



winkler

PILZ® LABORATORY AND INDUSTRY HEATING MANTLES



Laboratory heating mantles and accessories
Laboratory table top-controllers
Heating cables and tapes " ready to install "
Industrial heating mantles and controllers

LABORATORY HEATING SOLUTIONS PREVIEW



PILZ® Protect Line laboratory heating mantles

With the new generation "Protect Line" series, we combine traditional quality with a new level of electrical safety by introducing protection class I in the metal-cased Protect Line heating mantles.

These heating mantles are versatile with a temperature range of up to 450 °C and for volumes from 50 ml to 3,000 ml.

PILZ® WHG2 Crocheted laboratory heating mantles

As the forerunner of all our other standard series, the WHG2 series was developed for use in laboratories and has been on the market for over 80 years.

These heating mantles are versatile with a temperature range of up to 900 °C and for volumes from 25 ml to 20,000 ml.

PILZ® Classic Line laboratory heating mantles

PILZ® Classic Line laboratory heating mantles from Winkler have been proving their reliability and durability in the laboratory for decades. These heating mantles are versatile with a temperature range up to 450 °C and for volumes from 50 ml to 3,000 ml.

PILZ® WHU2ER laboratory heating mantles in square metal-casing format

The PILZ® WHU2ER series offers the same reliability and longevity like our basic low cost laboratory heating mantles from the classic line but in a rectangular metal-casing. These heating mantles are versatile with a temperature range of up to 450 °C and for volumes from 4,000 ml to 20,000 ml.

WHI and WHIS Industrial heating mantles

The WHI and WHIS Industrial heating mantles are used e.g. in the pharmaceutical, chemical and metal recycling industry, for chemical and biological reaction or for distillation to achieve certain results.

PILZ® Multi-place laboratory heating mantles with 4 or 6 positions

With the multi-place PILZ® heating mantles, 4 or 6 flasks can be heated at individual temperatures.

These heating mantles are versatile with a temperature range of up to 450 °C and for volumes from 100 ml to 1,000 ml.

PILZ® laboratory controllers and accessories

Suitable accessories for the heating mantles such as support rings, stands, power controllers, temperature controllers and sensors, support the practice-oriented use in laboratory operation.

Flexible laboratory heating tapes and cables

These are an ideal solution for laboratories and experimental facilities where an easily employed system to heat glass tubes or other laboratory apparatuses up to 900 °C is desired.

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Safety features

Classic Line heating mantles with metal housing

- One and two heating zones with heating zone selection switch (WHLG2)
- With integrated stepless power regulation (WHLG2ER)
- With metal tray for leakage protection and power regulation (WHLG2ER)
- Three heating zones with integrated stepless power regulation (WHLG3ER)

Protect Line heating mantles with metal housing and protection class I

- One and two heating zones with heating zone selection switch (WHLP2)
- With integrated stepless power regulation (WHLP2ER)
- With integrated sensor for connection to external controller (WHLP2TC)

Heating mantles with rectangular metal housing

- One and two heating zones with integrated stepless power regulation (WHU2ER)

Heating mantles with hand crocheted jackets

- Standard version with one and two heating zones (WHG2)
- High power and high temperature, 900° C, version with two heating zones (WHG2H)

Heating mantles for 4 to 6 flasks of the same size

- Multi-place heating mantle with 4 heating positions (WHRE4)
- Multi-place heating mantle with 6 heating positions (WHRE6)

Laboratory heating mantle accessories

- Detachable power regulators and connection plugs (WRT00116, WRT00117 and WHZA)
- Support rings, tripods and rod clamps (WHZT, WHZD and WHLZSTK02)
- Temperature sensors PT100, Type J and Type K (WFMP, WFSJ and WFSK)

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- T-500 controller with one sensor
- T-700 controller with two sensors for sensitive medium

HEATING TAPES AND CABLES READY TO INSTALL 34-41

- 200 °C heating tapes without and with earth braiding
- 400 °C heating cables without and with earth braiding
- 400 °C heating tapes with earth braiding
- 900 °C heating tapes without earth braiding

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Industrial heating mantles (WHI and WHIS)

- Standard industrial heating mantle (WHI)
- Safety industrial heating mantle with up to 5 heating zones (WHIS)

Industrial heating mantles controllers (WRTI171 and WRTI72)

- Standard industrial heating mantle controller with 3 to 5 power selectors (WRTI71)
- Safety industrial heating mantle controller with 3 to 5 power selectors and 3 to 5 heating zone temperature displays (WRTI72)

LABORATORY HEATING MANTLES



ECONOMICAL RELIABLE INVESTMENT FOR EFFICIENT AND PRECISE TEMPERATURE CONTROL OF MEDIUMS IN THE LABORATORY

In 2024 we have newly expanded our Classic Line WHLG2 and WHLG2ER heating mantles with additional larger volumes for up to 20 liters.

PILZ® heating mantles are available from basic heating mantle temperature regulation using heating zone switches up to high precision medium temperature control that use a heating mantle sensor to limit the temperature of the heating mantle while using an additional medium sensor to control the desired medium temperature.

This method prevents the temperature of the flask from becoming too high and the medium from overheating on the inner flask surface.

WHY CHOOSE SOLUTIONS DESIGNED AND MANUFACTURED BY WINKLER AG?

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ALL HEATING MANTLES IN THIS CATALOGUE ARE IN ACCORDANCE WITH THE LATEST SAFETY REGULATIONS AND STANDARDS

- **EN IEC 60519-1:2020-12 (VDE 0721-1:2020-12)**
Safety in installations for electro heating and electromagnetic processing
- **EN 61010-1 VDE 0411-1 Corrigendum 2:2023-03 and EN IEC 61010-2-010 VDE 0411-2-010:2022-12**
Safety requirements for electrical equipment for measurement, control, and laboratory use
- **2014/35/EC** Low voltage directive
- **2014/30/EU** Electromagnetic compatibility directive
- **2011/65/EU** RoHS directive and **2015/863/EU** Restrictive substances directive

LEADING TECHNOLOGY FOR ANY APPLICATION

All of Winkler heating mantles are characterized by reliability, innovation and safety for training centers, schools and the industry. With the **new Protect Line** generation, we combine traditional quality with a new level of electrical safety by introducing the **protection class I**.

STANDARD SOLUTIONS FROM STOCK

Short supply time! most standard products are available from stock and can be delivered within a reasonably and acceptably short time period.

SPECIAL SOLUTIONS FOR SUPPLIERS AND RETAILERS

Depending on quantity, the solutions offered in this catalogue can be specifically tailor-made (bespoke) in a different color and/or customized with company brand labelling and logos.

WINKLER QUALITY

We make no compromises when using proven high-quality tested materials and components from our selected and approved suppliers.

This and **100% testing of the products before shipment** provide the user a solution they can rely on and a long service life, even under heavy demands.

Our quality management system is certified in accordance with ISO 9001:2015.

Winkler is additionally a certified manufacturer for hazardous area (places where fire or explosion hazards may exist) solutions in accordance with directive 2014/34/EU (ATEX).

Put your trust in your experience and convince yourself of our quality and efficiency!

WE DEVELOP AND MANUFACTURE HEATING SOLUTIONS FOR EVERY APPLICATION!

Winkler has been developing and producing flexible electric heating solution for over 40 years.

By developing and manufacturing all products in-house, we are able to develop the right solution for you.

Thanks to our engineers with several decades of experience we are also the ideal partner when it comes to sophisticated solution.



PRODUCT OVERVIEW

Single flask heating mantles

Pilz® heating mantles with robust metal housing

Pilz® Classic Line heating mantles

- Not as fault current sensitive as protect line heating mantles for robust operation
- For volumes up to 20,000 ml
- Blind rivet on the back for mounting rod clamp

Pilz® Protect Line heating mantles

- Heating element with a metallic earth braiding
- Trips the RCD more easily for additional safety in case of spilling
- For volumes up to 3,000 ml
- Blind rivet nuts on the back for mounting rod clamp

Simple heating mantles without power regulation

- Two heating zones allow simple power stage selection of 50 and 100%

WHLG2



WHLP2



High temperature heating mantles without power regulation

- Two heating zones with three power stages 25, 50 or 100%
- High power output for fast heating
- Up to 900 °C temperature

WHLG2ER



WHLP2ER



Heating mantles with integrated stepless power regulation

- Integrated stepless power regulation allows precise heating
- Two heating zones allow power stages of 0-50 or 0-100%

Heating mantles with integrated sensor for external control

- Two heating zones
- Sensor integrated in heating mantle
- Allows precise control of heating mantle temperature

WHLP2TC



Multi-purpose heating mantles, suitable for three different flask sizes

- Special shape fits to multiple flask sizes
- Three heating zones
- Integrated stepless power regulation

WHLMG3ER



Heating mantles with metal tray for leakage protection

- Metal tray protects the heating mantle in case of spilling
- Two heating zones
- Integrated stepless power regulation

WHLG2ER



450 °C and 900 °C		Multi-place heating mantles 450 °C
<p>Pilz® heating mantles in rectangular metal housing</p> <ul style="list-style-type: none"> Improved stability on surfaces for high volumes For volumes 4,000 ml to 20,000 ml Blind rivet nuts on the back for mounting rod clamp 	<p>Pilz® heating mantles without housing</p> <p>Pilz® WHG2 crocheted laboratory heating mantles</p> <ul style="list-style-type: none"> Economy basic heating mantle version Hand crocheted outer jacket For volumes up to 20,000 ml 	<p>Robust metal housing</p> <p>Pilz® Multi-place heating mantles with 4 or 6 heating positions</p> <ul style="list-style-type: none"> One heating zone per heating position Integrated stepless power regulation for each heating position Stainless steel front and cover plate For volumes 100, 250, 500 and 1,000 ml Blind rivet nuts on the back for mounting rod clamp
	<p>WHG2</p> 	
	<p>WHG2H</p> 	
<p>WHU2ER</p> 		<p>WHRE4 and WHRE6</p> 

All heating mantles include a detachable personal protection plug with RCD function and a detachable power cable with Schuko plug type E/F (cable length 1,0 m)

MANUAL TEMPERATURE ADJUSTMENT WITH POWER REGULATORS

Simple power regulation via integrated heating zone selection

The heating zone switches allow a simple heating zone or power stage regulation.
For the larger volumes, the heating zones are split to avoid overheating when a flask is only half filled.

Pilz® Heating mantles with housing

With integrated zone switches			
Heating zones	Zone switches	Power stages	
1		0%*) 50%*) 100%*)	
2		0%*) 50%*) 100%*)	
3		0%*) 25%*) 50%*) 100%*)	

Pilz® Hand crocheted heating mantles

With integrated zone selector			
Heating zones	Zone selector	Power stages	
1		0%*) 50%*) 100%*)	
2		0%*) 25%*) 50%*) 100%*)	

Stepless power regulation



The stepless power regulation allows to select a very exact power level comparable to a domestic cooker. It allows to heat up liquids to a more exact temperature as the heating zone switch.

Integrated stepless power regulation

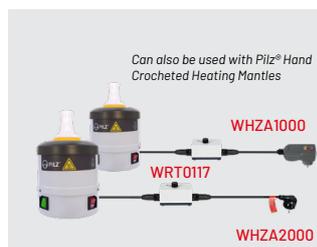


External stepless power regulators

The WRT0116 and WRT00117 power selectors can be used to retrofit any heating device with a stepless power regulator. It exists in two versions:



WRT0116:
(RCD required in mains supply)
3+PE power cable with male plug.
3+PE power socket for connection to heating mantle.



WRT0117:
3+PE male coupling for connection to heating mantle.
3+PE male coupling to WHZA detachable power supply cable.

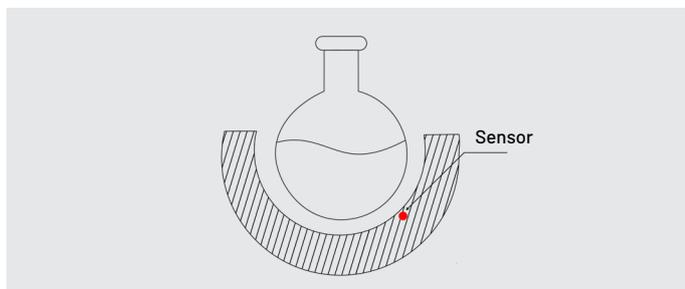
ELECTRONIC TEMPERATURE CONTROLLERS

Basic temperature control with one sensor



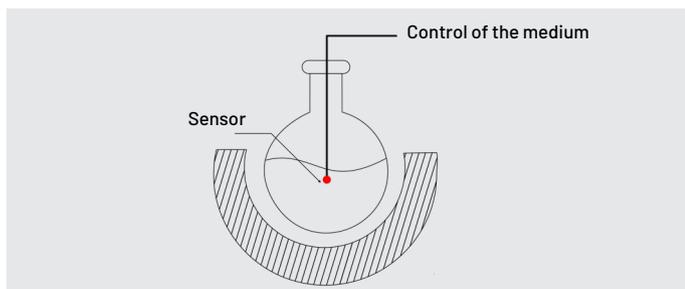
The T-500 can be used as a controller for the heating mantle or as a controller for the medium temperature. Thus, the temperature can be automatically controlled without any manual adjustments of the heating zone regulation

Heating Mantles temperature control



Simple to use, no sensor inside the medium required. Temperature of medium is less accurate.

Medium temperature control



Sensor inside the medium ensures accurate temperature control.

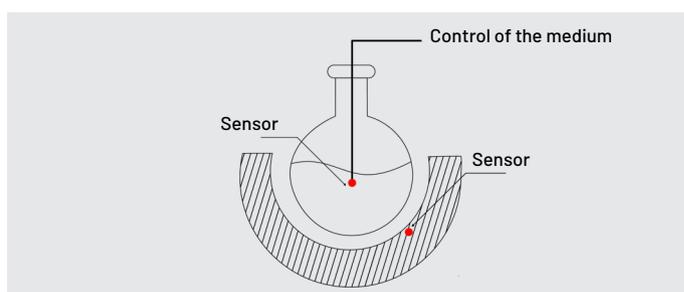
Advanced temperature control with two sensors for sensitive liquids



The T-700 can be used as a combined controller for the heating mantle and medium temperature.

The heating mantle sensor is used to limit the temperature of the heating mantle while the desired medium temperature is precisely controlled using the medium sensor. This prevents the temperature of the glass flask from becoming too high and the medium from overheating along the inside surface of the flask. In addition, the T-700 allows advanced functions such as slow heating via a ramp.

Heating Mantles and medium temperature control



The heating mantle sensor in the heating mantle prevents the temperature of the flask from becoming too high and the medium from overheating along the inside surface of the flask.



SAFETY FEATURES

IN ACCORDANCE WITH THE LATEST SAFETY REGULATIONS AND STANDARDS

- EN IEC 60519-1:2020-12 (VDE 0721-1:2020-12)
- EN 61010-1 VDE 0411-1 Corrigendum 2:2023-03
- EN IEC 61010-2-010 VDE 0411-2-010:2022-12
- 2014/35/EC Low Voltage Directive
- EU Directive 2014/30/EU electromagnetic compatibility directive
- 2011/65/EU+2015/863/EU RoHS directives

Safety requirements in general

When using the PILZ® heating mantle, the use of a residual current circuit breaker (RCD) >30 mA in accordance with the standards DIN EN 61008-1 and local regulations is mandatory. If electrically conductive liquid penetrates the heating element and it becomes soaked, the residual current circuit breaker integrated in the power supply line or provided RCD connection plug switches reliably and permanently voltage free.

In simplified terms-> If an electrical fault occurs, it safely disconnects the laboratory heating mantle from the operating voltage and prevents personal injury.

PILZ® LABORATORY HEATING MANTLE SAFETY FEATURES IN GENERAL

- Sealing between crocheted heating mantle and electrical components at the bottom within the housing
- Illuminated on/off and heating zone switches
- On/off and heating zone switch with lateral switching protection against unintentional switching
- Supplied with exchangeable schuko (type E/F) power cable with a residual current circuit breaker according to valid directive DIN VDE 0620-1. It is only required if the RCD is not present or has been removed in the power mains
- Supplied with a 3+PE power supply plug for provided exchangeable power cables and additionally purchased accessories



ADDITIONAL PILZ® CLASSIC LINE LABORATORY HEATING MANTLE FEATURES

- Protection class II for robust operation
- Basic low cost version with housing

ADDITIONAL PILZ® PROTECT LINE LABORATORY HEATING MANTLE FEATURES

- Protection class I with heating element additionally equipped with a metallic braiding
- Additional personal protection against contact with the metal casing
- Triggers the residual current circuit breaker more quickly when spillage or overflowing of liquid occurs

PILZ® HEATING MANTLES PASS TESTING IN ACCORDANCE WITH EN 61010-1: 2023-03, 11.3 AND 11.4

Testing of Pilz® crocheted heating mantles and heating mantles with metal housing according to sections 11.3 and 11.4 have proven that the heating mantles are in accordance with the standard.

Regulation adherence, in accordance to section 11.3 spillage, is achieved through either a residual current circuit breaker (RCD) in the power supply line or using the supplied exchangeable power cable. In accordance with section 6.5.1, appliances are to be equipped with automatic disconnection from the power circuit and must not be operated without such protection.

In the event of an overflow, the residual current circuit breaker must trip within 60 seconds and disconnect automatically from the mains voltage.

Testing has proven that Pilz® crocheted heating mantles will trip the circuit breaker within a few seconds.

EN 61010-1: 2023-03, 11.3 AND 11.4

Safety requirements for electrical equipment for measurement, control, and laboratory use

For certain types of appliances, these provisions are supplemented by special requirements to prevent touchable parts from becoming dangerously active in the event of an operating error (Section 6.3.2 of the Standard).

Pilz® crocheted heating mantles are able to meet requirements of this standard and is why we are, while using simplified text, especially mentioning and helping customers to become aware of the specific sections of this standard.

EN 61010-1: 2023-03, 11.1 General

Equipment containing fluids or intended for measurement in processes involving fluids must be designed to provide protection for users and the environment against danger from fluids used in the intended operation.

EN 61010-1: 2023-03, 11.3 Spillage

Appliances into which liquids may enter by spillage during operation must be designed in such a way that no danger is caused, for example, by wetting of insulation or internal non-insulated parts.

EN 61010-1: 2023-03, 11.4 Overflowing of liquids

The overflowing of liquids from containers in the appliance, which may be overfilled, must be designed in such a way that no danger is caused, for example, by wetting of insulation or internal non-insulated parts.

PILZ® CLASSIC LINE HEATING MANTLES

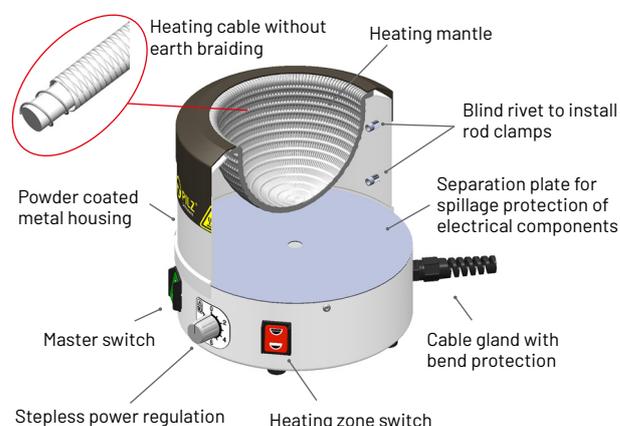


- ▶ Robust and traditional heating mantle version
- ▶ Not as fault current sensitive as protect line heating mantles

DESCRIPTION

With hand crocheted heating mantles made of silk and robust high chemical resistance power-coated metal housing PILZ® laboratory heating mantles from Winkler impress the market with their reliability and durability.

The heating mantles versatile versions with a temperature range for up to 450 °C and volumes from 4,000 ml to 20,000 ml have proven themselves in everyday laboratory use for decades.



ACCESSORIES

ROD CLAMP STK2



The support rod clamping holder can be installed at the back of the heating mantle using the provided blind rivet nuts. Made of durable plastic for support rods Ø 10 to Ø 12 mm.

TABLE-TOP CONTROLLERS



Durable laboratory controller for a wide range of applications in the laboratory and ideal complementation of our PILZ® heating mantles.

SENSORS



- Sensors with plug
- PT100 and Type K
- Up to 1,000 °C
- Easy to install

INCLUDED IN SCOPE OF SUPPLY

WHZA1000



Personal protection cable with PRCD Schuko plug and 3+PE coupling for quick connection to PILZ® heating mantles. *Only required if there is no RCD in the mains power supply circuit.

WHZA2000



Detachable power cable with Schuko plug and 3+PE coupling for quick connection to PILZ® heating mantles. *Only use if an RCD is already in the mains power supply circuit.

PILZ® CLASSIC LINE WITH HEATING ZONE SELECTION SWITCH (WHLG2)



BENEFITS

- **Basic low-cost version**
- 50 ml: heating zone switch for power stages
- > 50 ml: 2 different heating zones for selection according to fill stand
- For volumes up to 20,000 ml

Volume (ml)	Flask OD (mm)	Power (W ±10%)	Heating zones	Dimensions OD x H (mm)	Type code	Part no.
50	51	50	1	160x185	WHLG2XXX-230XX450-000050DE	W4897-0298
100	64	100	2	160x185	WHLG2XXX-230XX450-000100DE	W4896-4774
250	85	150	2	160x185	WHLG2XXX-230XX450-000250DE	W1465-0547
500	105	200	2	205x205	WHLG2XXX-230XX450-000500DE	W8498-0655
1,000	131	300	2	205x205	WHLG2XXX-230XX450-001000DE	W4895-0515
2,000	165	500	2	280x230	WHLG2XXX-230XX450-002000DE	W0815-8795
3,000	185	600	2	280x230	WHLG2XXX-230XX450-003000DE	W1644-6872
4,000	207	700	2	340x180	WHLG2XXX-230XX450-004000DE	W9113-4275
5,000	223	860	2	340x185	WHLG2XXX-230XX450-005000DE	W3284-4730
6,000	236	1,000	2	340x185	WHLG2XXX-230XX450-006000DE	W6462-7192
10,000	280	1,400	2	400x195	WHLG2XXX-230XX450-010000DE	W2442-4234
20,000	350	2,400	2	430x225	WHLG2XXX-230XX450-020000DE	W5303-6688

PILZ® CLASSIC LINE WITH INTEGRATED STEPLESS POWER REGULATION (WHLG2ER)



DEVICE BENEFITS

- **Stepless power regulation of chosen heating zone or zones**
- 50 ml: heating zone switch for power stages
- > 50 ml: 2 different heating zones for selection according to fill stand
- For volumes up to 20,000 ml

Volume (ml)	Flask OD (mm)	Power (W ±10%)	Heating zones	Dimensions OD x H (mm)	Type code	Part no.
50	51	50	1	160x185	WHLG2ERX-230XX450-000050DE	W4985-0654
100	64	100	2	160x185	WHLG2ERX-230XX450-000100DE	W0884-9751
250	85	150	2	160x185	WHLG2ERX-230XX450-000250DE	W4897-0169
500	105	200	2	205x205	WHLG2ERX-230XX450-000500DE	W9482-5451
1,000	131	300	2	205x205	WHLG2ERX-230XX450-001000DE	W9879-0658
2,000	165	500	2	280x230	WHLG2ERX-230XX450-002000DE	W9850-0654
3,000	185	600	2	280x230	WHLG2ERX-230XX450-003000DE	W0698-1468
4,000	207	700	2	340x180	WHLG2ERX-230XX450-004000DE	W2838-1271
5,000	223	860	2	340x185	WHLG2ERX-230XX450-005000DE	W9265-1459
6,000	236	1,000	2	340x185	WHLG2ERX-230XX450-006000DE	W0987-5146
10,000	280	1,400	2	400x195	WHLG2ERX-230XX450-010000DE	W2846-3603
20,000	350	2,400	2	430x225	WHLG2ERX-230XX450-020000DE	W7999-9175

PILZ® CLASSIC LINE WITH METAL TRAY FOR SPILLAGE PROTECTION (WHLSG2ER)



DEVICE BENEFITS

- Metal tray to additionally protect the woven heating mantle in case of spillage or vessel breakage. Metal tray suited for medium baths
- Stepless power regulation of chosen heating zone or zones
- 2 different heating zones for selection according to fill stand

Volume (ml)	Flask OD (mm)	Power (W ±10%)	Heating zones	Dimensions OD x H (mm)	Type code	Part no.
250	85	150	2	160x185	WHLSG2ER-230XX450-000250DE	W4654-5498
500	105	200	2	205x205	WHLSG2ER-230XX450-000500DE	W8941-0584
1,000	131	300	2	205x205	WHLSG2ER-230XX450-001000DE	W4656-4655
2,000	166	500	2	280x230	WHLSG2ER-230XX450-002000DE	W4485-0584

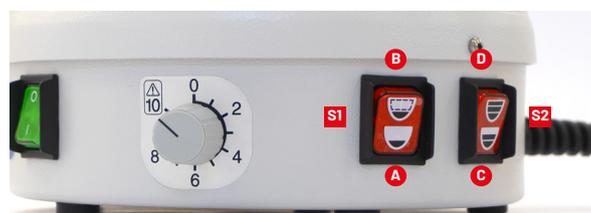
PILZ® CLASSIC LINE FOR DIFFERENT FLASK SIZES (WHLMG3ER)



DEVICE BENEFITS

- Suitable for 3 different flask sizes
- 3 different heating zones for selection according to fill stand
- Stepless power regulation of chosen heating zone or zones

Volume (ml)	Flask OD (mm)	Power (W ±10%)	Heating zones	Dimensions OD x H (mm)	Type code	Part no.
50-250	51-85	150	3	160x185	WHLMG3ER-230XX450-000250DE	W8421-0192
250-1,000	85-131	360	3	250x250	WHLMG3ER-230XX450-001000DE	W1546-4564
1,000-3,000	131-185	600	3	280x230	WHLMG3ER-230XX450-003000DE	W4585-0582



WHLMG3ER HEATING ZONE SELECTION

S1 A = Bottom heating zone (note: position S2 is irrelevant)
 S1 B + S2 C = Bottom heating zone + middle heating zone
 S1 B + S2 D = Bottom, middle and top heating zones

PILZ® PROTECT LINE HEATING MANTLES

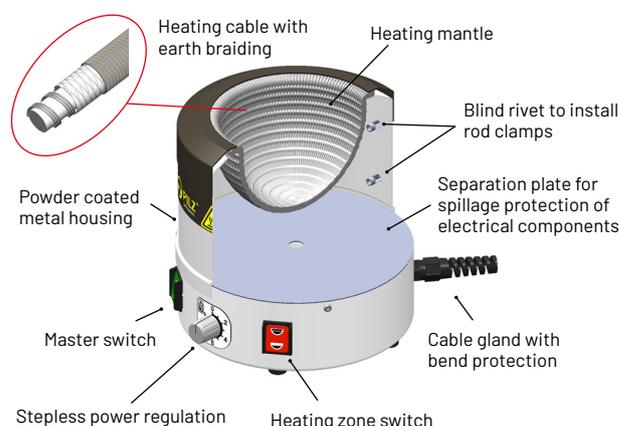


- ▶ Heating cable with earth braiding woven into the heating mantle
- ▶ Trips the RCD more quickly than the Classic Line heating mantles

DESCRIPTION

With hand crocheted heating mantles made of silk and robust high chemical resistance power-coated metal housing PILZ® laboratory heating mantles from Winkler impress the market with their reliability and durability.

The heating mantles versatile versions with a temperature range for up to 450 °C and volumes from 50 ml to 20,000 ml have proven themselves in everyday laboratory use for decades.



ACCESSORIES

ROD CLAMP STK2



The support rod clamping holder can be installed at the back of the heating mantle using the provided blind rivet nuts. Made of durable plastic for support rods \varnothing 10 to \varnothing 12 mm.

TABLE-TOP CONTROLLERS



Durable laboratory controller for a wide range of applications in the laboratory and ideal complementation of our PILZ® heating mantles.

SENSORS



- Sensors with plug
- PT100 and Type K
- Up to 1,000 °C
- Easy to install

INCLUDED IN SCOPE OF SUPPLY

WHZA1000



Personal protection cable with PRCD Schuko plug and 3+PE coupling for quick connection to PILZ® heating mantles. *Only required if there is no RCD in the mains power supply circuit.

WHZA2000



Detachable power cable with Schuko plug and 3+PE coupling for quick connection to PILZ® heating mantles. *Only use if an RCD is already in the mains power supply circuit.

PILZ® PROTECT LINE WITH HEATING ZONE SELECTION SWITCH (WHLP2)



DEVICE BENEFITS

- **Protection class I**
- 50 and 100 ml: heating zone switch for power
- >100ml: 2 different heating zones for selection according to fill stand

Volume (ml)	Flask OD (mm)	Power (W ±10%)	Heating zones	Dimensions OD x H (mm)	Type code	Part no.
50	51	60	1	160x185	WHLP2XXX-230XX450-000050DE	W5464-8797
100	64	90	1	160x185	WHLP2XXX-230XX450-000100DE	W7876-1875
250	85	150	2	160x185	WHLP2XXX-230XX450-000250DE	W0364-4825
500	105	200	2	205x205	WHLP2XXX-230XX450-000500DE	W6465-4565
1,000	131	300	2	205x205	WHLP2XXX-230XX450-001000DE	W7789-1586
2,000	165	500	2	280x230	WHLP2XXX-230XX450-002000DE	W5482-5465
3,000	185	600	2	280x230	WHLP2XXX-230XX450-003000DE	W0586-0585

PILZ® PROTECT LINE WITH INTEGRATED STEPLESS POWER REGULATION (WHLP2ER)



ADDITIONAL DEVICE BENEFITS

- **Stepless power regulation of chosen heating zone or zones**
- Protection class I
- 50 and 100 ml: heating zone switch for power
- >100ml: 2 different heating zones for selection according to fill stand

Volume (ml)	Flask OD (mm)	Power (W ±10%)	Heating zones	Dimensions OD x H (mm)	Type code	Part no.
50	51	60	1	160x185	WHLP2ERX-230XX450-000050DE	W1486-5542
100	64	90	1	160x185	WHLP2ERX-230XX450-000100DE	W4782-5642
250	85	150	2	160x185	WHLP2ERX-230XX450-000250DE	W1558-4855
500	105	200	2	205x205	WHLP2ERX-230XX450-000500DE	W4589-6545
1,000	131	300	2	205x205	WHLP2ERX-230XX450-001000DE	W4564-9775
2,000	165	500	2	280x230	WHLP2ERX-230XX450-002000DE	W1654-4558
3,000	185	600	2	280x230	WHLP2ERX-230XX450-003000DE	W1895-1892

PILZ® PROTECT LINE WITH INTEGRATED SENSOR (WHLP2TC)

450° C



ADDITIONAL DEVICE BENEFITS

- Type K sensor to limit the temperature of the heating mantle during heating
- Protection class I
- 50 and 100 ml: heating zone switch for power
- >100 ml: 2 different heating zones for selection according to fill stand

Volume (ml)	Flask OD (mm)	Power (W ±10%)	Heating zones	Dimensions OD x H (mm)	Type code	Part no.
50	51	60	1	160x185	WHLP2TCX-230XK450-000050DE	W4798-1465
100	64	90	1	160x185	WHLP2TCX-230XK450-000100DE	W1598-3578
250	85	150	2	160x185	WHLP2TCX-230XK450-000250DE	W1593-4657
500	105	200	2	205x205	WHLP2TCX-230XK450-000500DE	W6478-1405
1,000	131	300	2	205x205	WHLP2TCX-230XK450-001000DE	W4658-5482
2,000	165	500	2	280x230	WHLP2TCX-230XK450-002000DE	W5484-1905
3,000	185	600	2	280x230	WHLP2TCX-230XK450-003000DE	W4564-0654



HEATING MANTLES WITH RECTANGULAR METAL HOUSING

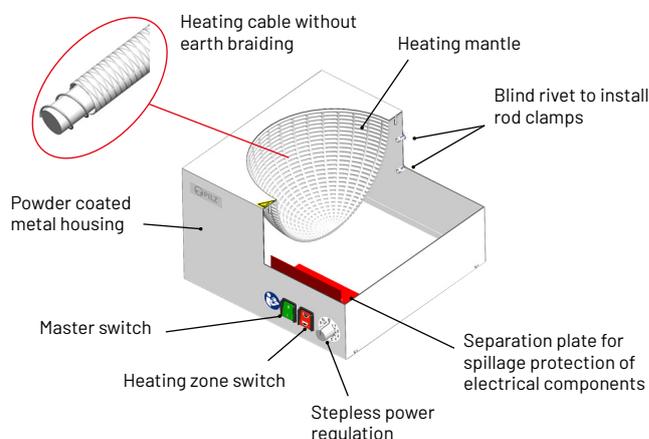


- ▶ Rectangular housing for better stability
- ▶ Not as fault current sensitive as protect heating mantles

DESCRIPTION

With hand crocheted heating mantles made of silk and robust high chemical resistance power-coated metal housing PILZ® laboratory heating mantles from Winkler impress the market with their reliability and durability.

The heating mantles versatile versions with a temperature range for up to 450 °C and volumes from 50 ml to 20,000 ml have proven themselves in everyday laboratory use for decades.



ACCESSORIES

ROD CLAMP STK2



The support rod clamping holder can be installed at the back of the heating mantle using the provided blind rivet nuts. Made of durable plastic for support rods Ø 10 to Ø 12 mm.

TABLE-TOP CONTROLLERS



Durable laboratory controller for a wide range of applications in the laboratory and ideal complementation of our PILZ® heating mantles.

SENSORS



- Sensors with plug
- PT100 and Type K
- Up to 1,000 °C
- Easy to install

INCLUDED IN SCOPE OF SUPPLY

WHZA1000



Personal protection cable with PRCD Schuko plug and 3+PE coupling for quick connection to PILZ® heating mantles. *Only required if there is no RCD in the mains power supply circuit.

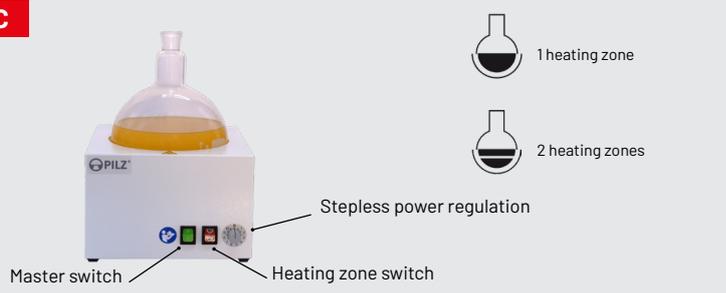
WHZA2000



Detachable power cable with Schuko plug and 3+PE coupling for quick connection to PILZ® heating mantles. *Only use if an RCD is already in the mains power supply circuit.

TWO HEATING ZONES WITH INTEGRATED POWER CONTROL (WHU2ER)

450° C



DEVICE BENEFITS

- **Basic low-cost version**
- Heating zone/power stage selection according to fill stand
- Stepless power regulation and illuminated heating zone selection switch
- Rectangular housing for more stability
- For volumes up to 20,000 ml

Volume (ml)	Flask OD (mm)	Power (W ±10%)	Heating zones	Dimensions W x H x D (mm)	Designation	Part no.
4,000	207	700	2	270 x 270 x 175	WHU2ERXX-230XX450-004000DE	W4464-4687
5,000	223	860	2	290 x 290 x 185	WHU2ERXX-230XX450-005000DE	W4125-3637
6,000	236	1,000	2	300 x 300 x 195	WHU2ERXX-230XX450-006000DE	W9199-5245
10,000	280	1,400	2	350 x 350 x 215	WHU2ERXX-230XX450-010000DE	W8961-6522
20,000	350	2,400	2	430 x 430 x 250	WHU2ERXX-230XX450-020000DE	W5326-1097



HEATING MANTLES WITH CROCHETED HEATING JACKETS

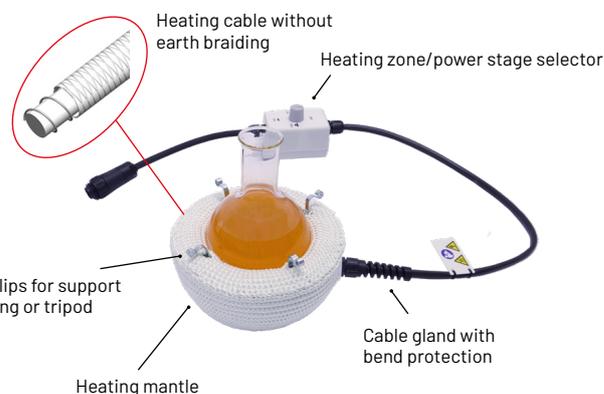


- ▶ Economy heating mantle version
- ▶ Not as fault current sensitive as Protect Heating Mantles

DESCRIPTION

With hand crocheted heating mantles made of silk, PILZ® laboratory heating mantles from Winkler impress the market with their reliability and durability.

The heating mantles versatile versions with a temperature range for up to 450 °C or 900 °C and volumes from 25 ml to 20,000 ml have proven themselves in everyday laboratory use for decades.



ACCESSORIES

SUPPORT RINGS



For WHG2 and WHG2H crocheted heating mantles (WHZT)

TRIPODS



For WHG2 and WHG2H crocheted heating mantles (WHZD)

SENSORS



- Sensors with plug
- PT100 and Type K
- Up to 1,000 °C
- Easy to install

INCLUDED IN SCOPE OF SUPPLY

WHZA1000



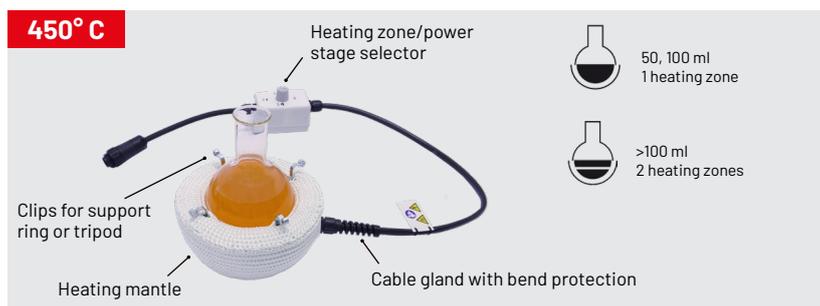
Personal protection cable with PRCD Schuko plug and 3+PE coupling for quick connection to PILZ® heating mantles.
*Only required if there is no RCD in the mains power supply circuit.

WHZA2000



Detachable power cable with Schuko plug and 3+PE coupling for quick connection to PILZ® heating mantles.
*Only use if an RCD is already in the mains power supply circuit.

STANDARD VERSION WITH ONE AND TWO HEATING ZONES (WHG2)

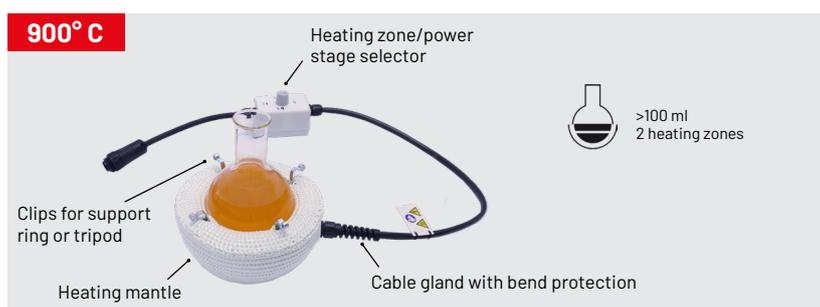


DEVICE BENEFITS

- **Basic low-cost version**
- Heating zone/power stage selection according to fill stand
- Clips for support ring or tripod
- For volumes up to 20,000 ml

Volume (ml)	Flask OD (mm)	Power (W ±10%)	Heating zones	Base opening ID (mm)	Type code	Part no.
25	41	40	1		WHG2XXXX-230XX450-000025DE	W0546-1564
50	51	70	1		WHG2XXXX-230XX450-000050DE	W1540-0654
100	64	110	1		WHG2XXXX-230XX450-000100DE	W7410-4713
250	85	200	2		WHG2XXXX-230XX450-000250DE	W9410-4451
500	105	300	2	62	WHG2XXXX-230XX450-000500DE	W4654-4645
1,000	131	450	2	62	WHG2XXXX-230XX450-001000DE	W0659-8756
2,000	165	700	2	62	WHG2XXXX-230XX450-002000DE	W4784-2512
3,000	185	800	2	62	WHG2XXXX-230XX450-003000DE	W4561-6422
4,000	207	1,000	2	62	WHG2XXXX-230XX450-004000DE	W4578-1568
5,000	223	1,200	2	62	WHG2XXXX-230XX450-005000DE	W8472-6554
6,000	236	1,400	2	62	WHG2XXXX-230XX450-006000DE	W4855-1698
10,000	280	2,000	2	62	WHG2XXXX-230XX450-010000DE	W1874-2058
20,000	350	2,800	2	62	WHG2XXXX-230XX450-020000DE	W8782-0558

HIGH POWER AND HIGH TEMPERATURE VERSION (WHG2H)

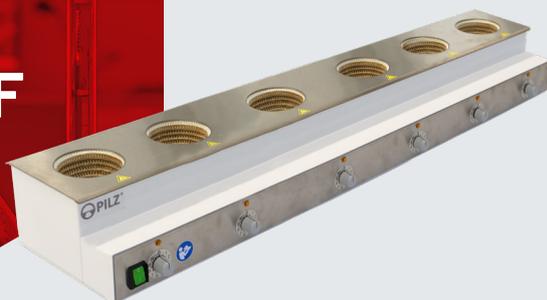


DEVICE BENEFITS

- **Basic low-cost version**
- Heating zone/power stage selection according to fill stand
- Clips for support ring or tripod
- For volumes up to 6,000 ml.

Volume (ml)	Flask OD (mm)	Power (W ±10%)	Heating zones	Base opening ID (mm)	Type code	Part no.
250	85	300	2		WHG2HXXX-230XX450-000250DE	W4566-1654
500	105	500	2	62	WHG2HXXX-230XX450-000500DE	W4980-0154
1,000	131	750	2	62	WHG2HXXX-230XX450-001000DE	W0589-1454
2,000	165	1,200	2	62	WHG2HXXX-230XX450-002000DE	W1549-8556
3,000	185	1,500	2	62	WHG2HXXX-230XX450-003000DE	W5468-6021
4,000	207	1,800	2	62	WHG2HXXX-230XX450-004000DE	W9554-5464
6,000	236	2,500	2	62	WHG2HXXX-230XX450-006000DE	W7981-0654

HEATING MANTLES FOR 4-6 FLASKS OF THE SAME SIZE

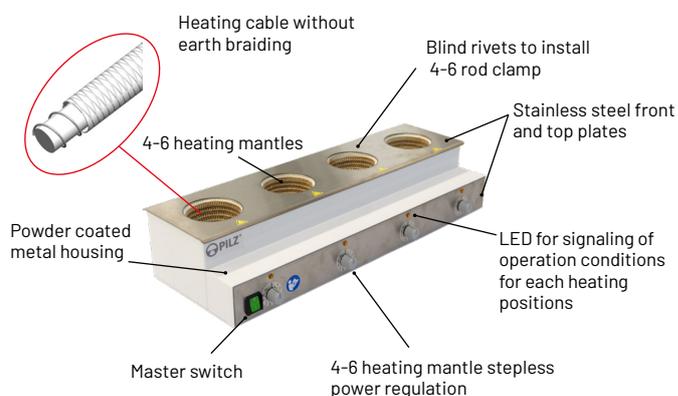


- ▶ Heat more than one flask at the same power output
- ▶ Heating more than one flask at different power outputs to achieve simultaneous medium reactions at different temperatures
- ▶ Move a flask from one heating mantle to another one set at a different power output to conduct certain tests or to achieve certain medium reactions at the same or different temperatures

DESCRIPTION

With hand crocheted heating mantles made of silk and robust high chemical resistance power-coated metal housing PILZ® laboratory heating mantles from Winkler impress the market with their reliability and durability.

The heating mantles versatile versions with a temperature range for up to 450 °C and volumes from 100 ml to 1,000 ml have proven themselves in everyday laboratory use for decades.



INCLUDED IN SCOPE OF SUPPLY

WHZA 1000



Personal protection cable with PRCD Schuko plug and 3+PE coupling for quick connection to PILZ® heating mantles.
*Only required if there is no RCD in the mains power supply circuit.

ROD CLAMP STK2



The support rod clamping holder can be installed at the back of the heating mantle using the provided blind rivet nuts.
Made of durable plastic for support rods Ø 10 to Ø 12 mm.

WHZA 2000



Detachable power cable with Schuko plug and 3+PE coupling for quick connection to PILZ® heating mantles.
*Only use if an RCD is already in the mains power supply circuit.

MULTI-PLACE HEATING MANTLE WITH 4 HEATING POSITIONS (WHRE4)

450° C



1. 4 heating mantles
2. Blind rivets to install 4 rod clamps holders
3. Stainless steel front and top plates
4. 4 heating mantles with stepless power regulation
5. Master switch
6. Powder coated metal housing

DEVICE BENEFITS

- Up to 4 flasks of the same size can individually heated at same or different temperature
- Operation LED indicators for each heating position
- Rod clamps can be individually attached for each heating position
- No need to purchase 4 single heating mantles and reduce the amount of space they would require

Volume (ml)	Flask OD (mm)	Power (W ±10%)	Heating zones	Dimensions W x H x D (mm)	Type code	Part no.
100	64	4 x 110	1	620 x 220 x 130	WHRE4ERX-230XX450-000100DE	W6159-5111
250	85	4 x 220	1	620 x 220 x 130	WHRE4ERX-230XX450-000250DE	W3304-5920
500	105	4 x 330	1	765 x 260 x 130	WHRE4ERX-230XX450-000500DE	W4037-9924
1,000	131	4 x 495	1	765 x 260 x 130	WHRE4ERX-230XX450-001000DE	W2104-4340

MULTI-PLACE HEATING MANTLE WITH 6 HEATING POSITIONS (WHRE6)

450° C



1. 6 heating mantles
2. Blind rivets to install 6 rod clamps holders
3. Stainless steel front and top plates
4. 6 heating mantles with stepless power regulation
5. Master switch
6. Powder coated metal housing

DEVICE BENEFITS

- Up to 6 flasks of the same size can individually heated at same or different temperature
- Operation LED indicators for each heating position
- Rod clamps can be individually attached for each heating position
- No need to purchase 6 single heating mantles and reduce the amount of space they would require

Volume (ml)	Flask OD (mm)	Power (W ±10%)	Heating zones	Dimensions W x H x D (mm)	Type code	Part no.
100	64	6 x 110	1	870 x 220 x 130	WHRE6ERX-230XX450-000100DE	W4465-7387
250	85	6 x 220	1	870 x 220 x 130	WHRE6ERX-230XX450-000250DE	W6144-3018
500	105	6 x 330	1	1,146 x 260 x 130	WHRE6ERX-230XX450-000500DE	W5260-7283
1,000	131	6 x 495	1	1,146 x 260 x 130	WHRE6ERX-230XX450-001000DE	W9744-1728

DETACHABLE POWER SELECTORS AND CONNECTION PLUGS

DESCRIPTION

Detachable stepless power regulators are optionally used with heating mantles that do not have built-in stepless power regulators.

These provide a more variable power control should the flask temperature require to be more exact than with only the heating zone control.

The **WRT00116** stepless power regulator can only be used where an RCD is available in the main power supply.

The **WRT00117** stepless power regulator can be used regardless of whether an RCD is present in the main power supply. If no RCD is present, the WHZA1000 RCD safety plug supplied with the heating mantle or purchased separately must also be used.

DEVICE FEATURES

- 1- Robust polycarbonate housing
- 2- Integrated stepless power regulation (0-100%)
- 3- LED signal light
- 4- Power cable with Schuko plug
- 5- Schuko socket for connection to heating mantle
- 6- 3+PE male coupling for connection to heating mantle
- 7- 3+PE male coupling for connection to WHZA detachable power supply cables

ACCESSORIES (NOT INCLUDED)

If there is no RCD installed in the mains supply, the WHZA1000 detachable Schuko (type E/F) personal protection (PRCD) power cable supplied with the heating mantle (or separately purchased) must also be used.

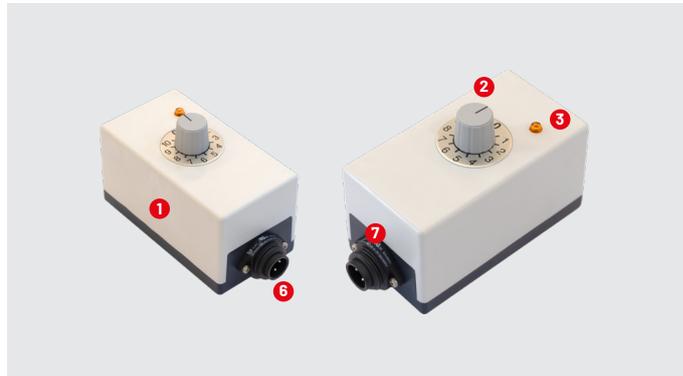
RCD SAFETY CONNECTION PLUG WITH COUPLING (WHZA1000)



POWER SELECTOR WITH SCHUKO SOCKET (WRT00116)



POWER SELECTOR (WRT00117)



CONNECTION PLUG WITH COUPLING (WHZA2000)



*RCD is not available in the main power supply.

TECHNICAL DATA

POWER SELECTOR WITH SCHUKO SOCKET (WRT00116)

Part number	W4870-5214	W4765-4086
Power supply plug type	Schuko plug (2+PE)	Swiss plug (2+PE)
Power supply connection length	1,4 m	1,4 m
Connection to heating mantle	Schuko socket	Schuko socket
Nominal voltage	230 VAC	230 VAC
Nominal current	13 A ohmic load	
Controller type	Stepless power regulation (0-100%)	
Nominal frequency	50 Hz	
Nominal switching capacity	3,000 W	
Dimensions L x H x W	120 x 56 x 57 mm	
Housing material	Polystyrene	

POWER SELECTOR WITH COUPLING SOCKET (WRT00117)

Part number	W4238-8294
Controller type	Infinity variable power (0-100%)
Mains power supply connection	Male 3+PE coupling connection
Connection to heating mantle	Female 3+PE coupling connection
Nominal voltage	230 VAC
Nominal current	10 A ohmic load
Nominal frequency	50 Hz
Nominal switching capacity	2,300 W
Dimensions L x H x W	120 x 56 x 57 mm
Housing material	Polystyrene

RCD SAFETY CONNECTION PLUG WITH COUPLING (WHZA1000)

Part number	W8331-7702
Power supply plug type	Schuko RCD plug (2+PE)
Coupling plug type	Female 3+PE
Power supply cable length	1,0 m
Nominal voltage	230 VAC
Nominal current	10 A

CONNECTION PLUG WITH COUPLING (WHZA2000)

Part number	W4568-4952	W4797-6027	W2093-5079	W7465-7895
Power supply plug type	Schuko plug (2+PE)	Swiss plug (2+PE)	UK plug (2+PE)	US plug (2+PE)
Coupling plug type	Female 3+PE	Female 3+PE	Female 3+PE	Female 3+PE
Power supply cable length	1,0 m	1,0 m	1,0 m	1,0 m
Nominal voltage	230 VAC	230 VAC	230 VAC	110 VAC
Nominal current	10 A	10 A	10 A	10 A

SUPPORT RINGS, TRIPODS AND ROD CLAMPS

SUPPORT RINGS FOR WHG2 AND WHG2H CROCHETED HEATING MANTLES (WHZT)



TRIPODS FOR WHG2 AND WHG2H CROCHETED HEATING MANTLES (WHZD)



ROD CLAMP FOR HEATING MANTLES WITH HOUSING (WHZSTK02)



PILZ® hand crocheted WHG2 and WHG2H laboratory heating mantles are factory supplied with clips for support rings and tripods.

The WHZT support rings and WHZD tripods made of stainless steel help provide the necessary reliable support of the WHG2 and WHG2H heating mantles.

The WHZSTK02 support rod clamping holder can be installed at the back of the heating mantle using the provided blind rivet nuts. Made of durable plastic for support rods between Ø 10 - 12 mm.

TECHNICAL DATA

Volume (ml)	WHZT Part No.	WHZD Part No.	WHZSTK02 Part No. for all volumes
25	W0419-7136		W4569-0489
50	W7986-0495		
100	W7986-9646	W4589-7548	
250	W6598-4589	W9654-7589	
500	W9456-7566	W3259-7452	
1,000	W9854-4669	W1236-4589	
2,000	W6548-5585	W5684-7425	
3,000	W6974-4587	W5896-5874	
4,000	W1236-8587	W2563-2541	
5,000		W5648-5874	
6,000		W5942-2587	
10,000		W4569-9856	
20,000		W2589-2564	

TEMPERATURE SENSORS

PT100, TYPE J AND TYPE K

winkler

PT100 SENSOR - READY FOR CONNECTION TO T560SW AND T760SW TABLE-TOP CONTROLLERS

Sensor assembled with Lemo-plug

250° C

- Wide temperature range
- Almost linear characteristic curve
- Good accuracy
- Good interchangeability
- High long-term stability



Sensor length	Sensor OD	Cable length	Sensor type	Tmax	Type code	Part no.
50 mm	3,5 mm	1,8 m	PT100 2-wire	250 °C	WFMP6999-000XX050	W2246-8080

PT100 SENSOR

Sensor without plug

450° C

- Wide temperature range
- Almost linear characteristic curve
- Good accuracy
- Good interchangeability
- High long-term stability



Sensor length	Sensor OD	Cable length	Sensor type	Tmax	Type code	Part no.
50 mm	3,5 mm	5,0 m	PT100 2-wire	450 °C	WFMP1250-000XX050	W0195-2108

THERMOCOUPLE-READY FOR CONNECTION TO T560SW AND T760SW TABLE-TOP CONTROLLERS

Thermocouple assembled with miniature plug

1000° C

- Self-powered (passive)
- Interchangeable, simple connectivity
- Relatively inexpensive
- Large selection of thermocouple probes
- Higher temperature resistance than other sensors



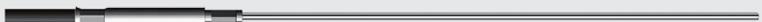
Sensor length	Sensor OD	Cable length	Sensor type	Tmax	Type code	Part no.
300 mm	1,5 mm	1,2 m	Type K (Ni-Cr-Ni)	1000 °C	WFSK6999-000XX012	W2718-6925

THERMOCOUPLE TYPE K

Thermocouple without plug

1000° C

- Wide powered passive
- Interchangeable, simple connectivity
- Relatively inexpensive
- Large selection of thermocouple probes
- Higher temperature resistance than other sensors



Sensor length	Sensor OD	Cable length	Sensor type	Tmax	Type code	Part no.
300 mm	1,5 mm	1,2 m	Type K (Ni-Cr-Ni)	1000 °C	WFSK1999-000XX012	W6754-3544

T-SERIES LABORATORY TABLE TOP CONTROLLERS



CONTROLLERS GREAT FOR LABORATORY APPLICATIONS

Today, ten years later, our customers appreciate the Winkler intelligent control algorithm FAT controllers, which perfectly replace PID-controllers thanks to the simple menu navigation and optional IR-Handheld remote control.

FAT stands for **F**ast **A**daptive **T**uning and describes the reliable algorithm - comparable to PID - working inside our controllers.

One big advantage of FAT is the permanently self-optimizing controller adjustment without the need to determine the obligatory PID-parameters.

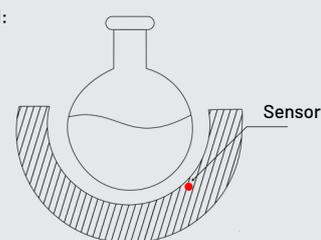
FAT the better PID-Controller alternative!



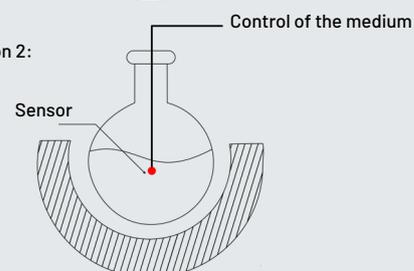
T-500 CONTROLLER WITH ONE SENSOR



Option 1:



Option 2:



DESCRIPTION

The T-500 provides temperature control of the heating mantle using the built-in heating mantle sensor or alternatively via medium sensor. Using the heating mantle sensor prevents the temperature of the glass flask from becoming too high and from overheating at the edges of the flask. Alternatively, the medium sensor can provide a more exact temperature of the medium inside the flask.

BENEFITS

- One sensor input for either heating mantle or medium temperature control
- Thermocouples or PT sensors may be used
- Sophisticated control algorithm for great heating result
- Easy usage with operation panel and multilingual menu control via LCD display



For direct connection to Pilz® Heating Mantles (T-560)



3+PE socket that perfectly matches the pin wiring of the PILZ® heating mantles plug connection. Either the heating mantle sensor or medium sensor can be connected. Should connection of both sensors be required, please refer to the T-700 series. Delivery includes miniature plug for connection of the sensor. Delivery does not include connection cable for power supply. This is already included with the heating mantle or can be ordered separately.

For use with a variety of heating products that have a Schuko plug (T-570)



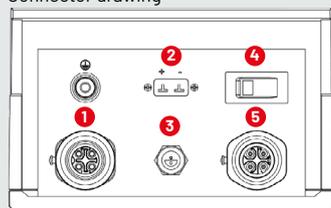
Schuko socket for connection of other products that do not have or use integrated Winkler standard 3+PE plugs or 6+PE sockets. For example, Winkler heating tapes and cables with Schuko plug or heating mantles from other manufacturers. Other sockets enable the simultaneous use of two sensors. Delivery includes Schuko plug with cold appliance plug C14 and miniature plug for connection of the sensor.

T-500 TECHNICAL DATA

Type	T-560	T-570 (10A)	T-570 (6,3A)
Part number	W5894-0609	W7460-6523	W0137-8520
Heater connection	3+PE socket	Schuko socket	Schuko socket
Mains connection	3+PE socket	C14 inlet	C14 inlet
Nominal voltage	90 ... 260 V AC 50/60 Hz		
T-560 Max. current T-570 Max. current	10 A 6,3 A		
Nominal output @ 230 V	T-560: 2300 W / T-570: 1450 W		
Nominal output @ 115 V	T-560: 1150 W / T-570: 725 W		
Power switch	Hybrid relay (> 2.5 Mio. switching cycles specified)		
Fuse	10 A (via internal fuse)		
Thermal protection	+85 °C (electronic temperature, resettable)		
Sensor inputs	Pt100, Pt1000 (2-wire) or Nickel 120, NTC 10k, NTC 100k (2-wire) via Lemo ERA.1S.302.CYM socket Thermocouples K, J, E or N via thermocouple socket all inputs potential-free with sensor break detection		
Adjustable setpoint range	Pt100, Pt1000: -120 °C ... +850 °C / Ni120: -50 °C ... +250 °C / NTC10k: -20 °C ... +250 °C / NTC100k: 0 °C ... +250 °C K Thermo.: -200 °C ... +1350 °C / J Thermo.: -210 °C ... +1200 °C / E Thermo.: -200 °C ... +1000 °C N Thermo.: -200 °C ... +1300 °C		
Controller type	FAT (Fast-Adaptive-Tuning)		
Range around setpoint	Adjustable ±0.5 K ... 20 K, default ±3 K (status LED green)		
Display	LCD graphic display		
Operation	Via operation panel and multilingual menu control Optional: via WRZF310N IR-Handheld (distance up to 7 m)		
Status LED	3-coloured LED for status indication of operation conditions		
Potential-free signal output	50 mA max. 45 V (potential-free) switch closed, if temperature is within range (status LED green)		
Ambient temperature	0 °C ... +50 °C		
Relative humidity	< 90 % (non-condensing)		
Protection standard	IP40		
Protection class	I		
Shutdown-relay	Breaks heating circuit on failure (single pole)		
Languages	English/German/Spanish /French		
Weight	1 kg		
Housing	ABS with anti-slip pads and wipeable front cover, dimensions (198x157x100)		
Pollution degree	2		
Max.operation altitude	2000 m		

T-560 : Standard plug arrangement

Connector drawing



1. Heater
2. Thermocouple
3. RTD sensor
4. Main switch
5. Mains connection

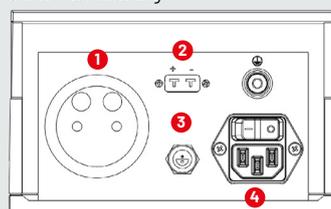
Heater connection: amphenol ecomate C016 3+PE socket

Mains connection: amphenol ecomate C016 3+PE plug

Pin	Function	Pin	Function
1	Heater L	1	L (V AC)
2	Heater N	2	N (V AC)
3	n.c.	3	n.c.
PE	PE	PE	PE

T-570 : Standard plug arrangement

Connector drawing



1. Heater
2. Thermocouple
3. RTD sensor
4. Mains connection

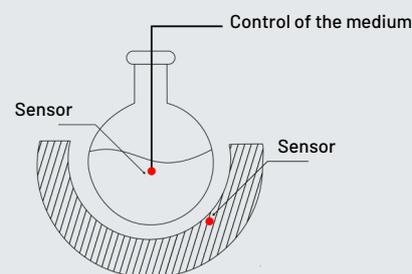
Heater connection: via schuko socket for heater (including 2 fuse holder 5x20 mm)

Mains connection: male plug (1.5 m Schuko cold appliance plug power cable included)

► Note

Only one Thermocouple or PT 100 RTD Sensor can be connected.

T-700 CONTROLLER WITH TWO SENSORS FOR SENSITIVE MEDIA



DESCRIPTION

The T-700 combines both advantages of control with two sensors. The medium temperature is regulated with high precision using the medium sensor. An additional sensor in the heating mantle is used to limit the temperature of the heating mantle during heating. This prevents the temperature of the glass flask from becoming too high and the medium from overheating on the inner flask surface. In addition, the T-700 allows advanced functions such as slow heating via ramp temperature settings.

BENEFITS

- Two sensor inputs that can be used simultaneously for exact medium temperature control
- Thermocouples or PT sensors may be used
- Sophisticated control algorithm for a great heating result
- Easy usage with control panel and multilingual menu control via LCD display



For direct connection to Pilsz® Heating Mantles (T-760)



3+PE socket that perfectly matches the pin wiring of PILZ® heating mantles plug connection. Other sockets enable the simultaneous use of two sensors. Delivery includes miniature plug for connection of the sensor. Delivery does not include a connection cable for the power supply. This is already included with the heating mantle or can be ordered separately.

For use with a variety of heating products that have a Schuko plug (T-770)



Schuko socket for connection of other products that do not have or use integrated Winkler standard 3+PE plugs or 6+PE sockets. For example, Winkler heating tapes and cables with Schuko plug or heating mantles from other manufacturers. Other sockets enable the simultaneous use of two sensors. Delivery includes a Schuko plug with a cold appliance plug C14 and miniature plug for connection of the sensor.

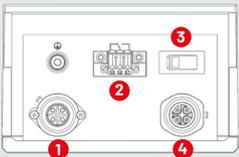
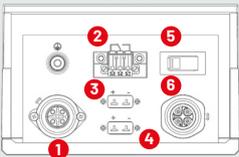
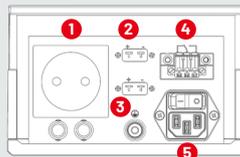
For direct connection to other Winkler products with combined power and sensor coupling (T-730)



6+PE plug for connection of other heating products with 6+PE sockets. For example, Winkler heating mats and jackets using two sensors at the same time. Delivery includes a miniature plug for connection of the sensor. Delivery does not include a connection cable for the power supply. This is already included with the heating mantle or can be ordered separately.

T-700 TECHNICAL DATA

Type	T-730	T-760	T-770
Part number	W1549-4705	W0549-1540	W5104-0565
Heater connection	6+PE socket	3+PE socket	Schuko socket
Mains connection	3+PE plug	3+PE plug	C14 inlet
Nominal voltage	90 ... 260 V AC 50/60 Hz		
Max. current	10 A		
Nominal output@ 230V	2300 W		
Nominal output@ 115V	1150 W		
Power switch	Hybrid relay (> 5 Mio. switching cycles at 10 A)		
Fuse	10 A (via internal fuse)		
Thermal protection	+85 °C (electronic temperature, resettable)		
Sensor inputs	Pt100, Pt1000 (2-wire) or Nickel 120, NTC 10k, NTC 100k (2-wire) via Lemo ERA.1S.302.CYM socket Thermocouples K, J, E or N via thermocouple socket all inputs potential-free with sensor break detection		
Adjustable setpoint	Pt100, Pt1000: -120 °C ... +850 °C / Ni120: -50 °C ... +250 °C / NTC10k: -20 °C ... +250 °C / NTC100k: 0 °C ... +250 °C K Thermo.: -200 °C ... +1350 °C / J Thermo.: -210 °C ... +1200 °C / E Thermo.: -200 °C ... +1000 °C N Thermo.: -200 °C ... +1300 °C		
Controller type	FAT (Fast-Adaptive-Tuning)		
Limiter type	Limiter, monitor, delta T, switched off		
Functions	Gradient, Follow control, Heater check, password protection, heater or cooler control, timeout, °C or °F display		
Range around setpoint	Adjustable ±0.5 K ... ±20 K, default ±3 K (signaled by green LED)		
Display	LCD graphic display		
Operation	Via control panel and multilingual menu control		Optional: via WRZF310N control unit (distance up to 7 m)
Status LED	3-coloured LED for status indication of operation conditions		
Potential-free signal output	Single pole dual throw contact max. 250 V AC/220 V DC; max. 2 A Functions: range reached, error, limiter active, heater active, temperature alarm (adjustable) 2.5 mio. Cycles load free/10 ⁵ cycles 30 VDC or 250 VAC		
Ambient temperature	0 °C ... +50 °C		
Relative humidity	< 90 % (non-condensing)		
Protection standard	IP40		
Protection class	I		
Shutdown-relay	Breaks heating circuit on failure (single pole)		
Languages	English/German/Spanish/French		
Weight	1 Kg		
Housing	ABS with anti-slip pads and wipeable front cover, dimensions (198x157x100)		
Pollution degree	2		
Max.operation altitude	2000 m		

T-730 : Standard plug arrangement		T-760 : Standard plug arrangement		T-770 : Standard plug arrangement	
Connector drawing  <ol style="list-style-type: none"> 1. Heater 2. Signal switch 3. Mains switch 4. Mains connections 		Connector drawing  <ol style="list-style-type: none"> 1. Heater 2. Signal switch 3. Sensor A 4. Sensor B 5. Mains switch 6. Mains connection 		Connector drawing  <ol style="list-style-type: none"> 1. Heater 2. Sensor A 3. Sensor B 4. Mains switch 5. Mains connection 	
Heater connection: amphenol ecomate C016 6+PE socket		Heater connection: amphenol ecomate C016 6+PE socket		Heater connection: Schuko socket + 2 x 5*20mm Fuse holder	
Mains connection: amphenol ecomate C016 3+PE plug		Mains connection: amphenol ecomate C016 3+PE plug		Mains connection: cold appliance C14	
Pin	Function	Pin	Function	Pin	Function
1	Heater L	1	L(V AC)	1	L(V AC)
2	Heater N	2	N(V AC)	2	N(V AC)
3	(r)* Sensor B +	3	n.c.	3	n.c.
4	(W)* Sensor B -	PE	PE	PE	PE
5	(r)* Sensor A +				
6	(W)* Sensor A -				
PE	PE				
Signal output: terminal connector for wires 0.25 mm ² to 2.5 mm ²					
Note By default sensor A is for control and sensor B is for limiter/monitor					

HEATING TAPES AND CABLES READY TO INSTALL

winkler



FLEXIBLE AND VERSATILE HEATING TAPES AND CABLES FOR LABORATORY APPLICATIONS

Winkler heating tapes and cables are especially developed for advanced laboratory applications and the perfect complementary to meet your laboratory requirements!

These heating tapes and cords are ideal for a wide range of applications and are widely used in laboratory environments.

They can easily be wrapped around objects of different shapes and sizes to heat a variety of apparatuses, including glass and metal tubing or beakers.



200 °C HEATING TAPE WITHOUT EARTH BRAIDING



- 1- Four heating conductors
- 2- Silicone insulated
- 3- Factory terminated, vulcanized power supply cable termination

DESCRIPTION

In laboratories and experimental facilities where an easily employed system is desired to heat shapes and parts to high temperatures or where it is important to ensure short heating-up periods.

Heating tapes in series WBS00201 are very flexible as regards their construction and can be used up to 200 °C for high power requirements up to 100 W/m.

BENEFITS

- Very high and constant heating power output per meter
- High operating temperature
- Extremely flexible
- Factory terminated for quick and easy installation
- Cost effective

TECHNICAL DATA

SILICONE HEATING TAPE (WBS00201)

Maximum temperature	200 °C
Without earth braiding	protection class II
Nominal voltage	230VAC (+/- 10%)
Heating power output	50 / 75 / 100 W/m
Number of heating conductors	4
Heating tape insulation	moisture resistant silicone
Heating cable termination	vulcanized silicone
Power supply connection	1,5 m with termination ferrules
Dimensions W x H	13 x 5 mm
Min. bending radius	> 10 mm

Length (m)	Power (w)	Type code WBS00201	Part no.
0,9	50	WBS00201-230XX200-00900050	W0896-7525
1,1	80	WBS00201-230XX200-01100080	W7184-6092
1,1	100	WBS00201-230XX200-00900100	W8555-6628
1,8	100	WBS00201-230XX200-01800100	W5150-2531
1,8	200	WBS00201-230XX200-01800200	W2081-3827
2,2	160	WBS00201-230XX200-02200160	W7593-9205
2,7	130	WBS00201-230XX200-02700130	W1806-6315
2,7	270	WBS00201-230XX200-02700270	W1530-2164
3,1	230	WBS00201-230XX200-03100230	W5028-9151
4,0	200	WBS00201-230XX200-04000200	W6667-9188
4,0	410	WBS00201-230XX200-04000410	W5084-7166
4,6	350	WBS00201-230XX200-04600350	W446-6330
6,3	320	WBS00201-230XX200-06300320	W1185-1972
6,3	640	WBS00201-230XX200-06300640	W5474-9597
7,3	550	WBS00201-230XX200-07300550	W2321-4469
9,5	470	WBS00201-230XX200-09500470	W1775-1603
9,5	950	WBS00201-230XX200-09500950	W1832-7706
11,0	820	WBS00201-230XX200-11000820	W2406-1560
13,5	670	WBS00201-230XX200-13500670	W2690-3538
13,5	1,340	WBS00201-230XX200-13501340	W3540-3843
15,5	1,160	WBS00201-230XX200-15501160	W5620-4794
16,0	780	WBS00201-230XX200-16000780	W9675-3583
16,0	1,570	WBS00201-230XX200-16001570	W1295-7688
18,3	1,370	WBS00201-230XX200-18301370	W5293-6224

200 °C HEATING TAPE WITH EARTH BRAIDING



- 1- Four heating conductors
- 2- Silicone insulated
- 3- Factory terminated, vulcanized power supply cable termination
- 4- Tinned copper earth braiding

DESCRIPTION

In laboratories and experimental facilities where an easily employed system is desired to heat shapes and parts to high temperatures or where it is important to ensure short heating-up periods.

Heating tapes in series WBS00202 are very flexible as regards their construction and can be used up to 200 °C for high power requirements up to 100 W/m.

BENEFITS

- **Protection class I**
- Moisture resistant
- Very high and constant heating power output per meter
- High operating temperature
- Factory terminated for quick and easy installation

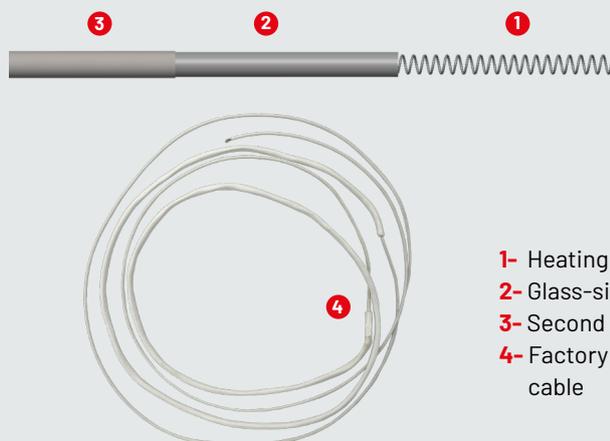
TECHNICAL DATA

SILICONE HEATING TAPE (WBS00202)

Maximum temperature	200 °C
With earth braiding	protection class I
Nominal voltage	230VAC (+/- 10%)
Heating power output	50 / 75 / 100 W/m
Number of heating conductors	4
Heating tape insulation	moisture resistant silicone
Heating cable termination	vulcanized silicone
Power supply connection	1,5 m with termination ferrules
Dimensions W x H	13 x 5 mm
Min. bending radius	> 15 mm

Length (m)	Power (w)	Type code WBS00202	Part no.
0,9	50	WBS00202-230XX200-00900050	W4585-4875
1,1	80	WBS00202-230XX200-01100080	W8975-2618
1,1	100	WBS00202-230XX200-00900100	W6467-3461
1,8	100	WBS00202-230XX200-01800100	W8392-8274
1,8	200	WBS00202-230XX200-01800200	W8416-2656
2,2	160	WBS00202-230XX200-02200160	W6003-7258
2,7	130	WBS00202-230XX200-02700130	W4689-2887
2,7	270	WBS00202-230XX200-02700270	W6937-2772
3,1	230	WBS00202-230XX200-03100230	W3302-1420
4,0	200	WBS00202-230XX200-04000200	W8202-3357
4,0	410	WBS00202-230XX200-04000410	W1684-2943
4,6	350	WBS00202-230XX200-04600350	W5353-6984
6,3	320	WBS00202-230XX200-06300320	W8046-7197
6,3	640	WBS00202-230XX200-06300640	W5995-7019
7,3	550	WBS00202-230XX200-07300550	W8416-1372
9,5	470	WBS00202-230XX200-09500470	W8963-7631
9,5	950	WBS00202-230XX200-09500950	W9080-5875
11,0	820	WBS00202-230XX200-11000820	W2688-2034
13,5	670	WBS00202-230XX200-13500670	W3853-9116
13,5	1,340	WBS00202-230XX200-13501340	W3665-5418
15,5	1,160	WBS00202-230XX200-15501160	W6225-3585
16,0	780	WBS00202-230XX200-16000780	W4044-9625
16,0	1,570	WBS00202-230XX200-16001570	W4479-8741
18,3	1,370	WBS00202-230XX200-18301370	W9436-7262

400 °C HEATING CABLE WITHOUT EARTH BRAIDING



- 1- Heating spiral
- 2- Glass-silk insulated
- 3- Second glass-silk insulated layer
- 4- Factory terminated power supply cable

DESCRIPTION

In laboratories and experimental facilities where an easily employed system is desired to heat shapes and parts to high temperatures or where it is important to ensure short heating-up periods.

Heating cables in series WKG00401 are very flexible as regards their construction and can be used up to 400 °C with high power requirements of 150 W/m.

BENEFITS

- Very high and constant heating power output per meter
- High operating temperature
- Extremely flexible
- Factory terminated for quick and easy installation
- Cost effective

TECHNICAL DATA

GLASS-SILK HEATING CABLE (WKG00401)

Maximum temperature	400 °C
Without earth braiding	protection class II
Nominal voltage	230VAC (+/- 10%)
Heating power output	150 W/m
Number of heating conductors	1
Heating tape insulation	2 layers glass-silk
Heating cable termination	ready for connection
Power supply connection	2x 1,0 m with termination ferrules
Dimensions W x H	6,0 mm diameter
Min. bending radius	> 6 mm

Length (m)	Power (w)	Type code WKG00401	Part no.
0,5	75	WKG00401-230XX400-00500075	W5697-6808
1,0	150	WKG00401-230XX400-01000150	W3941-7399
1,5	225	WKG00401-230XX400-01500225	W9819-6341
2,0	300	WKG00401-230XX400-02000300	W6300-3991
2,5	375	WKG00401-230XX400-02500375	W6557-6072
3,0	450	WKG00401-230XX400-03000450	W8371-6573
4,0	600	WKG00401-230XX400-04000600	W4424-5013
5,0	750	WKG00401-230XX400-05000750	W9877-7176
6,0	900	WKG00401-230XX400-06000900	W3518-1044

400 °C HEATING CABLE WITH EARTH BRAIDING



- 1- Heating spiral
- 2- Glass-silk insulated
- 3- Second glass-silk insulated layer
- 4- Factory terminated power supply cable
- 5- Tinned copper earth braiding

DESCRIPTION

In laboratories and experimental facilities where an easily employed system is desired to heat shapes and parts to high temperatures or where it is important to ensure short heating-up periods.

Heating cables in series WKG00402 are very flexible as regards their construction and can be used up to 400 °C with high power requirements of 150 W/m.

BENEFITS

- **Protection class I**
- Very high and constant heating power output per meter
- High operating temperature
- Extremely flexible
- Factory terminated for quick and easy installation

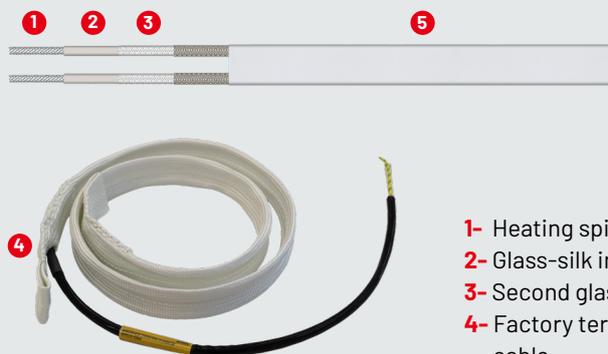
TECHNICAL DATA

GLASS-SILK HEATING CABLE (WKG00402)

Maximum temperature	400 °C
With earth braiding	protection class I
Nominal voltage	230VAC (+/- 10%)
Heating power output	150 W/m
Number of heating conductors	1
Heating tape insulation	2 layers glass-silk
Heating cable termination	ready for connection
Power supply connection	2 x 1,0 m with termination ferrules
Dimensions W x H	6,0 mm diameter
Min. bending radius	> 6 mm

Length (m)	Power (w)	Type code WKG00402	Part no.
0,5	75	WKG00402-230XX400-00500075	W7589-5278
1,0	150	WKG00402-230XX400-01000150	W7659-4606
1,5	225	WKG00402-230XX400-01500225	W7011-7299
2,0	300	WKG00402-230XX400-02000300	W5452-4851
2,5	375	WKG00402-230XX400-02500375	W4326-8581
3,0	450	WKG00402-230XX400-03000450	W1345-3320
4,0	600	WKG00402-230XX400-04000600	W2208-1369
5,0	750	WKG00402-230XX400-05000750	W7931-3849
6,0	900	WKG00402-230XX400-06000900	W1695-9169

400 °C HEATING TAPE WITH EARTH BRAIDING



- 1- Heating spiral
- 2- Glass-silk insulated
- 3- Second glass-silk insulated layer
- 4- Factory terminated power supply cable
- 5- Nickel earth braiding

DESCRIPTION

In laboratories and experimental facilities where an easily employed system is desired to heat shapes and parts to high temperatures or where it is important to ensure short heating-up periods.

Heating cables in series WBG00402 with nickel earth braiding are very flexible as regards their construction and can be used up to 400 °C with high power requirements of 250 W/m.

BENEFITS

- **Protection class I**
- Very high and constant heating power output per meter
- High operating temperature
- Extremely flexible
- Factory terminated for quick and easy installation

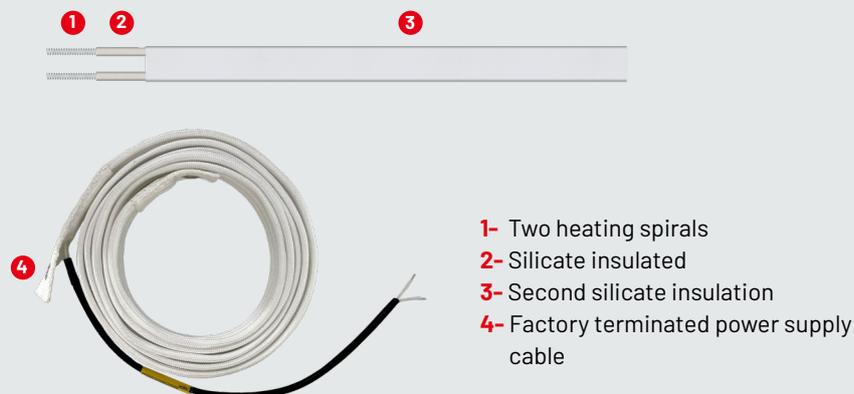
TECHNICAL DATA

GLASS-SILK HEATING TAPE (WBG00402)

Maximum temperature	400 °C
With earth braiding	protection class I
Nominal voltage	230VAC (+/- 10%)
Heating power output	250 W/m
Number of heating conductors	2
Heating tape insulation	2 layers glass-silk
Heating cable termination	ready for connection
Power supply connection	0,4 m with termination ferrules
Dimensions W x H	35 x 5 mm
Min. bending radius	> 15 mm

Length (m)	Power (w)	Type code WBG00402	Part no.
0,5	125	WBG00402-230XX400-00500125	W1256-4528
1,0	250	WBG00402-230XX400-01000250	W9519-9364
1,5	375	WBG00402-230XX400-01500375	W9672-6985
2,0	500	WBG00402-230XX400-02000500	W2694-4637
2,5	625	WBG00402-230XX400-02500625	W3892-7864
3,0	750	WBG00402-230XX400-03000750	W6186-8628
4,0	1,000	WBG00402-230XX400-0400 1000	W5530-2097
5,0	1,250	WBG00402-230XX400-05001250	W2350-9186

900 °C HEATING TAPE WITHOUT EARTH BRAIDING



DESCRIPTION

In laboratories and experimental facilities where an easily employed system is desired to heat shapes and parts to high temperatures or where it is important to ensure short heating-up periods.

Heating cables in series WBQ00901 with nickel earth braiding are very flexible as regards their construction and can be used up to 900 °C with high power requirements of 350 W/m.

BENEFITS

- **Protection class II**
- Extremely high and constant heating power output per meter
- High operating temperature
- Extremely flexible
- Factory terminated for quick and easy installation

Length (m)	Power (w)	Type code WBQ00901	Part no.
0,5	175	WBQ00901-230XX900-00500175	W7958-5857
1,0	350	WBQ00901-230XX900-01000350	W2365-4829
1,5	525	WBQ00901-230XX900-01500525	W9875-8644
2,0	700	WBQ00901-230XX900-02000700	W3474-5874
2,5	825	WBQ00901-230XX900-02500875	W4696-2375
3,0	1,050	WBQ00901-230XX900-03001050	W9577-5375

TECHNICAL DATA

GLASS-SILK HEATING TAPE (WBQ00901)

Maximum temperature	900 °C
Without earth braiding	protection class II
Nominal voltage	230VAC (+/- 10%)
Heating power output	350 W/m
Number of heating conductors	2
Heating tape insulation	2 layers silicate
Heating cable termination	ready for connection
Power supply connection	2 x 0,4 m with termination ferrules
Dimensions W x H	30 x 8 mm
Min. bending radius	> 10 mm

INDUSTRIAL HEATING MANTLES AND CONTROLLERS

winkler



HEATING MANTLE SOLUTIONS DESIGNED AND MANUFACTURED FOR INDUSTRIAL LABORATORY APPLICATIONS

Industrial heating mantles with temperature ranges of 300 °C and 450 °C have the same basic structure as the WHG2 glass fiber hand-crocheted laboratory heating mantles, but with the addition of an outer jacket made of PTFE glass fabric and a mechanically reinforced, stable cage with four eye bolts. The eye bolts serve to attach the heating jacket to mounting brackets. Additionally, it comes with factory installed electrical termination housing that includes 2.0 m. connection cable that has a 10-pin industrial plug for connection to our WRTI71 and WRTI72 industrial controllers.

With a range for flask volumes from 10,000 ml to 20,000 ml, the heating mantles have proven themselves in everyday industrial laboratory use for decades and impress with their reliability and durability.

INDUSTRIAL HEATING MANTLES WHI AND WHIS

winkler

DESCRIPTION

Both WHI and WHIS hand crocheted heating mantle series have the same basic design as the laboratory heating mantles. However, due to its size, it is mechanically reinforced by a stable support ring.

The four eyebolts are movably connected to the support ring and serve as mounting brackets.

The safety WHIS heating mantle with up to 5 heating zones and is regulated using the WRT172 control unit from Winkler.

This reduces tension in the glass bulb.

In case of inadmissibly large tensions, there is a risk that the glass bulb will break.

BENEFITS

- High quality hand crocheted heating mantles with chemical resistant PTFE coated outer jacket
- WHIS has up to 5 heating zones for different fill levels
- Extremely flexible
- Factory terminated for quick and easy installation
- Cost effective

DEVICE FEATURES

- 1- 4 eye bolts 4 x 12 mm
- 2- PTFE coated glass cloth fabric
- 3- Electrical termination housing
- 4- Factory terminated power supply cable with 10 pole plug
- 5- Factory terminated sensor cable with 10 pole plug
- 6- Type K thermoelement for each heating zone
(option: Type J thermoelements or PT100 sensors)

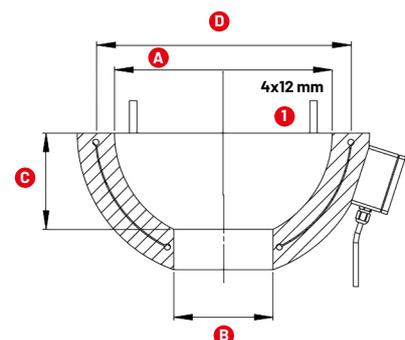
WHI AND WHIS DIMENSIONS ACCORDING TO FLASK OD

A Flask OD (mm)	B Bottom hole ID (mm)	C Height (mm)	D Eye bolt to eye bolt (mm)
280	60	150	315
350	60	190	398
365	60	200	405
490	60	265	555
510	60	275	575
610	60	325	670
750	60	395	825
760	60	400	830

STANDARD INDUSTRIAL HEATING MANTLE (WHI)



SAFETY INDUSTRIAL HEATING MANTLE WITH UP TO 5 HEATING ZONES (WHIS)



► must be specified if different from standard 60 mm

TECHNICAL DATA

	WHI	WHIS
Maximum temperature	450 °C	300 °C
Protection class	I	I
Nominal voltage	230/400VAC (+/- 10%)	230/400VAC (+/- 10%)
Heating spiral / cable	crocheted into heating mantle	crocheted into heating mantle
Heating mantle material	hand crocheted glass silk	hand crocheted glass silk
Outer jacket material	PTFE coated glass fiber fabric	PTFE coated glass fiber fabric
Number of heating zones	3/4/5	3/4/5
Power supply connection	2,0 m industrial with 10 pole plug	2,0 m industrial with 10 pole plug
Heating zone sensor cable		2,0 m industrial with 10 pole plug
Heating zone temperature sensor	Type K (option: Type J or PT100)	Type K (option: Type J or PT100)

STANDARD INDUSTRIAL HEATING MANTLE (WHI)

Volume (l)	Flask OD (mm)	Power (W ±10%)	Heating zones	Type code	Part no.
10	280	1,600	3	WHI3X280-230XK450-0010XXXX	upon request
20	350	2,400	3	WHI3X350-230XK450-0020XXXX	upon request
20	365	2,400	3	WHI3X360-230XK450-0020XXXX	upon request
50	490	4,500	3	WHI3X490-230XK450-0050XXXX	upon request
50	510	4,500	3	WHI3X510-230XK450-0050XXXX	upon request
100	610	6,000	4	WHI3X610-230XK450-0100XXXX	upon request
200	750	9,000	5	WHI3X750-230XK450-0200XXXX	upon request
200	760	9,000	5	WHI3X760-230XK450-0200XXXX	upon request

SAFETY INDUSTRIAL HEATING MANTLE WITH UP TO 5 HEATING ZONES (WHIS)

Volume (l)	Flask OD (mm)	Power (W ±10%)	Heating zones	Type code	Part no.
10	280	1,600	3	WHI3S280-230DK300-0010XXXX	upon request
20	350	2,400	3	WHI3S350-230DK300-0020XXXX	upon request
20	365	2,400	3	WHI3S360-230DK300-0020XXXX	upon request
50	490	4,500	3	WHI3S490-230DK300-0020XXXX	upon request
50	510	4,500	3	WHI3S510-230VK300-0050XXXX	upon request
100	610	6,000	4	WHI3S610-230XK450-0100XXXX	upon request
200	750	9,000	5	WHI3S750-230XK450-0200XXXX	upon request
200	760	9,000	5	WHI3S760-230XK450-0200XXXX	upon request

INDUSTRIAL HEATING MANTLE CONTROLLERS WRTI71 AND WRTI72

winkler

DESCRIPTION

WRTI71 industrial heating mantle benchtop controllers are manufactured using a plastic-coated metal housing and aluminum front/back panels made of aluminum. In both series, the power output of the heating zones can be set individually with the individual power controller.

The WHIS safety heating mantles are operated with the WRTI72 series controller, which has additional functions. With the digital temperature controllers, the temperatures of the medium can also be set individually.

BENEFITS

- Industrial grade controller saves time for quick and easy installation to WHI and WHIS
- Each heating zone power output are 0-100% infinitely variable for adjustment according to the flask fill volume
- Signal lamps to visually indicate power supply to heating zone
- PID control within 0,5% for more exact medium temperatures (WRTI72)

DEVICE FEATURES

- 1- Power supply switch
- 2- Digital temperature limiting controller
WRTI71: undermost heating zone
WRTI72: medium temperature
- 3- Three to five infinitely variable (0-100%) power selectors
- 4- Heating zone operation status indication lamp
- 5- Industrial 10 pole outgoing power supply socket
- 6- Thermoelement lemo socket size 1; 4 pole
- 7- 2,0 m power supply cable with 3 phases 16 A CEE plug (3 x 230 VAC/50 Hz)

WRTI72 ADDITIONAL FEATURES

- 8- Three to five heating zone temperature controllers
- 9- Industrial 10 pole socket for selected amount and type of heating mantle

STANDARD INDUSTRIAL HEATING MANTLE CONTROLLER WITH 3 TO 5 POWER SELECTORS (WRTI71)



SAFETY INDUSTRIAL HEATING MANTLE CONTROLLER WITH 3 TO 5 POWER SELECTORS AND 3 TO 5 HEATING ZONE TEMPERATURE DISPLAYS (WRTI72)



TECHNICAL DATA

Nominal voltage	230/400 VAC (50/60 Hz)
Nominal power	2 kW/heating zone
Nominal current	10 A/heating ohmicload zone 16 A/ohmicload each network phase
Protection class	I
Ingress protection	IP20
Power supply plug type	3 phases 16 A CEE plug with 5 poles
Power supply connection cable	2 m H05RR-F5G2,5
Ambient temperature range	0-50 °C
Thermoelement socket	6-pin input socket for NO contact, min. switching capacity: 24 VDC, 0.5 A
Thermoelement signal lamp	red
Digital temperature controller	0-500 °C
Control accuracy	PID control within 0.5%
Sensor break detection	included
Display of switching status	digital controller: green LED „OUT1“ set temperature > actual temperature = heating is ON power selector: signal lamp indicates power supply to the heating zone
Sensor connection	WRTI71: Lemo socket for thermoelement WRTI72: Industrial 10 pole socket and additional Lemo socket for thermoelement
Main switch	Illuminated 2-pole switch
Sensor type	Type K (option Type J or PT100)
Housing	powder coated steel; stainless steel front and back
Dimensions W x H x D	400 x 140 x 250 mm

STANDARD INDUSTRIAL HEATING MANTLE CONTROLLER WITH 3 TO 5 POWER SELECTORS (WRTI71)

Number of heating zones	Type code	Part no.
3	WRTI7103-2W4XK000	upon request
4	WRTI7104-2W4XK000	upon request
5	WRTI7105-2W4XK000	upon request

SAFETY INDUSTRIAL HEATING MANTLE CONTROLLER WITH 3 TO 5 POWER SELECTORS AND 3 TO 5 HEATING ZONE TEMPERATURE DISPLAYS (WRTI72)

Number of heating zones	Type code	Part no.
3	WRTI7203-2W4DK000	upon request
4	WRTI7204-2W4VK000	upon request
5	WRTI7205-2W4FK000	upon request



**ANY QUESTIONS?
PLEASE FEEL FREE
TO CONTACT US!**

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