Data Sheet

VHX Valve Sets with RAX Thermostatic Sensor for Designer Radiators & Bathroom Towel Rails

Application

VHX floor connection

VHX wall connection

The VHX-sets are specially designed for towel rails and designer radiators with '50 mm bottom connection' and ½" connection to the radiator.

The VHX-sets include a RAX thermostatic sensor for room temperature regulation.

The sets provides the perfect finishing touch for towel rails. The aesthetically pleasing and compact design allows the sensor to be mounted underneath the towel rail, parallel with the wall.

VHX valves controls the return flow from the radiator and have several features:

- free choice of left/right mounting direction
- available in versions for floor or wall connection
- built-in shut-off function
- two different surfaces matching most radiator

In order to avoid deposition and corrosion the composition of the hot water must be in accordance with the VDI 2035.

Quality

All Danfoss radiator thermostats are manufactured in factories, assessed and certified by BVC (Bureau Veritas Certification) against ISO 9001 and ISO 14001.

Ordering

VHX set

Description	Colour	Code no. Straight	Code no. Angle
VHX-DUO valve set, with RAX room sensor	Chrome	**013G4276**	**013G4279**
	RAL 9016	**013G4278**	**013G4281**
VHX-MONO valve set, with RAX room sensor	Chrome	**013G4282**	**013G4285**
	RAL 9016	**013G4284**	**013G4287**

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Compression Fittings

Description	Size	Code no. Nickel plated	Code no. Chrome plated
For steel and copper tubes	10 mm	**013G4110**	**013G4192**
	12 mm	**013G4112**	**013G4193**
	14 mm	**013G4114**	**013G4194**
	15 mm	**013G4115**	**013G4195**
	16 mm	**013G4116**	**013G4196**
For AluPex tubes	14 x 2 mm	**013G4174**	-
	16 x 2 mm	**013G4176**	**013G4200**
For Pex tubes	12 x 1.1 mm	**013G4143**	-
	12 x 2 mm	**013G4142**	-
	14 x 2 mm	**013G4144**	-
	15 x 2.5 mm	**013G4147**	**013G4199**
	16 x 2 mm	-	**013G4198**

Accessories

Product	Code no.
Adapter for electric heating element	**013G4166**
O-ring service set for VHX MONO angle valve and VHX DUO angle valve [1]	**013G4179**
O-ring service set for VHX DUO straight valve	**013G4180**
O-ring service set for VHX MONO straight valve	**013G4181**

[1] *Complete O-ring replacement of VHX DUO angle valve requires 2 x 013G4179.*

Technical data

Type	Connection		k_v-values [m³/h] with RAX sensor at setting [1]								(k_{vs})
	Radiator	System	1	2	3	4	5	6	7	N	N
VHX-DUO	G½A	G½	0.12	0.15	0.20	0.25	0.30	0.36	0.42	0.49	0.56
VHX-MONO	G½A	G½	0.12	0.15	0.20	0.25	0.30	0.34	0.38	0.40	0.45

Max. working pressure: 10 bar
Max. differential pressure[2]: 0,6 bar
Test pressure: 16 bar
Max. flow temperature: 120 ℃

[1] *The k_v-value indicates the water flow (Q) in m³/h at a pressure drop (Δp) across the valve of 1 bar;*

$$k_v = \frac{Q}{\sqrt{\Delta p}}$$

At setting N the k_v-value is stated according to EN 215, at X_P = 2K i.e. the valve is closed at 2℃ higher room temperature. At lower settings the X_P value is reduced to 0.5K of the setting value 1.
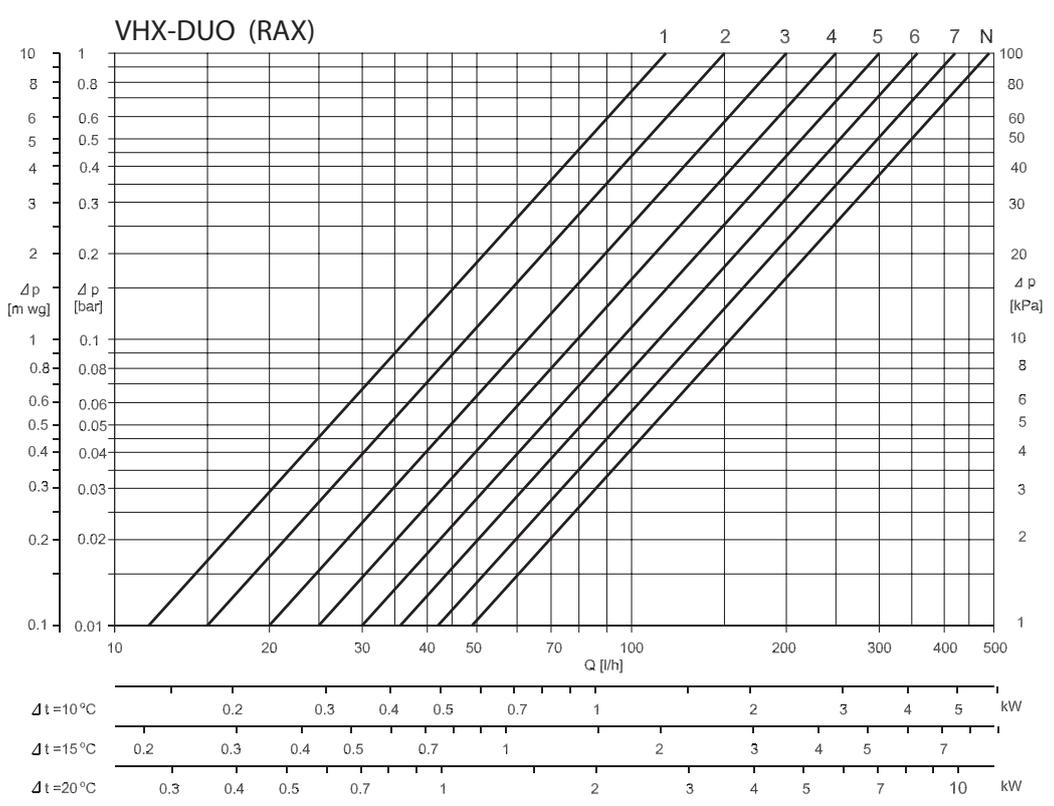*The k_{vs}-value states the flow Q at a maximum lift, i.e. at fully open valve at setting N.*

[2] *The maximum differential pressure specified is the maximum pressure at which the valves give satisfactory regulation. As with any device which imposes a pressure drop in the system, noise may occur under certain flow/pressure conditions. The differential pressure can be reduced by the use of the Danfoss differential pressure regulators.*
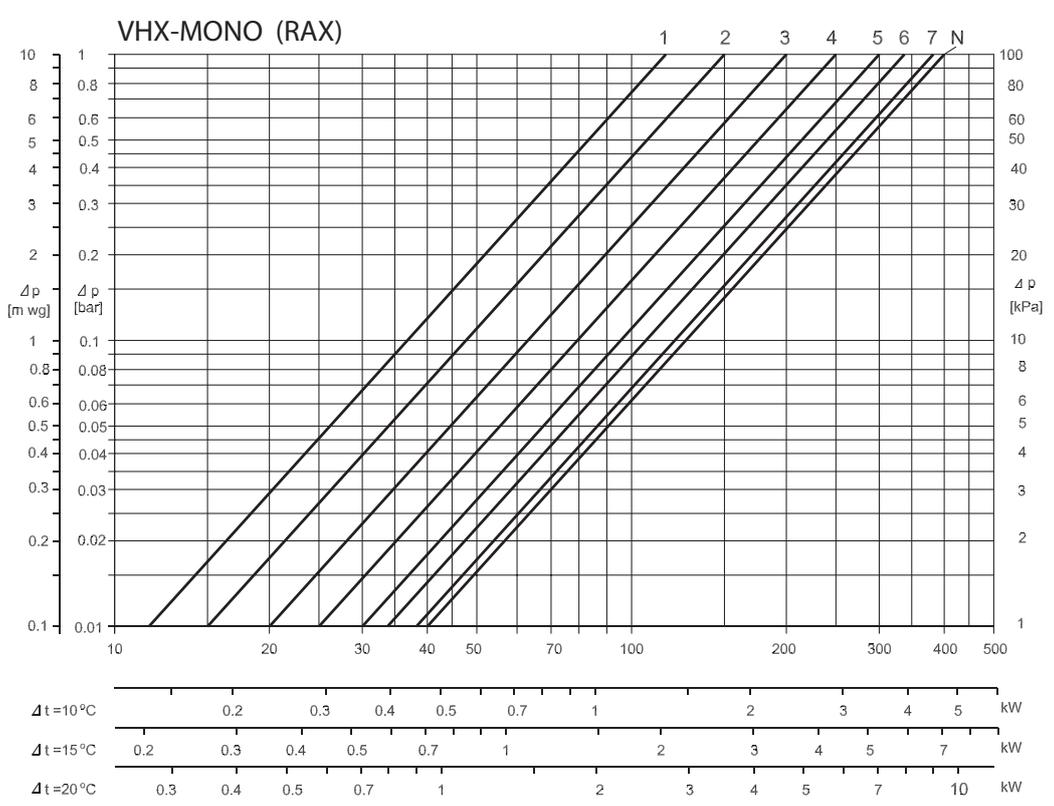
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Capacities

VHX-DUO (pre-setting)

VHX-DUO (RAX)

$\Delta t = 10\,°C$			0.2	0.3	0.4	0.5	0.7	1		2	3	4	5	kW
$\Delta t = 15\,°C$	0.2	0.3	0.4	0.5	0.7		1	2	3	4	5	7	
$\Delta t = 20\,°C$	0.3	0.4	0.5	0.7		1	2	3	4	5	7	10	kW

VHX-MONO (pre-setting)

VHX-MONO (RAX)

$\Delta t = 10\,°C$			0.2	0.3	0.4	0.5	0.7	1		2	3	4	5	kW
$\Delta t = 15\,°C$	0.2	0.3	0.4	0.5	0.7		1	2	3	4	5	7	kW
$\Delta t = 20\,°C$	0.3	0.4	0.5	0.7		1	2	3	4	5	7	10	kW

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Temperature Setting

RAX thermostatic sensor

0 = *Positive shut off*
❄ = *Frost protection setting*

	8	12	16	20	24	28	°C
0	❄	I	II	III	IIII	▶|	

Pre-setting

Danfoss pre-settable valve assemblies incorporate easy setting adjustment with clearly engraved setting markers scaled from 1 - 7 and N.

Setting values can be set quickly and precisely, without the need for tools, as follows:
• Remove protective cap or sensor.
• Turn Red ring to the desired setting value.

The preset level can be selected in 0.5 increments between 1 and 7 (see chart for flow rates). At setting N the valve is fully open (flushing option).

Installation

VHX-DUO Floor Connection

Free connection (left or right).
Radiator outlet always on thermostat side.

VHX-MONO Floor Connection

Free connection (left or right).
Radiator outlet always on thermostat side.

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Installation

VHX-DUO Wall connection

Free connection (left or right).
Radiator outlet always on thermostat side.

VHX-MONO Wall Connection

Free connection (left or right).
Radiator outlet always on thermostat side.

RAX sensor

Mounted directly on the valve with an Allen key
*(enclosed in set)*

Electric Heating Element

Danfoss electric heating elements can be mounted in the radiator through the VHX-DUO angle valve.

Mounting of a standard heating element (nonDanfoss) through the valve requires use of the adapter 013G4166.

If a heating element is to be used with other VHX valves, a standard heating element (non-Danfoss) has to be mounted directly in the radiator.

The heating element's wattage must be selected so that the wattage emitted on the heating element is always less than half of the nominal wattage the radiator can emit.
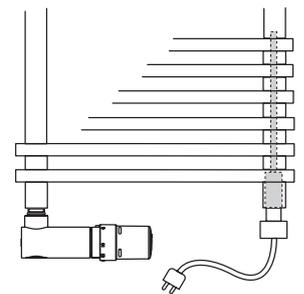
Examples: Mounting of an electric heating element
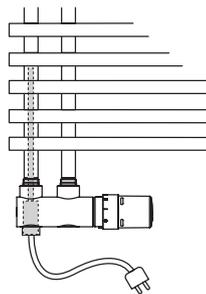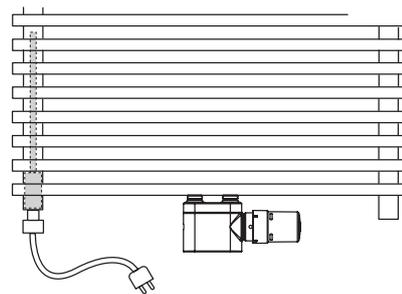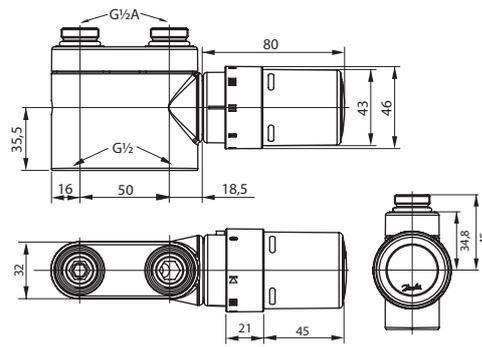

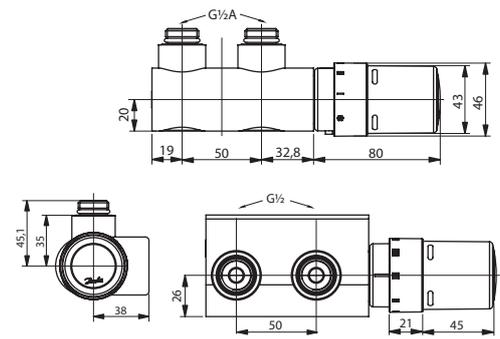*Danfoss*   *Standard (non-Danfoss)*   *Standard (non-Danfoss)*
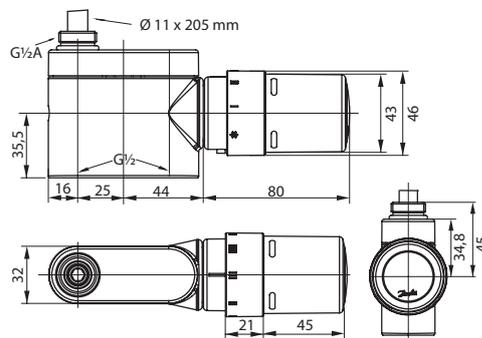
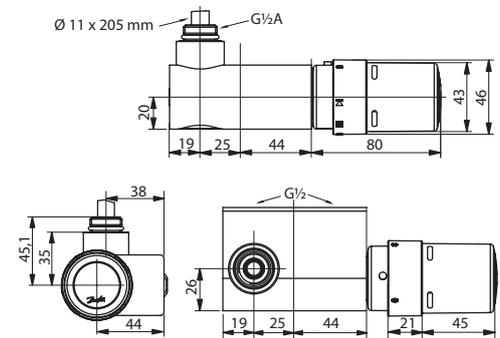# Data Sheet VHX Valve Sets with RAX Thermostatic Sensor

Dimensions

VHX-DUO floor connection

VHX-DUO wall connection

VHX-MONO floor connection

VHX-MONO wall connection