TEKNISK ELVARME

VARMESLANGER

ANALYSEMÅLING

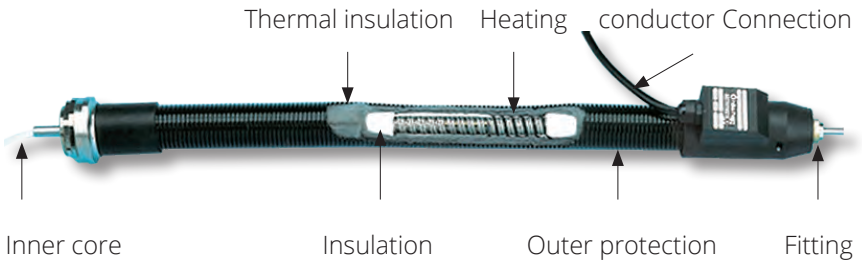
NEWTRONIC

TYPE CODES

ANALYTICAL HEATING HOSES

HEATING HOSE	SENSOR	OUTER PROTECTION	FITTING	TEMPERATURE
3 = H 300	0 = Fe-CuNi 1 = Fe-CuNi + limiter 2 = PT 100 3 = PT 100 + limiter 4 = NiCr-Ni 5 = NiCr-Ni + limiter 6 = limiter 7 = without sensor 8 = HTI controller 9 = PT 100 + 2nd PT 100	0 = polyamide standard braiding 1 = stainless steel braiding 2 = galv. steel braiding 3 = PA corrugated hose 4 = metal ring corr. hose 5 = textile glass braiding 6 = PU corrugated hose 7 = silicone outer skin 8 = rubber hose	0 = without 6 = RSL/V4 A A = H 300 A B = H 300 B C = H 300 C	100 °C 170 °C 200 °C 250 °C 350 °C

H [ ] [ ] [ ] [ ] – Nominal length in dm – DN [ ]



RATED POWER WATT/METRE AT 230 V ~ FOR THE H 300 SERIES ANALYTICAL HEATING HOSES

Type	DN mm	4	6	8	10	12
H 300	200°C	100	120	140	160	200
H 300 A+C	200°C	120	140	160	200	260
H 300	350°C	200	220	250	280	310
H 300 A	350°C	220	250	280	310	400

TOLERANCES

Rated power / rated voltage	+ 5% / -10%
Diameter	± 10%
Length	± 2%
Test voltage for heating hoses (230 V measurement voltage)	2000 Volt high voltage test heating conductor – PE conductor

INNER CORE - ANALYTICAL

INNER CORE (OR PIPE) FOR THE H 300 ANALYTICAL HEATING HOSE SERIES

PFA OR PTFE
CORE WITH 1 MM WALL THICKNESS

250 °C

DN mm	4	6	8	10	12
Minimum bend radius / mm***	200	250	300	350	400
Pressure / bar**	12	9	7	6	5

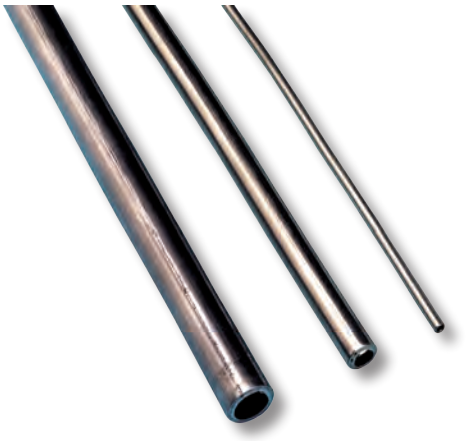
Vacuum 8 mbar

350°C

VA STAINLESS STEEL
INNER CORE WITH 1 MM WALL THICKNESS (1.4571)

DN mm	4	6	8	10	12
Minimum bend radius / mm*	300	350	400	500	600
Pressure / bar*	60	60	50	50	40

Vacuum 50 mbar



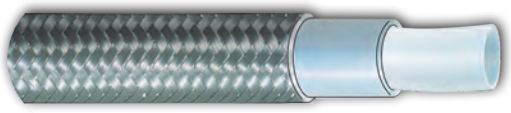
250°C

PFA OR PTFE
CORE TYPE TA WITH BRAIDING LAYER OF SOFT STEEL. OPTIONAL WITH REPLACEABLE CORE

DN mm	2	4	6	8	10	12
Minimum bend radius / mm***	40	50	75	100	120	130
Pressure / bar* with industial fitting	20	20	20	15	15	15
Pressure / bar** without fitting	20	12	9	7	6	5

Vacuum 8 mbar. The braiding layer reduces the risk of the core kinking

Rigid core TA



Replaceable core TA

The inner cores are partly also available in inch dimensions.

PTFE = polytetrafluoroethylene

PFA = perfluoroalkoxy

* temperature correction factor 100°C x 0.9; 200°C x 0.8; 250°C x 0.7; 350°C x 0.6

** temperature correction factor 100°C x 0,68; 150°C x 0,53; 200°C x 0,39; 250°C x 0,28

*** Corrugated stainless steel core hoses can be used universally without limitation in the range -190°C to max. +550°C for liquids and gaseous media in all industries, and are completely diffusion resistant; not suitable for chlorides, bromides and other halogens.

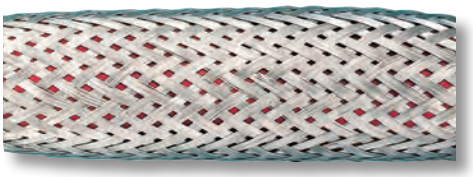
All basic hoses are subjected to a pressure test after installing the fit-ting if technically possible (double the operating pressure). A heater element with a close pitch is mounted or a heating tape (H300B type) depending on the model. Heater elements can be encapsulated with polyolefin, silicone, fluor plastic (FEP, PFA, PTFE...), glass fibre and mi-neral insulation, and may or may not include earth-wire sheathing.

OUTSIDE PROTECTIVE HOSES - ANALYTICAL

PA STANDARD PROTECTIVE BRAIDING

Material	PA 6, polyamide
Temperature stability	+150°C *

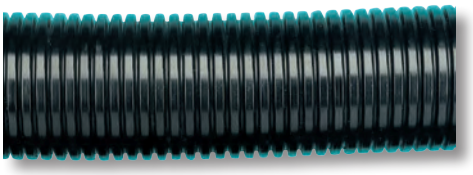
Very flexible, available in various colours



METAL PROTECTIVE BRAIDING

Material	steel, galvanised or stainless steel
Temperature stability	+300°C to +500°C *

Very flexible, very good protection against abrasion



PA CORRUGATED HOSE/ PUR CORRUGATED HOSE

Material polyamide	PA6	optional PA12	PUR
Temperature stability	+120°C *	+100°C	+90°C

Very flexible, non-crush, flame-retardant, non-halogen

PUR CORRUGATED HOSE WITH STEEL COIL

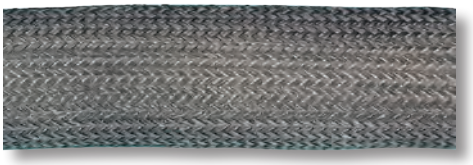
Material	PU (polyurethane)
Temperature stability	+90°C *

Very flexible, non-crush, flame-retardant, non-halogen

METAL RING CORRUGATED HOSE

Material	steel, galvanised
Temperature stability	+250°C *

Very flexible, non-crush, very resistant against sharp objects and swarf



TEXTILE GLASS BRAIDING

Material	textile glass - black
Temperature stability	+400°C *

Very flexible, very good protection against abrasion, protection against falling glowing swarf etc.

SILICONE OUTER SKIN

Material	silicone smooth - black/white
Temperature stability	+200°C *

Very flexible, smooth surface, easy-to-clean, moisture-proof

* The temperature stability relates to brief contact with a correspondingly hot environment. In case of prolonged use above the operating temperature of the external protective hose, the structure of the heating hose must also be changed accordingly.

Also partly available antistatic

END CONNECTIONS - ANALYTICAL

FOR H300 B SERIES HEATING HOSES

End cap made of silicone
Connection cable 3 m long
H 300 B B-S

Ends caps made of polyamide with terminals in the hard cap
Available as a self-assembly set
H 300 B-K

Terminal with KV screw connector on the end.
H 300 B-KVE

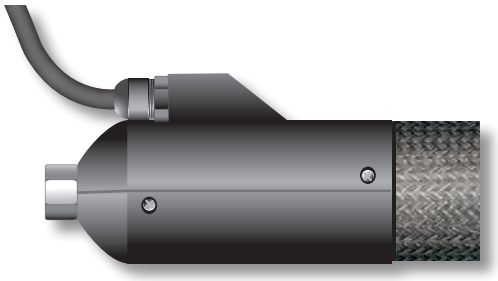
Terminal with sliding KV screw connector.
H 300 B-KV

All end connections technologies can be combined with each other.

H 300 B
On a cable drum

CONNECTION CABLE OUTLET - ANALYTICAL

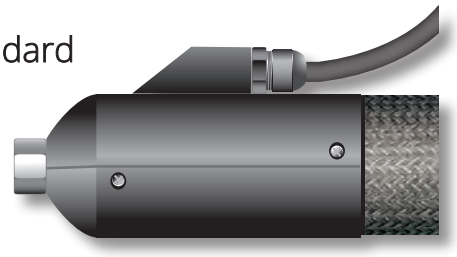
HARD CAP –
MADE OF POLYAMIDE
PA6 GLASS-FIBRE
REINFORCED



forward

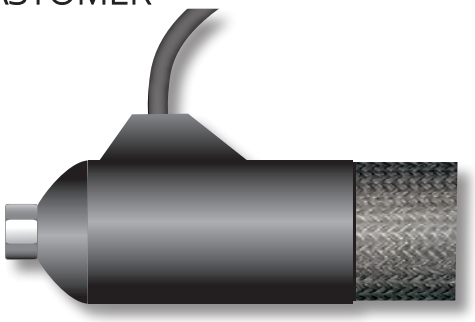
hose sided or frontal

Standard

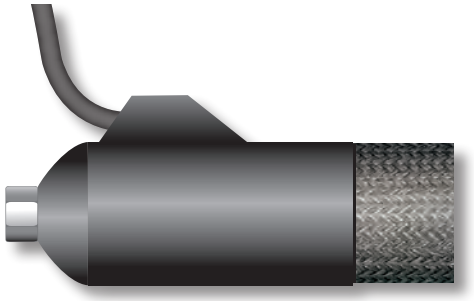


backward

SOFT CAP –
MADE OF SILICONE OR
ELASTOMER



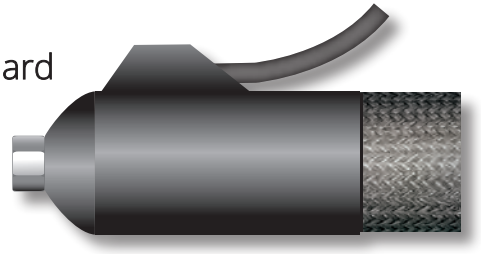
bent up



forward

hose sided or frontal

Standard



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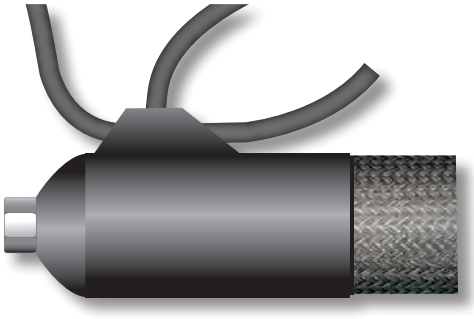


combined

ANALYTICAL HEATING HOSES

H 300 SERIES

350°C

ANALYTICAL SAMPLE GAS LINES WITH RSL FITTING

APPLICATION POTENTIAL:

Maintaining the temperature of motor exhaust, CO_2 measurements, industrial exhaust gasses, blast furnace exhaust gasses, air testing, environmental testing, etc.

This heated sample-extraction line prevents condensation from forming or a temperature drop below the dew point, thus no gas components are eliminated or lost.

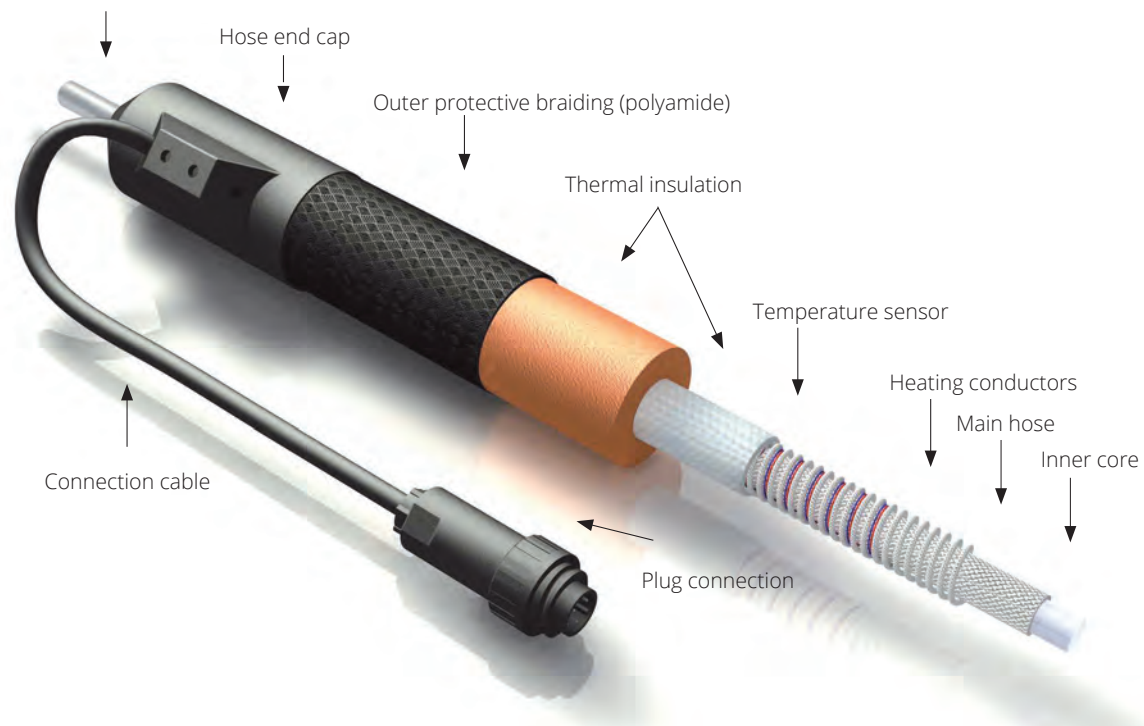
Operating temperature	100°C / 200°C / 250°C / 350°C
Rated voltage	230 V AC/DC (other voltages up to 500 V)
Rated power	Watt/metre, see type codes
Inner core DN 4 – 12 mm	up to 250°C PTFE or PFA above 250°C stainless steel see Inner cores analytics
Connection fitting	RSL 1.4571 steel, for cutting ring screw, without transition, see table
Heating	heating conductor, structure according to DIN, moisture-proof with PE conductor braiding; > 250°C not moisture-proof
Thermal insulation	depending on the operating temperature heat stabilized, close-pore silicone foam or thermal fleece, elastomer foam
Outer protective braiding	polyamide black, options - see Outer protection
Hose end caps	PA hard cap or elastomer cap
Temperature sensor	Fe-CuNi type J, NiCr-Ni type K, PT 100 and integral control system (HTI) possible
Connection cable	3 m
Plug connection	according to specification
Production lengths	up to 100 m
Protection type	IP44 (EN 60529), protection class I

Tolerance	
Operating temperature	±10°C

RSL

Pipe connection for cutting ring screw

DN	RSL L (mm)	d (mm)
4	25	6
6	25	8
8	26	10
10	26	12
12	28	15



ANALYTICAL HEATING HOSES

H 300 A SERIES

350°C

ANALYTICAL SAMPLE GAS LINES WITH REPLACEABLE INNER CORE AND CABLE SCREW FITTING.

APPLICATION POTENTIAL:

Maintaining the temperature of probe lines for motor exhaust, CO_2-measurements, industrial exhaust gasses, blast furnace exhaust gasses, air testing, etc.

The core of this heating hose runs uninterrupted and unrestricted from the extraction point to the analysis unit.

Threaded cable fittings on both ends simplify assembly on housings.

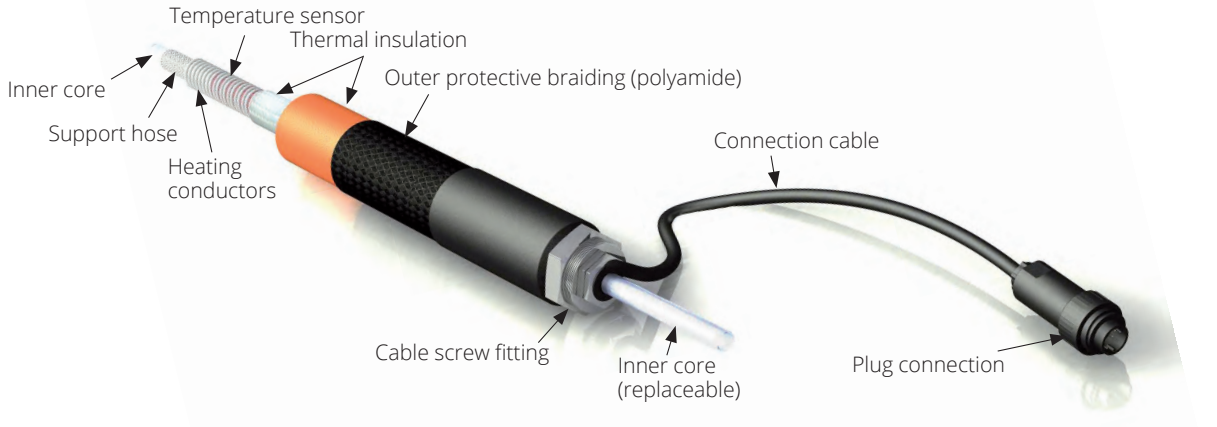
This version permits quick on-site replacement of the inner core if the inside walls are contaminated.

Operating temperature	100°C / 200°C / 250°C / 350°C
Rated voltage	230 V AC/DC (other voltages up to 500 V)
Rated power	Watt/metre, see type codes
Inner core DN 4 – 12 mm	up to 250°C PTFE or PFA above 250°C stainless steel - see Inner cores analytics 100 mm protruding on both sides **seamless**
Heating	heating conductor, structure according to DIN, moisture-proof with PE conductor; > 250°C not moisture-proof
Thermal insulation	depending on the operating temperature heat stabilized, close-pore silicone foam or thermal fleece, elastomer foam
Outer protective braiding	polyamide black, options - see Outer protection
End of hose KV screw connector	Strain relief from cable screw fitting, bore hole Ø 42 mm DN 4 – 6 bore hole Ø 52 mm DN 8 – 12 bore hole Ø 65 mm DN 16
Temperature sensor	Fe-CuNi type J, NiCr-Ni type K, PT 100 and integral control system (HTI) possible
Connection cable	3 m
Plug connection	according to specification
Production lengths	up to 50 m
Protection type	IP44 (EN 60529), protection class I

Tolerance	
Operating temperature	±10°C

Temperature control using our controllers, in chapter Control technology.

Extended applications are possible with special equipment. Diffusion proof on special request.



ANALYTICAL HEATING HOSES

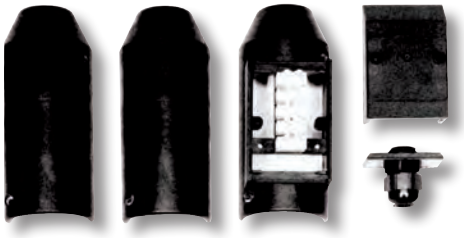
H 300 B SERIES 120°C

ANALYTICAL SAMPLE GAS LINES, CUT TO SIZE WITH PTFE INNER CORE, AVAILABLE ON REELS BY THE METRE

FOR USER ASSEMBLY ON THE CONSTRUCTION SITE:

H 300 B heating hoses are available as meter goods up to a length of 150 m. This makes it possible for the customer to determine hose lengths for themself "from the roll". In combination with our H 300 B-K assembly set, the end connections can be fitted on-site. Heating tapes are used for heating.

The H 300 B heating hoses with **HBR semiconductor heating tapes** limit their power on heating. The temperature attained depends on the environmental conditions, A temperature controller may be required, depending on the application, as too high temperatures destroy the semiconductor layer. If temperature differences occur along sections of routed heating hoses, the heating power adapts to the environmental temperature from section to section. This ensures uniform heating overall.



H 300 B-K assembly set end connection Option

Operating temperature depending on the selection of heating tape	Data relate to an outside temperature of approx. +10°C - see table below
Rated voltage	230 V AC (other voltages on request)
Inner core DN 4 – 12 mm	PFA, PTFE or stainless steel - see Inner cores analytics, Option: replaceable core
Connection fitting	cores protruding, seamless
Thermal insulation	thermally stabilised, close-pore foam or thermal fleece
Outer protection	PA corrugated hose
Hose end caps	PA hard cap or elastomer cap separate assembly set optional
Temperature sensor	Fe-CuNi, PT 100 or HTI optional
Outer diameter	42 mm, ±10%
Production lengths	up to 150 m - see table below
Protection type	IP44 (EN 60529), protection class I

TECHNICAL DATA H 300 B ANALYTICAL LINES AT +10°C OUTER TEMPERATURE:

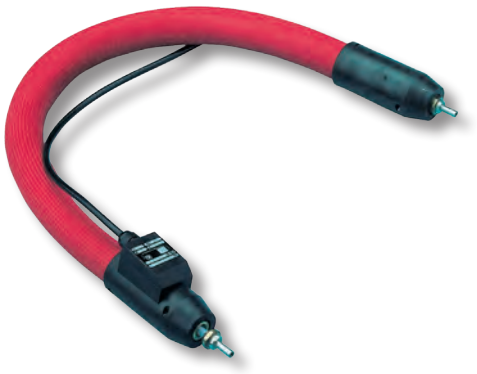
	Watt/m	can be cut to size at intervals of	Holding temp.	max. heating circuit length**
Limited heating tape HBR  reduced power on heating	10 17 25 31 40 60	can be cut to size for each length	35°C 40°C 50°C 60°C 90°C 120°C	150 m 130 m 100 m 70 m 60 m 40 m

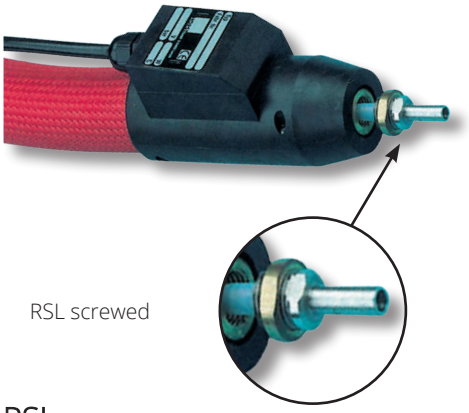
*HTI / system ** at 16A

ANALYTICAL HEATING HOSES

H 300 C SERIES

250°C





RSL screwed

RSL

Pipe connection for cutting ring screw

DN	RSL L (mm)	d (mm)
4	25	6
6	25	8
8	26	10
10	26	12
12	28	15

ANALYTICAL SAMPLE GAS LINES WITH REPLACEABLE PTFE INNER CORE AND SCREWED FITTING

APPLICATION POTENTIAL:

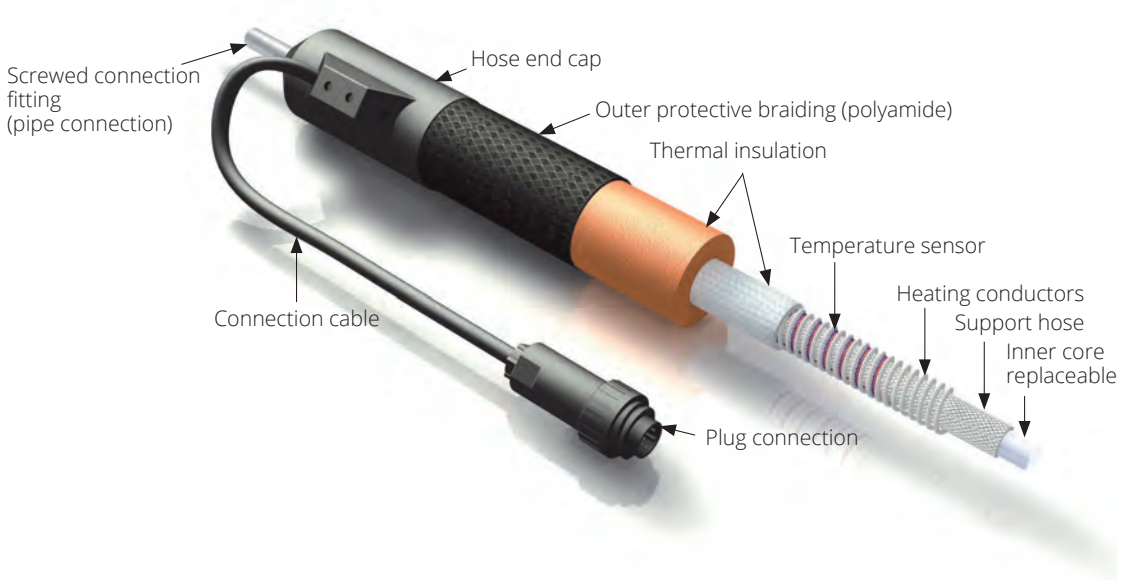
Maintaining the temperature of probe lines for motor exhaust, CO_2 measurements, industrial exhaust gasses, blast furnace exhaust gasses, air testing, etc.

The special fittings made of 1.4571 steel prevent the movement or kinking of the PTFE core at the end of the analysis heating hose. A clamping ring fitting can be attached. Strain relief is accomplished by way of the outer braid.

Operating temperature	max. 100°C, 200°C, 250°C
Rated voltage	230 V AC/DC (other voltages up to 500 V)
Rated power	Watt/metre, see type codes
Inner core DN 4 – 12mm	PFA or PTFE. see Inner cores Analytical
Connection fitting	RSL special fitting 1.4571 stainless steel, screwed without transition
Heating	heating conductor, structure according to DIN, moisture-proof with PE conductor
Thermal insulation	heat stabilized, closed-pore silicone foam, thermal fleece or elastomer foam
Outer protective braiding	polyamide black, options - see Outer protection
Hose end caps	PA hard cap or elastomer cap
Temperature sensor	Fe-CuNi type J, NiCr-Ni type K, PT 100 and integral control system (HTI) possible
Connection cable	3 m
Plug connection	according to specification
Production lengths	up to 100 m
Ingress protection	IP44 (EN 60529), protection class I

Tolerance	
Operating temperature	±10°C

Temperature control using our controllers, in chapter Control technology.



HAF SERIES 200°C

HEATING HOSE WITH INTEGRATED FILTER

APPLICATION POTENTIAL:

Portable measuring instruments, TÜV (technical inspection agencies) application.

Analytical heating hoses with integrated filter are an advanced development of the previous separated systems of heated hose and heated filter section. This version was preferentially designed for use with portable measuring instruments. For this purpose, special importance was placed on a light and flexible construction. The version shown is designed for this application.

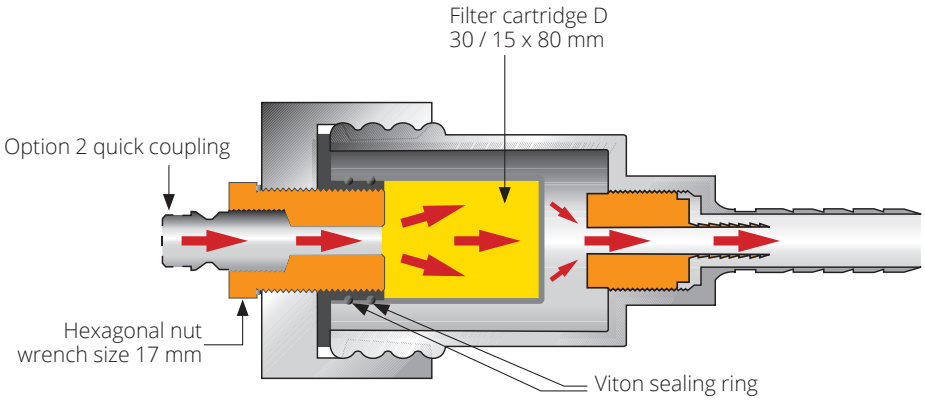
HAF SPECIFICATION

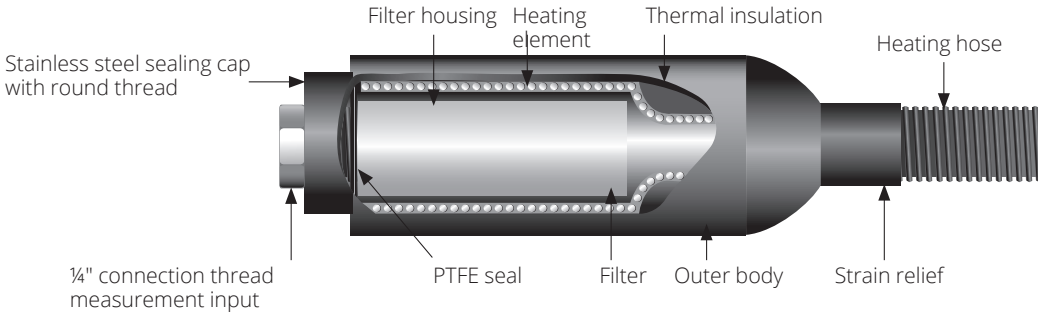
Test gas pipes (PTFE core DN 2 or DN 4) and **control lines** can be built into this system as options. The filter housing is made of 1.4571 steel. Versions in Hasteloy or with **PTFE coating** are also possible. The heating hoses can be connected to all our controller types (see chapter Control technology). Our **HTI integral system** is preferred. Temperature measurement is performed on the filter housing for all other control systems.

For general use, the filter housing can be adapted to other filter dimensions, other hose diameters and hose lengths so that this new development can be matched to all our existing analytical heating hose systems and covers the **complete range of analytical technology**.

Inner core PTFE:

Nominal diameter	fixed	replaceable
8	X	
4	X	X





ANALYTICAL HEATING HOSES

HMI SERIES

200°C

MINI HEATING HOSE

APPLICATIONS:

In analytical technology for portable measuring systems; connection hoses in medical technology in all application areas; for maintaining the heat of a medium.

The HMI mini heating hoses are a miniaturized version of our standard H300 hose series. The structure is similar, only less thermal insulation is used.

Operating temperature	max. 200°C
Rated power	individually adaptable
Rated voltage	low voltage and mains voltage
Main hose type	PTFE cores, silicone-Viton hoses, capillaries made of stainless steel and copper, plastic hoses made of PA/PP/PE/PVC/...
Outer diameter	min. 20 mm possible
Available execution	self-limiting, with in-built (customer-specific) sensor. with connection to an HTI integral controller

Depending on the application, the outer jacket consists of an SI hose, red-brown/black or a closed PA corrugated hose.

The end connections are silicone moulded parts and tapered or cast shapes.

SIM SERIES

150 °C

CLIP ATTACHMENT TRACE HEATER FOR HEATING THIN PIPES AND HOSES

This trace heater for thin steel and copper pipes, as well as for hoses, consists of a silicone profile with parallel heating elements.

The slotted shape enables pre-installed pipe systems, e.g. in analytical cabinets, to be heated without having to dismantle them. This saves considerable assembly costs.

The version presently available covers piping from 4-12 mm OD. The lengths and power ratings are flexibly adapted to customer requirements. The tracer heaters are therefore very easy to replace.

Operating temperature	-20 to +150°C
Rated voltage	12 - 230 V AC/DC
Rated power	depending on configuration 50 - 100 W/m
Heating	heating conductor, structure according to DIN, moisture-proof with protective braiding
Thermal insulation	heat-stabilised closed-pore silicone hose
Outer protection	silicone profile smooth
End caps	PA hard cap single ended
Temperature sensor	PT100
Connection cable	1.5 m
Plug connection	according to specification
Production lengths	max. 5 m
Protection type	up to IP54 (EN 60529), protection class I

ANALYTICAL HEATING HOSES

HEATED HOSE JUNCTIONS 200°C

If you have an unheated fitting and need to keep your medium at the right temperature, then our HIH heating sleeve is the right solution.

APPLICATION POTENTIAL:

Interconnection of heating hoses, connection of heating hose system, feeders in the heating hose system, or as an adapter between different fittings.

HIH HEATING SLEEVE

Operating temperature	200°C, maximum
Rated voltage	230 V AC/DC (other voltages 12 to 500 V)
Power rating	Sleeve Ø 22 mm = 12 W Sleeve Ø 40 mm = 24 W

The rated power is designed so that heating hoses are set to operating temperatures of up to 200°C and the temperature in the connector component does not drop. For this reason, in the majority of cases HIH does not need any controller, although it can be fitted with one if required.

Type	Inner Ø	Heated length	Total length
HIH – 08	22 mm	70 mm	96 mm
HIH – 16	40 mm	90 mm	120 mm

For special applications, the sleeves can be provided with outlets. These permits special feeder types. Other dimensions are available.

HI INSULATION SLEEVE WITHOUT HEATING

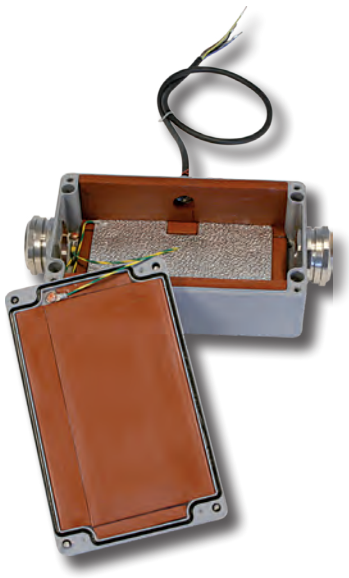
Type	Temperature	Inner Ø	Total length
HI – 08	200°C	22 mm	70 mm
HI – 16	200°C	40 mm	90 mm

with loop fastening Other dimensions are available.

HOT BOX

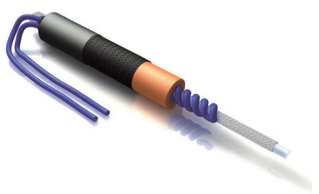
Housing with integrated heater for loss-free thermal connection to analysis lines made with robust metal casing.

Operating temperature	max. 250°C
Rated voltage	230 V AC/DC (other voltages 12 to 500 V)
Power rating	adapted to design requirements
Dimensions	adapted to design requirements
Insulation	10 mm silicone foam
Temperature sensor	optional
Connection cable	3 m
Temperature regulators	see chapter Control technology



ELVARME

VORES PRODUKTSORTIMENT INKLUDERER:



INDUSTRIELLE VARMESLANGER

ATEX

REGULATORER

GALVATHERM

FØDEVAREINDUSTRI

VARMESLANGER

VI FØRER PRODUKTER INDENFOR KATEGORIERNE:

AUTOMATIK

HVAC & BYGNINGS-AUTOMATIK

KØLEPROFILER

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