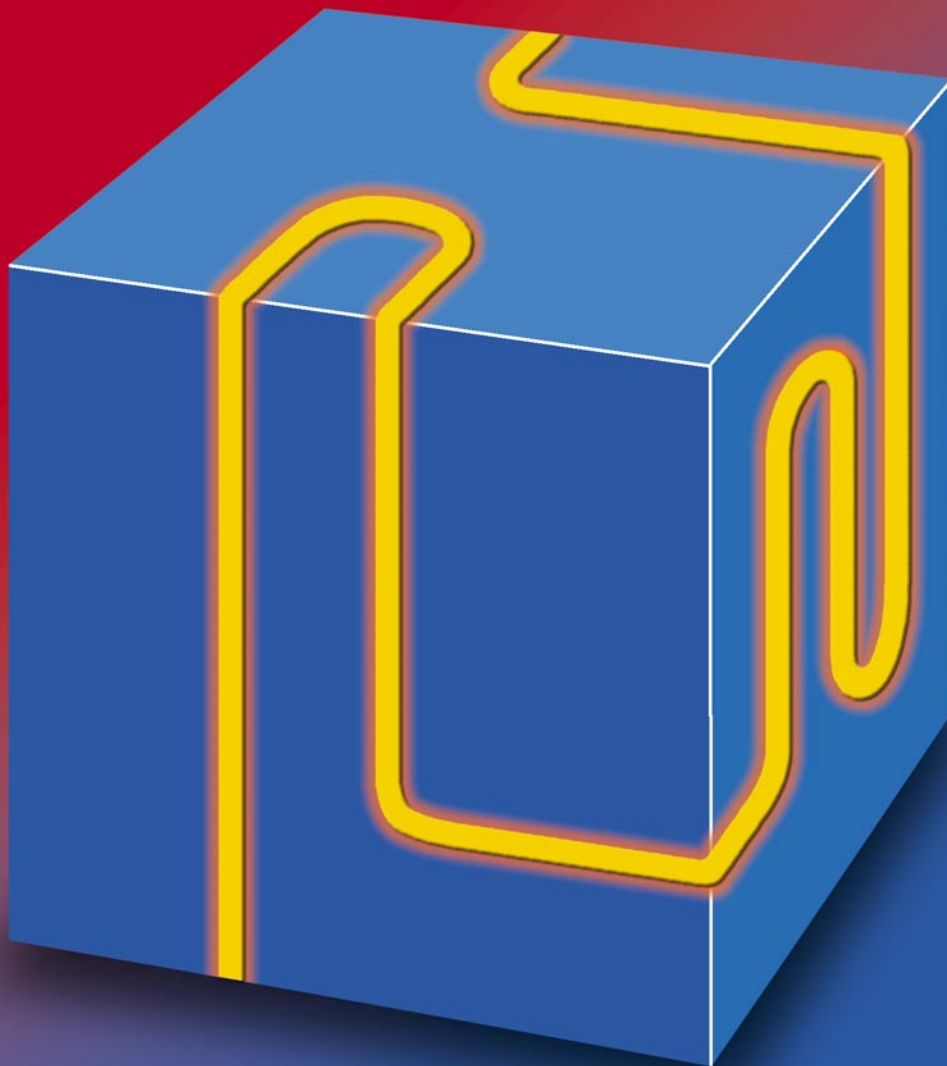
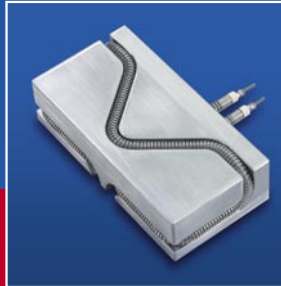
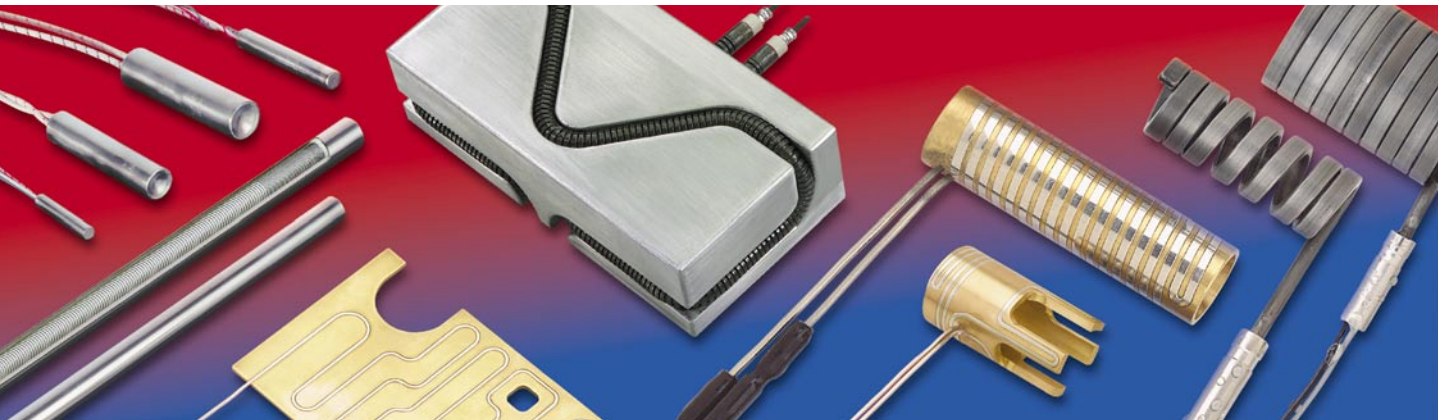


hotflex[®]

Flexible tubular heater

Three dimensional
heating!





Since the foundation in 1973 hotset has developed and produced heating elements and since then they have been on an expansion course. Oriented by customer demands hotset proves a special service-request with the solution of heating tasks.

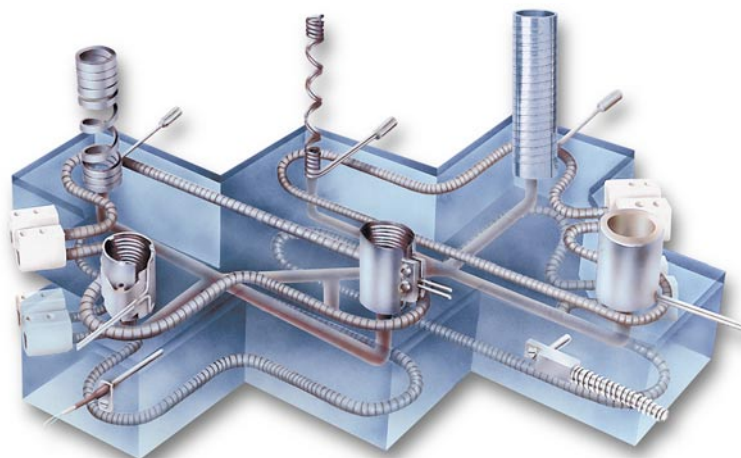
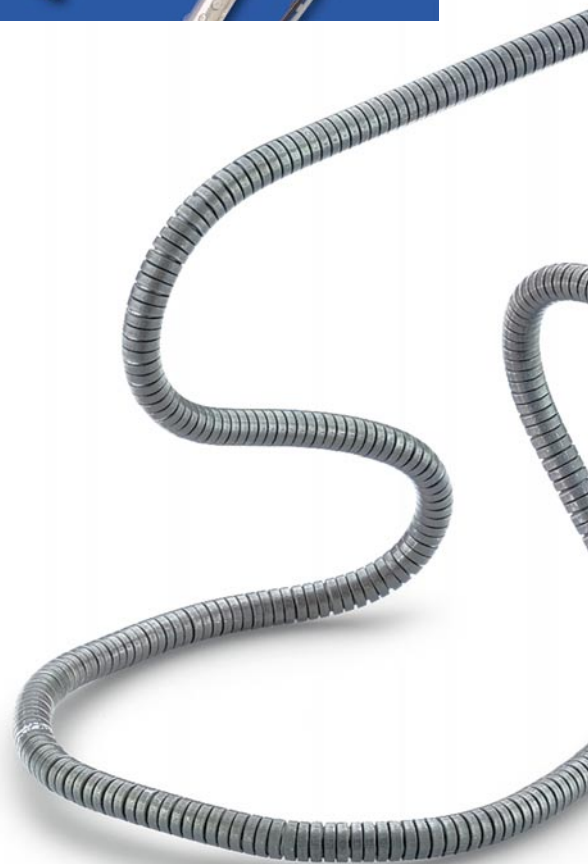
With production plants in Lüdenscheid (production of cartridge heaters and coil heaters) and on Malta (production of cartridge heaters) hotset offers high production knowledge and innovation force for the future.

Starting with a large stock range via simple special heating elements up to customer-specific developments: no matter whether cartridge heaters, coil heaters or innovative products such as hotflex[®] or hotlight[®] – with a wide product range as well as high-quality customer-service hotset offers the right solution – also customer-specific.

Thus, hotset can prove its high level of innovations and can offer heating elements which are of high quality, fully developed and are suitable for different applications. In Germany and worldwide more than 30 countries is hotset “always one step ahead”.

Motivated and qualified employees take care that hotset stands for innovation, competence and reliability also in future.

You will see and experience it – promised!



Three dimensional heating!

Flexibility is (nearly) everything. In each case, flexibility offers a lot if you want to bend a tubular heater in all directions.

Design and handling are considerably simplified e. g. when heating hot chambers of hot runner systems or heating outlines and the effort is reduced to a minimum:

The smaller dimensioning of tools, short down times, low maintenance sensitivity, high energy savings and easy stockkeeping resp. replacements are the decisive advantages of the three-dimensional "hotflex"[®]-heating. In addition to this, the "hotflex"[®]-user is more flexible regarding production and tool modifications.

Considering a minimum bending radius the "hotflex"[®] can be manually bent and easily pressed or inserted into a milled groove.

Due to the special surface it is absolutely not necessary to additionally cast the "hotflex"[®].

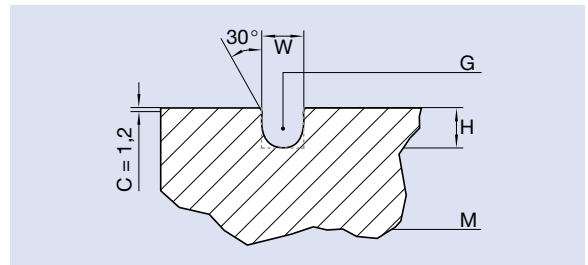
A study of the Technical College "Märkische Fachhochschule Iserlohn" with the title "Temperature technology with hotflex"[®] confirms the outstanding product advantages: Temperature differences have been reduced with the



"hotflex"[®] to 1.3 °C (towards 12 °C with a common heating) in a tested duroplast forming.

Furthermore the study of Prof. Dr.-Ing. P. Thienel proves a "consistent temperature level, (...) higher and faster cross-linking of the mass" as well as a "reduction of the cycle time of 20 %" when transmitting on a tool for Poly-V pulley.

As per the "hotset"-slogan "always one step ahead" hotset immerses with the "hotflex"[®] in the heating of third dimension as first heating element manufacturer.

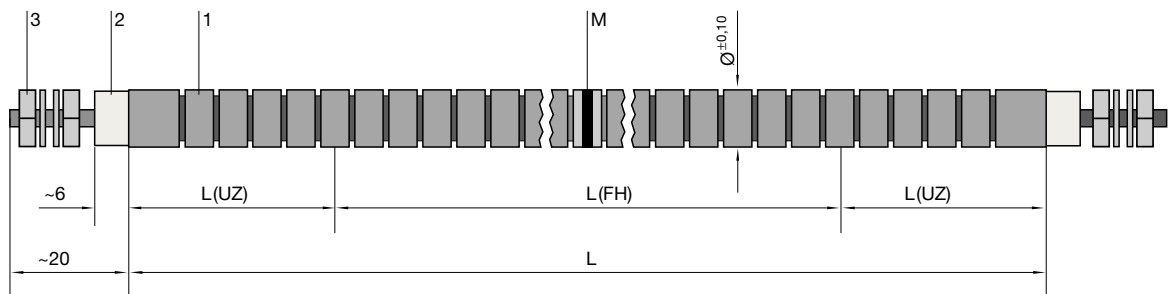


The hotflex can directly be inserted, pressed or e. g. put by using a plastic hammer into a groove of a tool.

M = Manifold

C = Camfer

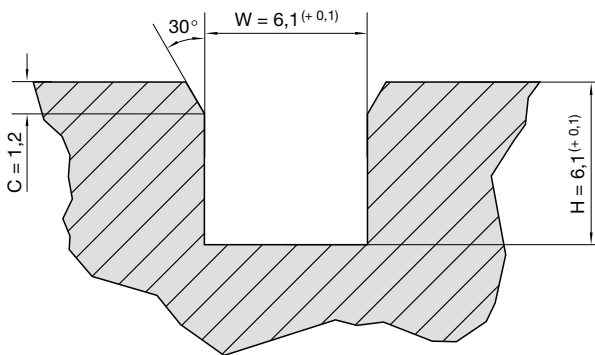
G = Groove: Width (W) = Height (H) = Diameter (hotflex[®]) + 0,10 mm = slot profile hotflex[®]/Q



- 1 = Outer sheath stainless steel (mat-no. 1.4541)
- 2 = Ceramic insulator
- 3 = Threaded pins M 2,5 with set of nuts and washers of stainless steel

- L = Total length
- L (FH) = Flexible heated length
- L (UZ) = Unheated zone, not bendable (min. 30 mm)
- M = Mark of the mid

hotflex[®] / Q 6 x 6

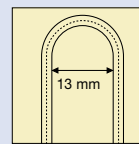


measures in [mm]

Groove for an optimal pressing of the hotflex[®] / Q 6 x 6

Technical data

- Profile: 6 x 6 mm
- Sheath material: stainless steel
- Sheath temperature of heating element: max. 700 °C
- Connection voltage: max. 250 V, standard: 230 V
- Wattage tolerance: ± 10%
- High voltage proof (cold): 1.000 V – AC in straight condition
- Insulation resistance (cold): ≥ 5 MΩ at 500 V – DC
- Leakage current (cold): ≤ 0,5 mA at 253 V – AC
- Max. total length straight: 1.500 mm
- Length tolerance straight: ± 1,5%
- Extension factors
(remark: when determining the total length, please consider the length tolerance of ± 1.5%)
Groove length (according to radius R) x
Extension factor = Length L (hotflex[®])
hotflex[®] Ø 6,5:
at radius R 6,5 mm = 0,97
at radius R 10,0 mm = 0,97
at radius R 12,5 mm = 0,97
at radius R 15,0 mm = 0,97
at radius R >15,0 mm = 0,98
- Sheath surface load: max. 10 W/cm² according to application (depending on heated length)
- Minimum bending radius: R = 6,5 mm (internal)

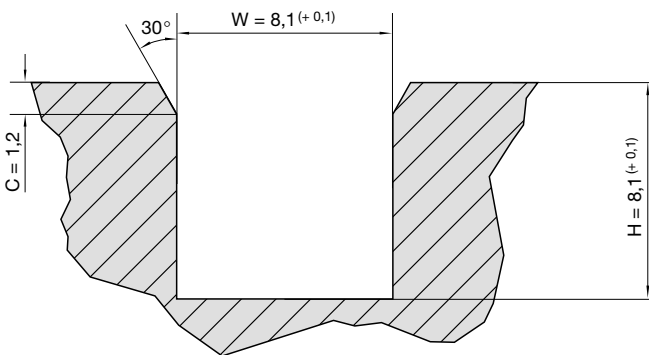
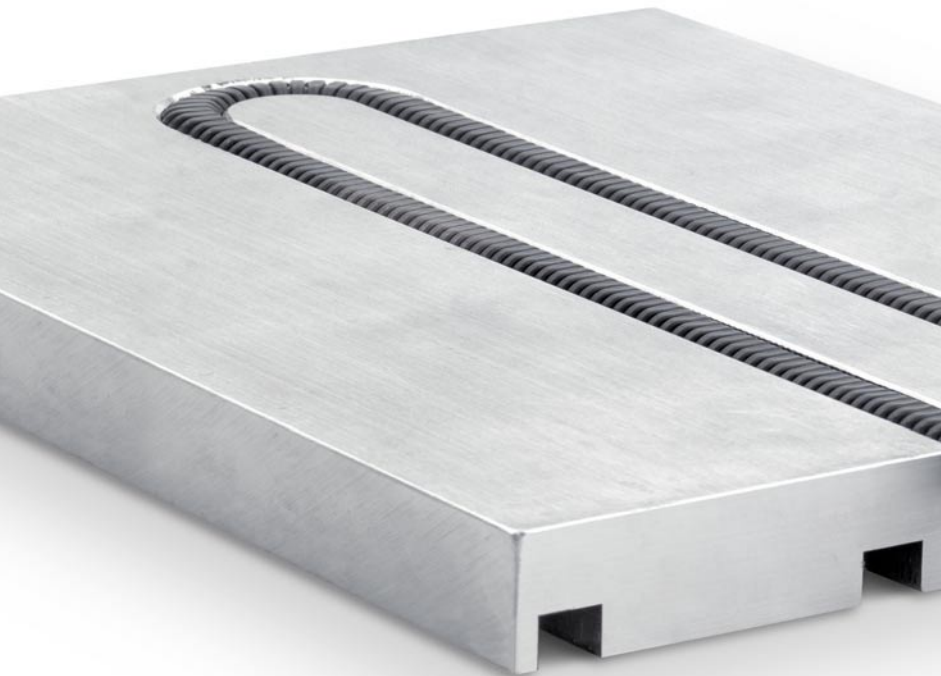


- Unheated zones: min. 30 mm / 30 mm
- Not bendable zones: min. 30 mm / 30 mm
- Connection options: M 2,5 with set of nuts and washers out of stainless steel, see page 6

Other dimensions and product varieties on request.

We reserve the right to change technical details. Please consider the hints in our special brochure "Calculation basics".

hotflex[®] / Q 8 x 8

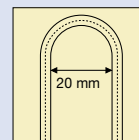


measures in [mm]

Groove for an optimal pressing of the hotflex[®] / Q 8 x 8

Technical data

- Profile: 8 x 8 mm,
- Sheath material: stainless steel
- Sheath temperature of heating element: max. 700 °C
- Connection voltage: max. 250 V, standard: 230 V
- Wattage tolerance: ± 10%
- High voltage proof (cold): 1.000 V – AC in straight condition
- Insulation resistance (cold): ≥ 5 MΩ at 500 V – DC
- Leakage current (cold): ≤ 0,5 mA at 253 V – AC
- Max. total length straight: 2.600 mm
- Length tolerance straight: ± 1,5%
- Extension factors
(remark: when determining the total length, please consider the length tolerance of ± 1.5%)
Groove length (according to radius R) x
Extension factor = length L (hotflex[®])
hotflex[®] / Q 8 x 8:
at radius R 10,0 mm = 0,95
at radius R 12,5 mm = 0,95
at radius R 15,0 mm = 0,96
at radius R >15,0 mm = 0,97
- Sheath surface load: max. 15 W/cm² according to application (depending on heated length)
- Minimum bending radius: R = 10 mm (internal)

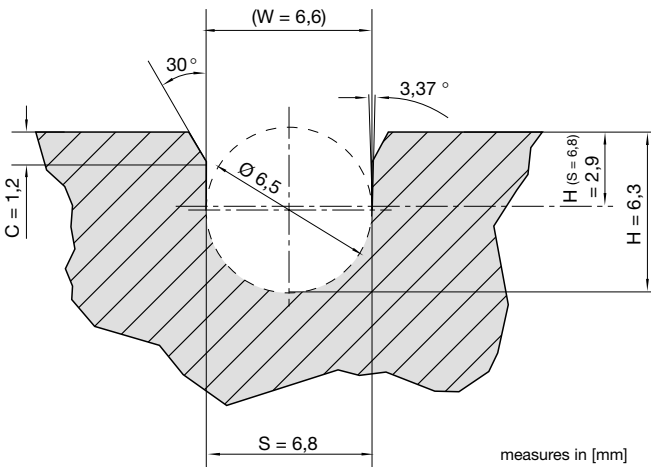


- Unheated zones: min. 30 mm / 30 mm
- Not bendable zones: min. 30 mm / 30 mm
- Connection options: M 2,5 with set of nuts and washers out of stainless steel, see page 6

Other dimensions and product varieties on request.

We reserve the right to change technical details. Please consider the hints in our special brochure "Calculation basics".

hotflex[®] Ø 6,5



Groove for an optimal pressing of the hotflex[®] Ø 6,5 – alternative see page 3

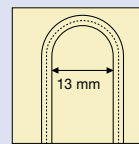
Technical data

- Diameter: 6,5 ± 0,1 mm
- Sheath material: stainless steel
- Sheath temperature of heating element: max. 700 °C
- Connection voltage: max. 250 V, standard: 230 V
- Wattage tolerance: ± 10%
- High voltage proof (cold): 1.000 V – AC in straight condition
- Insulation resistance (cold): ≥ 5 MΩ at 500 V – DC
- Leakage current (cold): ≤ 0,5 mA at 253 V – AC
- Max. total length straight: 1.500 mm
- Length tolerance straight: ± 1,5%
- Extension factors
(remark: when determining the total length, please consider the length tolerance of ± 1.5%)
Groove length (according to radius R) x
Extension factor = Length L (hotflex[®])

hotflex[®] Ø 6,5:

at radius R	6,5 mm	= 0,98
at radius R	10,0 mm	= 0,98
at radius R	12,5 mm	= 0,97
at radius R	15,0 mm	= 0,97
at radius R	>15,0 mm	= 0,98

- Sheath surface load: max. 10 W/cm² according to application (depending on heated length)
- Minimum bending radius: R = 6,5 mm (internal)

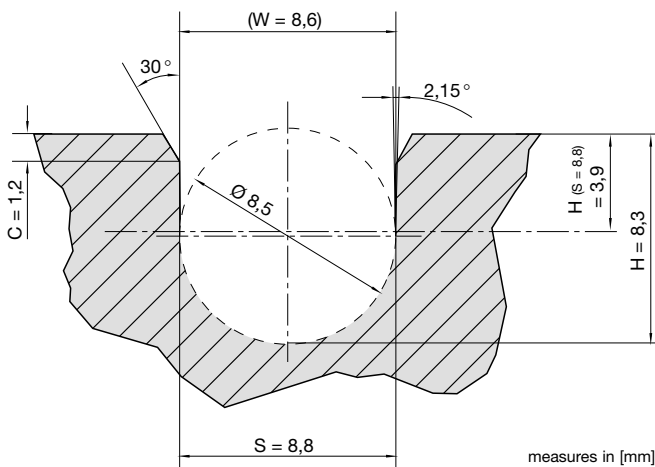
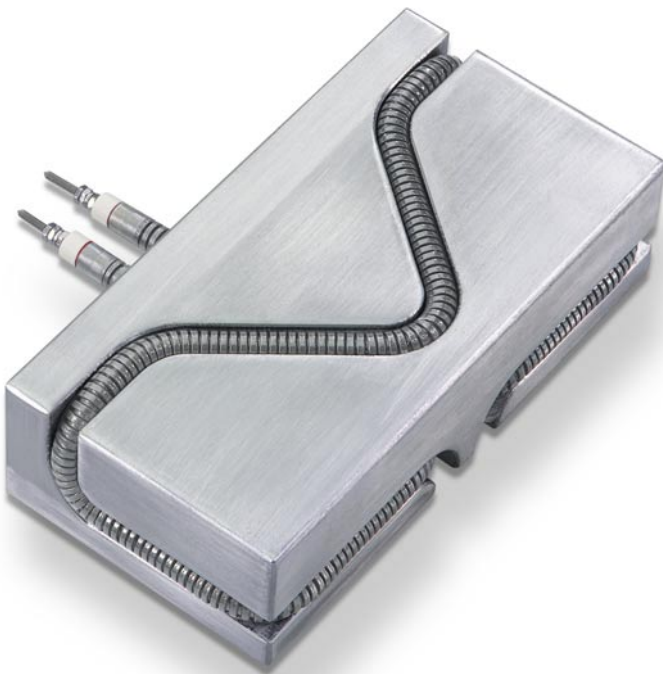


- Unheated zones: min. 30 mm / 30 mm
- Not bendable zones: min. 30 mm / 30 mm
- Connection options: M 2,5 with set of nuts and washers out of stainless steel, see page 6

Other dimensions and product varieties on request.

We reserve the right to change technical details. Please consider the hints in our special brochure "Calculation basics".

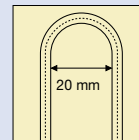
hotflex[®] Ø 8,5



Groove for an optimal pressing of the hotflex[®] Ø 8,5 – alternative see page 3

Technical data

- Diameter: 8,5 ± 0,1 mm, 8,0 ± 0,1 mm resp. 8,2 ± 0,1 mm on option
- Sheath material: stainless steel
- Sheath temperature of heating element: max. 700 [°C]
- Connection voltage: max. 250 [V], standard: 230 [V]
- Wattage tolerance: ± 10%
- High voltage proof (cold): 1.000 V – AC in straight condition
- Insulation resistance (cold): ≥ 5 MΩ bei 500 V – DC
- Leakage current (cold): ≤ 0,5 mA bei 253 V – AC
- max. total length straight: 2.600 mm
- Length tolerance straight: ± 1,5%
- Extension factors
(remark: when determining the total length, please consider the length tolerance of ± 1.5%)
Groove length (according to radius R) x Extension factor = length L (hotflex[®])
hotflex[®] Ø 8,0 + 8,2:
at radius R 10,0 mm = 0,92
at radius R 12,5 mm = 0,93
at radius R 15,0 mm = 0,94
at radius R >15,0 mm = 0,96
hotflex[®] Ø 8,5:
at radius R 10,0 mm = 0,94
at radius R 12,5 mm = 0,95
at radius R 15,0 mm = 0,95
at radius R >15,0 mm = 0,96
- Sheath surface load: max. 15 W/cm² according to application (depending on heated length)
- Minimum bending radius: R = 10 [mm] (internal)



- Unheated zones: min. 30 mm / 30 mm
- Not bendable zones: min. 30 mm / 30 mm
- Connection options: M 2,5 with set of nuts and washers out of stainless steel, see page 6

Other dimensions and product varieties on request.

We reserve the right to change technical details. Please consider the hints in our special brochure "Calculation basics".

hotflex[®] stock dimensions



Stock dimensions hotflex[®] Ø 6,5

stock-I.D.	Length (L) [mm] (± 1,5 %)	Power [W] (± 10 %) at 230 V
6500300	300	350
6500350	350	400
6500400	400	500
6500450	450	600
6500500	500	650
6500550	550	700
6500600	600	800
6500650	650	850
6500700	700	900
6500750	750	1000
6500800	800	1100
6500850	850	1200
6500900	900	1300
6500950	950	1350
6501000	1000	1400
6501050	1050	1450
6501100	1100	1500
6501150	1150	1550
6501200	1200	1600
6501250	1250	1650
6501300	1300	1700
6501350	1350	1800
6501400	1400	1900
6501450	1450	2000
6501500	1500	2100

Attention:

- Connection options on stock: threaded thins M 2,5 with set of nuts and washers of stainless steel
- You can find technical data in the product discription on page 4 and 5.

Other dimensions and product varieties on request.

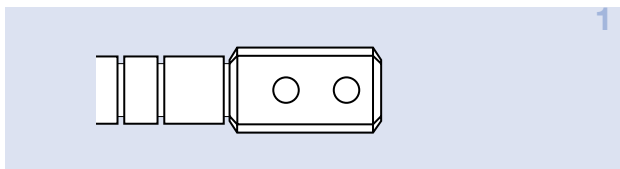
We reserve the right to change technical details.

Please consider the hints in our special brochure "Calculation basics".

Stock dimensions hotflex[®] Ø 8,5

stock-I.D.	Length (L) [mm] (± 1,5 %)	Power [W] (± 10 %) at 230 V	stock-I.D.	Length (L) [mm] (± 1,5 %)	Power [W] (± 10 %) at 230 V
6100300	300	650			
6100350	350	750			
6100400	400	900			
6100450	450	1050			
6100500	500	1150	6110500	500	700
6100550	550	1300	6110550	550	780
6100600	600	1450	6110600	600	860
6100650	650	1600	6110650	650	950
6100700	700	1750	6110700	700	1000
6100750	750	1900	6110750	750	1100
6100800	800	2050	6110800	800	1190
6100850	850	2200	6110850	850	1250
6100900	900	2350	6110900	900	1350
6100950	950	2500	6110950	950	1430
6101000	1000	2650	6111000	1000	1500
6101050	1050	2800	6111050	1050	1590
6101100	1100	2930	6111100	1100	1650
6101150	1150	3060	6111150	1150	1750
6101200	1200	3190	6111200	1200	1830
6101250	1250	3320	6111250	1250	1900
6101300	1300	3450	6111300	1300	1990
6101350	1350	3580	6111350	1350	2070
6101400	1400	3710	6111400	1400	2150
6101450	1450	3840	6111450	1450	2230
6101500	1500	3970	6111500	1500	2300

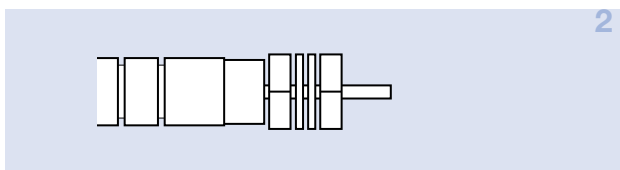
Connection options hotflex[®]



1

Ceramic terminal connector "plug'n heat"

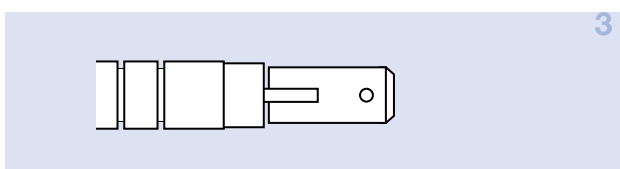
- B 14 x H 21 x T 25 mm
- This ceramic terminal connector is ready for installation
- no additional insulation necessary
- approx. 14 x 21 x 25 mm
- heat resistant up to 230 °C in continuous operation (max. up to 280 °C)



2

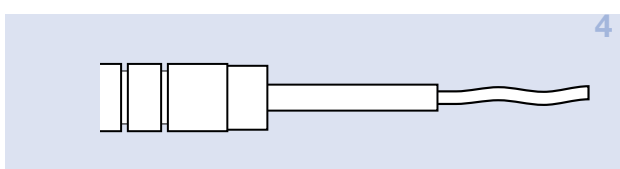
Threaded pins

- M 2,5 with set of nuts and washers of stainless steel
- M 4 with set of nuts and washers of stainless steel *



3

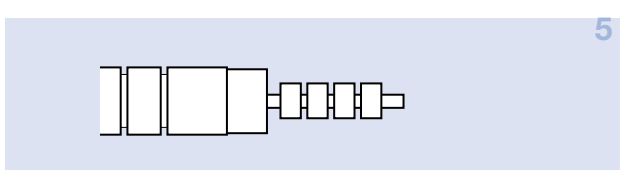
Flat plug (W = 6,3 mm)



4

Continuous leads

- Glass silk insulated Ni-leads, multiwire (also with cable socket for M 2,5 and M 4)
- PTFE insulated Ni-leads, multiwire
- High temperature mineral fibre insulated Ni-leads, multiwire
- Tube section casted with ceramic kit



5

plain Ni-leads

- with ceramic beads insulation



We are looking forward to cooperating with you!

hotset develops and realises
heating solutions for

- Hot runner technology
- Packaging technology
- Junction Technology
- Rubber-, India rubber (caoutchouc), and silicon processing
- Welding mirror manufacturing
- Extrusion technology

As well as all other industrial applications –
fast, individually and competent!



hotset – in Germany and more than 30 countries worldwide.
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