

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



Type	Highlights
TP 3M165E.2	<ul style="list-style-type: none"> Patented control technology - time saving up to 50% High calibration volume Fastest stabilisation times on the market Patented touchscreen function Management of device under test with barcode scanner (Accessories) Optional with stainless steel case (for pharmaceutical and food industry)

Technical data

Type	TP 3M165E.2			TP 3M255E	
Temperature range*	-35...165 °C -25...150 °C (at surface calibration)			RT...255 °C RT...200 °C (at surface calibration)	
Reference sensor (selectable)	internal	external	external + AirShieldInsert	internal	external
Hysteresis	±0.25 °C	±0.025 °C	±0.025 °C	±0.25 °C	±0.025 °C
Dry block					
Accuracy	±0,3 °C	±0,2 °C	±0.099 °C**	±0.3 °C	
Stability	±0.010 °C	±0.005 °C	±<0.001...0.005 °C	±0.05 °C	
Resolution	0.001	0.001	0.001		
Load error			±0.010 °C		
Temperature homogeneity → Axially → Radial			±0.060 °C ±0.010 °C		
Measurement zone	123...163 mm				
Micro calibration bath					
Accuracy	±0.1 °C	±0.137 °C**		±0.2 °C	
Stability	±0.010 °C /	±0.005 °C		±0.05 °C	
Resolution	±0.001 °C	0.001			
Load error		±0.050 °C			
Temperature homogeneity → Axially → Radial		±0.075 °C ±0.050 °C			
Measurement zone	110...150 mm				

* At an ambient temperature of 20 °C / 68 °F

Transition times*	TP 3M165E.2	TP 3M255E
Cooling time → RT...-30 °C** → Tmax...RT	40 min (Dry block) 65 min (Micro calibration bath) 24 min (Dry block) 25 min (Micro calibration bath)	105 min (Dry block) 78 min (Micro calibration bath)
Heating time → RT...Tmax → -35 °C...165 °C	32 min (Dry block) 50 min (Micro calibration bath) 37 min (Dry block) 56 min (Micro calibration bath)	23 min (Dry block) 105 min (Micro calibration bath)
Stabilisation time		
With ext. reference → to ±0.05 °C → to ±0.005 °C	From 5 min From 10 min	

General data		
Type	TP 3M165E.2	TP 3M255E
Interface	Ethernet, 3 x USB	
Calibrator dimensions → Width → Height → Depth	210 mm 380 + 50 mm 300 mm	
Block dimensions → Diameter → Depth	Ø 60 mm 170 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
Display unit		
Display	Brilliant Color-Touchscreen (7"), multi panel safety glass, viewing angle 120...140° Brightness 400 cd / m ² , Unit °C / °F / K	
Display range	-50...165 °C	0...255 °C
Resolution	0.1 / 0.01 / 0.001 °C / °F / K	

* Further information on transition times on request, all data refer to tests with new devices

** Cooling time to Tmin [-35 °C] differs

TP 3M // Integrated measuring instrument

Technical data	
Optional for temperature calibrator	TP 3M165E.2*
Device under test input - Resistance thermometers	
Number of channels	2
Connection	4x 4 mm safety socket per channel
Type of connection	2-, 3-, 4-wire technology
Resistance range	0...400 Ω
Accuracy Pt100	±0.05 °C
Accuracy Pt1000	±0.09 °C
Device under test input - Thermocouple	
Number of channels	2
Connection	2x thermocouple socket (Mini)
Measuring range	0...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

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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	Power supply	Type					
-35...165 °C	Multifunction	Ø60 x 170 mm	110...240 V	TP 3M165E.2	EP3M	16	2	6015U3	
RT...255 °C	Multifunction	Ø60 x 170 mm	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				
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

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

Order code	
4. Calibration certificate - Select your certificates as required*	
SIKA-Works calibration certificate for 1. function	EKTPWP1FKT
SIKA-Works calibration certificate for 2. function	EKTPWP2FKT
SIKA-Works calibration certificate for 3. function	EKTPWP3FKT
SIKA-Works calibration certificate for 4. function	EKTPWP4FKT
DAkKS calibration certificate for 1. function	EKTPDAKKS1FKT
DAkKS calibration certificate for 2. function	EKTPDAKKS2FKT
DAkKS calibration certificate for 3. function	EKTPDAKKS3FKT
DAkKS calibration certificate for 4. 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)	EKTPDAKKSIMIZUS
DAkKS calibration certificate complete (Pt100, Pt 500, Pt1000, Type K/J/N/E/T/R/S, mA, V)	EKTPDAKKS KOMPL

* 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
Tripod	TP 3M165E.2, TP 3M255E.2	EZTPMSG0000000
Calibration liquid (Silicone oil), 50cSt	TP 3M165E.2, TP 3M255E.2	EZSÖ0500000000
Calibration liquid (Silicone oil), 20cSt	TP 3M165E.2, TP 3M255E.2	EZSÖ0200000000
Calibration liquid (Silicone oil), 10cSt	TP 3M165E.2, TP 3M255E.2	EZSÖ0100000000
Calibration liquid (Silicone oil), 5cSt	TP 3M165E.2, TP 3M255E.2	EZSÖ0050000000
Network switch	TP Premium complete	XE2103
Barcode scanner	TP Premium complete	XE2102
Wifi router	TP Premium complete	XE2101