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HEATING SOLUTIONS FOR HAZARDOUS AREAS

2016-06

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Product examples

3-part ATEX heating jacket for gas container WEXHD003

ATEX heating jacket for pipeline WEXH0028

Heating mantle for 50 litre gas container WEXHI1X350

ATEX heating jacket for analyzer WEXH0036

ATEX heating mantle with container WEXH0079

10 litre ATEX gas bottle heater WEXHB010

Content

50 litre ATEX gas bottle heater WEXHB050

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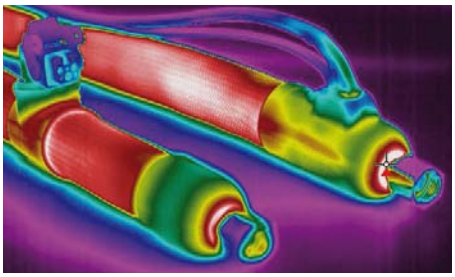
WINKLER TECHNOLOGY

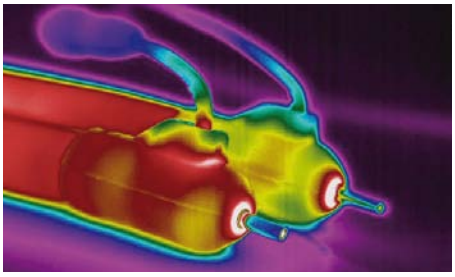
With more than 35 years of experience, Winkler stands for reliable products and intelligent innovations in industrial heat engineering. We probably offer the broadest range of flexible heating systems, control & monitoring equipment and accessory products for exacting analytical measurement.

Heated lines from Winkler are used in analytical systems for monitoring air pollutants in power stations and waste incineration plants as well as for process analysis in industry. They serve to transport gas samples without falsification from the sampling point to the gas treatment system and analyser. Thanks to their high degree of durability, they can be in use for many years, often round the clock and under tough conditions. The whole bandwidth of heating solutions from Winkler is also demonstrated at engine test beds for the calibration and optimization of combustion engines in the context of further development as well as at chassis dynamometers for statutory emission testing and vehicle certification.

The accuracy and reproducibility with which sensors and instruments in analytical systems are able to function crucially depends on the sampling gas treatment and the correct heating along the measuring gas route in accordance with the applicable standards and regulations. As the legal regulations become stricter and measurement technology improves even further, the requirements in this sector will increase correspondingly. Therefore, the heating within an analytical system represents a major element of every facility, and this is where Winkler, as a specialist, can always offer the perfect solution.

Rely on our experience and you will be convinced of our products and services!





Thermographic pictures

WINKLER EC-TYPE EXAMINATION CERTIFICATES

Our ATEX heated lines and ATEX heated hoses are approved as complete systems and certified with a single EC-Type Examination Certificate (system approval). They can be employed for the intended purpose in potentially explosive gas or dust atmospheres zone 1 / 2 and 21 / 22 in compliance with the enclosed instructions for installation and operation.

Benefit from the advantages of a system approval!

Certification to the current standards (EN 60079) of all the fitted electrical and non-electrical components guarantees maximum safety (state of the art).

Particularly advantageous are the special combinations of individual functions as well as the option of customized or process-specific designs.

The total construction of all ATEX heated lines and ATEX heated hoses is electrostatically dissipative both with regard to static and dynamic operation, so that dangerous discharge cannot build up in hazardous areas (see information on this topic - page 5).

On the basis of the extensive information and documentation supplied with the delivery, the operator of hazardous area installations is allowed verifiability as required in the Explosion protection document based on the Ordinance on Hazardous Substances (GefStoffV) §6 „Gathering Information and Risk Assessment".

Don't hesitate to get in touch with our specialists – we will be happy to advise you!
Frank Merkel (Head of ATEX product management / ATEX commissioner)
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WINKLER QUALITY

The technical experience and high level of quality assurance are reflected in all Winkler products so that our customers can rely on tested and proven products for their applications.

Our heating systems are characterized by an even distribution of heating power and a generously dimensioned heating conductor arrangement. This enables relatively direct and careful heat transfer to the fluid or object to be heated.

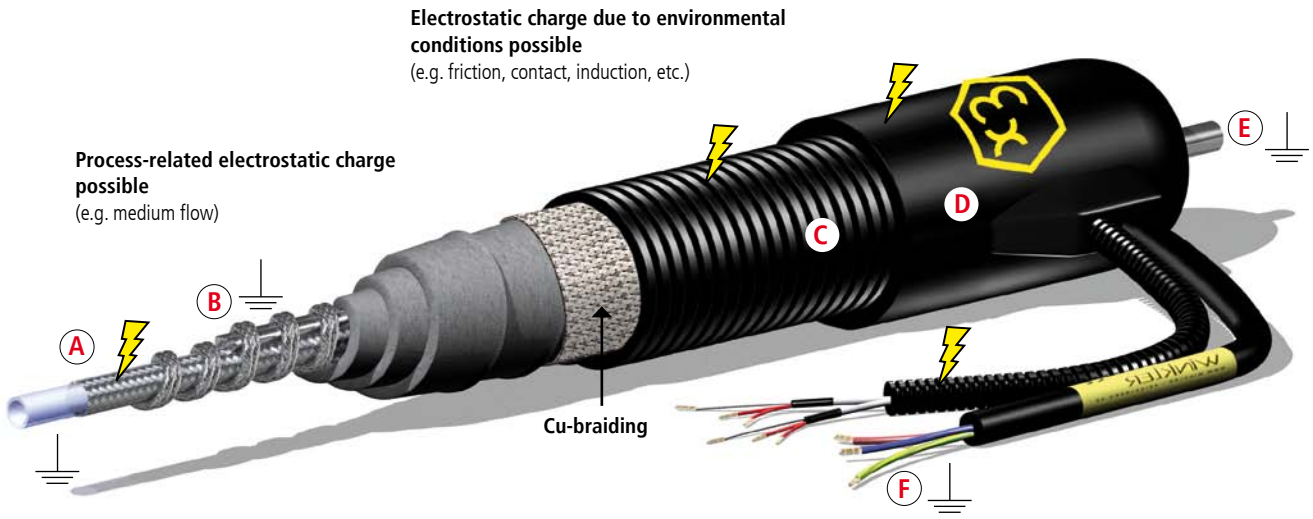
We only use high-quality, proven and tested materials and components, and there is no compromise in this respect when it comes to the selection of and cooperation with our suppliers. Our customers are therefore offered excellent and trustworthy products with a long service life, even under heavy load conditions.

Winkler products are 100% routine tested. There are three documented tests already during production, and during the final test the heated lines are again subjected to strict quality inspection. This testing procedure ensures a high degree of safety and reliability. And in the long run, these high quality and safety standards are beneficial.

Our quality management system is certified to ISO 9001:2008. Winkler is a certified manufacturer in accordance with Guideline 2014/34/EU Appendix VII (ATEX).

ELECTROSTATICALLY CONDUCTIVE DESIGN OF THE OVERALL SYSTEM

Avoidance of ignition hazard due to electrostatic charging of heated lines and heated hoses in potentially explosive areas. Basis: TRBS 2153 BG RCI



- **A** the PTFE hose is earthed via its steel braid
- **B** the insulated PTFE heating conductor is earthed via its metal protective braiding
- **C** the outer jacket (corrugated pipe) is electrostatically dissipative and connected to the silicone caps or threaded connectors, a Cubraid with large contact area serves the purpose of connection to the conductor system
- **D** the silicone caps or threaded connectors are electrostatically dissipative and connected to the corrugated pipe
- **E** the controllers are connected to the braided PTFE hose and are integrated into the safety measures of the complete system
- **F** protective conductor connection (PE / 2.5 mm²) in mains cable

You can download more information about „**Flexible electrical heating for potentially explosive areas**“ as well as our **EC-Type Examination Certificates** at **www.winkler.eu/downloads**.

1. ATEX HEATED LINES AND ATEX HEATED HOSES

CODIFICATION OF WINKLER ATEX HEATED LINES

Terminations and cable exits (other types upon request)

0-3	Silicone caps on both sides	5-8	Silicone cap on E-side and threaded connector on A-side
4	Threaded connectors on both sides	9	Threaded connector on E-side and silicone cap on A-side
X	Special configuration		

Power (W/m) / Max. operating temperature (°C)

WEX0+WEX1
Type of heating tape

10 = 10 W/m	15 = 15 W/m
26 = 25 W/m	33 = 30 W/m

WEX2+WEX3
Type of heating tape

25 = 25 W/m	30 = 30 W/m
45 = 40 W/m	60 = 54 W/m

WEX8+WEX9
Max. operating temperature (°C)

20 = 200°C

Inner lines and fittings

0	PTFE-hose	1	PTFE hose with exchangeable PTFE hose
3	PTFE basic hose with stainless steel tube-stubs	4	PTFE basic hose with stainless steel tube-stubs and exchangeable PTFE hose
5	Stainless steel tube	6	PTFE basic hose with sleeves and exchangeable PTFE hose
		9	PTFE basic hose with stainless steel clamping fittings and exchangeable PTFE hose

W	E	X	8	3	2	0	3	-	2	3	0	Z	E	0	0	6	-	1	5	0	0	0	3	T	3

Winkler ATEX-Series

WEX0 ▸Page 4 - 5
WEX1 ▸Page 4 - 5

WEX2 ▸Page 6 - 7
WEX3 ▸Page 6 - 7

WEX8 ▸Page 8 - 9
WEX9 ▸Page 8 - 9

Serial code

Nominal diameter **DN**

Length **L (cm)**

Sensor position (XX: no sensor)
Standard 300 mm from E-Side

Temperature class

T6 T5 T4 T3

Sensor type and quantity

XX = No Sensor
XE = 1 x ATEX-Pt100
ZE = 2 x ATEX-Pt100

Operating voltage (V)

230 230 VAC
115 V 115 VAC
▸ **Other voltages on request!**

Note:
All the descriptions and illustrations of the products in this catalogue are non-binding and correspond to our current state of knowledge.
Winkler reserves the right to modify the products described here at any time and without prior notice if considered necessary for the purpose of further development or constructional reasons.

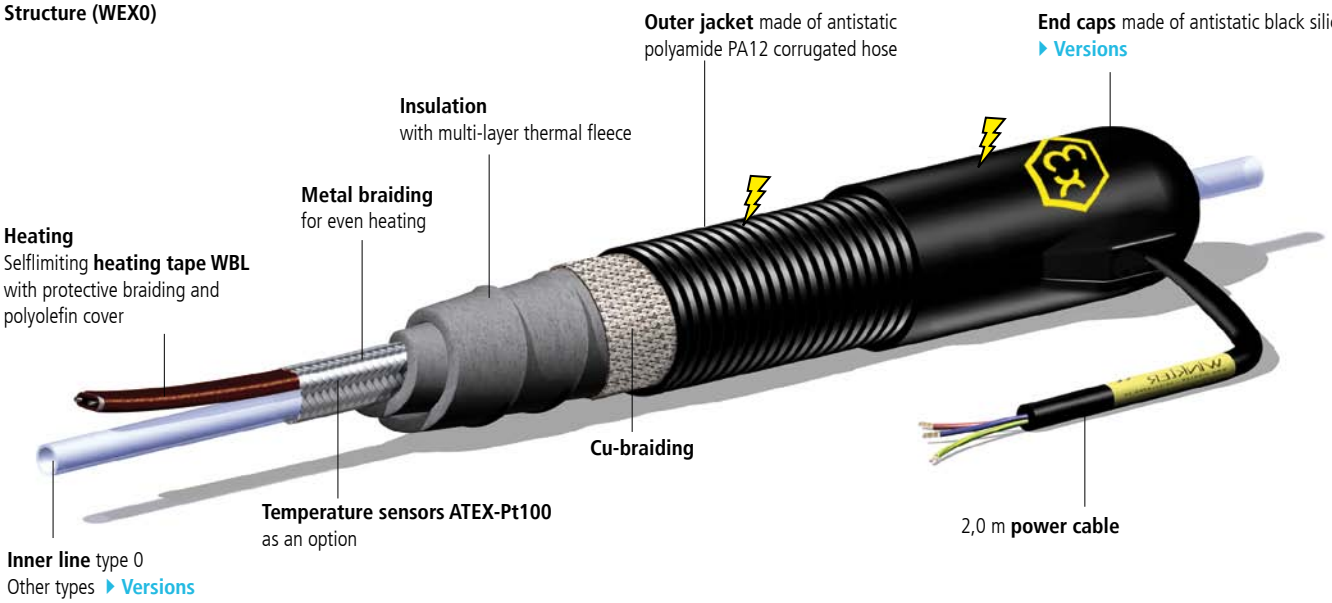
1.1 ATEX HEATED LINES SERIES WEX0 AND WEX1

T6 = 85°C | T5 = 100°C

Applications

Self-limiting heated lines for the transport of gas samples in the temperature range up to +65°C for protection against frost and condensation.
For applications in potentially explosive atmospheres classified zone **1/2 (Gas) and 21/22 (Dust)** areas. Not suitable for zone 0 and 20 areas.

Structure (WEX0)

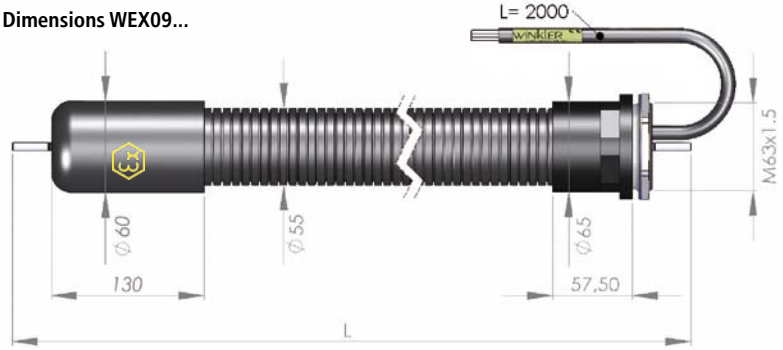


Features and benefits

- Very robust structure made of durable, high-quality materials. Suitable for indoor and outdoor installation. Protection classes Gas IP66/Dust IP6X.
- Large variety of nominal diameters, inner lines, fittings, terminations and cable exits to cover most applications.
- High flexibility → very easy installation especially of higher lengths and at low temperatures (up to –20°C).
- Ready to connect, complete system tested and certified according to ATEX with EC-type examination certificate.
  The lines are supplied fully fitted and terminated and can be directly connected and put into operation without further inspection or approval.
- No controller is necessary in the basic version. Optionally one or two temperature sensors ATEX-Pt100 can be integrated to control the process temperature and to limit the heating tape temperature.

Specifications for 230 VAC (115 VAC upon request, Tolerances: lengths ±2%, diameters ±5%, power ±10%)				
Serie **WEX0** (fix inner lines)	**WEX0_10_**	**WEX0_15_**	**WEX0_26_**	**WEX0_33_**
Serie **WEX1** (exchangeable, antistatic inner lines)	**WEX1_10_**	**WEX1_15_**	**WEX1_26_**	**WEX1_33_**
Nominal power at ambient temperature Ta = +10°C	10 W/m	15 W/m	25 W/m	30 W/m
Temperature maintained at ambient temperature Ta = –20°C	5-15°C	10-25°C	20-35°C	30-45°C
Temperature class	T6	T6	T5	T5
Max. permissible operating temperature Power **ON** / OFF	**+65°C** / +85°C (kumulativ 1.000h)			
Min. installation temperature	–20°C			
Admissible range of ambient temperatures	–40°C / +65°C			
Max. length L at Ta = -25°C (one heating circuit, 20A fuse type C) ▸ Other lengths on request	82 m	82 m	75 m	64 m
Min. admissible bending radius	250 mm			
Marking	Ⓔx II 2G Ex e mb IIC T6...T5 Gb Ⓔx II 2D Ex mb tb IIIC T95°C Db		**-40°C ≤ Ta ≤ 65°C**	
EC type examination certificate	**TPS 14 ATEX 29587 012 X**			

Dimensions WEX09...



VERSIONS: AVAILABLE TERMINATIONS UND CABLE EXITS

Depending on applications, ATEX heated lines series WEX0 and WEX1 can be terminated with silicone caps or threaded metric connectors on both the electrical connection side (E-side) or the opposite ending side (A-side). Please indicate the kind of termination when ordering. Other versions on request.

WEX03_ _ _ / WEX13_ _ _
with silicone caps on both sides

WEX04_ _ _ / WEX14_ _ _
with threaded connectors M63x1,5 on both sides

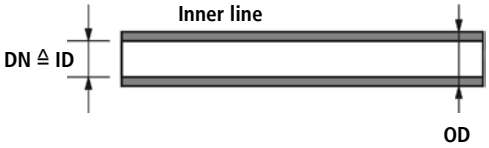
WEX08_ _ _ / WEX18_ _ _
with silicone cap on E-side and threaded connector M63x1,5 on A-side

WEX09_ _ _ / WEX19_ _ _
with threaded connector M63x1,5 on E-side and silicone cap on A-side

VERSIONS: AVAILABLE NOMINAL DIAMETERS

Nominal diameter **(DN)** (mm)		Inner diameter **(ID)** Inner line	Outer diameter **(OD)** Inner line
2	2/3	2 mm	3 mm
4	4/6	4 mm	6 mm
6	6/8	6 mm	8 mm
8	8/10	8 mm	10 mm
10	10/12	10 mm	12 mm
13	13/15	13 mm	15 mm
16	16/18	16 mm	18 mm

Attention!
The nominal diameter **DN** of the heated lines always refers to the inner diameter **(ID)** of the inner line.



VERSIONS: AVAILABLE INNER LINES AND FITTINGS

▸ Other inner lines and fittings on request

Series **WEX0** (fix inner lines)

WEX0_ _ _0
PTFE hose (protruding 500 mm on both sides)

WEX0_ _ _3
PTFE basic hose with stainless steel tube-stubs1.4571

WEX0_ _ _5
Stainless steel tube 1.4404 (protruding 50 mm on both sides)

Series **WEX1** (exchangeable, antistatic inner lines)

WEX1_ _ _1
PTFE hose with exchangeable antistatic PTFE hose (protruding 500 mm on both sides)

WEX1_ _ _4
PTFE basic hose with stainless steel tube-stubs 1.4571 and exchangeable antistatic PTFE hose (protruding 500 mm on both sides)

WEX1_ _ _6
PTFE basic hose with sleeves and exchangeable antistatic PTFE hose (protruding 500 mm on both sides)

WEX1_ _ _9
PTFE basic hose with stainless steel clamping fittings 1.4571 and Exchangeable antistatic PTFE hose (protruding 500 mm on both sides)

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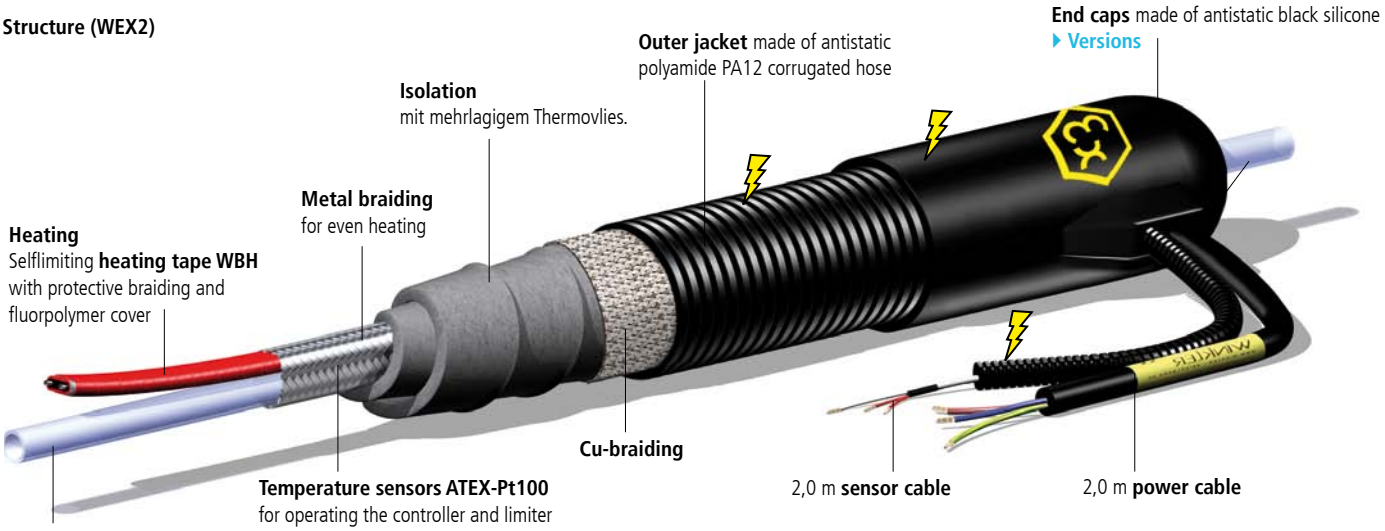
1.2 ATEX HEATED LINES SERIES WEX2 AND WEX3

T3 = 200°C

Applications

Self-limiting heated lines for the transport of gas samples in the temperature range up to +120°C for protection against condensation and measurement falsifications.
For applications in potentially explosive atmospheres classified **zone 1/2 (Gas) and 21/22 (Dust)** areas. Not suitable for zone 0 and 20 areas.

Structure (WEX2)

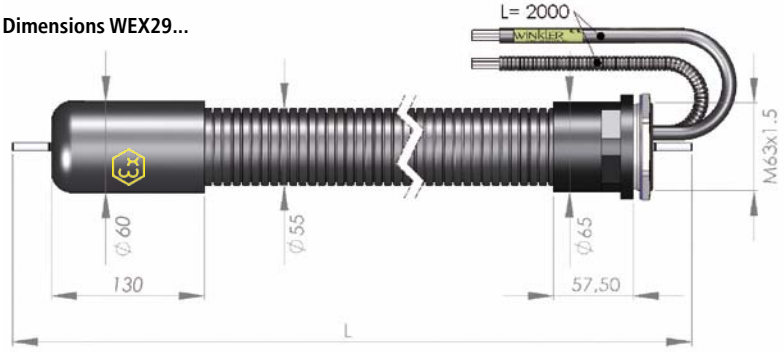


Features and benefits

- Very robust structure made of durable, high-quality materials. Suitable for indoor and outdoor installation. Protection classes Gas IP66/Dust IP6X.
- Large variety of nominal diameters, inner lines, fittings, terminations and cable exits to cover most applications.
- High flexibility → very easy installation especially of higher lengths and at low temperatures (up to –20°C).
- Ready to connect, complete system tested and certified according to ATEX with EC-type examination certificate. The lines are supplied fully fitted and terminated and can be directly connected and put into operation without further inspection or approval.
- A controller is necessary in the basic version. Optionally one or two temperature sensors ATEX-Pt100 can be integrated to control the process temperature and to limit the heating tape temperature.
- In a special version, no sensor and no controller are necessary. Special conditions apply in this case (please refer to installation instructions).

Specifications for 230 VAC (115 VAC upon request, Tolerances: lengths ±2%, diameters ±5%, power ±10%)				
Series **WEX2** (fix inner lines)	**WEX2_25_**	**WEX2_30_**	**WEX2_45_**	**WEX2_60_**
Series **WEX3** (exchangeable, antistatic inner lines)	**WEX3_25_**	**WEX3_30_**	**WEX3_45_**	**WEX3_60_**
Nominal power at ambient temperature Ta = +10°C	25 W/m	30 W/m	40 W/m	54 W/m
Temperature maintained at ambient temperature Ta = –20°C	50-60°C	70-80°C	90-100°C	110-120°C
Temperature class	T3	T3	T3	T2
Max. permissible operating temperature Power **ON** / OFF	**+120°C** / +190°C (cumulative 1.000h)			
Min. installation temperature	–20°C			
Admissible range of ambient temperatures	–40°C / +85°C			
Max. length L at Ta = -25°C (one heating circuit, 20A fuse type C) ▸ Other lengths on request	82 m	82 m	66 m	52 m
Min. admissible bendind radius	250 mm			
Marking	Ex II 2G Ex e mb IIC T4...T3 Gb Ex II 2D Ex mb tb IIIC T195°C Db		**-40°C ≤ Ta ≤ 85°C**	
EC type examination certificate	**TPS 14 ATEX 29587 014 X**			

Dimensions WEX29...



VERSIONS: AVAILABLE TERMINATIONS UND CABLE EXITS

Depending on applications, ATEX heated lines series WEX2 and WEX3 can be terminated with silicone caps or threaded metric connectors on both the electrical connection side (E-side) or the opposite ending side (A-side). Please indicate the kind of termination when ordering. Other versions on request.

WEX23_ _ _ / WEX33_ _ _
with silicone caps on both sides

WEX24_ _ _ / WEX34_ _ _
with threaded connectors M63x1,5 on both sides

WEX28_ _ _ / WEX38_ _ _
with silicone cap on E-side and threaded connector M63x1,5 on A-side

WEX29_ _ _ / WEX39_ _ _
with threaded connector M63x1,5 on E-side and silicone cap on A-side

VERSIONS: AVAILABLE NOMINAL DIAMETERS

Nominal diameter **(DN)** (mm)		Inner diameter **(ID)** Inner line	Outer diameter **(OD)** Inner line
2	2/3	2 mm	3 mm
4	4/6	4 mm	6 mm
6	6/8	6 mm	8 mm
8	8/10	8 mm	10 mm
10	10/12	10 mm	12 mm
13	13/15	13 mm	15 mm
16	16/18	16 mm	18 mm

Attention!
The nominal diameter **(DN)** of the heated lines always refers to the inner diameter **(ID)** of the inner line.

VERSIONS: AVAILABLE INNER LINES AND FITTINGS

▸ Other inner lines and fittings on request

Series **WEX2** (fix inner lines)

WEX2_ _ _0
PTFE hose (protruding 500 mm on both sides)

WEX2_ _ _3
PTFE basic hose with stainless steel tube-stubs 1.4571

WEX2_ _ _5
Stainless steel tube 1.4404 (protruding 50 mm on both sides)

Series **WEX3** (exchangeable, antistatic inner lines)

WEX3_ _ _1
PTFE hose with exchangeable antistatic PTFE hose (protruding 500 mm on both sides)

WEX3_ _ _4
PTFE basic hose with stainless steel tube-stubs 1.4571 and exchangeable antistatic PTFE hose (protruding 500 mm on both sides)

WEX3_ _ _6
PTFE basic hose with sleeves and exchangeable antistatic PTFE hose (protruding 500 mm on both sides)

WEX3_ _ _9
PTFE basic hose with stainless steel clamping fittings 1.4571 and Exchangeable antistatic PTFE hose (protruding 500 mm on both sides)

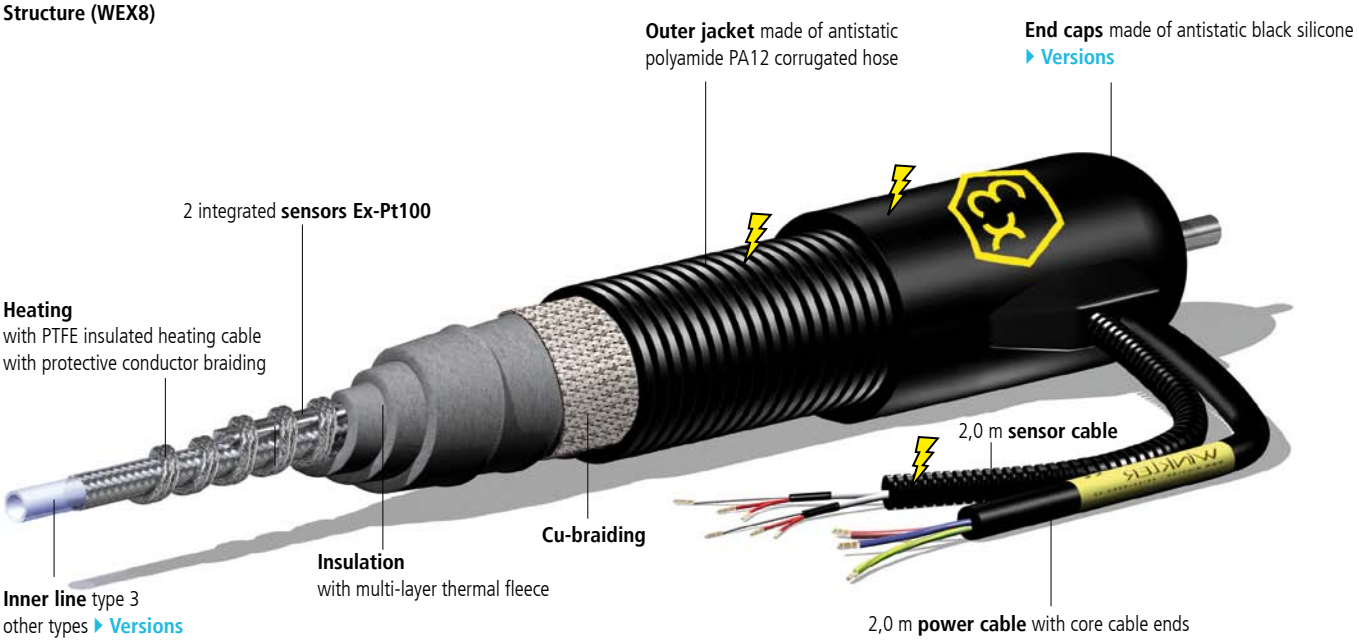
1.3 ATEX HEATED LINES SERIES WEX8 AND WEX9

T3 = 200°C

Applications

Heated lines for the transport of gas samples in the temperature range up to +200°C for protection against measurement falsifications.
For applications in potentially explosive atmospheres classified zone **1/2 (Gas) and 21/22 (Dust)** areas. Not suitable for zone 0 and 20 areas.

Structure (WEX8)

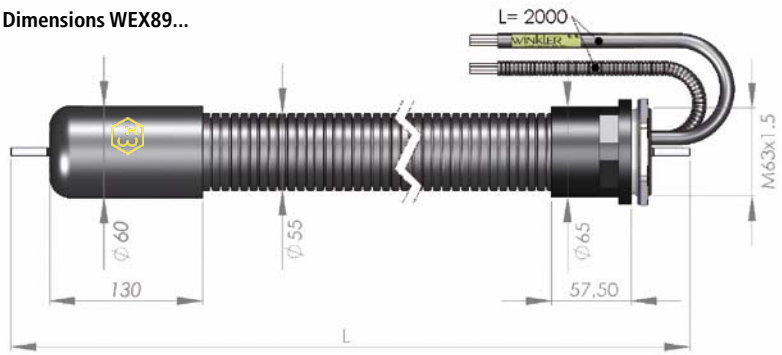


Features and benefits

- Very robust structure made of durable, high-quality materials. Suitable for indoor and outdoor installation. Protection classes Gas IP66/Dust IP6X.
- Large variety of nominal diameters, inner lines, fittings, terminations and cable exits to cover most applications.
- High flexibility → very easy installation especially of higher lengths and at low temperatures (up to –20°C).
- Ready to connect, complete system tested and certified according to ATEX with EC-type examination certificate.
  The lines are supplied fully fitted and terminated and can be directly connected and put into operation without further inspection or approval.
- Operation only with controller and limiter. Two temperature sensors ATEX-Pt100 are built-in at 300 mm from E-side for the temperature control and limitation.
  (Other sensor positions on request). Suitable temperature controllers/limiters for ATEX areas. ▸ Page 10.

Specifications for 230 VAC (115 VAC upon request, Tolerances: lengths ±2%, diameters ±5%, power ±10%)						
Series **WEX8** (fix inner lines)	**DN 4**	**DN 6**	**DN 8**	**DN 10**	**DN 13**	**DN 16**
Series **WEX9** (exchangeable, antistatic inner lines)	—	—	**DN 4**	**DN 6**	**DN 8**	**DN 10**
Nominal power	100 W/m	100 W/m	100 W/m	100 W/m	125 W/m	150 W/m
Temperature maintained at ambient temperature Ta = –20°C	+200 °C					
Temperature class	T3					
Max. permissible operating temperature	**+200 °C**					
Min. installation temperature	-20 °C					
Admissible range of ambient temperatures	–40°C / +85°C					
Max. heated length **L** ▸ Other lengths on request	46 m	46 m	46 m	37 m	37 m	31 m
Min. admissible bending radius	250 mm					
Marking	**II 2G Ex e mb IIC T3 Gb** **II 2D Ex mb tb IIIC T200°C Db**			**-40°C ≤ Ta ≤ 85°C**		
EC type examination certificate	**TPS 09 ATEX 1006 X**					

Dimensions WEX89...



VERSIONS: AVAILABLE TERMINATIONS UND CABLE EXITS

Depending on applications, ATEX heated lines series WEX8 and WEX9 can be terminated with silicone caps or threaded metric connectors on both the electrical connection side (E-side) or the opposite ending side (A-side). Please indicate the kind of termination when ordering. Other versions on request.

WEX83_ _ _ / WEX93_ _ _
with silicone caps on both sides

WEX84_ _ _ / WEX94_ _ _
with threaded connectors M63x1,5 on both sides

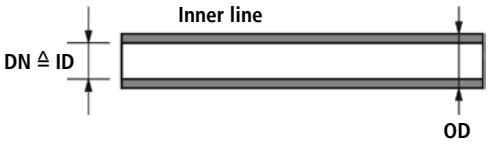
WEX88_ _ _ / WEX98_ _ _
with silicone cap on E-side and threaded connector M63x1,5 on A-side

WEX89_ _ _ / WEX99_ _ _
With threaded connector M63x1,5 on E-side and silicone cap on A-side

VERSIONS: AVAILABLE NOMINAL DIAMETERS

Nominal diameter **(DN)** (mm)		Inner diameter **(ID)** Inner line	Outer diameter **(OD)** Inner line
2	2/3	2 mm	3 mm
4	4/6	4 mm	6 mm
6	6/8	6 mm	8 mm
8	8/10	8 mm	10 mm
10	10/12	10 mm	12 mm
13	13/15	13 mm	15 mm
16	16/18	16 mm	18 mm

Attention!
The nominal diameter **(DN)** of the heated lines always refers to the inner diameter **(ID)** of the inner line.



VERSIONS: AVAILABLE INNER LINES AND FITTINGS

▸ Other inner lines and fittings on request

Serie **WEX8** (fix inner lines)

WEX2_ _ _0
PTFE hose (protruding 500 mm on both sides)

WEX8_ _ _3
PTFE basic hose with stainless steel tube-stubs 1.4571

WEX8_ _ _5
Stainless steel tube 1.4404 (protruding 50 mm on both sides)

Series **WEX9** (exchangeable, antistatic inner lines)

WEX3_ _ _1
PTFE hose with exchangeable antistatic PTFE hose (protruding 500 mm on both sides)

WEX9_ _ _4
PTFE basic hose with stainless steel tube-stubs 1.4571 and exchangeable antistatic PTFE hose (protruding 500 mm on both sides)

WEX9_ _ _6
PTFE basic hose with sleeves and exchangeable antistatic PTFE hose (protruding 500 mm on both sides)

WEX9_ _ _9
PTFE basic hose with stainless steel clamping fittings 1.4571 and Exchangeable antistatic PTFE hose (protruding 500 mm on both sides)

2. ATEX HEATING JACKETS

200 litre ATEX drum heater WEXHD200 (non-standard)

IBC-Heater WEXHCIBC

2.1 ATEX HEATING JACKETS SERIES WEXH

T3 = 200 °C

Applications

The WEXH… type explosion protected heating jackets can be used in gas and dust areas **zone 1/2 (gas) and zone 21/22 (dust)** and are therefore universally applicable for diverse sectors and industrial applications (explosion groups IIC hydrogen and for IIIC conductive dusts) with necessary process-related heating.
Not suitable for zone 0 and 20.

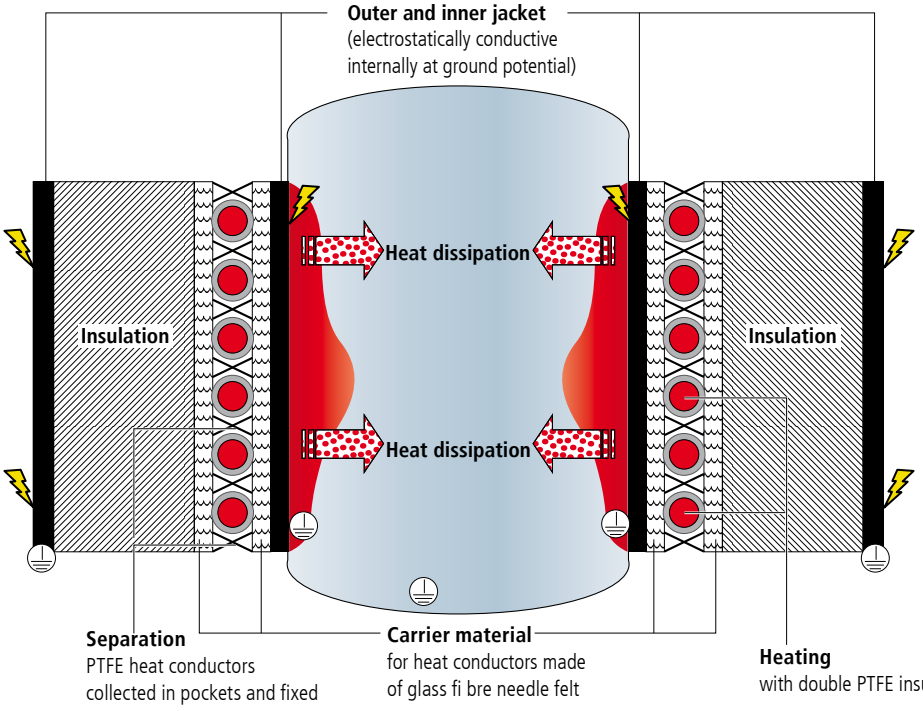
Structure

Operation with Controller
▶ page 18-21

Features and benefits

· Very robust construction made of high quality, durable materials. Indoor and outdoor use possible. Protection classes: Gas IP64 / dust IP6X.
· Wide range of variants in terms of dimensions, contours and fi xation options cover most heating applications.
· High fl exibility □ simple assembly, also for large heating jackets and low ambient temperatures (down to –40 °C).
· Ready-for-connection, complete system tested and certifi ed according to ATEX with EC Type Examination Certifi cate (system certification).
The heating jackets are delivered completely ready confi gured and can be connected and put into operation immediately without further acceptance procedures.

Schematic section



As a result of their special construction, the ATEX heating jackets can be configured variably for customer-specific applications up to 200 °C (T3). The fully electrostatically dissipative design means the operator of the ATEX system is always certain that no hazardous electrostatic charge can occur on the ATEX heating jacket and that charge is dissipated to ground potential immediately when the ATEX heating jacket is connected. The extended use for ambient temperatures from -40 °C to +60 °C indicates appropriately robust and special materials, which have successfully passed various additional tests and are therefore also suitable for outdoor use.

Technical data for 230 VAC

	Heating jacket	Drum heater	Heating for gas bottles	Insulation jacket	IBC-Container
Series WEXH….	_ _ _ _	**D** _ _ _	**B** _ _ _	**I** _ _ _	**C** _ _ _
Nominal voltage	230V (AC) / 50 Hz (other voltages available on request)				
Heating power	Depending on design (max. 30W/m heat conductor load)				
Max. operating temperature heating jacket	+ 200 °C				
Temperature class	T6, T5, T4, max.T3 (depending on temperature setting controller / limiter)				
Max. temperature limit in gas atmospheres	+ 200 °C (180 °C / 190 °C)				
Max. temperature limit in dust atmospheres	+ 120 °C (100 °C / 110 °C)				
Min. ambient temperature	- 40 °C				
Max. ambient temperature	+ 60 °C				
Outer jacket	Electrostatically conducting PTFE fabric (black)				
Fixtures	Tension straps with snap locks Velcro fastener lace-up hooks / eyelets				
Electrical connection	2 separate terminal boxes for network / sensor				
Connecting cable	3 m (other lengths available on request)				
Ex sign	**Gas ⟨Ex⟩ II 2G Ex e mb IIC T3 Gb** **Staub ⟨Ex⟩ II 2D Ex e mb IIIC T120°C Db**				
EC-Type Examination Certificate	**TPS 11 ATEX 29587 011 X**				
Zones	1/2 (gas), 21/22 (dust)				

Technical principles and documentation

- Approved for Zones 1/2 (gas) and 21/22 (dust)
- Not suitable for use in Zones 0 (gas) and 20 (dust)
- Approved for explosion groups IIC hydrogen and IIIC conductive dust
- Suitable for temperature classes T6, T5, T4, T3
- Acceptance / certifi cation according to new standards
- EN 1127-1:2007 Explosive gas atmospheres - explosion protection -
- Part 1 - Basic concepts and methodology – Ignition hazard analysis
- EN 60079-0:2009 Part - General requirements
- EN 60079-7:2007 Part 7 - Equipment protection by increased safety "e"
- EN 60079-18:2009 Part 18 - Equipment protection by cast encapsulation "m"
- Extensive documentation

Codes for Winkler ATEX heating jackets

W	E	X	H	0	0	0	1	-	2	3	0	Z	E	8	0	0	-	0	1	9	5	X	X	T	3
Winkler	ATEX-design (with EC-Type Examination Certificate)		Heating jacket	Special numbers 0000-9999 or letters and serial codes for standard articles					Operating voltage (V) 230 = 230 VAC; 12 - 230 = 12 - 230 VAC			Sensor type and no. XX = no sensor; XE = 1 x EX-Pt100; ZE = 2 x EX-Pt100		Height in cm				→ D = Drum heaters → B = Gas bottle heaters → I = Insulation → C = IBC-Container and serial codes from 000-999				Length heating jacket in dm		Free for special coding (XX) or 01, 02, 03	Coding temperature class (T3, T4, T5, T6)	

3. ATEX TEMPERATURE CONTROLLERS AND LIMITERS

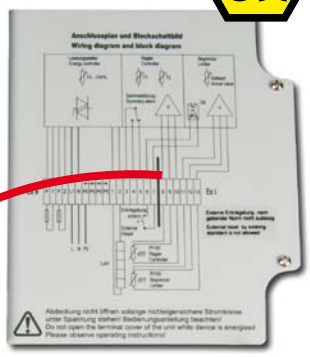

winkler.eu
WEXRBL25-230ZE000
Nicht in explosionsfähiger Staubatmosphäre öffnen!


winkler
WEXRBL25-230ZE000
Störungsmeldungen
Alarms

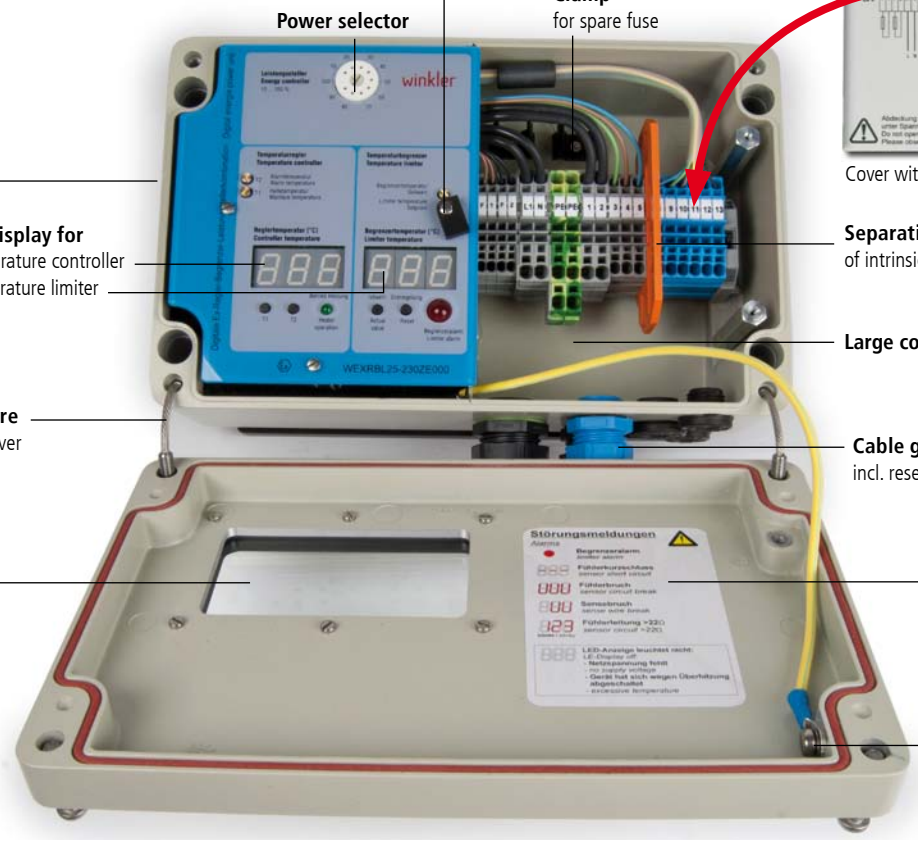
3.1 DIGITAL ATEX CONTROLLER LIMITER AND POWER SELECTOR COMBINATION SERIES WEXRBL25

Application
Comprehensive solution for controlling and limiting the temperature in areas with potentially explosive gas or dust atmospheres according to **zones 1/2 (gas) and 21/22 (dust)**, incl. power selector function. Appropriate for ATEX heated lines and heated hoses, ATEX heating mantles and ATEX drum heaters. Not suitable for zone 0 and 20.

Structure (interior view)

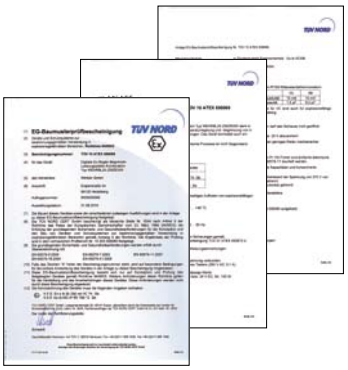


Cover with connection diagram



Structure (Cable insertion)

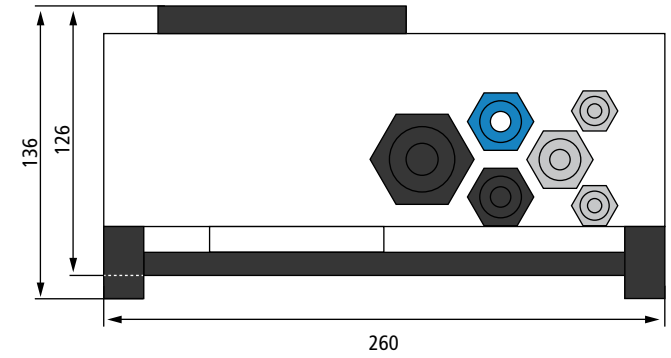
Features and benefits
- Approved to zones 1/2 (gas) and 21/22 (dust)
- Not appropriate for applications in zones 0 (gas) and 20 (dust)
- Approved to explosion groups IIC hydrogene and IIIC static dust
- Appropriate for temperature classes T1,T2,T3,T4
- Approval / certified to latest standards
  EN 60079-7:2003 Protection standard - e - high safety
  EN 60079-11:2007 Protection standard - i - intrinsical safety
  EN 60079-18:2004 Protection standard - m - encapsulation
  EN 60079-31:2009 Protection standard - t - protection by body
- Complete documentation



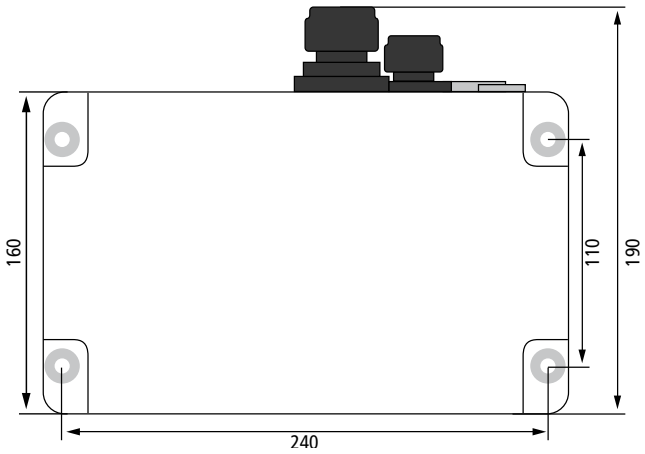
EC-Type examination certificate

Operating manual

Dimensions and technical data



Front view



Back view and drilling template

ATEX marking	**II 2G Ex e ib [ib Gb] mb IIC T4 Gb** **II 2D Ex tb IIIC IP6X T90°C Db**
EC-Type examination certificate	**TÜV 10 ATEX 556065**
Supply voltage	230 VAC (-15% to +10%); 50-60 Hz
Load output	elektronic solid state relay with 25 A nominal current
External fuse	25 A automatic cut out, Type A, B, C (Siemens), or Z, B, C (ABB)
Power input	≤ 11 VA (without load)
Sensor	Pt100 DIN resistance thermometer
Measuring circuit **- intrinsically safe -**	[Ex ib] IIC Uo=6.3 V; Io=22 mA; Po=35 mW max. outer capacitance 1,5 µF max. outer inductance 10 mH [Ex ib] IIB Uo = 6.3 V, Io = 22 mA; Po=35 mW max. outer capacitance 8.2 µF max. outer inductance 10 mH
Measuring range	0 … 450 °C
Dimensions / weight	260 × 160 × 136 mm / 6 kg
Assembly	Wall mounting, mounting on base panel
Housing / protection standard	Aluminium / IP64 according to DIN EN 60529
Ambient temperature	-20 °C … +40 °C
Excess temperature protection	Integrated temperature switch (cut-off temperature approx. 90 °C)
Profile connection clamps	Mains input 0.5..6 mm² (≤ 4 mm² with ferrules) Load output 0.5..6 mm² (≤ 4 mm² with ferrules) Sensors 0.2..4 mm² (≤ 2.5 mm² with ferrules) Reset/signal 0.2..4 mm² (≤ 2.5 mm² with ferrules)

Enclosed accessories

Additional cable glands
1 × M20
2 × M16

Bridges
2 × bridges for operation
with two-wire Pt100

Mounting
4 × screws

Option

Plug connection version
Series WEXRBL25-230ZES00

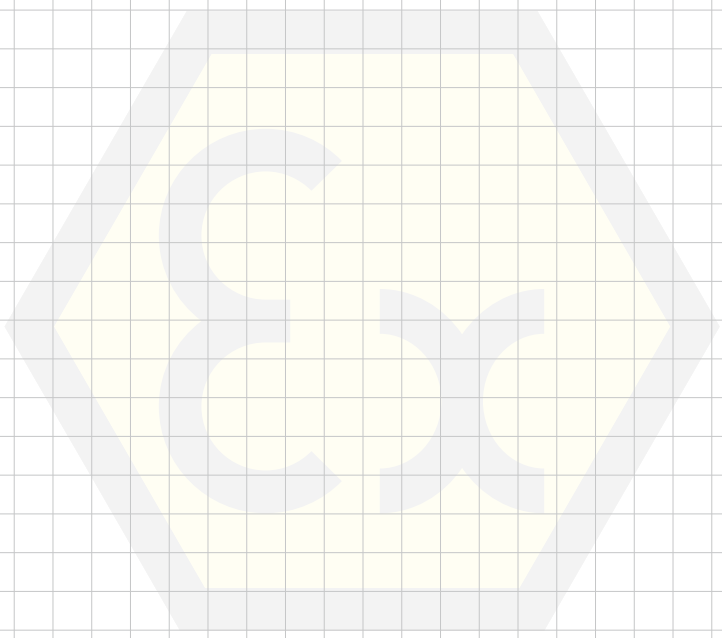
3.2 TEMPERATURE CONTROLLER AND LIMITER SERIES WEXEXCMP

Art. No. WEXEXCMP-230ZE020
Comprehensive solution for controlling and limiting the temperature in areas with potentially explosive gas or dust atmospheres according to zones 1 / 2 and 21 / 22, installed outside the hazardous area in a switch cabinet (top hat rail installation).
Suitable for all explosion protected heating solutions.

ATEX marking:	**II (2) G [Ex ib] IIC / IIB** **II (2) D [Ex ib] IIIC / IIIB**
EC-Type Examination Certificate:	Electronic temperature controller **TÜV 10 ATEX 555822** Electronic temperature limiter **TÜV 08 ATEX 554381**
Supply voltage:	24 - 256 VAC (50-60 Hz)
Load output:	250 VAC, 5A | 48 VDC, 1A | 24 VDC, 5A Activation of control circuit →SSR Activation of limiter circuit →power contactor
Sensor:	PT100 resistance thermometer
Measuring circuit: **- intrinsically safe -**	[Ex ib] IIC U_0=2,6 V; I_0=6,8 mA max. external capacity 6,7 µF max. external inductance 50 mH
Measuring range:	-99 °C ... +460 °C
Housing / protection standard:	Polycarbonate, mounting for standard rail by installing in control cabinet / IP30
Ambient temperature:	-20 °C ... +50 °C

Also available in other designs

FOR YOUR NOTES



4. ATEX ACCESSORIES

4.1 FIXATION SUPPORTS (STATIC CONDUCTIVE)

Applications / use
Fixation supports for potentially explosive atmospheres.
Material: Antistatic polyamide 12.
Extremely shock resistant, optimum axial strain relief, quick installation due to single hole fixing.
Versions for normal and heavy load.

WZXL48EX

Art.-No. WZXL48EX	for heavy load
Suitable for:	Series **WEX8-WEX9** (55 mm outer diameter of corrugated hose)
Dimensions (WxHxD):	115 x 90 x 30 mm

WZXL36EX

Art.-No. WZL36EX	for heavy load
Suitable for:	Series **WEX0-WEX3** (43 mm outer diameter of corrugated hose)
Dimensions (WxHxD):	85 x 75 x 30 mm

WZXS48EX

Art.-No. WZXS48EX	for normal load
Suitable for:	Series **WEX8-WEX9** (55 mm outer diameter of corrugated hose)
Dimensions (WxHxD):	68 x 68 x 20 mm

WZXS36EX

Art.-No. WZXS36EX	for normal load
Suitable for:	Series **WEX0-WEX3** (43 mm outer diameter of corrugated hose)
Dimensions (WxHxD):	56 x 56 x 20 mm

4.2 TERMINAL ENCLOSURES

Applications / use
Terminal enclosures for the prolongation of connection cables in potentially explosive atmospheres IP66.
Material: Polyester. Available for higher ambient temperatures up to 95 °C (in stock).

WZX188EX

Art.-No. WZX188EX	Terminal enclosure Ex e (Power)
EC-Type Examination Certificate:	**PTB 00 ATEX 1002**
Marking:	**Ⓔx II 2G Ex e IIC T6 Gb** **Ⓔx II 2D Ex tb IIIC T80°C Db** **-20 °C ≤ Ta ≤ +40 °C**
Equipment:	2 cable glands, 2 blind plugs, 6 terminal blocks
Dimensions (WxHxD):	122 x 120 x 90 mm

WZX189EX

Art.-No. WZX189EX	Terminal enclosure Ex i (Sensors)
EC-Type Examination Certificate:	**PTB 00 ATEX 1002**
Marking:	**Ⓔx II 2G Ex ia IIC T6 Gb** **Ⓔx II 2D Ex tb IIIC T80°C Db** **-20 °C ≤ Ta ≤ +40 °C**
Equipment:	3 cable glands, 1 blind plug, 7 terminal blocks
Dimensions (WxHxD):	122 x 120 x 90 mm

WZX190EX

Art.-No. WZX190EX	Terminal enclosure Ex e (Power)
EC-Type Examination Certificate:	**PTB 00 ATEX 1002**
Marking:	**Ⓔx II 2G Ex e IIC T4 Gb** **Ⓔx II 2D Ex tb IIIC T115°C Db IP66**
Equipment:	2 cable glands, 2 blind plugs, 4 terminal blocks
Dimensions (WxHxD):	122 x 120 x 90 mm

Winkler GmbH is an independent, medium-sized company located in Heidelberg (Germany). For more than 35 years we have been developing and manufacturing a broad range of electric heating solutions for industry and laboratory applications.

We supply reliable and durable products made of high-quality materials.

We are the right partner for innovative and quick answers to your requirements. Customized solutions and flexible manufacturing are our particular strengths. Our experienced specialists will offer you professional advice and - together with you - develop the heating solution tailored to your application.

Winkler - Your heating solution!

Our headquarter

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ATEX commissioner

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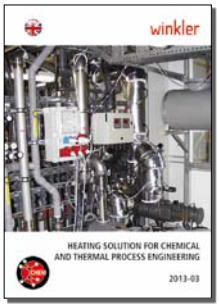
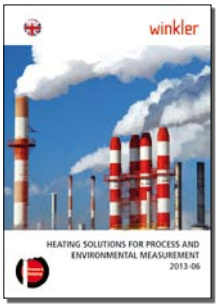
f.merkel@winkler.eu

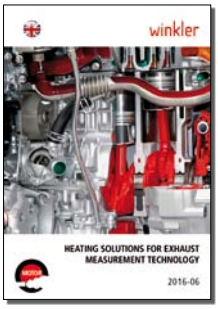
Our product range



Heating solutions for chemical and thermal process engineering



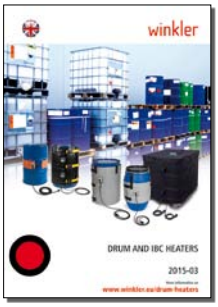
Heating solutions for process and environmental measurement



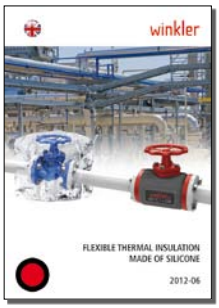
Heating solutions for exhaust measurement technology

Heating solutions for rail technology

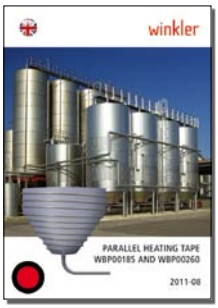
Heated hoses for glueing technology and for filling and dosing systems



Drum and IBC heaters



Flexible thermal insulation made of silicone



Parallel heating tapes

PILZ® Laboratory heaters

Temperature control unit for wall mounting

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