165 °C -31 °F ... 329 °F	Dry block	±1 °C	±1.80 °F	TP Basic	28 x 150	TP 17165M
	Dry block	±0.4 °C	±0.72 °F	TP Basic	28 x 150	TP 17165
	Dry block	±0.2 °C	±0.36 °F	TP Solid	28 x 150	TP 17165S
	Dry block	±0.2 °C	±0.36 °F	TP Premium	28 x 150	TP 37165E.2
	Dry block ext. Dry block int.	±0.2 °C ±0.3 °C	±0.36 °F ±0.54 °F	TP Premium	60 x 170	TP 3M165E.2
	Air Shield Insert	±0.099 °C	±0.1782 °F			
Calibration bath Infrared Surface	±0.1 °C ±0.5 °C ±1 °C	±0.18 °F ±0.9 °F ±1.88 °F				
-30 °C ... 165 °C -22 °F ... 329 °F	Dry block	±0.4 °C	±0.72 °F	TP Basic	60 x 150	TP 17166
	Dry block	±0.2 °C	±0.36 °F	TP Solid	60 x 150	TP 17166S
-10 °C ... 100 °C 14 °F ... 212 °F	Dry block	±0.05 °C	±0.09 °F	TP Solid	7 x 6.5 x 150	TP 17Zero
RT ... 200 °C RT ... 392 °F	Dry block	±1 °C	±1.80 °F	TP Basic	18 x 150	TP 18200E
RT ... 255 °C RT ... 491 °F	Calibration bath	±0.2 °C	±0.36 °F	TP Solid	60 x 170	TP M255S
	Dry block ext. Dry block int.	±0.25 °C ±0.5 °C	±0.45 °F ±0.9 °F	TP Premium	60 x 170	TP 3M255E.2
	Air Shield Insert	±0.08 °C	±0.144 °F			
	Calibration bath, tub insert, ext.	±0.35 °C	±0.63 °F			
	Calibration bath, tub insert, int.	±0.53 °C	±0.954 °F			
	Calibration bath, direct filling, ext.	±0.18 °C	±0.324 °F			
	Calibration bath, direct filling, int.	±0.46 °C	±0.828 °F			
	Infrared Surface	±0.5 °C ±1 °C	±0.9 °F ±1.8 °F			
RT ... 450 °C RT ... 842 °F	Dry block	±0.6 °C	±1.08 °F	TP Basic	60 x 150	TP 17450
	Dry block	±0.3 °C	±0.54 °F	TP Solid	60 x 150	TP 17450S
	Dry block Air Shield Insert	±0.3 °C ±0.2 °C	±0.54 °F ±0.36 °F	TP Premium	60 x 150	TP 37450E.2
	Infrared Surface	±0.5 °C ±1 °C	±0.9 °F ±1.8 °F			
RT ... 650 °C RT ... 1202 °F	Dry block	±1 °C	±1.8 °F	TP Basic	28 x 150	TP 17650M
	Dry block	±0.8 °C	±1.44 °F	TP Basic	28 x 150	TP 17650
	Dry block	±0.4 °C	±0.72 °F	TP Solid	28 x 150	TP 17650S
RT ... 700 °C RT ... 1292 °F	Dry block Air Shield Insert	±0.43 °C ±0.27 °C	±0.744 °F ±0.486 °F	TP Premium	29 x 150	TP 37700E.2
RT ... 850 °C RT ... 1562 °F	Dry block	±1 °C	±1.8 °F	TP Basic	18 x 100	TP 18850E
400 °C ... 1300 °C 752 °F ... 2372 °F	Dry block	±2 °C	±3.6 °F	TP Solid	28 x 200	TP 281300E

Subject to technical modifications and errors