



With EG certificated design complying
with regulations 94/9/EG (ATEX 95)

Temperature Test Chambers WT series and Climate Test Chambers WK series

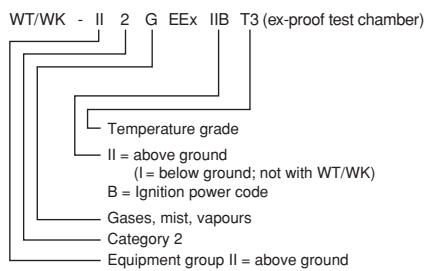
Ex-proof . . .

Explosion protection

Many products emit inflammable substances. Combined with air, these substances can develop with air a gas mixture which is explosive. So as to prevent such an atmosphere causing an explosion, special precautions need to be taken.

For such applications, Weiss Umwelttechnik offers the WT/WK-II 2 G EEx IIB T3 (ex-proof test chamber) series, which enable tests to be carried out in a potentially explosive test environment in the test chamber.

Equipment nomenclature



Equipment categories

Explosion-protected systems are divided into three categories. The WT/WK-II 2 G EEx IIB T3 (test chamber ex-proof) series meets the requirements of categories 2 and 3.

Category 1 (Equipment for zones 0, 1 and 2)

applies to products which guarantee a **very high level of safety** in areas in which the development of a potentially explosive atmosphere caused by gases, vapours, mist or dusts is **highly probable** and whose occurrence is perpetual, long-term or frequent.

Category 2 (Equipment for zones 1 and 2)

applies to products which guarantee a **high level of safety** in areas in which the development of a potentially explosive atmosphere caused by gases, vapours, mist or dusts is **probable**.

Category 3 (Equipment for zone 2)

applies to products which guarantee a **normal level of safety** in areas in which the development of a potentially explosive atmosphere caused by gases, vapours, mist or dusts is **less likely**.

Temperature classes

The substances are divided into classes in according to their ignition temperature.

The WT/WK-II 2 G EEx IIB T3 series (ex-proof test chamber) (T4 optional) is suitable for storing materials in the temperature classes T1 to T3.

Explosion groups (Equipment groups)

The substances are divided into explosion groups according to their ignition energy.

The WT/WK-II 2 G EEx IIB T3 series (ex-proof test chamber) is suitable for storing materials in the explosion groups IIA and IIB.

Temperature classes and explosion groups

Temperature class	T1	T2	T3	T4
Ignition temperature	> 450 °C	450 – 300 °C	300 – 200 °C	200 – 135 °C
Explosion groups (Equipment groups)	Examples:			
IIA Ignition energy > 180 µJ	Acetone ether Ammonium benzole Acetic acid Methane Propane Toluol	n-butane n-butyl alcohol Natural gas Vinyl chloride	Benzines Diesel Heating oil n-hexane	Ether Ethyl ether
IIB Ignition energy 60 ... 180 µJ	Hydrogen cyanide Town gas	Ethyl alcohol Ethylene Isoprene	Dimethyl ether	
IIC Ignition energy < 60 µJ	Hydrogen	Acetylene		

green: WT/WK-II 2 G EEx IIB T3
(ex-proof test chamber)
yellow: T4 optional
red: not permissible

Technical Data

WT/WK-II 2 G EEx IIB T3 (ex-proof test chamber)								
			480		800		1300	
Type	WT/WK		/40	/70	/40	/70	/40	/70
Test space volume	Litres		480	480	810	810	1340	1340
Test space dimensions	Height	mm	920	920	920	920	920	920
	Width	mm	800	800	1100	1100	1100	1100
	Width ²⁾	mm	760	760	1060	1060	1060	1060
	Depth	mm	650	650	805	805	1330	1330
External dimensions ¹⁾	Height	mm	2050	2050	2050	2050	2050	2050
	Width	mm	1000	1000	1300	1300	1300	1300
	Width ³⁾	mm	1100	1100	1400	1400	1400	1400
	Depth ⁴⁾	mm	2480	2480	2675	2675	3200	3200
	Depth ⁵⁾	mm	2600	2600	2825	2825	3410	3410
Performance for temperature tests								
Temperature range	°C		-40	-60	-40	-60	-40	-60
	°C		+160	+160	+160	+160	+160	+160
Change rate as per IEC ⁶⁾	Cooling	K/min	2.0	2.0	2.0	1.8	2.0	1.8
	Heating	K/min	3.5	3.5	2.5	2.5	2.0	2.0
Heat Compensation	W		2000	1800	4000	2200	3500	2000
Temperature fluctuation	K				±0.3 ... ±0.8			
Temperature deviation	K				±0.5 ... ±2.0			
Calibration values					+23 °C and +80 °C			
Performance for climate tests – only WK-type								
Temperature range	°C				+10 ... +95			
Dewpoint range	°C				(-3) ⁹⁾ +4 ... +94			
Humidity range	% r. h.				10 ... 98			
Humidity fluctuation	% r. h.				±1 ... ±3			
Temperature fluctuation	K				±0.2 ... ±0.5			
Temperature deviation	K				±0.5 ... ±1.0			
Heat compensation ⁷⁾	W				200			
Calibration values					+23 °C/50 % r. h. and +95 °C/50 % r. h.			
Electrical connection					3/N/PE AC 400 V ±10 % 50 Hz			
Protection grade					32 A CEE plug IP 22 and IP 54			
Max. connected power	kW		9.5	11	13	15.5	13	15.5
Max. current consumption	A		19	22	26	31	26	31
Noise level – 1 m from the front ⁸⁾	dB(A)		61	62	73	73	73	73
Weight	kg		900	930	1350	1380	1400	1430

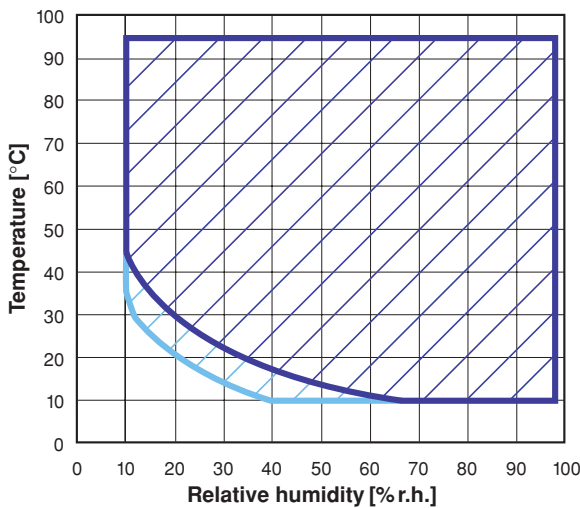
The performance data relate to an ambient temperature of +25 °C.

- ¹⁾ By dismantling components the external dimensions can be reduced
- ²⁾ Width between the shelf supports
- ³⁾ With door handle and hinge
- ⁴⁾ Without touch panel
- ⁵⁾ With touch panel
- ⁶⁾ Change rate as per IEC 60068-3-5, measured in the supply air stream
- ⁷⁾ At +25 °C to +90 °C, humidity to max. 90 % r. h.
- ⁸⁾ Free field measurement as per DIN 45635, Part 1, accuracy class 2
- ⁹⁾ Intermittent operation

We reserve the right to make any technical alterations.

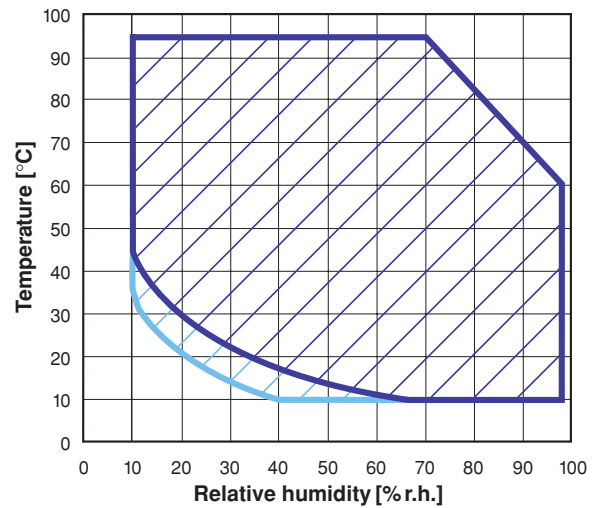
Humidity diagram with reference to relative humidity

Operative climate range T3



- Standard operating range
- Intermittent operation

Operative climate range T4 (option)



- Standard operating range
- Intermittent operation

Options

Temperature class T4

With this option, it is also possible to test materials with an ignition temperature of $>135^{\circ}\text{C}$ in the test chamber. This results in a limitation in the operative climate range. Moreover, the upper test space temperature is restricted to $+100^{\circ}\text{C}$.

Test chamber window

The test chamber door can be fitted with a window. Lighting, also available as an option, is fitted to the door exterior, the test chamber thereby being illuminated through the window.

Temperature change rates

If required, test chambers with greater temperature change rates (up to approx. 5 K/min) can be supplied (applies only to T3).

Capacitive measuring system – ex-proof version

In addition to the psychrometric measuring system, a capacitive humidity measuring system is installed. The humidity control can optionally be operated with the capacitive sensor or the psychrometric measuring system.

Explosive mixture monitoring

With this additional equipment, the atmospheric concentration of various substances in the test space can be monitored.

Water-cooled version

For cooling tower and chilled or town water.

Test chambers for constant climatic condition

Ex-proof test chambers for constant atmosphere, low temperature change rates are available on demand.



Installation

The WT/WK-II 2 G EEx IIB T3 (ex-proof test chamber) temperature and climate test chamber series must be installed only in a neutral area.

Where installation is carried out in a potentially explosive area, further measures are essential and must be carried out in coordination with the operating company and the technical supervision authorities.

WT/WK Ex series

The WT and WK test chamber series enable reproducible temperature and climate tests to be carried out for quality-assurance and -improvement.

The WT and WK series test chambers feature numerous practicable, innovative and ergonomic characteristics in technology, design, construction and operation.

For a variety of applications, test chambers of various sizes and with or without panorama windows, are available as standard.

Technical safety evaluation

The explosion-proofing measures were examined by the "TÜV Nord CERT GmbH & Co. KG" following which Weiss Umwelttechnik received the design certification.

For the purposes of assessment, the 94/9/EG (ATEX 95) regulations were applied.

Test the best...



A complete line of systems is available offering test space volumes ranging from approx. 60 l to 1,500 l, a working range from $-75 \dots +180^\circ\text{C}$ and relative humidity values ranging from 10 ... 98 % r.h.

We also offer an extensive line of field-proven test systems specially for simulating exposure to weather, temperature shock, corrosion and long-time tests for application in research, development, quality control and production.

Of course, Weiss – as one of the leading producers of environmental simulation systems world-wide – offers the entire spectrum of high-tech test systems starting from a series of cost-effective test systems up to customized walk-in chambers and in-line systems.

If it's know-how, service and reliability that you are looking for – contact Weiss Umwelttechnik.



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