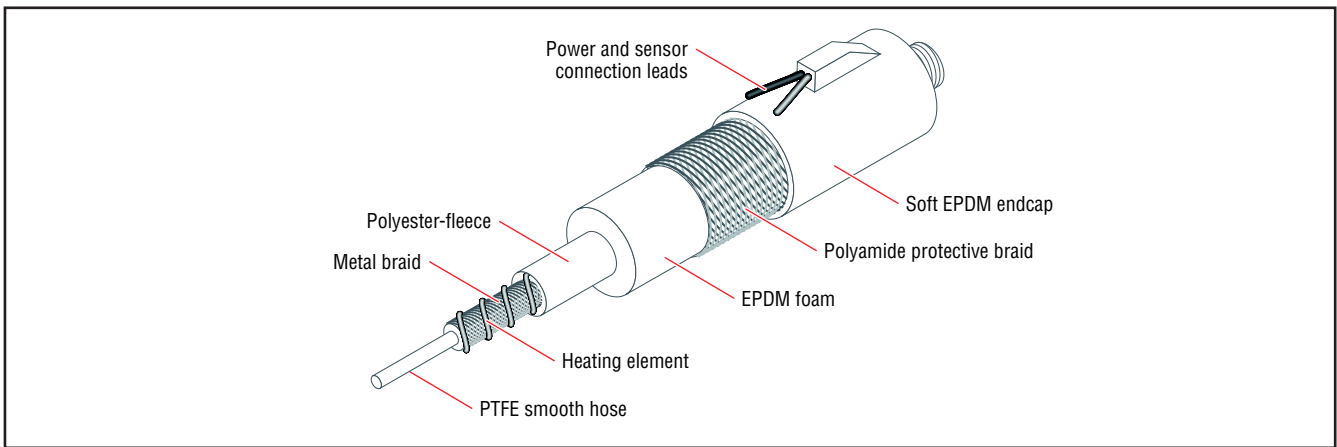


Heated hose, standard range for liquid and gaseous media

Isopad IHH-ST1A/ST1D is a flexible heated hose for liquid and gaseous media with a maximum operating temperature of 100°C. The standard versions have smooth PTFE inner hose constructions with stainless steel braiding for pressurized operation. The thermal insulation consists of polyester fleece and ethylene propylene diene monomer (EPDM) foam.

Mechanical protection is provided by a polyamide braid and soft EPDM endcaps. Built-in Pt100 sensors provide optimum temperature control for the medium. The evenly wrapped resistance heating cable allows an homogeneous heat distribution throughout the hose.

The standard versions can be used for a wide range of applications. Special designs are available on request with focus on the performance level and/or environmental influences. See our list of options for your desired design on page 3.



Area Specifications

Area classification	Nonhazardous, ordinary area
Ingress protection	IP54
Electrical protection class	Class I
Maximum withstand temperature (power off)	100°C
Ambient temperature range	-20 to +40°C

Standard Manufacturing Sizes

Length	Up to 19 m ⁽¹⁾
Tolerances	According to DIN 20066
Nominal width	4, 6, 8, 10, 13 mm

⁽¹⁾ Available in steps of 0.1 m

Heater Construction

Type	Resistance heating cable
Material	Various alloys
Material of insulation	PTFE
Material of outer sheath	Copper-nickel braid
Carrier	Stainless steel braid
Inner hose	Smooth PTFE hose
Fittings	AGR or DKR according to ISO 228/1
Fitting material	Galvanized steel
Thermal fabric fibre insulation	Polyester-fleece of 4 to 5 mm thickness

Heater Construction

Thermal foam insulation	EPDM of 9 to 11 mm thickness
Outer protection	Polyamide braid

Lead Connection

Connection length	1.5 m
Cross section	Depending on design
Maximum operating temperature	180°C
Insulation material	Silicone

Temperature Control

Sensor type	Pt100 two-wire DIN Class B
Sensor lead length	1.5 m
Lead cross section	Depending on design
Maximum operating temperature	180°C
Sensor lead material	Silicone

Technical Data

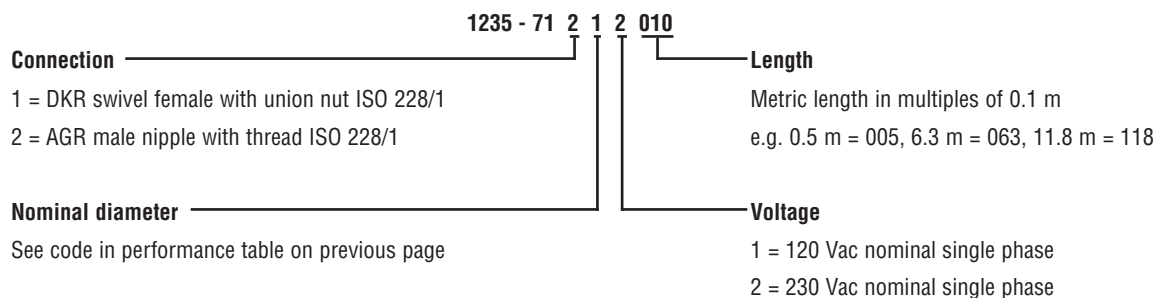
Frequency	50-60 Hz
Nominal operating voltage	120 or 230 Vac
Nominal power	Depending on design
Power per meter	Maximum 110 W/m (see performance table)
Minimum insulation resistance	100 MΩ
Maximum operating temperature	100°C
Maximum operating pressure	See performance table
Minimum bend radius	See performance table

Performance Table

Nominal diameter		Power (W/m) at 100°C	Maximum static pressure (bars)		Minimum bend radius (mm)	
Code	mm		at 20°C	at 100°C	Static	Dynamic ⁽¹⁾
1	4	70	250	238	100	200
2	6	80	240	228	150	300
3	8	90	200	190	200	400
4	10	100	175	166	140	480
5	13	110	150	143	270	540

⁽¹⁾Dynamic performance represents two dimensional single piston stroke per second (1 Hz) with compressed air (medium) 6 bars at 100°C operating and 20°C ambient temperature. Dynamic performance of heated hoses is recommended to be tested for each individual application.

Ordering Information - Part Number Configurator (for standard versions only, not applicable for special versions)



Example: 1 m heated hose, 4 mm nominal diameter, 230 V supply voltage, AGR connection

Part Number: 1235-71212010

Options for Special Versions

If your requirements are not met by the above specifications, we can tailor-make a heated hose to suit you. Variations depend on design and can include:

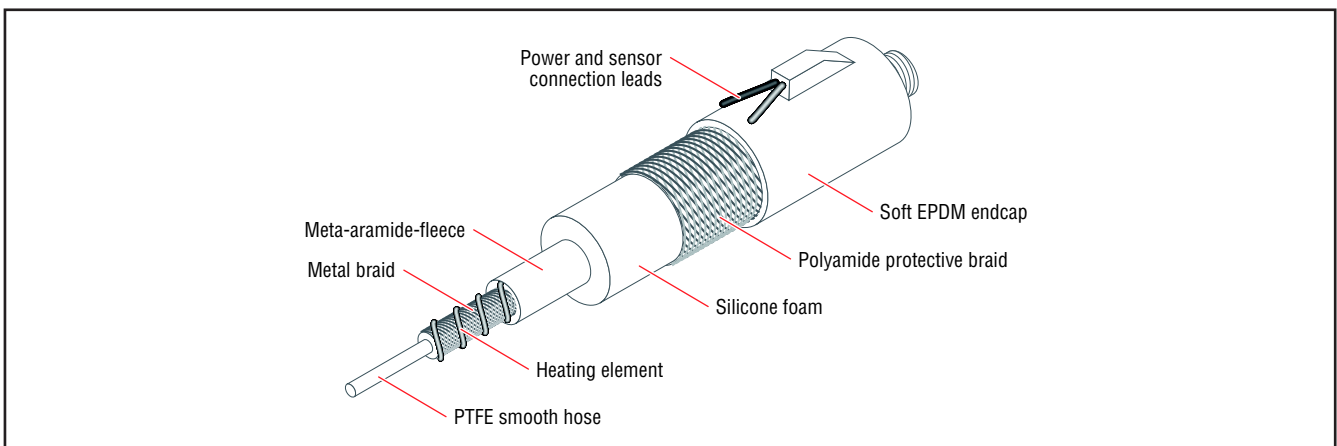
- Other nominal sizes and inner hoses, e.g. supplied components for individual heating
- Sizes up to 120 m
- Sensor types, e.g. thermocouples Type K, Type J, etc.
- Supply voltage up to 400 V, single-phase or three-phase
- Higher power outputs
- Increased ingress protection, e.g. IP65 for outdoor applications
- Increased pressure resistance, up to 475 bar at 100°C (depending on nominal diameter)
- Other materials, e.g. for applications recommending silicone free production
- Approved components for the use in hazardous areas according to IECEx and ATEX
- Replaceable inner hoses for nonpressurized gas analysis
- Premounted plugs and special supply and messenger leads
- Controlling devices and high temperature lock-out thermostats

Heated hose, standard range for liquid and gaseous media

Isopad IHH-ST2A/ST2D is a flexible heated hose for liquid and gaseous media with a maximum operating temperature of 200°C. The standard versions have smooth PTFE inner hose constructions with stainless steel braiding for pressurized operation. The thermal insulation consists of meta-aramide fleece and silicone foam.

Mechanical protection is provided by a polyamide braid and soft ethylene propylene diene monomer (EPDM) endcaps. Built-in Pt100 sensors provide optimum temperature control for the medium. The evenly wrapped resistance heating cable allows an homogeneous heat distribution throughout the hose.

The standard versions can be used for a wide range of applications. Special designs are available on request with focus on the performance level and/or environmental influences. See our list of options for your desired design on page 3.



Area Specifications

Area classification	Nonhazardous, ordinary area
Ingress protection	IP54
Electrical protection class	Class I
Maximum withstand temperature (power off)	200°C
Ambient temperature range	-20 to +40°C

Standard Manufacturing Sizes

Length	Up to 19 m ⁽¹⁾
Tolerances	According to DIN 20066
Nominal width	4, 6, 8, 10, 13 mm

⁽¹⁾ Available in steps of 0.1 m

Heater Construction

Type	Resistance heating cable
Material	Various alloys
Material of insulation	PTFE
Material of outer sheath	Copper-nickel braid
Carrier	Stainless steel braid
Inner hose	Smooth PTFE hose
Fittings	AGR or DKR according to ISO 228/1
Fitting material	Galvanized steel
Thermal fabric fibre insulation	Meta-aramide-fleece of 4 to 5 mm thickness

Heater Construction

Thermal foam insulation	Silicone of 9 to 11 mm thickness
Outer protection	Polyamide braid

Lead Connection

Connection length	1.5 m
Cross section	Depending on design
Maximum operating temperature	180°C
Insulation material	Silicone

Temperature Control

Sensor type	Pt100 two-wire DIN Class B
Sensor lead length	1.5 m
Lead cross section	Depending on design
Maximum operating temperature	180°C
Sensor lead material	Silicone

Technical Data

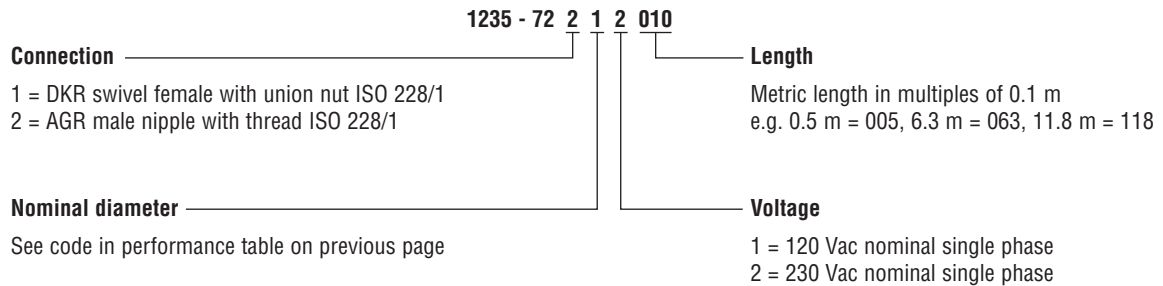
Frequency	50-60 Hz
Nominal operating voltage	120 or 230 Vac
Nominal power	Depending on design
Power per meter	Maximum 140 W/m (see performance table)
Minimum insulation resistance	100 MΩ
Maximum operating temperature	200°C
Maximum operating pressure	See performance table
Minimum bend radius	See performance table

Performance Table

Nominal diameter		Power (W/m) at 200°C	Maximum static pressure (bars)		Minimum bend radius (mm)	
Code	mm		at 20°C	at 200°C	Static	Dynamic ⁽¹⁾
1	4	90	250	208	100	200
2	6	100	240	199	150	300
3	8	110	200	166	200	400
4	10	120	175	145	140	480
5	13	140	150	125	270	540

⁽¹⁾Dynamic performance represents two dimensional single piston stroke per second (1 Hz) with compressed air (medium) 6 bars at 100°C operating and 20°C ambient temperature. Dynamic performance of heated hoses is recommended to be tested for each individual application.

Ordering Information - Part Number Configurator (for standard versions only, not applicable for special versions)



Example: 1 m heated hose, 4 mm nominal diameter, 230 V supply voltage, AGR connection
Part Number: 1235-72212010

Options for Special Versions

If your requirements are not met by the above specifications, we can tailor-make a heated hose to suit you. Variations depend on design and can include:

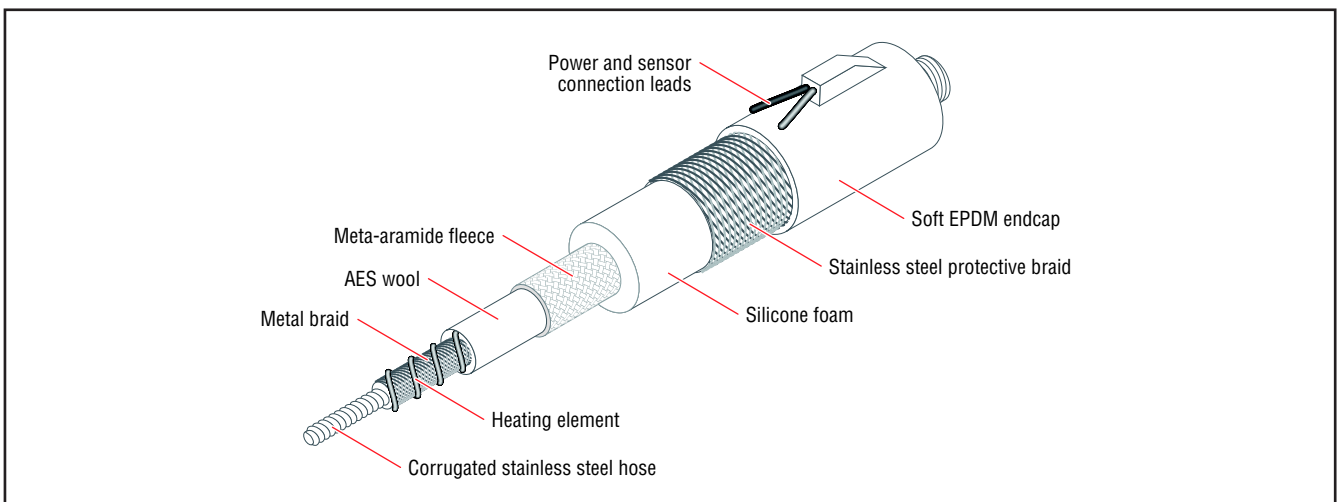
- Other nominal sizes and inner hoses, e.g. supplied components for individual heating
- Sizes up to 120 m
- Sensor types, e.g. thermocouples Type K, Type J, etc.
- Supply voltage up to 400 V, single-phase or three-phase
- Higher power outputs
- Increased ingress protection, e.g. IP65 for outdoor applications
- Increased pressure resistance, up to 415 bar at 200°C (depending on nominal diameter)
- Other materials, e.g. for applications recommending silicone free production
- Approved components for the use in hazardous areas according to IECEx and ATEX
- Replaceable inner hoses for nonpressurized gas analysis
- Premounted plugs and special supply and messenger leads
- Controlling devices and high temperature lock-out thermostats

Heated hose, standard range for liquid and gaseous media

Isopad IHH-ST4A/ST4D is a flexible heated hose for liquid and gaseous media with a maximum operating temperature of 400°C. The standard versions have corrugated stainless steel inner hose constructions with stainless steel braiding for pressurized operation. The thermal insulation consists of high temperature fleece and silicone foam.

Mechanical protection is provided by a stainless steel braid and soft ethylene propylene diene monomer (EPDM) endcaps. Built-in Pt100 sensors provide optimum temperature control for the medium. The evenly wrapped resistance heating cable allows an homogeneous heat distribution throughout the hose.

The standard versions can be used for a wide range of applications. Special designs are available on request with focus on the performance level and/or environmental influences. See our list of options for your desired design on page 3.



Area Specifications

Area classification	Nonhazardous, ordinary area
Ingress protection	IP54
Electrical protection class	Class I
Maximum withstand temperature (power off)	400°C
Ambient temperature range	-20 to +40°C

Standard Manufacturing Sizes

Length	Up to 19 m ⁽¹⁾
Tolerances	According to DIN 20066
Nominal width	6, 8, 10, 13 mm

⁽¹⁾ Available in steps of 0.1 m

Heater Construction

Type	Resistance heating cable
Material	Various alloys
Material of insulation	Glass-silk
Material of outer sheath	Woven glass-silk
Carrier	Stainless steel braid
Inner hose	Corrugated stainless steel hose
Fittings	AGR or DKR according to ISO 228/1

Heater Construction

Fitting material	Stainless steel
Thermal fabric fibre insulation	Meta-aramide-fleece + AES-wool of 8 to 12 mm thickness
Thermal foam insulation	Silicone of 9 to 11 mm thickness
Outer protection	Stainless steel braid

Lead Connection

Connection length	1.5 m
Cross section	Depending on design
Maximum operating temperature	180°C
Insulation material	Silicone

Temperature Control

Sensor type	Pt100 two-wire DIN Class B
Sensor lead length	1.5 m
Lead cross section	Depending on design
Maximum operating temperature	180°C
Sensor lead material	Silicone

Technical Data

Frequency	50-60 Hz
Nominal operating voltage	120 or 230 Vac
Nominal power	Depending on design
Power per meter	Maximum 150 W/m (see performance table)
Minimum insulation resistance	100 MΩ
Maximum operating temperature	400°C
Maximum operating pressure	See performance table
Minimum bend radius	See performance table

Performance Table

Nominal diameter		Power (W/m) at 400°C	Maximum static pressure (bars)		Minimum bend radius (mm)	
Code	mm		at 20°C	at 400°C	Static	Dynamic ⁽¹⁾
2	6	120	125	62	50	160
3	8	130	125	62	65	250
4	10	140	100	50	75	260
5	13	150	85	42	90	280

⁽¹⁾Dynamic performance represents two dimensional single piston stroke per second (1 Hz) with compressed air (medium) 6 bars at 100°C operating and 20°C ambient temperature. Dynamic performance of heated hoses is recommended to be tested for each individual application.

Ordering Information - Part Number Configurator (for standard versions only, not applicable for special versions)

	1235 - 74 2 1 2 010	
Connection		Length
1 = DKR swivel female with union nut ISO 228/1 2 = AGR male nipple with thread ISO 228/1		Metric length in multiples of 0.1 m e.g. 0.5 m = 005, 6.3 m = 063, 11.8 m = 118
Nominal diameter		Voltage
See code in performance table on previous page		1 = 120 Vac nominal single phase 2 = 230 Vac nominal single phase

Example: 1 m heated hose, 4 mm nominal diameter, 230 V supply voltage, AGR connection
Part Number: 1235-7421010

Options for Special Versions

If your requirements are not met by the above specifications, we can tailor-make a heated hose to suit you. Variations depend on design and can include:

- Other nominal sizes and inner hoses, e.g. supplied components for individual heating
 - Sizes up to 120 m
 - Sensor types, e.g. thermocouples Type K, Type J, etc.
 - Supply voltage up to 400 V, single-phase or three-phase
 - Higher power outputs
 - Increased ingress protection e.g IP65 for outdoor applications
 - Increased pressure resistance
 - Other materials eg. for applications recommending silicone free production
 - Replaceable inner hoses for nonpressurized gas analysis
 - Premounted plugs and special supply and messenger leads
 - Controlling devices and high temperature lock-out thermostats
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